CARVING REALISTIC Faces with Power

Frank C. Russell

About the author

Frank C. Russell is a Vermont wood carver internationally known for his ability to carve birds, animals and the human figure in the round. Considered by many to be one of the nation's more versatile power carvers, he has won numerous awards on both the national and international level. Mr. Russell taught on the high school and collegiate levels for many years before turning to wood carving as a full time profession in 1980. Though he still presents many carving classes in Vermont, he is more often sponsored by organizations to present seminars throughout the U.S. and Canada.

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DEDICATION

There exists a fraternal order whose members come from every walk of life, every age, every race, color, creed, and religion.

Each is blessed with a creative talent most hallowed, coveted by many, and held sacred by the possessor.

To each, this book is dedicated,

To each, a sister or a brother,

To each, a teacher or student,

To each a colleague

To each, a Woodcarver.

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with book ideas on related subjects.

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Preface

I was prompted to undertake this work by the many requests that I received from carvers new to power carving, and others (power carvers and manual carvers alike) who wanted to learn how to carve the human face as a diversion from bird or animal carving. My greatest challenge was sorting through the mountain of data that I thought was so essential. The greatest revelation during my quest was realizing that what may have been important to me might not be of any value to others, and vice versa.

Finally, I decided to allow my students and the methods that I use to teach them through seminars, demonstrations, and individual sessions be my guide. Every technique, question, and method, was noted until I had yet another mountain of data to sort through.

I am still of the opinion that what works for one may not work for another, and to this end, I remind the reader that nothing is written in stone. If a different technique works for you, or you can improve on any of the methodology herein, do what works best for you. There are many ways to accomplish the same end, so take the best and leave the rest.

I extend gratitude to the many who gave their photographic eyes, ears, noses, mouths, profiles, and full images to give credence to the written word. To this end, my heartfelt sympathy is extended to those intrepid souls who earn a living by photographing children!

Finally, I wish to thank the Foredom Electric Company of Bethel, Connecticut, and the L.R. Oliver Company of Ira, Michigan, for the technological data and material assistance given—assistance without which this author and book would have been sorely lacking.

Contents

Why Power Carving?

Each time I list the following credits and debits to beginning carvers, I worry about what their initial reaction will be. The concept of carving with power is relatively new, and therefore, still has to be proven. The debits, when listed in black and white, seem to dominate the credits, but in reality the credits bear greater significance and desirability. Power carving provides greater benefit and satisfaction to me through product results, the amount of time spent carving, and the prices I get for my work with respect to the amount of time invested.

Power carving is more relaxing, probably because I don't have to work as hard for the end result as I do when I carve manually.

Before going further, let me say that I enjoy any type of carving in the round, whether it be manual or power. My preference lies with power only for the reasons listed in the credit section below. Carving of any type, affords me a relaxation that I can't find anywhere else. I can lay on the sunniest, sandiest beach, totally enjoying the surroundings, wishing I had my carving tools. Usually, this feeling hits the hardest at some kind of meeting, when suddenly, all I want is to be in my studio carving.

POWER CARVING CREDITS AND DEBITS

SPEED

Power carving is faster, stock can be removed or wasted away more quickly than by manual or conventional means. This applies most especially on smaller pieces where the carver can get where he wants to go faster and with less effort.

As much as I care for the many manual tools that I own, I dislike taking the time to sharpen them. I don't have this problem with power, where virtually no time is taken from a project for sharpening. I don't begrudge the few seconds it takes to clean a bit, or even to reshape a particular stone bit that I am using.

Texturing feathers, fur, or hair, takes less time than would be required for manual texturing techniques with a v-gouge, woodburner, or knife. When carving is one's livelihood, the "time is money" adage certainly holds true.

DIVERSITY

There are many operations that are clearly easier and faster with the selection of proper bit, speed, and type of stroke. For instance, with the proper sized ball bit, the nostrils on the human face can be easily carved and shaped with less time and effort than with conventional hand tools. The same can be said for most of the power operations used, from shaping the head, to the relieving and shaping of features, to final texturing.

RESULT

Since my introduction to power carving, I have always been able to achieve comparable or better results in less time with a machine than with manual tools.

When I'm expending creative energy, I don't like to expend much physical energy. I want to get results as soon as I can with as little effort as possible. Power carving demands much less effort physically to get a desired result. I have had several arthritic students convert to power carving simply because they could wield a power handpiece without the pain that gripping a knife or chisel caused.

COST

Hopefully, power carving machine prices will go the way of calculators and computers, and the prices will get lower as new technology and developments allow. However, at this point in time, and depending on the machine chosen, power carving has a heavy initial expenditure requirement. A power unit and handpiece alone would cover the cost of enough knives, chisels, and accessories to more than satisfy the average manual carver, and still have enough left to buy a goodly amount of carving stock.

Once the power unit and handpiece have been acquired, an adequate selection of carving bits must be purchased in order to perform the desired operations. Some bits cost as much as, or more than, a good chisel. Granted, everything doesn't have to be purchased immediately, but when the totals are in, as a rule the power carver will have made a larger initial expenditure for the "necessities."

NOISE

Some woodcarvers find the noise difficult to get used to, or worse, never get used to the noise. The whine of machinery isn't what they consider a part of traditional craftsmanship, or they find it too distracting. The reasons are as varied as they are many. However, I have found that at least 90 percent of those I interviewed who disliked power to begin with, have introduced power to at least some of their carving tasks. As for me, I find the sound of my machinery comforting.

I must admit that it is quite difficult to hold conversations above the whine of machinery, especially when teaching to a room filled with power carvers.

MESSY

Power carving is messier to clean up due to the smaller particles of stock being removed. When I waste away with my knives and chisels, it's much easier to brush the bench and sweep up than it is after I've had a power carving session. When I forget to turn on the dust collector, there is also airborne dust that settles on everything. This never occurs when I'm carving with hand tools.

SAFETY

The coarser gritted carving bits can leave a hole in a finger quickly if care is not taken, but with respect to finger cuts, power carving is far safer than chisel/knife carving.

The **danger** lies in prolonged breathing of fine wood dust without proper protection or adequate dust control/removal. The carving process generates an incredible amount of coarse and fine wood dust, depending on the progress of the project. If care is not taken through immediate removal and/or a protective device, the airborne dust particles are taken into the lungs with every inhalation.

DEPENDENCE ON ELECTRICITY

Having a utility beyond one's control can be frustrating. Usually when I opt to winter in my home state of Vermont, it's because I have commissions or carving obligations that absolutely have to be completed before I can run to the comfort and warmth of my Florida home. I have never

known it to fail that a wet heavy snow will cause a power outage of from several hours delay to four days (the big one in 1990!). This dependence on electricity is never brought home as poignantly as when time is of the essence, and there's no juice!

Often when I go to the seashore, or for walk in the woods, to a fishing camp, or just out, I carry a knife and a few small chisels in my belt pack. I enjoy any opportunity to stop and carve a small project from driftwood or other found pieces while I sit and revel in the glory around me. If I were a power carver in the strictest sense, it would be a tough chore pulling that two-mile long extension cord up one of my favorite mountains to carve with power while I sit and revel!

Choosing a Power Carving Machine

Before considering one particular machine, gather all the printed information available on specifications, special features, options, and prices. Do this on several different machines, but select the most desirable one, with a second, third, or even fourth choice, then apply any or all of the criteria listed below to each choice.

Once you feel certain of a particular choice, find a dealer or a woodcarver who will let you try one out. Specifications may be great, but if the unit is uncomfortable to use, this is the point to decide, before you buy one. Woodcarving shows, woodcarving club meetings, and the homes of carving friends are all good places to look for the type of machine you want to try out. Give your second and third choices a test also.

For most of us, this is too critical an expenditure not to get maximum satisfaction. When I look around the studio, I'm reminded too often by a tool sitting unused that I too hastily made a decision (or none at all) before I charged ahead and bought one -or more—because I "just had to have it". The only excuse I can make, after I own it, is "someday I may use it for something".

Consider the following criteria before selecting a rotary power machine, whether it be a flexible shaft unit, or a micro motor unit. Each has it's own uses during a carving project.

MANUFACTURER

Is the manufacturer or distributor well known and trusted?

Look for a manufacturer that is well established, highly visible, easily accessible, and has a reputation for reliability and honesty.

Does the manufacturer have a good reputation with suppliers/woodcarvers ?

Talk with carving suppliers that sell or woodcarvers that use or have used the power tool/line that you are considering. Get their opinions regarding the manufacturer and any dealings they have had with the firm.

Some questions you should consider:

Does the company stand by their product?
How long has the company been in business?
What kind of parts and repair service do they provide?
How costly are replacement parts and/or labor?
Where is closest repair point?
How prompt are they?

MODEL/POWER/RPM

How long has the model been in service and/or on the market?

If you decide on a particular model, find out how long that specific model has been offered for sale, how often it has been upgraded, modified, or had a design change. Consider whether or not you will still be able to get replacement parts and service for that same machine in the near or distant future.

How durable is the model?

Consider not only durability, but whether the model will function as you want it to and perform consistently to a desired operation or standard. If it doesn't function for the type of carving you do or wish to do, DON'T make concessions here. Opt for a machine that has the power and durability to function as you want it to—and for the length of time that you want it to. Find out what tests, if any, have been performed by the manufacturer or by independent groups ... and how well the machine you are considering faired compared to others.

What is the RPM (Revolutions Per Minute) rating?

There are varying schools of thought on ideal RPM's, but generally the higher (faster) the better. For the texturing of hair, fur, or feathers, 35,000 rpm or higher is preferred, with lower RPM's for rough and finish shaping. A variable speed control (either a dial or foot pedal) will allow selection of a specific speed as needed for a particular function where controlled shaping or strokes are required.

How powerful is the machine compared to others?

There are several machines available that have a high RPM rating, but can easily be stopped with the finger tips, and lose power drastically on even the lightest of texturing strokes.

What do others who own the machine think of it?

Ask fellow carvers who are using, or have used, the same machine you are considering, for their honest opinion.

AVAILABILITY

How available are company representatives to talk to?

Does the company provide a customer service representative?

Is there a telephone 800 number for problems as well as ordering?

Does the company have more than one supplier?

Are there sources other than the manufacturer for replacement parts such as handpieces, brushes, collets, and other accessories? A collet (think of collar) is a cylindrical insert that has a center hole of a particular size or diameter—3/32", ⅛", and ¼" are the most common shaft

diameters used by carvers. A collet allows the use of a variety of bit shaft sizes with the same handpiece.

At a given woodcarving show, how many tool vendors are likely to be selling the same machine, plus parts, that you are considering? The more the merrier. Although not altogether auspicious for the vendors, it proves advantageous, convenient, and beneficial for a buyer to have several sources available to chose from!

COST

Whenever I give talks, lectures, demonstrations, or seminars to prospective power carvers, the biggest deterrent to their commencement or conversion to power carving is the initial price of the unit they are considering.

At the time of this writing, there are many excellent machines available, but the price of the cheapest machine alone would allow a manual carver to purchase more than enough knives and chisels to function in any area of manual carving—and still have enough left to take a friend to dinner.

It goes without saying that price comparisons are imperative, where price is a major consideration. Get every benefit you desire in a particular unit for the most economical price.

Don't get hooked on a company or unit just because "Joe has one". If a machine satisfies all the criteria you set forth for it, feels comfortable to use, and has an acceptable price—get it! I have met too many "Joes" who rave about a machine they own only because they want to save face after getting a lesser-quality, higher-priced machine. Allow your own good sense to dictate the end result.

GUARANTEE/REPAIR COSTS

How long is the period of guarantee?

Does the entire machine fall under warranty?

Does the manufacturer have a good guarantee reputation?

Who pays for shipping if the machine is still under warranty?

After the warranty period, is the machine set up in such a way that simple repairs and part replacements can be performed by the owner?

What does the manufacturer offer as a repair program?

Is repair work done promptly?

Does the manufacturer have repair dealerships, or does everything have to be returned to the distributor, manufacturer, and/or even a foreign country?

It may be less costly to buy a new machine than to repair the old one.

Power Carving Machinery

Micro Motor Machine—Preferred for all finish, shaping, and texturing operations. Rarely used for wasting away or "hogging" large amounts of material. High RPM gives a smoother, finer cut. Because the motor is in the handpiece, a greater amount of hand movement and flexibility is obtainable than with any other carving machine available to the general public to date.

Be aware (Beware) of the quality of the machine if this is a first time purchase. There are many cheaply priced machines available that can't deliver the power for even a moderate stroke without loss of RPM. I have yet to find one of these that won't burn out quickly if given the task of day to day use. See *CHOOSING A POWER CARVING MACHINE* for assistance in selecting a machine.

Micro Motor Machine

The Foredom Electric Company Micro Motor with the 45,000 rpm handpiece and 35,000 rpm handpiece was used for all the finish shaping, detailing, and texturing throughout this book.

Flexible Shaft Machine—For controlled removal of stock, this machine is the preferred machine to date for carving features. This is not to say that this machine can't be used for the finer touch operations attributed to the micro motor machine. This is the only machine that many carvers have, and to that end, must accomplish all phases of power carving. Until the advent of the micro motor machines, this machine was preferred over the bulky hard-to-handle general purpose machines that have been on the market for so long.

Texturing hair or fur presents the greatest challenge with this machine as so many short strokes are required. The

handpiece presents resistance through the flexible shaft, and the shaft itself presents an opposing torque from the swing that develops from the side to side motion of the carvers hand. This gets tiring to some if not taken in short periods.

HINT: To minimize torque introduced by the swinging flexible shaft, keep the shaft parallel with the forearm, allowing it to touch the forearm often. This will dampen the swing and relieve a great amount of the strain necessary to oppose and control the torque generated by the swinging shaft.

The Foredom Electric Company Model SR flexible shaft machine with the #44b handpiece and the #8b handpiece was used for all rough shaping and wasting away on all the projects in this book.

Power Carving Accessories

CARVING BITS

Descriptions of the same bit will vary from manufacturer to manufacturer, or from distributor to distributor, so ask your supplier to describe the bit before you buy it. The definitions given here are to clarify their use throughout the text in this book.

Flexible Shaft Machine

Carbide Kutzall

These bits are available in a variety of shapes and shape sizes, and may be obtained in coarse and fine grits.

For rough shaping, wasting away, or just plain "hogging" stock, I have never found a better type of bit that can be hand-held and still give fast, controlled stock removal. I am still using some that are at least eight years old.

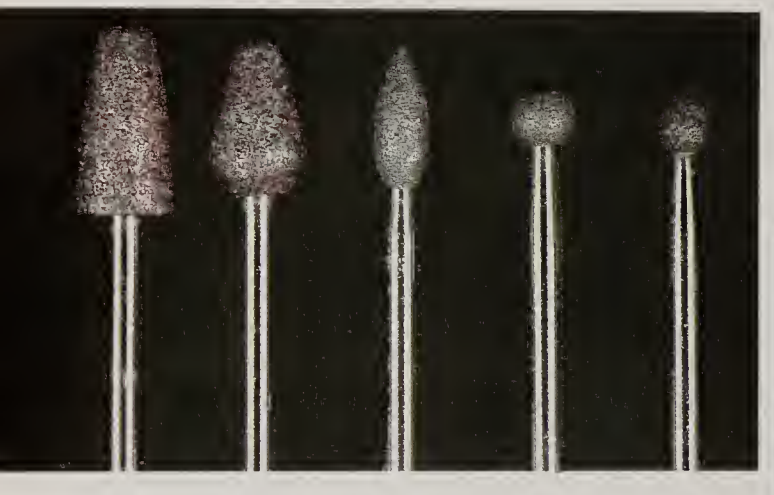
As I demonstrate and lecture, I am often asked how various bits are made. Although the manufacturing process for the Kutzall ® type of bit is carefully guarded, the manufacturer, L.R. Oliver Company, has kindly provided me with a general description.

A machined steel shape with a ⅛-inch or ¼-inch shaft is cleaned, then covered with a temporary adhesive. This temporary adhesive will hold a single layer of perfectly round tiny steel balls over the entire shape of the bit. Once the ball layer is in place, the bit is magnetized and attracts a coating of carbide grains which build up on the rounded surfaces of the balls, transforming each ball into a conical point (something like a tiny stalactite). The entire bit is then bonded with another coat of temporary adhesive and sent to a furnace that first burns off the temporary adhesive and then fuses all the components together.

Because of the depth of the conical point, the Carbide Kutzall has a tremendous cutting capability. However, when excess force or speed is used (and depending on the type of wood) they may congest, building waste between the points. They are easily cleaned with either a powerful solvent, oven cleaner, a soft wire hand brush, or a propane torch, as heat (even red heat) doesn't seem to have any adverse effect on these bits.

The shapes preferred by the author and used/demonstrated throughout this book are the taper, flame, and cylinder shapes.

Ruby Carvers



Ruby mineral abrasives are sorted, then bonded to a metal core shape, usually with a 3/32-inch shaft. Some manufacturers call this type of bit a ruby trimmer. Depending on size, they are available in coarse and fine grits.

These are the bits of choice for detail, finish, and texture carving on most of the faces that I carve. A rubber abrasive belt cleaner is a must with ruby carvers to keep waste from building between the grit particles and eventually resin/heat hardening to a point where the surface becomes smoothed out and much less effective. *Cleaning is accomplished at a medium to low speed.* Wet cleaners are also available, but in my opinion, they seem to dull the ruby carver and are too expensive.

Another type of ruby carver is constructed by fusing a shaped mass of ruby abrasives to the end of a 3/32-inch shaft without a metal core in the same manner that texturing stones are made. Common names: Ruby Carver, Ruby Trimmer, Ruby Cutter, Ruby Bit.

Diamond Carvers

These bits are constructed in the same manner as the ruby carvers, but use industrial diamond particles as an abrasive. The diamond particles are sorted and sized before being bonded to a metal core shape. Diamond carvers are available in different shaft diameters, so be sure you have a handpiece collet for the size you buy. Usually, suppliers (whether dental or woodcarving) will identify the size and type, but if not, ask before you buy. FG means *Friction Grip* and is a 1/16-inch diameter shaft commonly used by dentists, and HP indicates *Hand Piece* or colletted grip and is a 3/32-inch diameter shaft. There are adapters available that enable use of the 1/16-inch shaft in a 3/32-inch collet.

Diamond bits are cleaned in the same manner as ruby carvers, with the same wet or dry bit cleaning options.

Diamond Carvers are more expensive than ruby carvers, but last longer.

Common names: Diamond Cutter, Diamond Carver, Diamond Trimmer, Diamond Bit

Stone Bits

These bits are made of a shaped mineral composition mounted on steel shafts. The best and most common of the compositions used is aluminum oxide which is a finer grit and gives a very smooth finish. Shaft size is 3/32-inch diameter for most small to medium stone bits, with ⅛-inch diameter shafts for most of the larger stone bits.

Stone bits vary greatly in texture of grit and quality of construction.

These bits can be cleaned with a rubber block abrasive cleaner such as used with the ruby carvers. A carbide stone shaping block can be used to reshape and edge stone bits, extending the use and life of any or all stone bits.

Stump Cutters & Rotary Files

These bits are made of steel and have serrated cutting edges that remove, shape, and smooth stock remarkably well. The cylindrical shapes lend themselves very well to texturing hair and fur.

There are a great many more varieties, but the intent here is to introduce and deal with the class and type of bits used for the projects in this book.

To help you learn more about the functions and varieties of bits available, talk to woodcarving suppliers, a dental technician, or your dentist. You may find some items are cheaper to buy through dental supply houses. Ask your dentist for any old dental supply catalogs or for the address of one or more of his suppliers. At one time I asked my dentist to save any used bits that he was going to discard, but with the current AIDS situation I just feel better buying new ones from carving suppliers or dental supply houses.

Defuzzing Pads and Cleaning Brushes

Depending on the type of wood used, these bits and/or bit mandrels may not be necessary. A mandrel is a shaft on which tools or bit shapes can be mounted. However, they are a must for anyone who carves with basswood, for example. The fiberous grains of basswood stand away from the detailing or texturing surface and must be cleaned away or made to lay back down. This is accomplished either with a rotary defuzzing pad or a bristle brush that is run in the opposite direction of the cut, with the grain, and away from the end of the grain where ever possible.

Again, depending on the type of wood used, and often the type of bit used, these bits are a must. Defuzzing or brush cleaning should be done at a medium to slow speed so as not to remove fine detail or burn the carved surface.

FUNCTION OF BITS

For the sake of clarity, the bits are presented individually within three separate function groups. Depending on preference and desired finish, use may vary from carver to carver, and overlap from group to group, but in general, the description and function is as described.

Rough Shaping

Carbide Cutzall
Stump Cutters & Rotary Files

Finish Shaping & Smoothing

Ruby Carvers
Diamond Carvers
Stump Cutters & Rotary Files

Texturing

Stones
Ruby Carvers
Diamond Carvers
Stump Cutters

Bits are available in a variety of shapes, sizes, grits, and qualities. *Be vigilant of quality.* Unfortunately there are some dealers who misrepresent, or by not being woodcarvers actually don't know, the poor quality of bit they are selling. If a bit has proven itself, stay with it until you find something better. The old saw that you get what you pay for holds as true for bits as it does for most everything else.

BIT SHAPES

Once the carver learns to use a particular shape for a resultant cut, it becomes as automatic as the selection of a "V" gouge for a sharp bottomed cut, a "U"gouge for a round bottom cut, or a knife just to waste away unwanted stock.

If I had but two choices of shape for this carving bit, I would choose the flame shape first, and the small ball shape next.

Depending on the angle the handpiece, the desired cut with a flame-shape carver can be V-shaped or U-shaped. Any area of the head can be shaped away and detailed with a flame shaped carver. The eyes, ears, nose, and mouth can be rough shaped, finish shaped, and detailed. This same bit can be used for facial hollows and rounds, hair separations and curls, clothing wrinkles and detail, and any other facial detail and clarification.

Practice with the flame bit and learn how versatile a tool it is. Select a speed that feels comfortable, try different carving strokes at that speed, and note the result. Next, experiment with different speeds, strokes, and handpiece angles. Note the result of the cuts and what was needed to maintain the control it took to get a particular result. Practice with a variety of bit shapes, and soon, proper selection to your way of carving becomes automatic.

The small ball bit is as versatile a bit as is the flame shape. Deep hollows of the head such as the definition on either side of the bridge of the nose, nostril cavities, ear depressions/indentations, and pupil depressions. If the eyes have detailed pupils just a slight touch is sufficient to relieve each pupil indentation. Again, practice with this bit until you are familiar with its use to your way of carving.

BIT SIZE

The size of the bit selected is determined by the scale of the area being carved. Selection of too small a ball bit, for example, will be just as inconvenient as the selection of "U" gouge that is too small or too shallow. Try to match the bit diameter to the size desired for the bottom of an area to be cut.

BIT GRIT

Grit of the bit will determine the smoothness of finish that the surface of the carved area will recieve. Selection of proper grit will save both time and effort. If the area to be carved is a rough-out or rough shape operation, there is no need rough shaping with a fine grit bit when the area will undergo several more shaping operations with finer detail bits.

ADDITIONAL CARVING ACCESSORIES

Speed Control Units—Essential to some sanding and finishing operations. Foot control allows a greater amount

of freedom in that the only movement required is by the foot. To me, the hand or table top controller, which requires that one hand be freed to regulate the speed before resuming work, requires a break in concentration and time. The manner in which one carves and physical preference dictate which unit is the more desireable.

Foot Control

Hand Control

Dust Mask, Exhaust Fan and/or Dust Collector—It goes without saying that a dust collection or dust protection device is the most important investment to your health. Within a very short period of time the entire studio will be blanketed with a layer of fine dust particles if not properly controlled or exhausted. I don't smoke, but every year that I go for a physical, my family doctor's first concern is for my lungs because he knows what I do for a living.

Shadow Lamp—A source of bright light that can be directed across the work from the opposite side from your carving hand, gives deep shadow to any indentation or texture operation. A lamp such as this will save much movement and shifting of the piece under regular studio light that casts direct light and little shadow as you try to check your progress.

Manual Carving Tools

There are certain manual tools that I keep within easy reach at all times. These are the same tools that always go into my belt pack when I'm tramping through mountain forests or along a beach. There are but three that I consider of utmost importance, and with them alone, I believe any human face can be carved, and certainly any and all of the projects found in this book.

1) Select a knife with a blade that affords a long reach, has a fairly thin blade, and has a handle that is comfortable. "A knife that comes gladly to the hand anytime you choose to pick it up", is how an old carver/knifemaker once explained his preference in handle shapes to me. The knives shown were made for me by an amateur knifemaker from Florida who haunts flea markets looking for old butcher knives of quality steel. Each butcher knife allows him to shape several carving knife blades. When he first showed them to me, I laughed at the "rat tail" handle design—until I used the knife. For two years now, they are the only knives I have used.

Two chisels, one a deep, straight parting tool (V-gouge), and the other, a deep, straight U-gouge are adequate to complete a facial project. Regular palm chisels didn't allow me to choke up on the tool in a way that was comfortable to my way of carving or relieving features, so I shortened the handles on two standard length chisels and they have been used ever since.

Power Carving Techniques

Experiment with every carving bit that you own to ascertain their capabilities and yours. Note what it takes to achieve a particular cut or result with each bit, as well as the effort and type of stroke it requires. You will find this preliminary practice will add greatly to your power carving knowledge, to the result you seek, and will reduce the amount of time required to get that desired result—should time be a factor for consideration.

STROKE VARIATIONS

BRACE STROKE—The handpiece is brought towards braced thumb. Used with larger coarse bits where a power stroke is required to remove or waste away stock. The thumb is braced against any convenient part of the carving and used to control the amount of power needed to maintain stability and regulation of the stroke for shaping.

DRAG STROKE—The handpiece is held like a pencil and the stroke executed (usually along a guideline) in the same manner one would draw a pencil line from top to bottom on paper. This motion is without doubt the most used stroke of any to define and relieve away a desired area or mass for shaping.

Since the drag stroke is the one stroke used for about ninety percent of relieving and shaping, and the flame shaped bit is the bit used for about ninety percent of relieving and shaping, it will be most beneficial to learn to use the following variations of the drag stroke:

HIGH ANGLE (DRAG STROKE)—When the handpiece (with a flame shape bit) is held at a high degree of angle, the resultant cut is a V cut very much the same as the cut of a V-gouge or parting tool.

LOW ANGLE (DRAG STROKE)—When the handpiece (with a flame shape bit) is held at a low degree of angle, the resultant cut is a U-cut very much the same as the cut of a U-gouge.

WIPE/SHAPING STROKE—Handpiece is held like a pencil and the stroke is executed from side to side in the same manner as one would erase a pencil mark. The handpiece is usually held at a low angle while the bit is used for stock removal and shaping.

TEXTURING STROKE—Handpiece is held like a pencil and the stroke is executed from side to side in a zig-zag motion. The handpiece is held in a high angle position so that just the corner of the bit meets the stock, giving a fine deep hair-like cut. Cylindrical or inverted cone shaped stone bits are usually preferred for this operation.

Carving Features

Before any attempts are made at carving the face, the carver must be familiar with the basic shapes of the individual features. This can best be done by studying, sketching, and carving each one separately.

The most important aspect to carving anything is to study it carefully. For the most part, a carver/sculptor copies or represents what already exists. For example, humans, birds, and animals already exist. Even dragons, mythical beings, and the like, must exist as an image in the mind before they can be represented.

You can't carve what you don't know or understand. The most difficult task I have as a carving instructor is to convince a new student of the absolute need to carefully study and gain a working knowledge of what he/she is about to carve, *before* he/she attempts to carve it. I can teach technique, methodology, and proper practice with respect to carving, but teaching attitude and desire is a different matter altogether.

To begin the study, references should be gathered and considered. References can include real life models, sculptures, photographs, magazine articles, and/or artistic renditions. Preferred are samples that are larger than life with high detail.

There is an element basic to all features that must be recognized. As an example, carefully study the general shape and geometric planes of the nose and you will find that, although there are an infinite number of differently shaped noses, they all fall within a general shape of a nose. Apply this to all the features and areas of the face. This in itself leaves the carver an extremely wide latitude within which to create and originate.

What one person concludes as the way to develop a basic shape that suits him/her for the nose, mouth, eyes, etc. may differ greatly from what the next person sees as a way to form his/her basic shape. Settle on what you feel comfortable with (as long as it looks like a nose!). I like to give basic geometric shapes to each feature then detail it from there—ie: I see the ears as wedge shapes before I round them out, or the front of the nose as a kite shape before it is detailed.

Practice Blocks

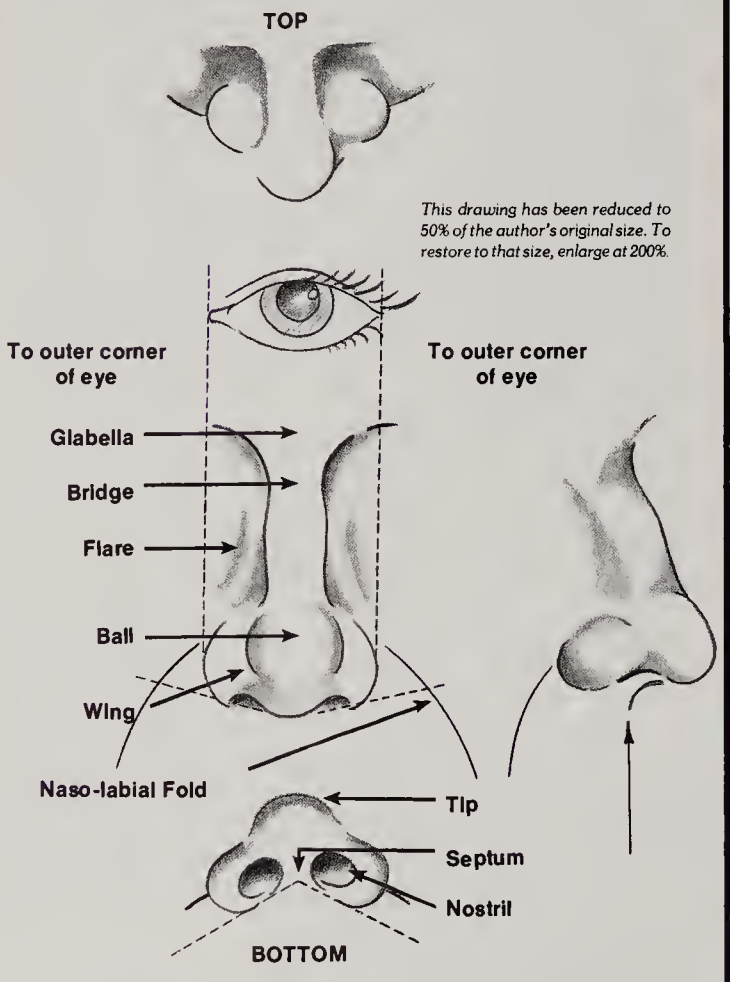
One of the most helpful learning aids enroute to carving the first facial figure is to carve individual features from separate blocks of wood (see the pictorial sequences on carving individual facial features that follow). If it is an eye, shape and carve just one eye from the block—as a learning exercise, and possibly as a reference if/when your are satisfied with the end result. Take your time, put as much or as little detail into the carving as you wish to begin with, then evaluate your progress. You may want to change your technique, method of layout, and/or amount of detail before you finally decide on what best fits your method of carving and taste.

This is a learning exercise, so stay relaxed, enjoy what you are doing, and learn as much as you can from it. Once you are satisfied with the result of one feature, go on to a different one and carve it from a single block. If you botch it up, you've lost only a small block of wood. The time and effort you've invested has been a lesson, *at the very least* in how not to do that particular feature the next time.

The blank and completed blocks illustrated are a part of the seminars that I teach. Within the seminars, the features are dealt with individually, then as a collective whole, the same as they are being presented in this book.

Carving the Nose

NOSE WORKSHEET



NOSE NOMENCLATURE AND AXIOMS

The nose is one eye-unit wide at the base.

A right angle is formed at the tip of the nose by joining the corners of the eyes to the tip of the nose.

If a straight line is drawn from the corner of the right eye to the left corner of the mouth, and a similar line is drawn from the corner of the left eye to the right corner of the mouth, the intersection point should be close to the tip of the nose.

The male nose is straighter on the bottom (in profile) than the female.

The female and child nose turn upward (in profile), giving a more "pert" appearance.

As a rule, the male nose appears longer than the female nose, because the male head is a bit larger.

In profile, the bottom of the nose is half on the face and half off. *(see arrow in profile drawing above)*

The female nose is delicate and rounded.

The male nose has sharper, more chiseled lines than the female nose.

The naso-labial folds (the "smile lines"), begin above the wings of the nose and carry down to the corners of the mouth. These folds may continue along either side of the chin, and may be double or "broken" on some faces—especially the elderly.

OBSERVE noses—the differences are amazing!

NOSE CARVING SEQUENCE

The nose is carved from a *kite* shaped relieved mass, whose "tail" widens out into the eye brows.

1) Layout

a) extremes of nose width where nose will join face

b) browlines

c) curvature of nose where bridge arches into browline

2) Carve

a) relieve maximum width of nose

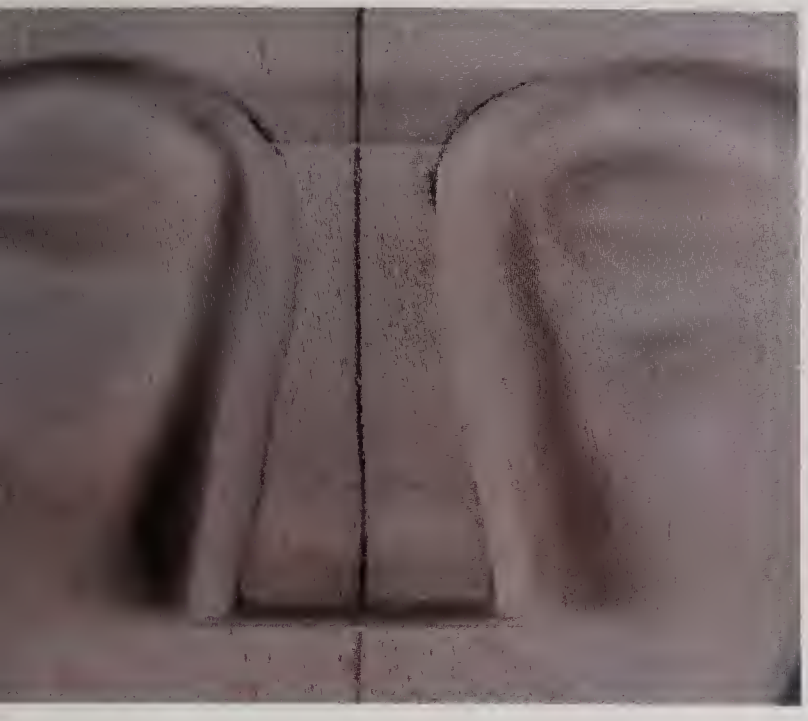
b) cut in bottom of browline down to upper area of eye mound, joining with first width of nose cut

(at this point, the cuts should be symmetrical in shape and depth, and look like two rounded back-to-back hockey sticks or figure sevens—leave the

bottom of the cut rounded to allow for a proper blending into cheeks and eye mounds without leaving a sharp looking cut around the base of the nose and brows)

BIT: flame shape in low angle position

3) Carve



a) extremes of eye mounds

b) excess from cheeks below eye mounds

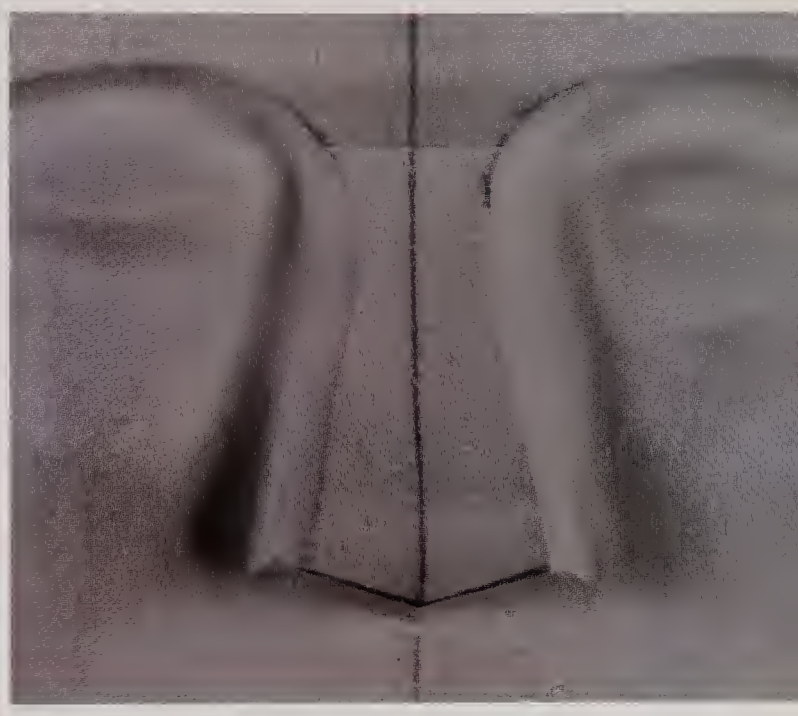
(leave enough extra stock in this area to enable shaping of cheeks and age lines as necessary to finishing of the carving)

BIT: flame shape in low angle position

4) Layout

a) slope of nose at nostril openings

5) Carve

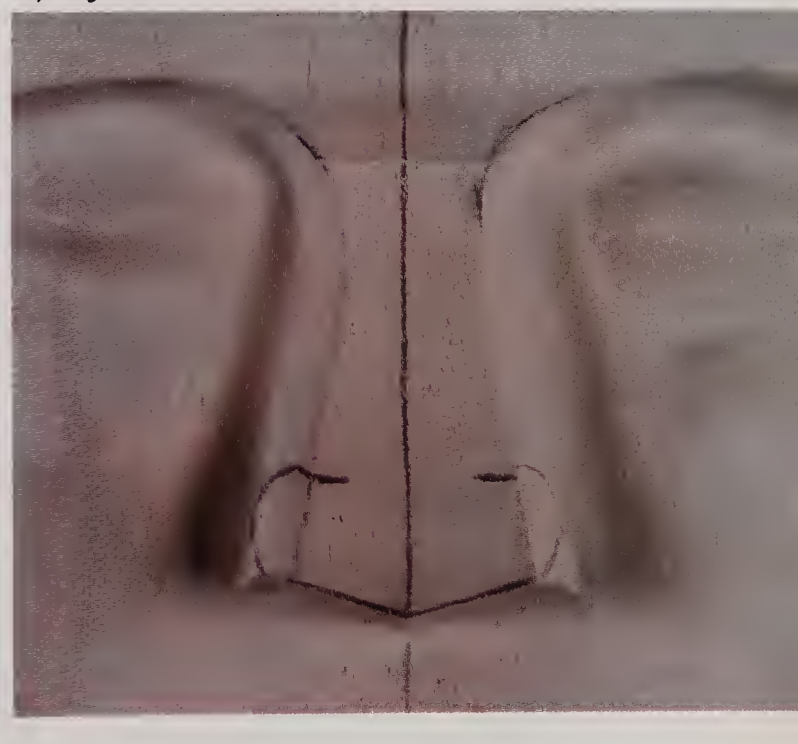


a) slope of nose at nostril openings

(use care with slope angles—the more angle given to this cut, the more "hawk-nosed" the finished nose will appear)

BIT: flame shape in high angle position

6) Layout



a) size and shape of wings or "flares" of the nose

7) Carve

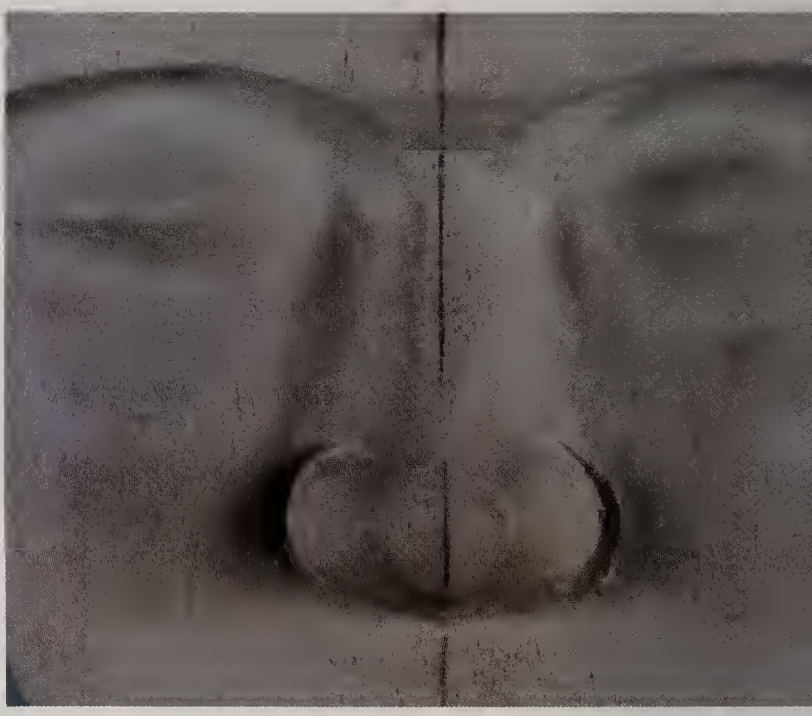
a) wings or "flares" of the nose
(give thought to how thick or thin the roll of the wing should be on the nose shape you have chosen for the face you are carving. Make sure both wings are the same size or the nose will appear out of balance and proportion)

BIT: flame shape in high angle position

8) Layout

a) width and shape of nose ridge from bridge to ball

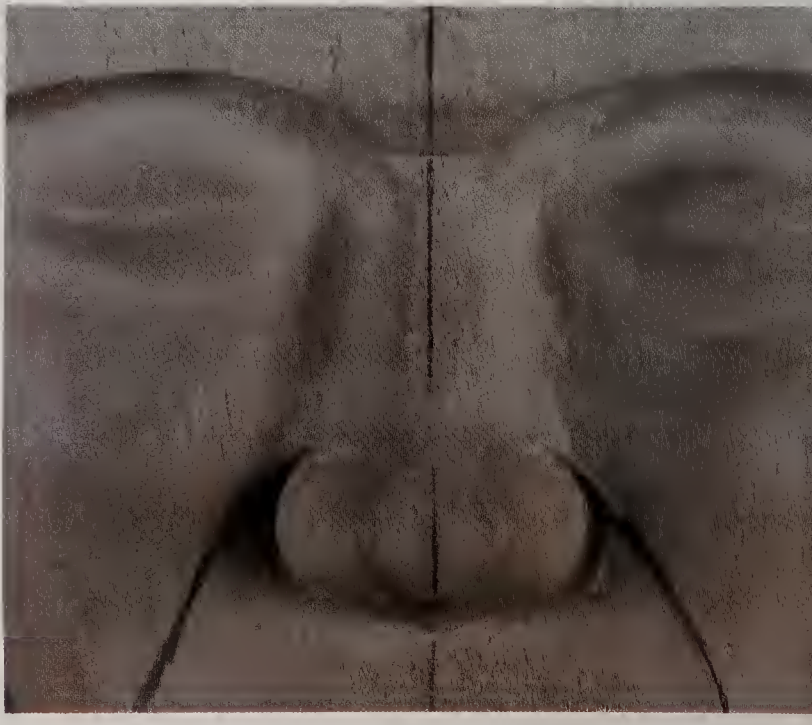
9) Carve



a) ridge of nose from bridge to ball

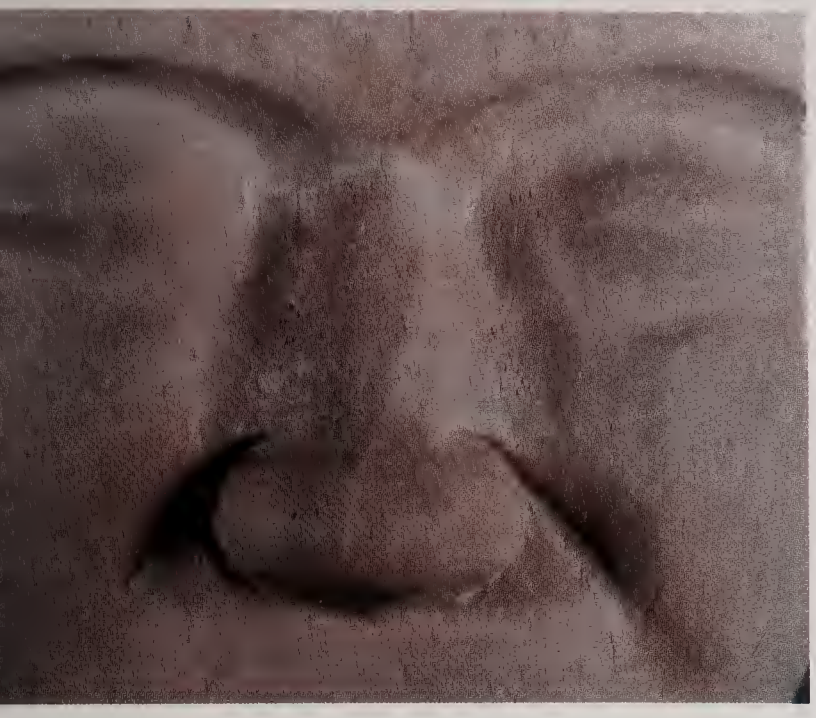
BIT: flame shape or taper in low angle position.

10) Layout



a) suggestion of naso-labial folds (smile lines) beginning at upper edge of each wing

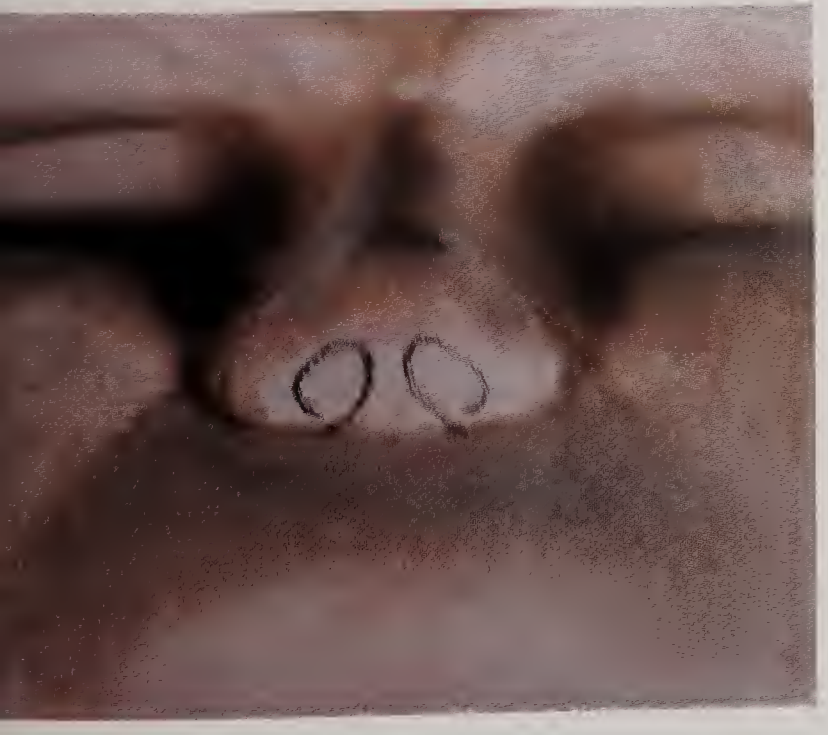
11) Carve



a) beginning of naso-labial folds
(remember these folds will terminate at the outer areas of the corners of the mouth, so just let them run in that general direction at this time—you will return to them after the mouth has been laid out and carved)

BIT: flame shape in low angle position

12) Layout



a) size and shape of nostrils and septum

13) Carve

a) hollow nostrils to shape and depth desired
(the nostrils are hollowed in the shape of opposing commas, and the stock left between them is what forms the septum)

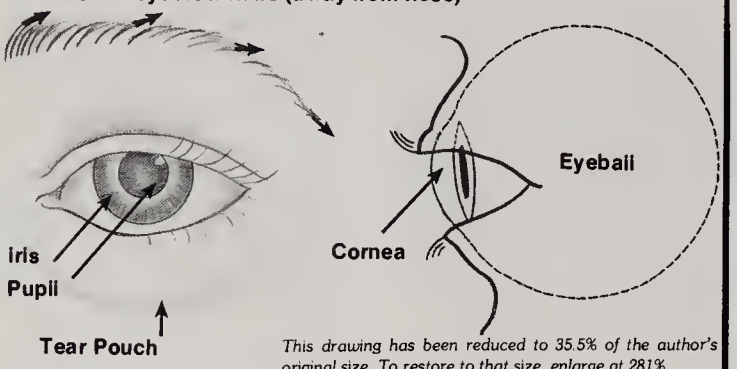
BIT: ball and flame shape in high angle position

14) Carve

a) deepen areas where the brow lines and eye mounds meet, in preparation for carving the eyes
b) touch up and "sharpen" any details that need attention
BIT: flame shape in high angle position

Carving the Eye

EYE WORKSHEET



This drawing has been reduced to 35.5% of the author's original size. To restore to that size, enlarge at 281%.

EYE NOMENCLATURE AND AXIOMS

The unit of measure for the human head is the human eye.

The head is five eye units wide across the eye line.

The space between the eyes is one eye unit wide.

The height of the open eye is one-half its width or length.

The distance from the top of the eyebrow to the open bottom eyelid is one eye unit.

The height of the brow varies greatly, but generally the brow is located on the bony prominence above the eye.

The distance from the corner of the eye to the front of the ear is the same as from the corner of the eye to the corner of the mouth.

The upper portion of the pupil is hidden under the upper lid when the eye is normally positioned.

The lower lid has no definite lower border unless the tear pouch sags.

The greatest difficulty in carving the eye is placement. A good eye out of place is worse than a bad one in proper position.

Familiarize yourself with eye basics, and OBSERVE!

EYE CARVING SEQUENCE

1) Carve

a) shape eye mounds carefully—make sure both are of equal size.

This shape is very important to the appearance of the finished eye. The eye mound should be large enough to carve the proper sized eye into, and still have enough left over for the bases of the eye mounds to blend back into the face.

BIT: flame shape or taper in low angle position

2) Layout

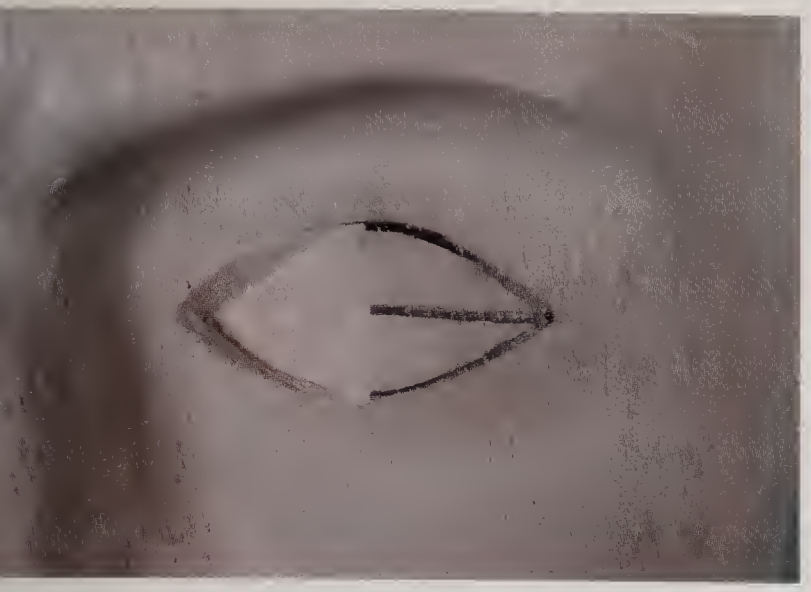
a) shape of the eye—both eyes must be the same size.

3) Carve

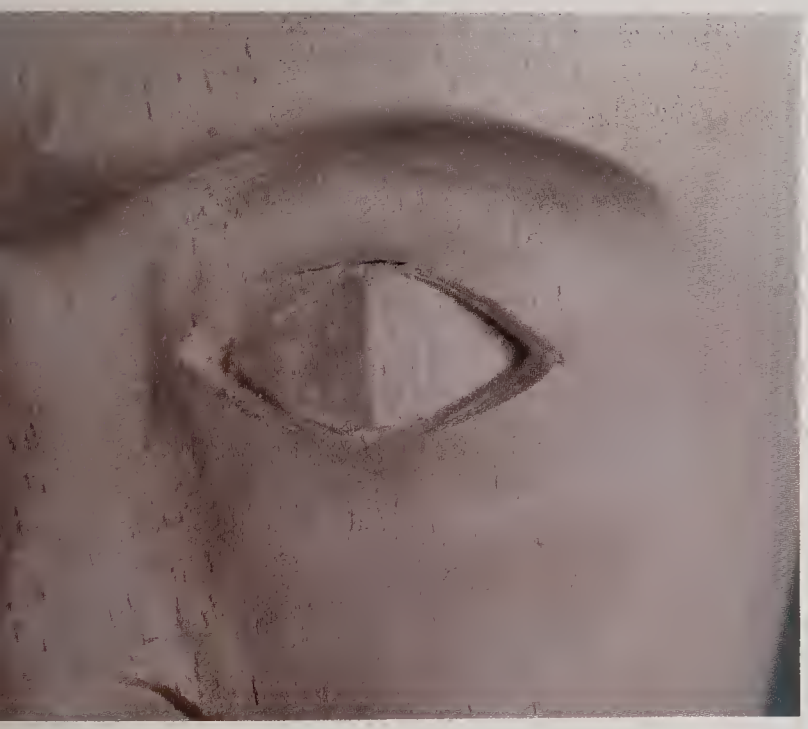
a) lids and beginning shape of eyeball

1a) to begin the shape of the eyeball, cut deeply at one corner of the eye and draw the stroke along the upper line of the eye shallowing out as the stroke approaches the center of the eye.

2a) make the same draw stroke along the bottom line of the eye, again, getting shallower as the cut approaches the center of the eye.



3a) clean out the stock between the two cuts



4a) repeat the process for the other half of the eye.

(at this point, the eye will appear very square cut, with a ridge running vertically throught the center, falling away to deepness at the corners)

BIT: flame shape in high angle position*

*depending on the size of the eye, this is one operation that may be less troublesome if accomplished by using a knife. For a larger sized eye, a knife will often relieve the triangular wedge of stock from either side of the eye with less effort and with equal accuracy.

4) Carve

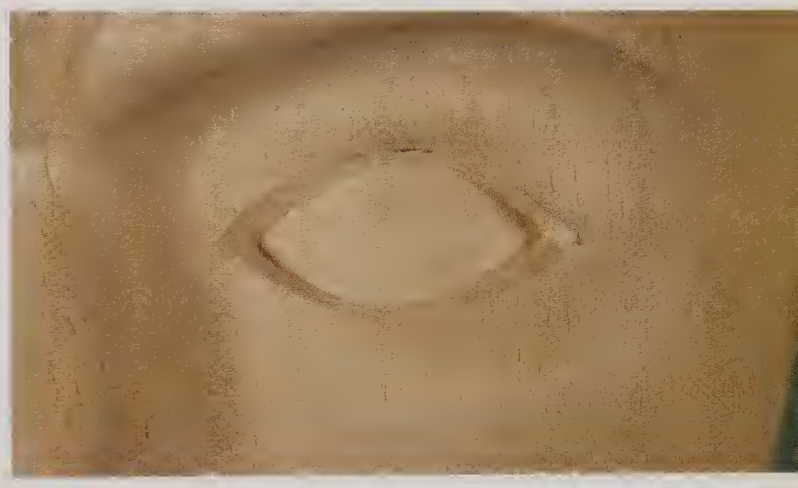
a) cut a triangular chip that runs from the center of the ridge and running upward to the edge of the upper lid

b) cut a matching triangular chip from the center of the ridge and running downward to the edge of the lower lid

(this gives the eye a faceted appearance and presents the eyeball in a much easier shape to be symmetrically rounded)

BIT: flame shape in high angle position

5) Carve



a) round all the sharp areas of the eyeball, making the eyeball appear as round and as smooth as possible.

(from the ovoid mound formed by the closed eyelids, the impression of a round eyeball underneath must be obtained. So as the eye is "opened", think of the roundness of the eyeball below, and shape the exposed part accordingly)

BIT: flame shape in high angle position

6) Carve

a) shape upper and lower lids close to final shape and uniform thickness

b) location of upper lid fold and corner wrinkles

(a more interesting eye is achieved if the outer corner of the eye is swept upward with the tip of a flame shape held in a very high angle position. The eye is also given more personality if the inner corner of swept very slightly downward with the tip of a flame shape bit also held in a very high angle position. In both cases, the lower lid should be blended up to the upper lid, removing a look of sharp departure).

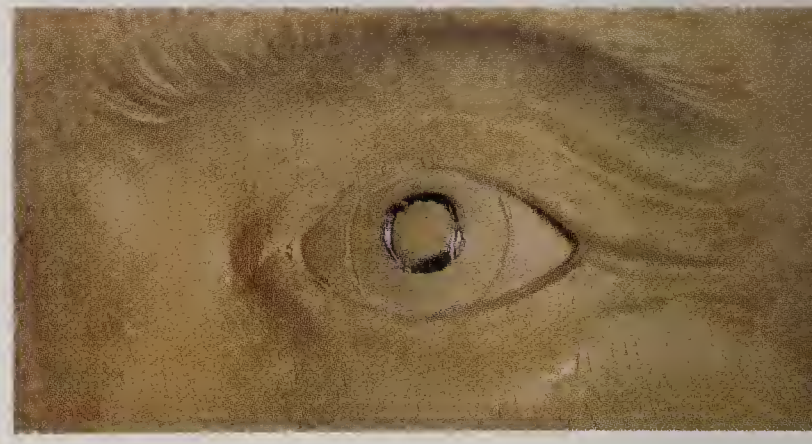
BIT: flame shape in low angle position

7) Layout

a) iris and pupil.

(it is imperative that both iris' and pupils be the same size on either eye!)

8) Carve



a) indent the outline of the iris

(remember the upper portion of the iris is covered by the upper lid on the normal open eye. Rather than raise the area of the iris, as the cornea naturally does, it is just as effective to make a slight indentation around the inner edge of the iris line. This not only indicates the outline of the iris, but gives a reverse impression of the raised cornea, giving greater depth to the eye)

BIT: flame shape in high angle position

9) Carve

a) indent pupils—shape the spherical indentation by using a spiraling stroke from the center of the pupil outward to the line of the pupil.

(with smaller scale eyes, the bit may be bigger than the pupil, in which case, just a touch of the bit will fill the outline of the pupil with the necessary indentation, and no spiral stroke movement will be necessary.)

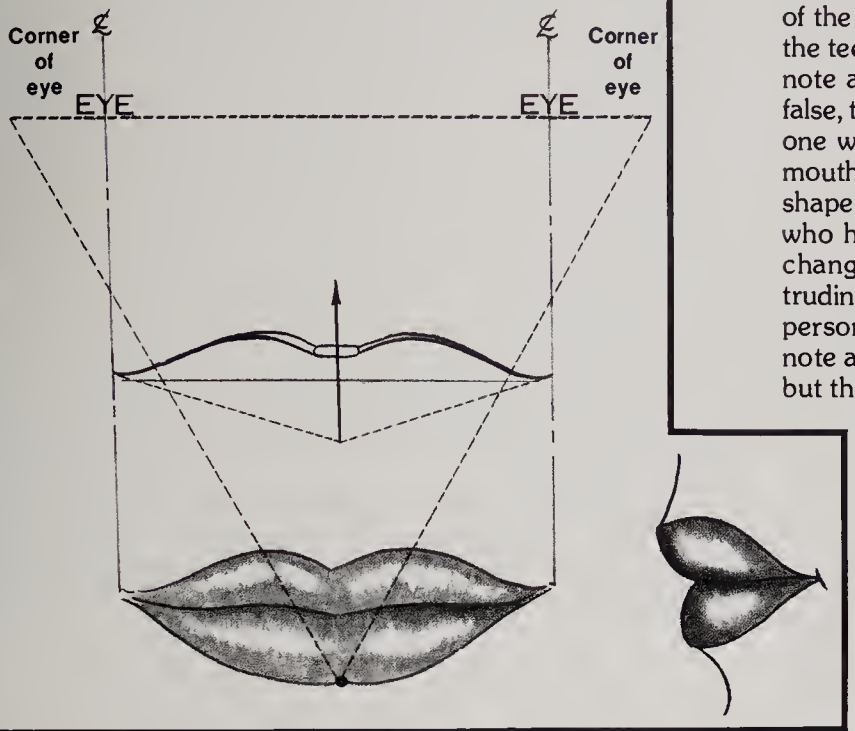
BIT: ball shape in high angle position*

*If the eyes are to be painted, indentation of the iris and pupils is usually omitted (1) to facilitate ease of painting, and (2) painting gives its own depth to the eye through use of color and reflection points.

b) add any final detail and touchup that needs attention

Carving the Mouth
MOUTH WORKSHEET

This drawing has been reduced to 51% of the author's original size. To restore to that size, enlarge at 204%.



MOUTH NOMENCLATURE AND AXIOMS

The corners of the mouth would run through the centers of the eyes if extended upward.

The distance from the outer corners of the open eyes along the horizontal eye line, is the same as the distance from the center of the bottom lip line to the corner of either eye—forming an equilateral triangle.

The distance from the bottom of the nose to the center of the bottom line of the lower lip is one eye unit. This distance stays the same whether the mouth is smiling, normal, or frowning.

Think of the upper lip line as a bow (as in Cupid's Bow). (see drawing above)

The middle line of the mouth (where the lips meet) is usually a modified version of the upper lip line. (More prominent on the female mouth)

The lower lip line can be indented at the center to indicate two masses. (More defined on the female)

Female lips are usually fuller than male lips.

The upper lip extends slightly beyond or over the lower lip on the relaxed mouth.

(See lip profile drawing above)

As a rule, the male chin is more sharply defined than the female chin. The female chin has softer, more rounded lines.

To begin carving the mouth, a distinct mound should be formed into which the mouth isdetailed. Much thought must be given to the extent of this "mound" as it dictates the final shape and location of the mouth.

OBSERVE mouths—they are as expressive (if not more so) than the eyes!

MOUTH CARVING SEQUENCE

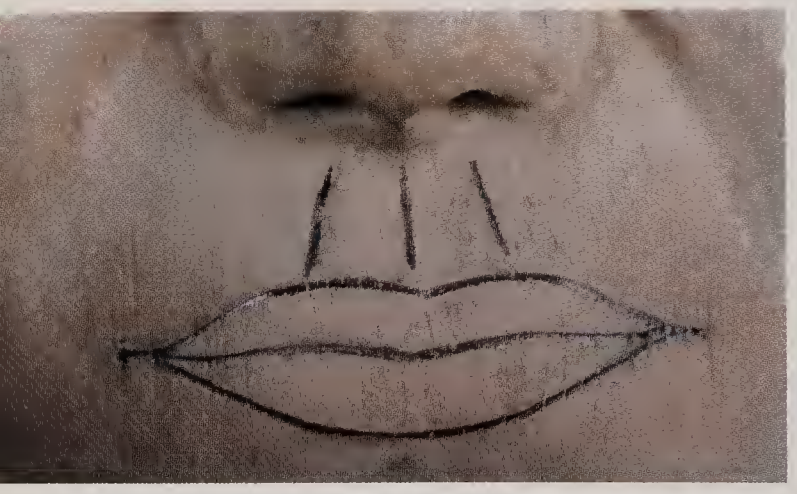
The geometric shape from which the mouth is carved, is a section of a **cylinder** which is formed by the frontal portion of the jaws where the teeth are set. The jaw and the set of the teeth, determine the shape of the mouth. For example, note a person with a full set of teeth, whether natural or false, then compare that person to one who has no teeth, or one who has removed a set of false teeth. Although the mouth maintains a rounded look from side to side, the shape of the mouth is changed completely. Even on children who have lost all the front baby teeth, the mouth shape changes radically. Note an individual with large protruding "buck" front teeth, and compare that look to a person who has uniformly shaped front teeth, and you will note a great difference in not only the shape of the mouth, but the projection of the upper lip.

1) Carve

a) shape the mouth mound (cylindrical section) giving attention to the area of the arc where the mouth will actually be located first, then rough shape and blend the areas adjacent to the mound that the mound will flow into, such as the sulcus, the gnathion (ball) of the chin, and the furrows of the naso labial folds on either side of the mouth.

BIT: flame shape in low angle position

2) Layout

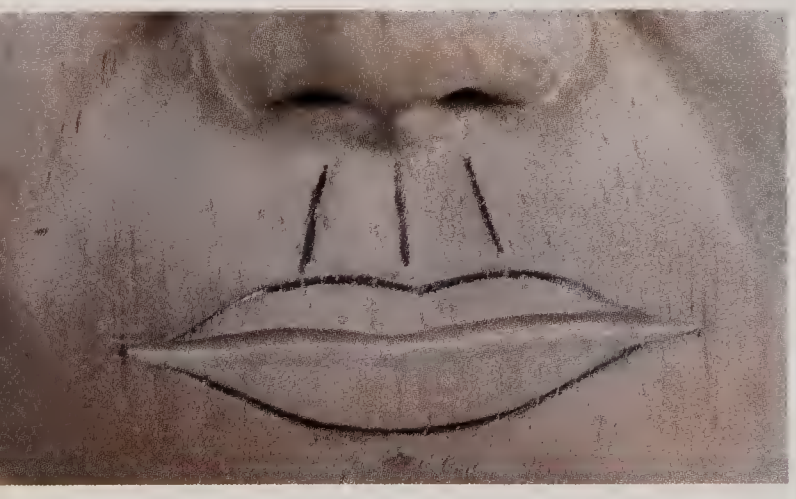


a) the mouth on the mound

b) the extremes of the sulcus between the mouth and nose

(refer to the mouth axioms on the mouth worksheet -use them as a guide for placement, shape, and size of the mouth -the "Cupid's Bow" application will aid greatly to shaping the upper lip—the arch of the "bow limbs" of the upper lip and the roundness of the bottom lip line will determine how full or how thin the lips and resulting shape of the mouth will appear)

3) Carve



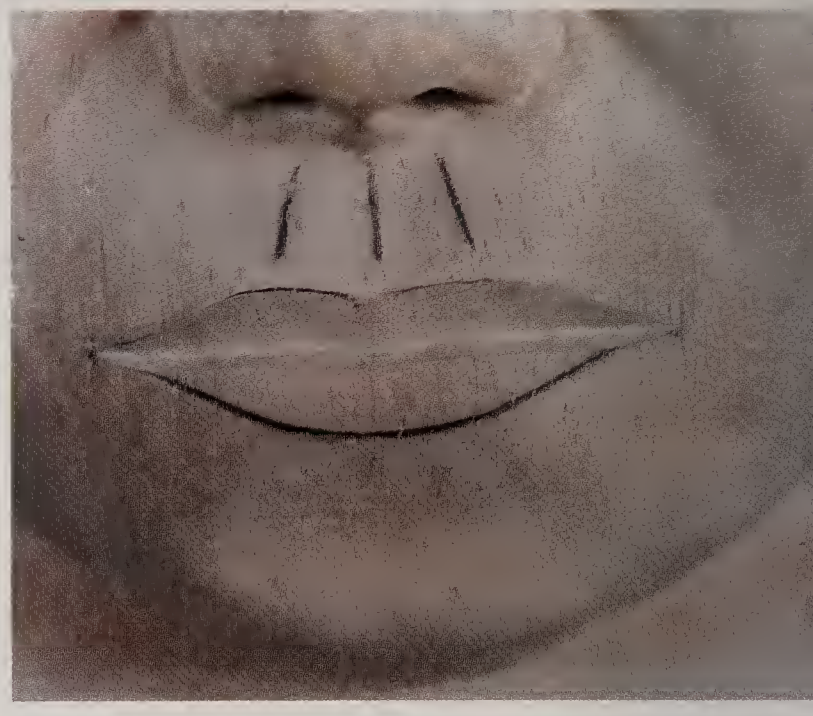
a) begin shaping the mouth with a vertical cut along the center lip line*

(depending on the scale/size of the mouth, you may want to work the V-shaped trough between the lips to shape and depth by removing layers of stock rather than trying to remove and shape in one operation. Use the upper and lower lip lines as guides to shape the inner or "reddened" parts of the lips)

BIT: flame shape in high angle position

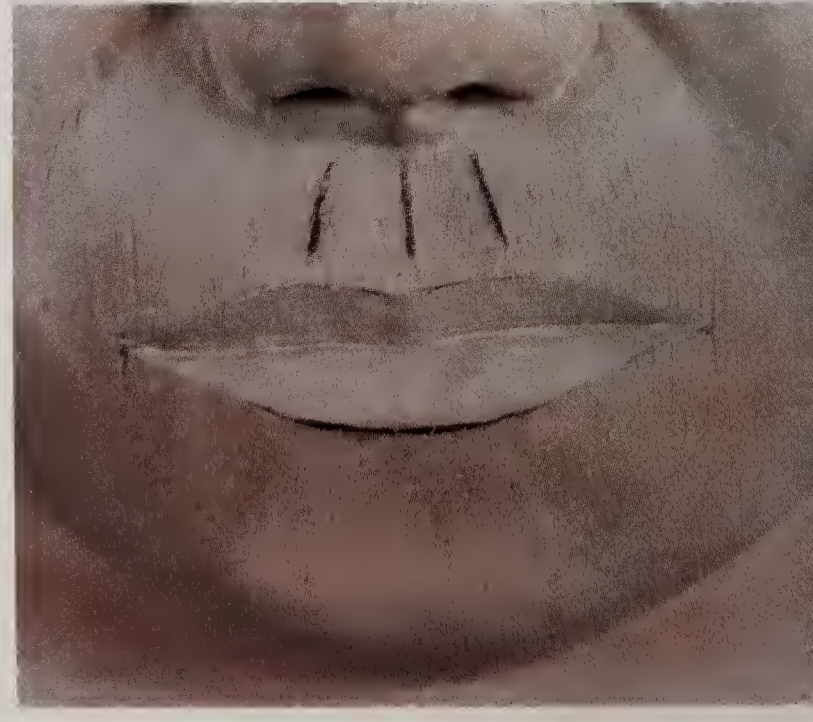
*If you feel unsure of your ability to follow this line with a drag stroke at this time, you may want to outline the center line of the lips first with a "V"-gouge, then follow the trough of the manual cut to deepen and shape the slope of the lips with your power tool.

4) Carve



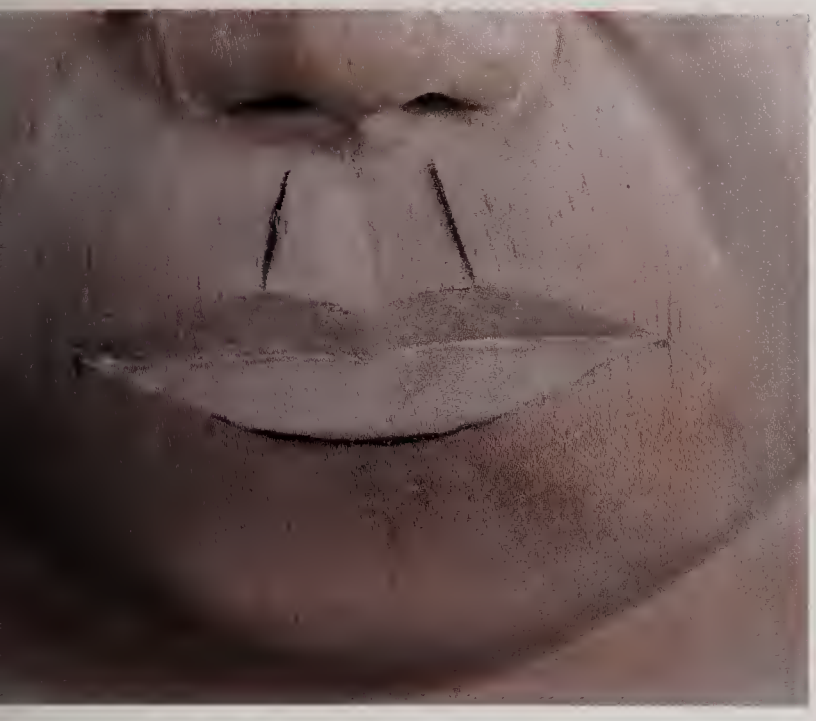
a) stock away from the upper lip line downward and inward to the depth of the initial cut that was made along the centerline of the lips (the line formed where the lips come together)

5) Carve



a) stock away from the lower lip line upward and inward to the depth of the initial cut that was made along the centerline of the lips

6) Carve



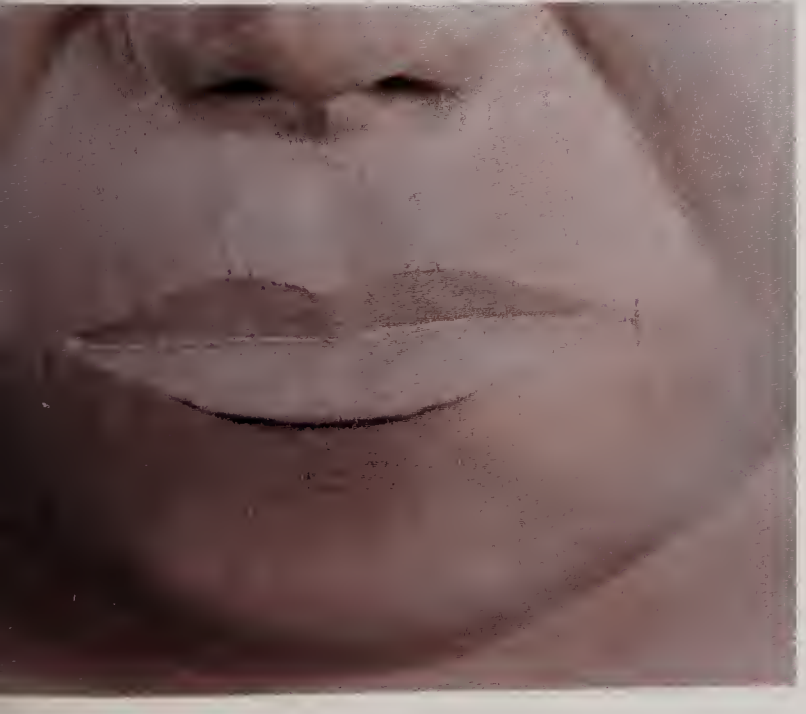
a) indent the depth of the furrow between the pillars (ridges) of the sulcus (bring sulcus to depth from the bottom of the nose at the center of the septum, to the center of the upper lip line or what would be the handle area of the Cupid's bow).

b) blend from the bottom of the furrow up to the sulcus ridge lines.

c) from the top of the sulcus ridge lines, blend downward along the upper lip line outward to the naso-labial (smile line) fold.

BIT: flame shape in low angle position

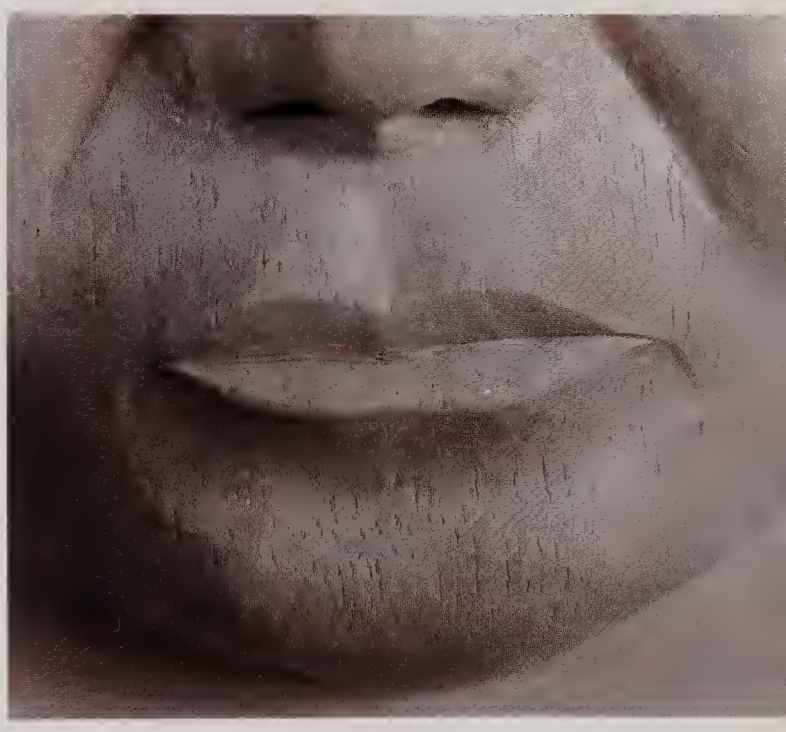
7) Carve



a) cut in the sharp curvature under the lower lip. (use the lower lip line as a guide, cutting downward and rolling upward into the gnathion or ball of the chin)

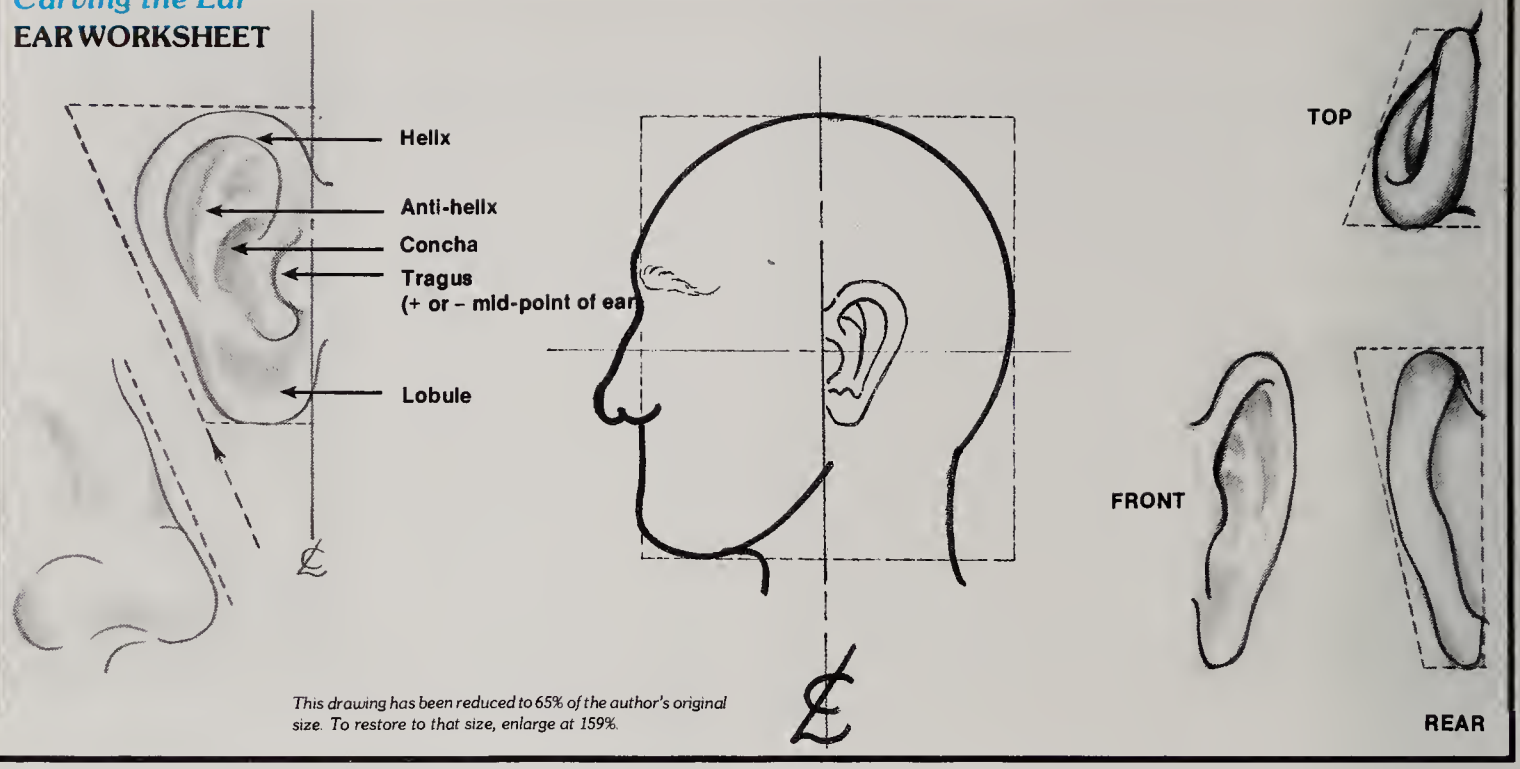
b) indent corners of the mouth on the lower lip indicating how the upper lip rolls slightly over the lower lip in this area.

BIT: flame shape in low angle position



(age and shape of face will determine the extremes of this indentation or roll—the younger the face, the smaller and more graceful the indent, the older the face the greater and sharper the indent)

EAR WORKSHEET



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EAR NOMENCLATURE AND AXIOMS

Envision the side of the head as a square approximately one-eighth higher than wide, that has been divided into quarters.

The forward line of the ear is located on the right side of the vertical centerline.

The position of the ear is just at the edge of the jaw.

The lobe is attached just above the joined or articulated point of the jaw.

The top of the ear would extend into the eyebrow.

The bottom of the ear is in line with the bottom of the nose.

The ear is twice as high as it is wide.

The back line of the ear slants at about the same angle as the front (profile) line of the nose.

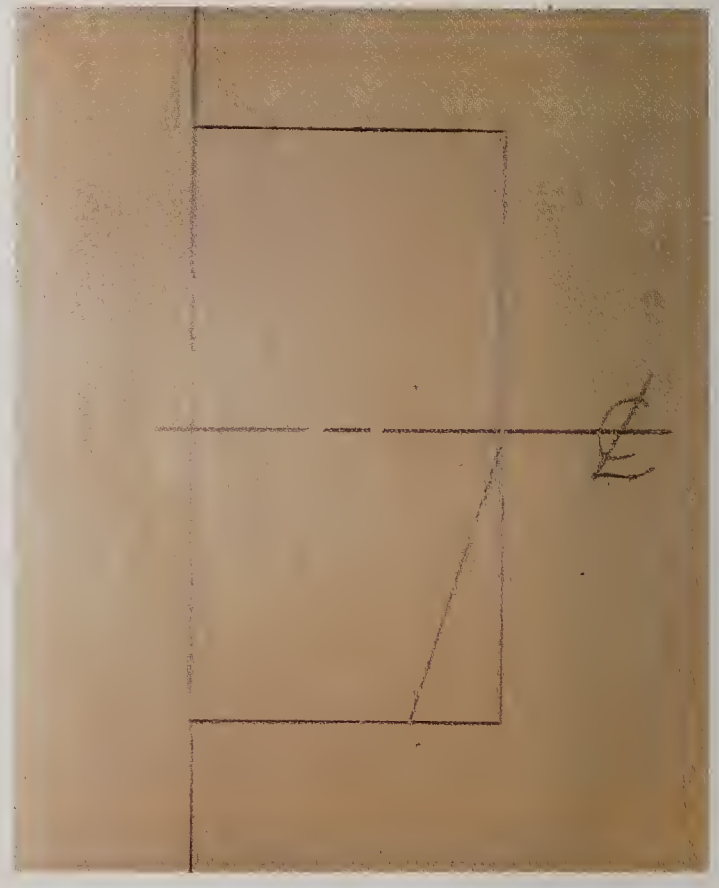
The shape of the ear varies greatly, and a high degree of freedom is allowed once the ear is properly located and basic construction has been roughed out—unless you are carving/sculpting an exact likeness.

The ear's forward line (where it joins the side of the head) is vertical on men and may be slightly inclined to the rear on women.

To the observer, a flat looking ear is intolerable—avoid flat looking, non-hollowed ears.

OBSERVE ears—none are the same, but all have the same basic shape!

1) Layout



a) front edge of ear on C/L of side of head
b) ear is twice as high as it is wide
c) rear slope of ear (same as the profile of the slope of the nose)

EAR CARVING SEQUENCE

The basic geometric shape of the ear is a rectangular *wedge*. Although all ears are basically the same, every ear is different—even on the same head the ears differ.

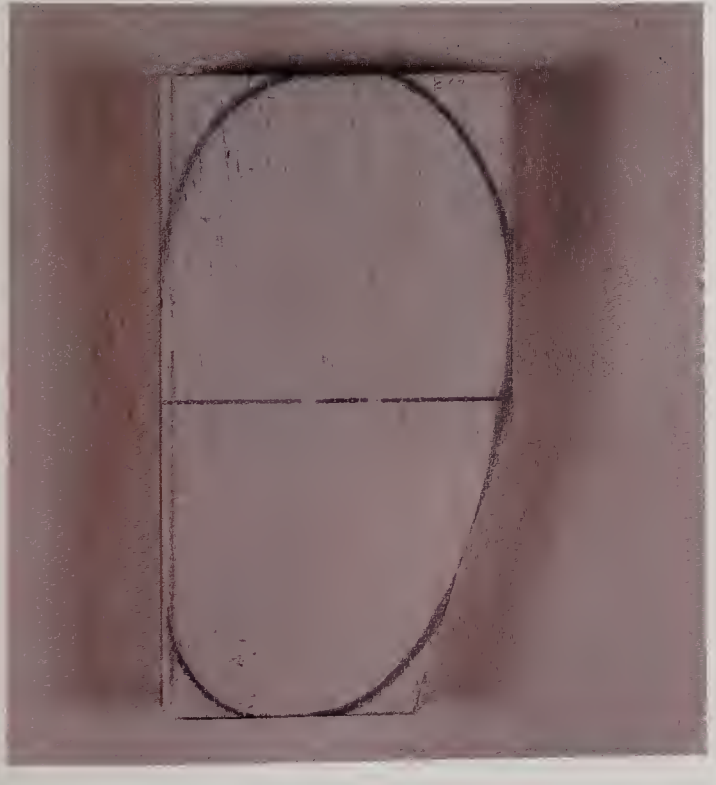
2) Carve

a) relieve the squared ear shape away from the head (make the shape slightly larger than necessary in case adjustments are needed to get both ears exactly the same size)

Check from side to side to insure that both ears are equal in size, and equally positioned from front to back and up and down—the squared shape makes it easier to check for size and positioning

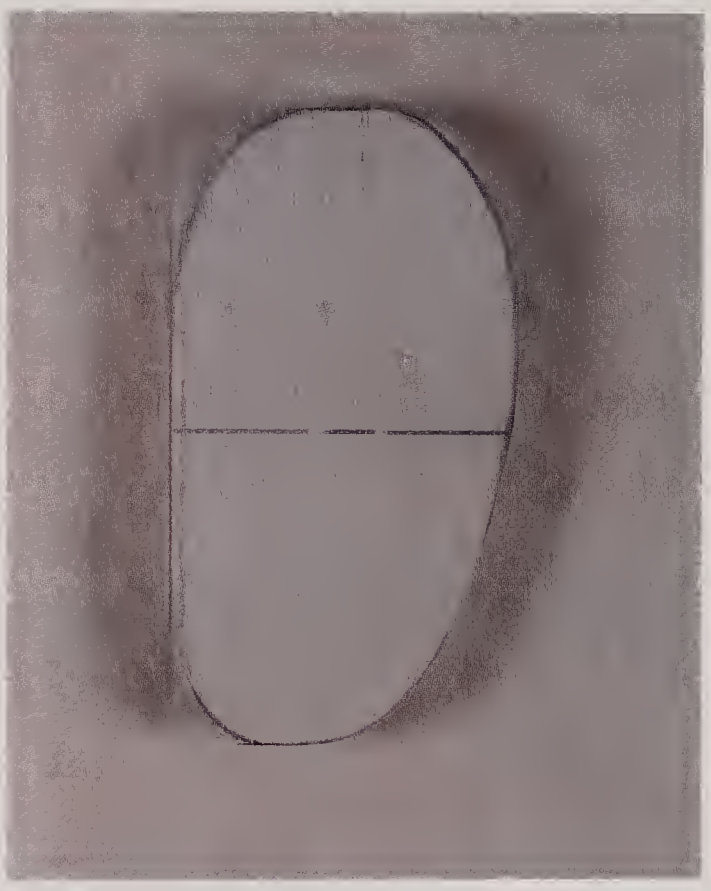
BIT: flame shape in high angle position

3) Layout



a) rounded outline of ear

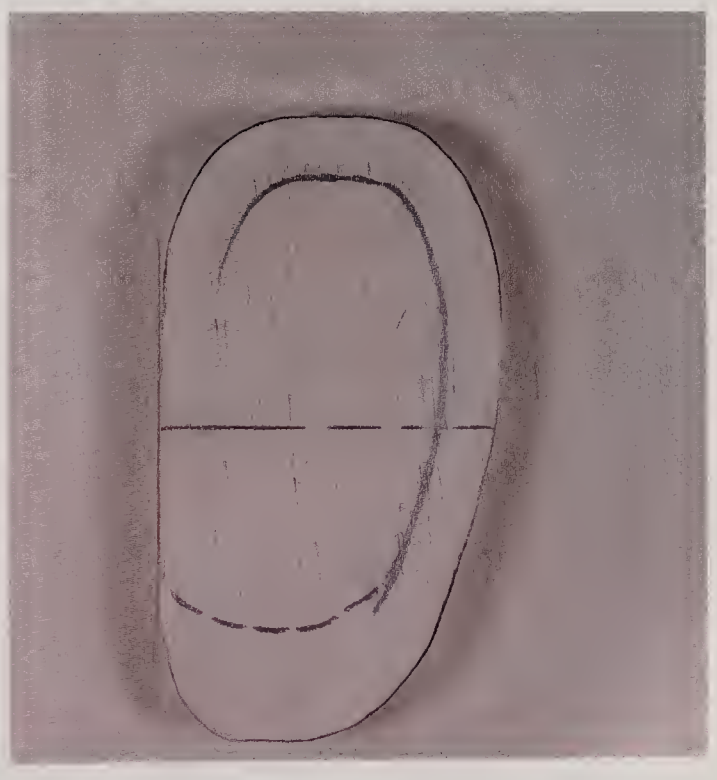
4) Carve



a) round outline of ear

BIT: flame shape in high angle position

5) Layout



a) inner line of helix

6) Carve

a) remove stock from inner line of helix, sloping downward to the point where front edge of ear joins side of head

(at this point, the rough shape will resemble a clamshell)

BIT: flame shape in high angle position

7) Layout

a) tragus—which falls at the center of the ear

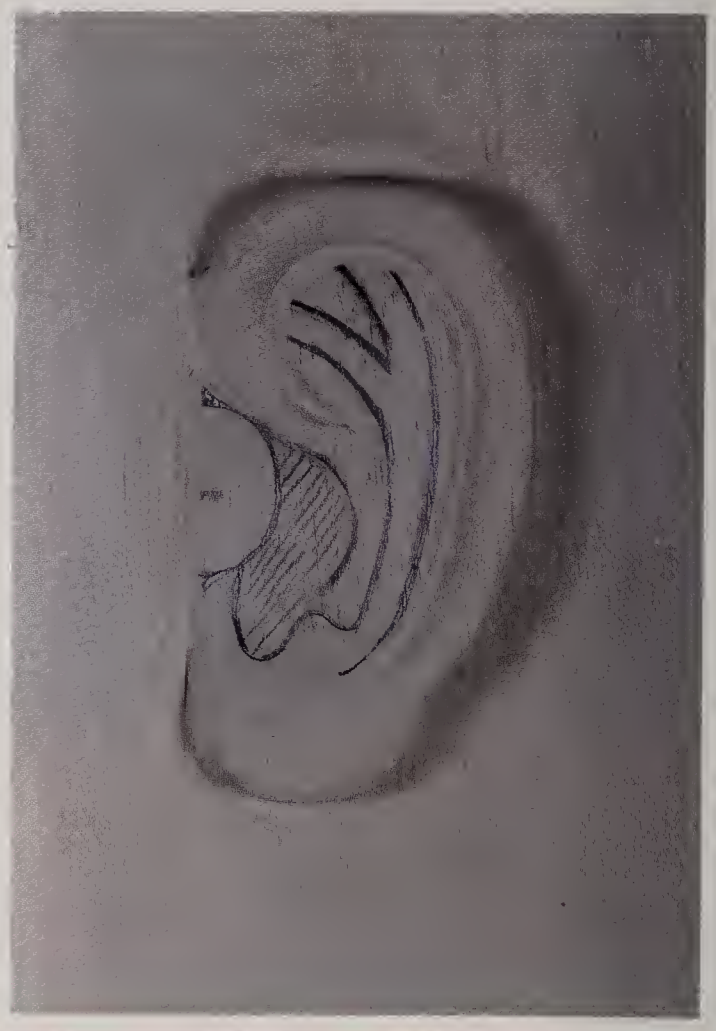
b)reestablish inner line of helix if it has been removed

c) draw anti-helix (usually a bent "Y" ridge)

d) shape of concha

(make sure both ears are layed out the same)

8) Carve



a) relieve, shape, and round out helix

b) relieve, shape, and round out tragus

c) relieve and shape anti-helix

d) relieve concha to shape and desired depth

e) shape and indent lobule

BIT: flame shape in high and low angle positions

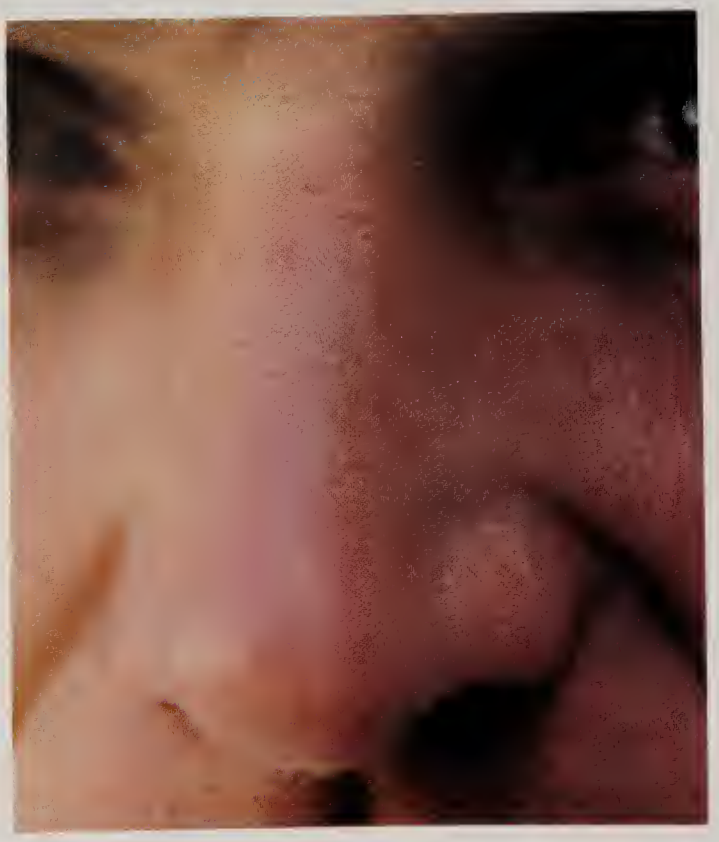
9) Carve

a) remove as much stock as desired beneath the ear and between the ear and head—especially at the lobule.

(depending on the amount of hair and/or how much the ears are meant to protrude, it may be necessary to remove no more than a deepened "V" groove along the back and top of the ear—give thought to this area before removing a great amount of stock)

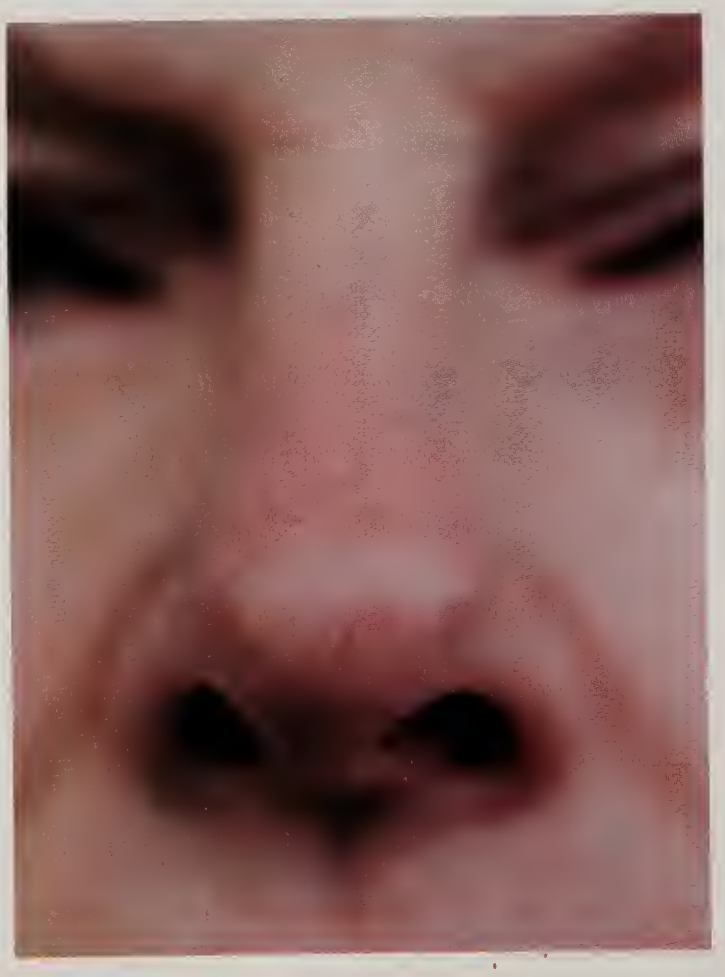
10) Carve

a) check from side to side and apply finishing touches to insure both ears are carved as closely alike as possible



Male Nose

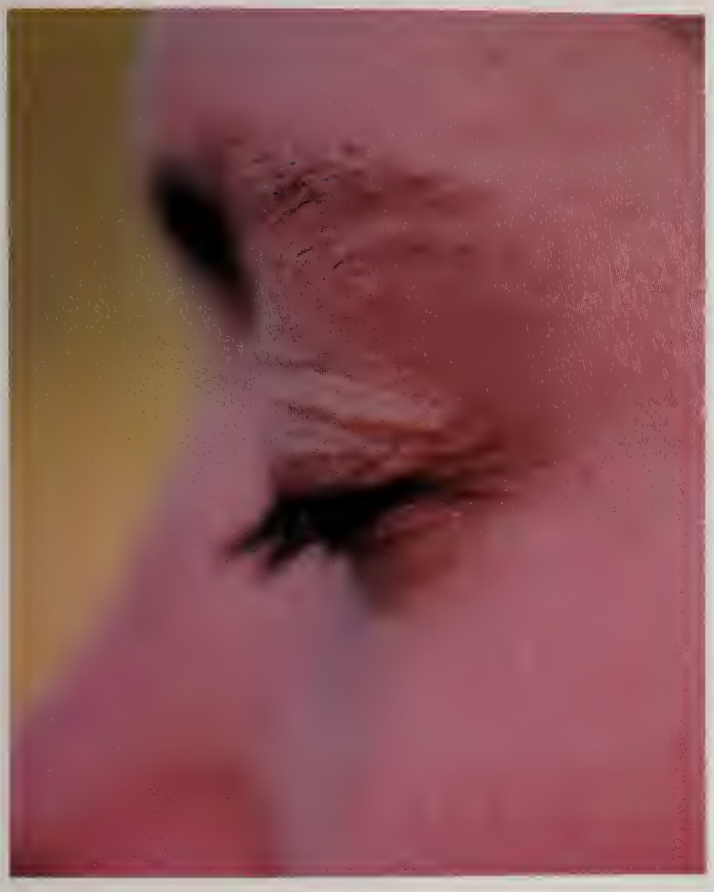
Female Nose Profile



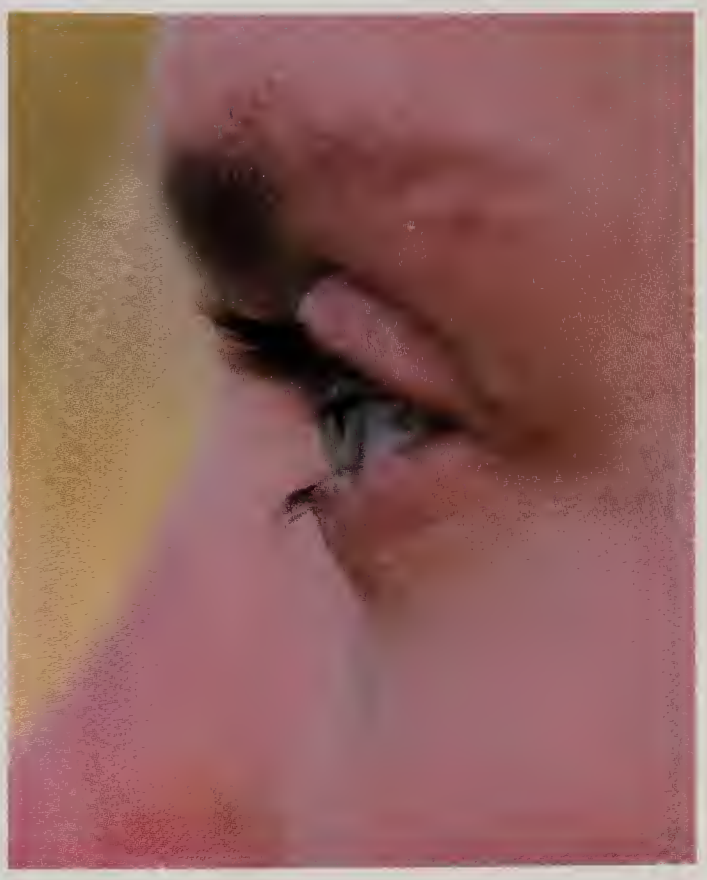
Female Nose

Male Eye

Female Eye

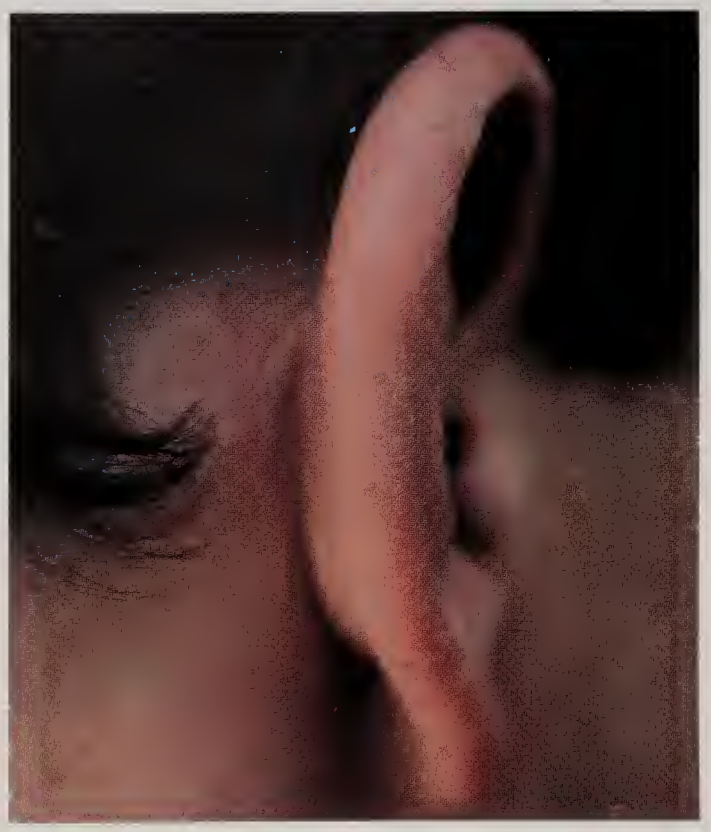


Female Eye (Closed)



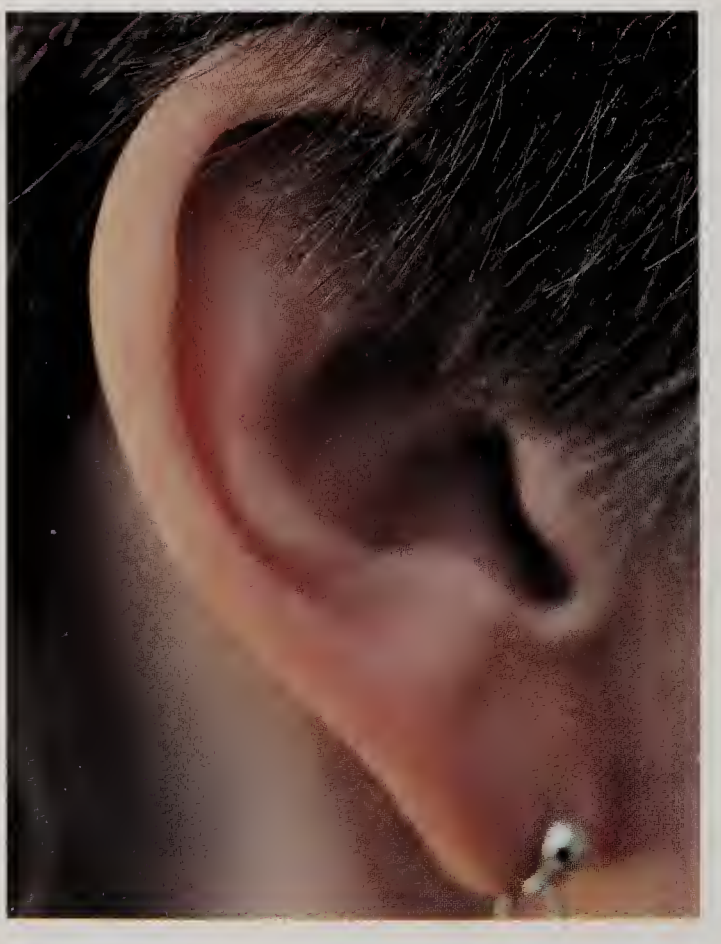
Female Eye (Open)

Female Mouth Profile



Male Ear (Rear)

Male Ear

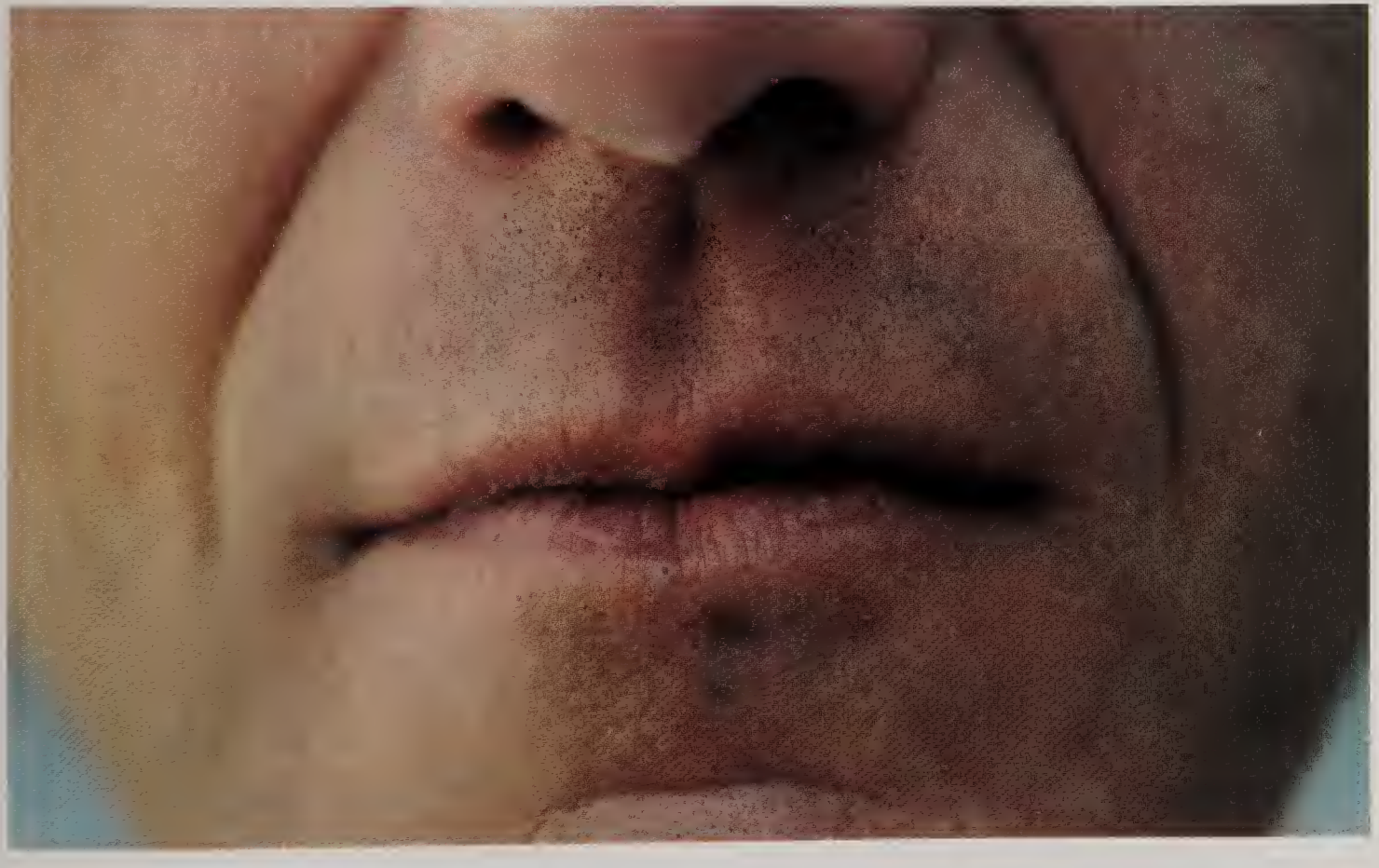


Female Ear

Female Eye

Male Eye

Female Mouth



Male Mouth

Humps and Hollows

—FACIAL CONTOURS -

We begin laying out and relieving the major features by considering the head as an egg shape. Away from this egg shape we must relieve some generalized shapes that have been detailed as the major features of the head—the ears, eyes, nose, and mouth.

Now the interconnecting topography or contours (excluding the hair) must be considered and shaped. I believe that this is an area left unattended by too many beginning carvers.

These are the considerations that give definition and realistic dimension to the face. This is also the area of a carving that loudly informs a knowledgeable observer of the skills exerted by a skilled and knowledgeable woodcarver.

Consider the prominent hollows that are a part of every human face, which, like the ears, eyes, nose, and mouth, have a general shape, but differ with each individual.

Look at the hollows or indented areas with respect to where they are located and how they are shaped on the particular face that you are carving. Keep in mind the extent and depth of each hollow. Note where single hollows occur, such as the indented area between the eyebrows, or the indentation above the chin, and then, locations of paired hollows that require symmetry such as at the temples.

Now do the same with raised areas such as the chin, or paired rises that require symmetry such as the cheek bones.

These shapes are as individual to the face being carved as were the nose and the mouth.

When you gather the references that you want to review or incorporate into your carving, be sure to include any photos or drawings of facial contours that you feel will be helpful in your reference package. Even if you are working from a project drawing such as one found in the project section of this book, you will need either a sketched or photographic reference that will help guide you to giving more realism to your carving.

If you don't have the time or opportunity to photograph facial contours, magazines, catalogs, and library books are all excellent sources for facial references. I have noticed that the larger chain-store catalogs don't feature many older folks as models. Unfortunately, we will learn how to age a face later in this book. I say unfortunately, because every time we go over the age indicators in my classes or seminars, for some reason I hear a lot of moaning and groaning.

I assembled a set of facial "Hump and Hollow" reference photographs so that I would always have references to work from when I got to that point in a carving. I found there were two requirements for getting the type of photograph I wanted. First, a cooperative model, and secondly, a harsh light source such as the sun or a strong shadow light if I was photographing in the studio. I studied these photos with care before carving a likeness of them on or into a face, and gradually, facial contours became a second nature consideration. Now that I know what I'm after with respect to size, shape, and extent of a particular contour area, I refer to these reference photos less, but they are always kept close at hand for a refreshment course, when needed.

Use a live model if you haven't prepared a good set of references. My wife only recently admitted to how tired she got of being constantly interrupted from something she was doing by my

"Oh, Honey! . . . Can you come here for a few minutes?"

With a model who will allow it, use your hands to physically impress on your mind the extent of the facial contours. I close my eyes and touch the face and the areas of the face as would a blind person, then I open my eyes to touch and feel the same areas again. It is amazing how much the hands can "see."

It is assumed that the ears, eyes, nose, and mouth have been shaped, contoured, and blended into the head. Now let us address those areas that fall between, but are so essential to carving a realistic face. The following suggestions are but a few to help you to identify and locate these areas. They may all be useful to your style of carving or just a few may fit your needs. As usual, take the best and leave the rest.

HOLLOWED OR INDENTED AREAS

The hollow of the temples

The indent just above the eyebrows at the base of the forehead

The hollow between the eyebrows

The hollows of the cheeks below the prominent cheek bones

The indent caused by the naso-labial fold (the "smile" line)

The indent above the chin

The indent in the middle of the sulcus below the nose

The hollow from the corners of the mouth along either side of the chin

The hollow beneath the corner of the jaw under the ear.

The indent on the bottom of the jaw where the throat begins.

The hollow of the throat on either side of the Adam's apple

RAISED OR PROMINENT AREAS

The corners of the forehead

The rise of the bony ridge under the eyebrows

The prominence of the upper cheeks, the high cheek bone (malar) region

The "puff" or fullness of the lower cheeks

The ridges on either side of the naso-labial fold

The ridges of the sulcus

The rise and shape of the chin

The rise and shape of the Adam's apple

The triangular shape of the jaw bone

Shaping and Texturing Hair

Any beard, moustache, eyebrows, or head hair takes a certain amount of thought with respect to placement within and about the facial area. For example, if care is not given to leave enough stock for curls that fall over an ear, the desired effect is lost for lack of stock from which to shape and detail the curls. Plan ahead to save the frustration of having to start over again or glue extra stock to a carving to preserve a desired effect.

HAIR MASS LAYOUT

Determine areas where hair is desired. If you are working from a pattern, the determination has pretty much been made for you, so the most important thing to remember is leaving enough stock to make the proper hair mass and hair shapes that will occur on it.

If you are originating, as suggested at the beginning of this section, plan carefully before any stock is removed.

CONSIDERATIONS BEFORE CARVING HAIR: UPPER HAIR MASS

Amount and coarseness of hair
Thickness and length of sideburns
How hair will fall and what direction at top of the ears
How hair will exit from behind ears
How hair will teminate at base of head (especially male)
Length of hair and how ends terminate (especially female)
How detailed hair will be and whether detail will fit overall carving
Appropriate placement of splits, overlays, and curls.
Direction of hair away from part and across top of head
How hair will fall on the forehead and where it will go from there (especially male)
How hair will fall over face from top or sides (especially female)
To what extent hair will encroach on face from top and/or sides(especially female)

EYEBROWS

Direction of hair flow
How thick or thin they will be
Length and shape of brows

Coarseness of texture

MOUSTACHES

How far away from face moustache will protrude
Shape of moustache (if alone)
How hairs depart from base of the nose
Direction and flow of hair

BEARDS

Overall shape of beard mass
Direction or flow of hair
Extent of beard on face—especially around the mouth and bottom of nose

How much of mouth will be exposed between beard and moustache

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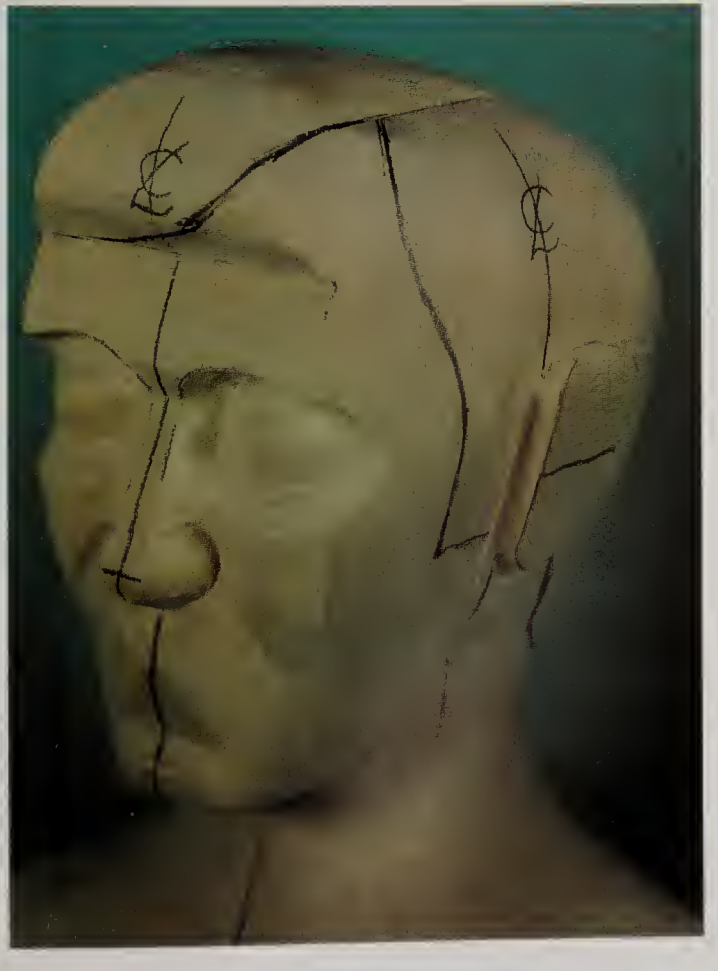
SHAPING HAIR MASS

1) Layout



a) Outer extremes of all hair masses

2) Carve

a) Outline mass to desired depth
BIT: Flame shape using drag stroke.
b) Relieve mass away from head by removing unnecessary stock lying adjacent to outlined mass
BIT: Any bit allowing convenient removal of stock
c) Roll edges and blend as necessary
BIT: Flame shape using shaping stroke.

DETAILING HAIR MASS

1) Carve

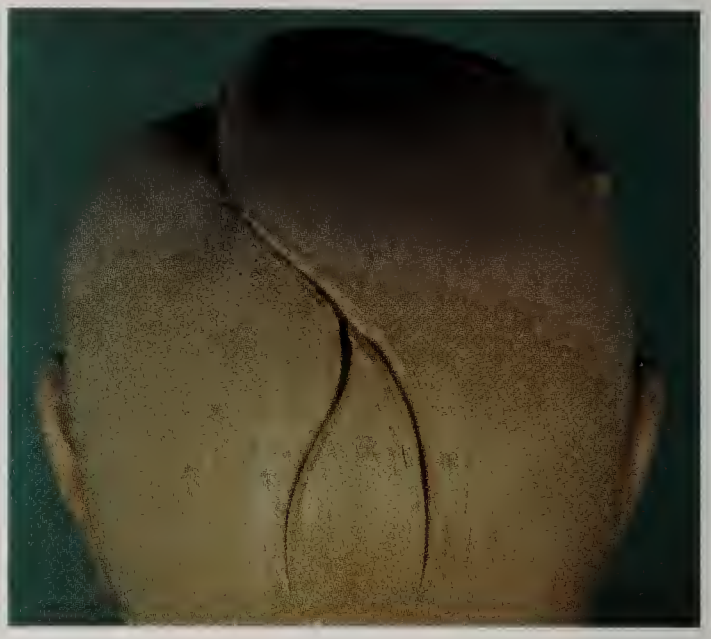
a) Smooth the area of the hair to enough to draw the detail that you want on it.

2) Layout

a) Draw individual details such as hair separations, overlays, curls, and/or hollows in place. View the carving at "arms length" to insure that placement gives the desired effect or look. Don't be afraid to erase and redraw any section or individual detail that doesn't suit you.

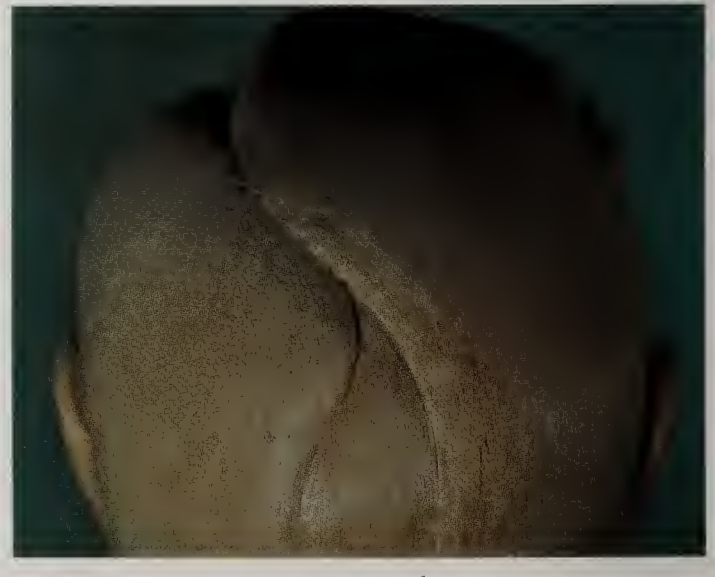
Experiment and adjust before you do any carving.

Hair separations—are formed where upper hair has separated, and hair that would normally be underneath, has pushed through. The shape of the depression caused by the under hair coming through is begun by drawing, then carving an upside down **"Y"** with all the legs of the **Y** returning to join the flow lines already established.



The deepest part of the depression, will occur at the crotch of the **Y**, and must be fairly deep and well-defined (sharp) to give realism. As the under hair spews out from between the separated upper hairs, it will fan out, eventually becoming a part of the upper or surface hairs.

BIT: Flame shape in low angle drag position



Once the depression is defined, the fan must be blended back into the mass of hair below it.

Attention is next given to the separation area that the under hair comes through. It is usually sufficient to roll the sharp edges over, allowing them to form a little **"V"** where they come together, then blend the **V**-groove (single leg of the **"Y"**) back into the hair mass above it, in preparation for texturing the hair.

BIT: Flame shape in low angle wipe position

Caution should be used as to location and number of hair depressions used. Where one or two can really accentuate the hair, too many, or improper positioning can look inappropriate. As usual, study hair, most especially hair similar to the style, length, and character of what you propose to carve.

Overlays/Curls—are caused by separate locks or tresses of hair that stand away or on top of the general mass of hair.

The overlay/curl is first defined by pencil layout in an appropriate area.

The shape is outlined, with the deepest indentation occuring at the middle and end of the overlay mass. The outlining cut will shallow out as it blends back into the main mass of hair that it separates from.

The final shape of the overlay mass is relieved away from the hair surface that it lays atop of, by removing excess stock around the exposed end and sides. This will allow it to stand away sufficiently for the edges to be shaped and blended for texturing.

As with the hair depressions, use caution and thought as to placement and appropriateness of overlays and curls. If you are carving a bearded scrawny old man, curly hair may give the carving a totally different atmosphere and attitude, than would thin straight hair. Curls require more planning because of the amount of stock that has to be left to work with. It's difficult to carve curls that you want to frame the face, when all the stock needed to make the curls stand away from the face has been removed.

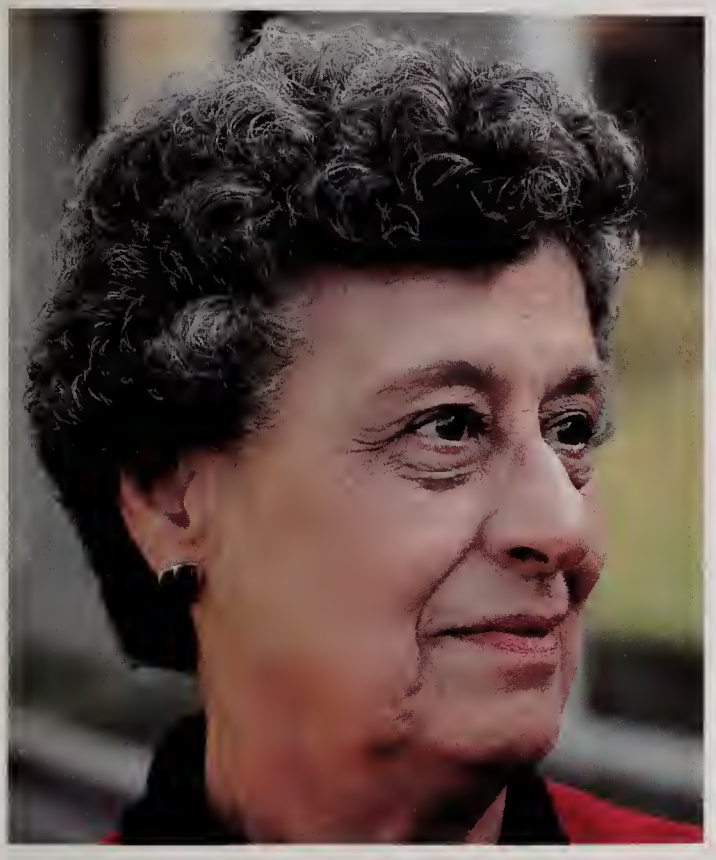
TEXTURING HAIR

The coarseness of hair will depend on the size, grit, and stroking force of the bit used to texture the hair. Depending on the species of wood used, the higher the RPM's the better for the smoothest cut and appearance. Basswood, jelutong, tupelo, and woods of similar softness require a very high RPM to maintain a smooth, untorn look to the texturing. Woods such as maple, cherry, oak, and walnut demand a slower speed during the texture cut or the wood will burn. The best method used to texture hardwoods at high RPM without burn marking, is to use a quick stroke. However, quickening the stroke usually doesn't allow for a very deep cut. Practice on a piece of scrap wood until you get the speed/stroke combination that suits the result you want.

1) Draw flow lines in the directions that the hair is to be textured. Once the flow lines are drawn, decide if the flow direction(s) is(are) how you want the hair direction on the finished carving. This is very important, because the flow lines you draw now are what will be your guides all through the texturing process.

2) With a medium grit stone (a ⅛-inch cylinder or a ⅛-inch inverted cone shape was used for all the projects in this book.), begin texturing at the bottom of the texture area. Make short random-length back and forth strokes across the hair area, always in the direction of the flow lines.

3) The textured surface should be cleaned of any accumulated dust using a rotary bristle brush at medium to low speed. Any fuzzy grain ends that occur during the texturing process can usually be laid down or removed during this same operation. If the "fuzzies" persist, a defuzzing pad lightly run in the direction of the grain will accomplish the same task a bit more harshly than the rotary brush.



Maturity and Aging

1) Hair turns white or grey
2) Hair thins
3) Scalp may show through bald spot at top of head
4) Eyebrows grow sparse and scraggly
5) Wrinkles lengthen at corners of eyes
6) Eyelids have a tendency to droop
7) Wrinkles form around lower lid pocket
8) Socket bone protrudes as eyes sink back
9) More pronounced depression at temples
10) Cheek bones become more prominent
11) Hollow forms below cheek bones
12) Ears appear to lengthen because lobules sag and lengthen
13) Ball of nose may appear to swell, becomes more prominent
14) Mouth sinks back
15) Mouth puckers and lips roll inward, if no teeth
16) Wrinkles run off lips and corners of mouth
17) Flesh drops and sags at jowls
18) Neck thinner, appears more gaunt
19) Skin drapes and folds along neck and under chin

Male/Female Comparison

Keep in mind that the following comparisons are for consideration as you carve. They are assumptions based on observation, and may or may not fit the scope of the facial example that you as the carver wish to exhibit. However, knowledge and subsequent use of them may serve to greatly exemplify a particular feature or part of the face that you are carving. As usual, this is your creative domain, so take what is best, and leave the rest.

1) For the most part, male features are sharper than female features, especially in profile.

2) Females have rounder, softer, more graceful lines especially about the cheeks, jowls, and chin.

3) Female lips are thicker and more full than male lips.

4) Male noses appear to be longer and larger overall when compared to the female nose.

5) Female nose bases turn upward in profile, whereas the male nose base runs straighter out and away from the face.

6) Male noses have straighter more angular lines—female noses round downward and outward in profile, giving the nose a more "pert" appearance.

7) Female chins are gracefully rounded—male chins are more pronounced with sharper, bolder, more indented lines.

8) Male brow lines extend further outward and have a sharper profile than do female brows.

9) Male brows are more ridged with a slight indentation on the forehead above the brow line—the female brow line is more flush with the forehead, and the forehead is rounded slightly outward.

10) Female eyes appear to be larger, more wide open, and softer when compared to the overall female face than do male eyes which appear smaller, less wide open, and with more severe lines when compared to the overall male face.

11) In profile, the female sulcus (the ridges between the nose and mouth) will generally curve inward slightly before it meets the upper lip line—the male sulcus will appear to be straight with no inward curvature.

12) Male eyebrows appear more coarse, shaggy, and tend to cover a greater area than will female eyebrows.

13) Some female ears appear to tilt backwards away from the centerline of the side of the head—the front edge of the male ear will more closely follow the straight up and down line of the centerline.

Children

The easiest face to carve is the adult male due in part to the angularity and sharpness of the facial features.

More difficult is the female face primarily because of the softness and grace found in, and necessary to, feminine features.

The greatest challenge is the face of a child. Because of the way a child's face develops, many of the axioms applicable to the adult head and face can't be applied to the layout and carving of a child's face. Consider the following before you begin to carve a child's face.

1) The eyes may appear to be further apart on babies and toddlers. The iris will cover much of the exposed part of the eye because it is nearly adult size. This makes a child's eyes appear wider, softer, and more expressive.

2) The child's face will appear smaller in proportion to the overall head than would an adult face.

3) The neck will appear much smaller in proportion to the head.

4) The ears appear lower, and often appear larger and disproportionate to the rest of the features.

5) The back of the head will appear more bulbous and stick out from the neck further than would the adult head.

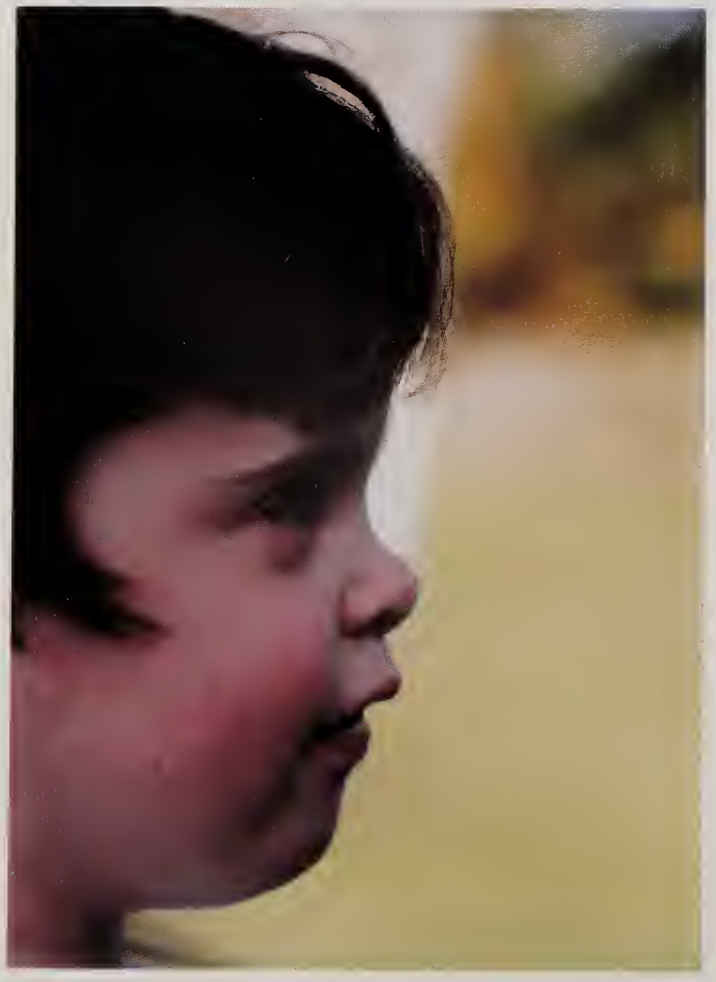
6) The chin is smaller in proportion to the adult chin, and doesn't protrude to the extent that the adult chin does.

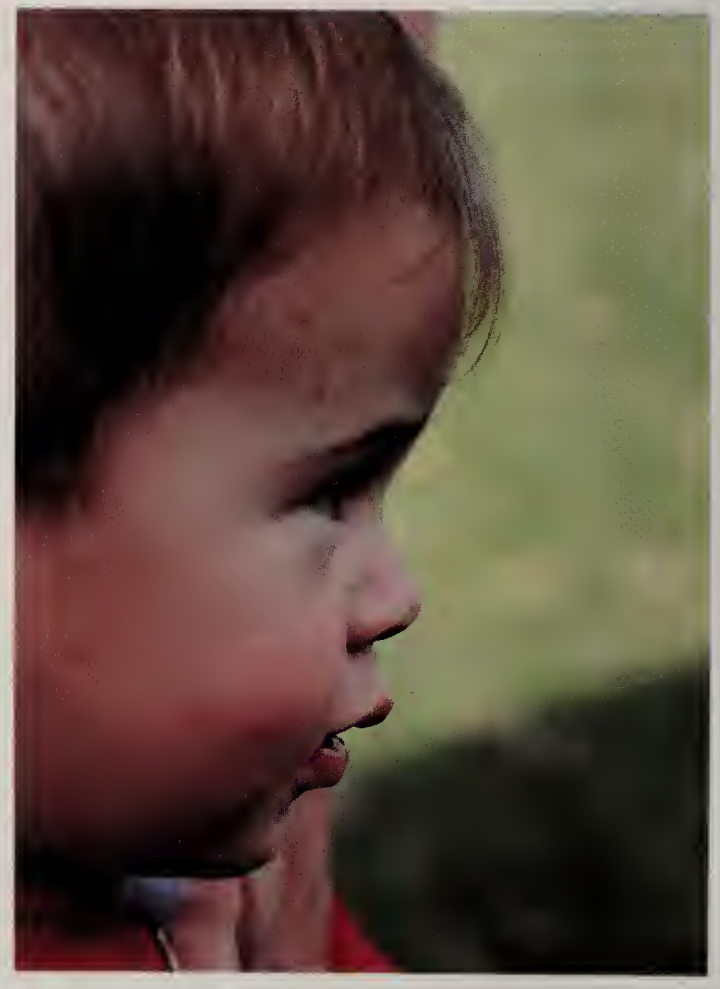
7) The younger the face, the rounder the cheeks. Smallness of the chin also serves to accentuate the roundness of the cheeks.

8) For the most part, children's noses have an upturned, "perky" appearance.

9) The younger the child, the further out the upper lip extends. The overall mound of the mouth stands out further than the adult mouth, and is more severely indented and/or rolled at the corners.

Carefully study children's faces, and gather a photo/reference folder on each age group that you intend to carve. I loved giving my grandchildren their bottles before a nap or bedtime just so I could hold them close and study them. It was a toss-up as to which felt better, holding them close or having them in a position where they held still long enough to look at.





AXIOMS FOR THE HEAD

For layout, the unit of measure for the human *body* is the human *head*, and the unit of measure for the human *head*, is the human *eye*.

Whether carving a bust or a full bodied figure, the following axioms for the head will generally apply for the normal, relaxed face.

1) Envision the front of the head as an egg shape (small end at the bottom) that has been divided into quarters by horizontal and vertical center lines.

2) The horizontal center line of the egg-shaped front is the center line for the eyes (the horizontal eyeline).

3) The head is five eye units wide at the eyeline.

4) The space between the eyes is one eye unit wide.

5) The height of the open eye is one-half its width or length.

6) THE EQUILATERAL FACIAL TRIANGLE— Laying out a well proportioned face is fool proof if the carver remembers the following equilateral rule: *The distance from the outer corners of the open eyes along the horizontal center eye line, is the same as the distance from the center of the bottom lip line to the corner of either eye.*

7) The corners of the mouth would run through the centers of the eyes if extended upward.

8) The distance from the bottom of the nose to the center of the bottom line of the lower lip is one eye unit. This distance stays the same whether the mouth is smiling, normal, or frowning.

9) The nose is one eye unit wide at its base.

10) The distance from the top of the eyebrow to the open bottom eyelid is one eye unit.

11) Envision the side of the head as a square about one-eighth higher than it is wide, that has been divided into quarters by horizontal and vertical centerlines.

12) The front line of the ear is located on the vertical centerline.

13) The top of the ear would extend into the top of the eyebrow.

14) The bottom of the ear is in line with the bottom of the nose.

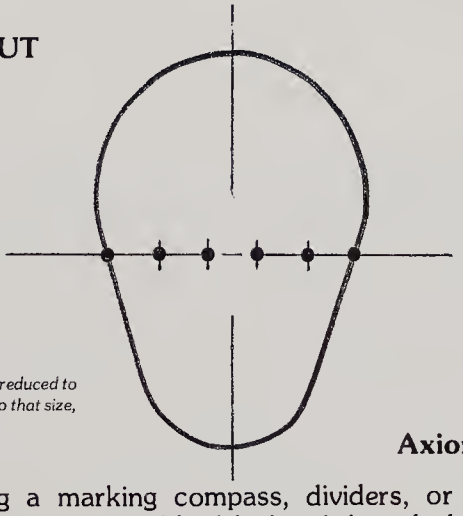
15) The ear is twice as high as it is wide.

16) The back line of the ear slants at about the same angle as the front line of the nose.

HEAD AND FACIAL LAYOUT

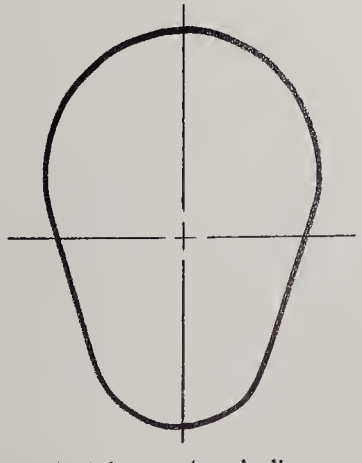
The first area of concern for layout is the egg shaped frontal area of the face (solid line), then, the ears (blackened), and finally, the hair (dotted line).

The drawings on pages 41 and 42 have been reduced to 57% of the author's original size. To restore to that size, enlarge at 208%.



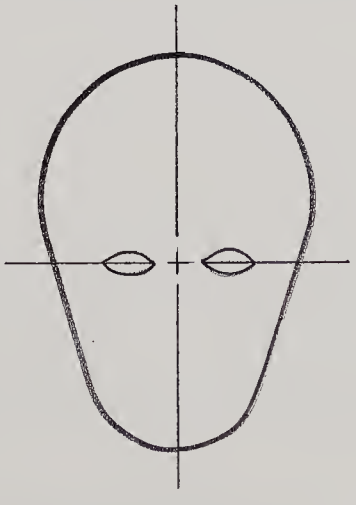
Axiom #3, #4

2) Using a marking compass, dividers, or calipers, establish the five-eye width of the head along the horizontal eye centerline. *(Exclude ears, hair, and/or beard)*



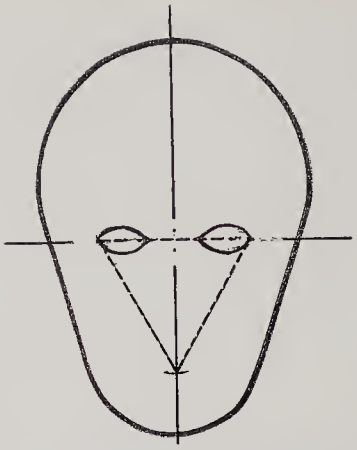
Axiom #1, #2

1) Divide front facial area (excluding ears, hair, and/or beard) into four sections by intersecting a horizontal and vertical centerline.



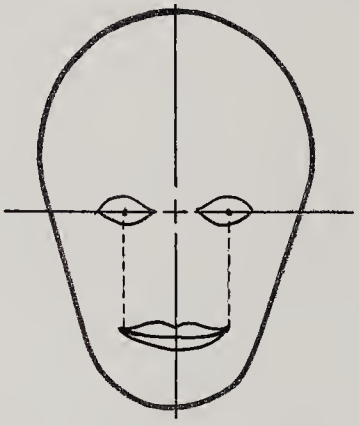
Axiom #5

3) Draw general outline of eyes (exclude eyelashes)



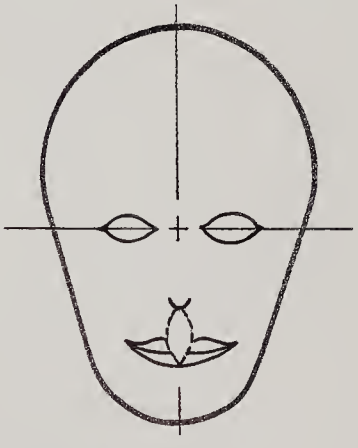
Axiom #6

4) Apply the equilateral facial triangle using a compass to intersect the center of the lower lip line.



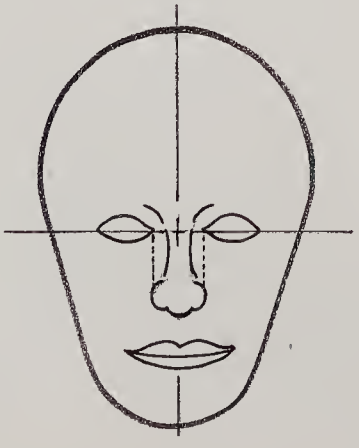
Axiom #7

5) Draw the shape of the mouth.



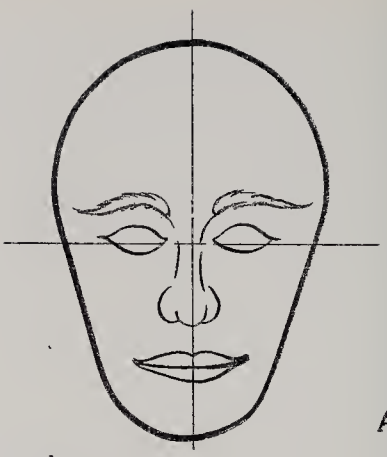
Axiom #8

6) Establish the bottom of the nose across the vertical centerline.



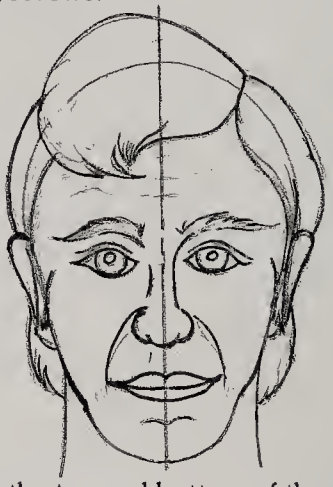
Axiom #9

7) Locate the width of the base of the nose, then draw the shape of nose.



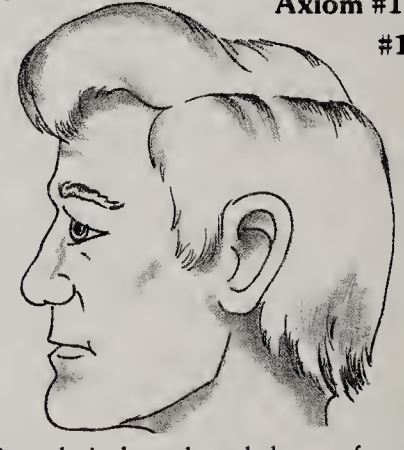
Axiom #10

8) Locate eyebrows.

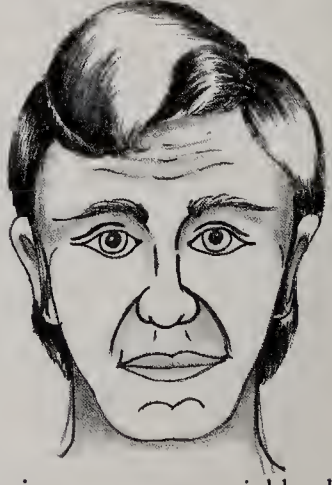


9) Locate the top and bottom of the ear behind the vertical centerline on the side of the head. Draw the shape of ear.

Axiom #11, #12, #13, #14, #15, #16



10) Draw hair, beard, and shape of eyebrows as desired.



11) Emphasize any creases, wrinkles, highpoints, or depressions that you wish to include on the carving.

The hair and ears should be located and relieved away from the head before the facial layout and carving begins. This insures that enough stock will remain to shape curls, mustaches, beards, and ears as desired later. Conversely, if the face is carved without leaving enough stock for hair, stock will have to be removed from the face to lift hair away, losing previously carved detail on the face. The more hair on and around the face, the more planning is required.

FACE CARVING SEQUENCE

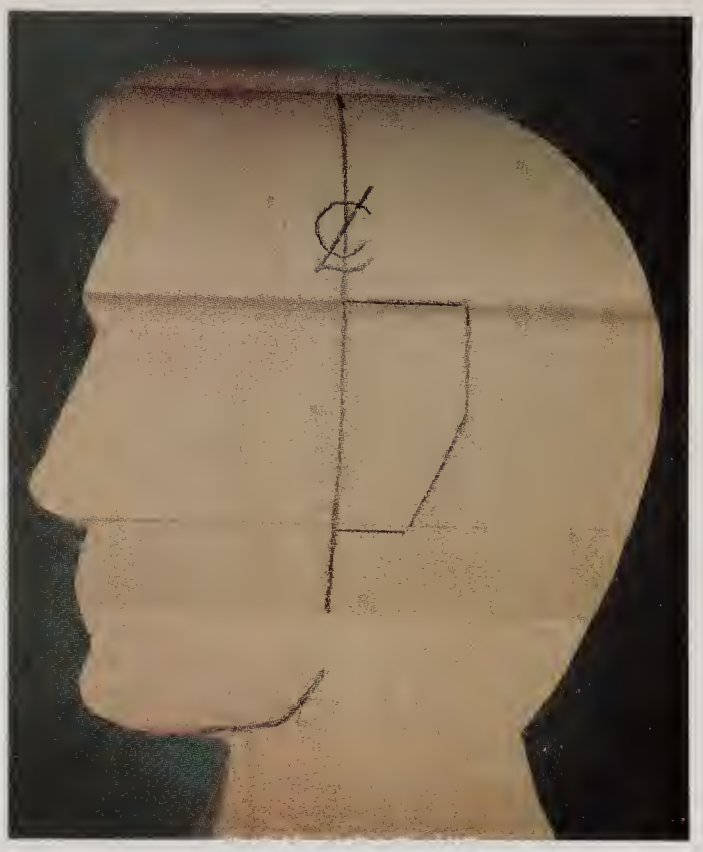
LAYOUT refers to the lining, sizing, or drawing of a particular feature with a pencil.

CARVE refers to the actual cutting in, carving, or texturing of a particular feature.

C/L = Centerline

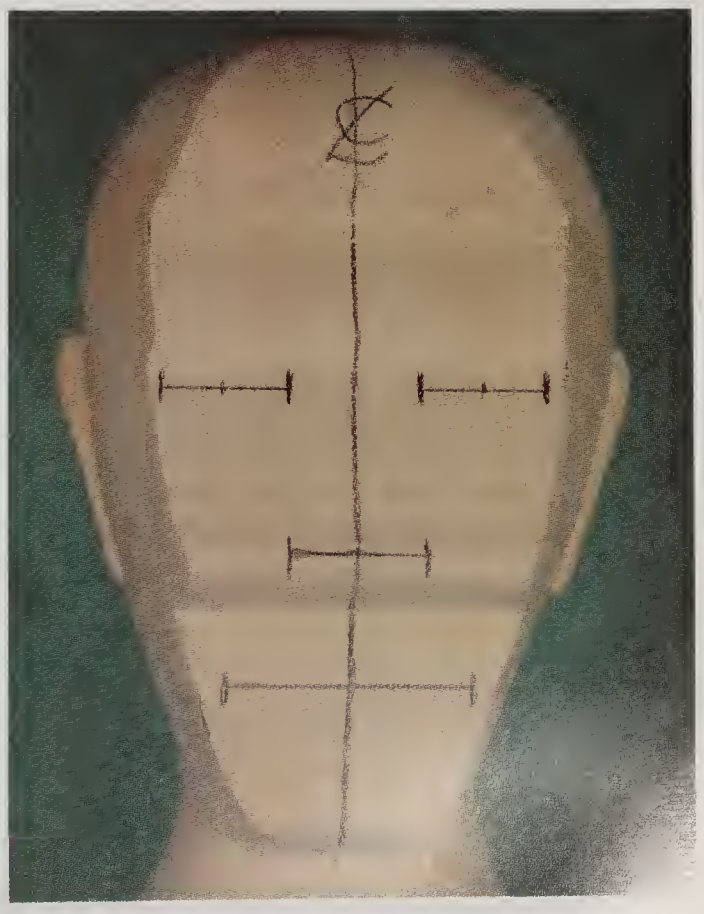
1) Layout

a) vertical C/L of face
b) proper width of eyes, nose, and mouth
c) extremes of stock to be removed by taper/wedge of face

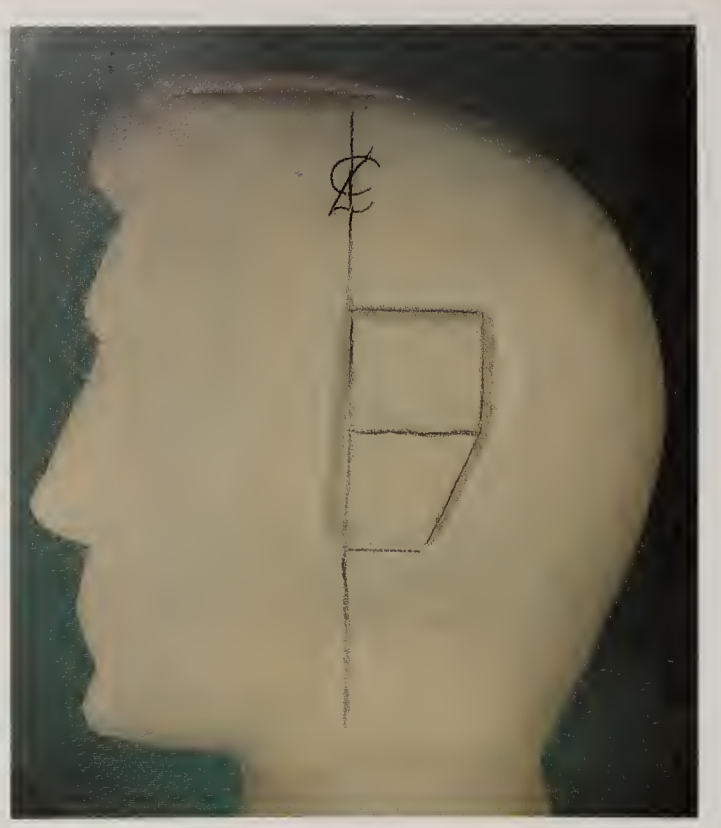


d) location and squared out shape of ears

2) Carve

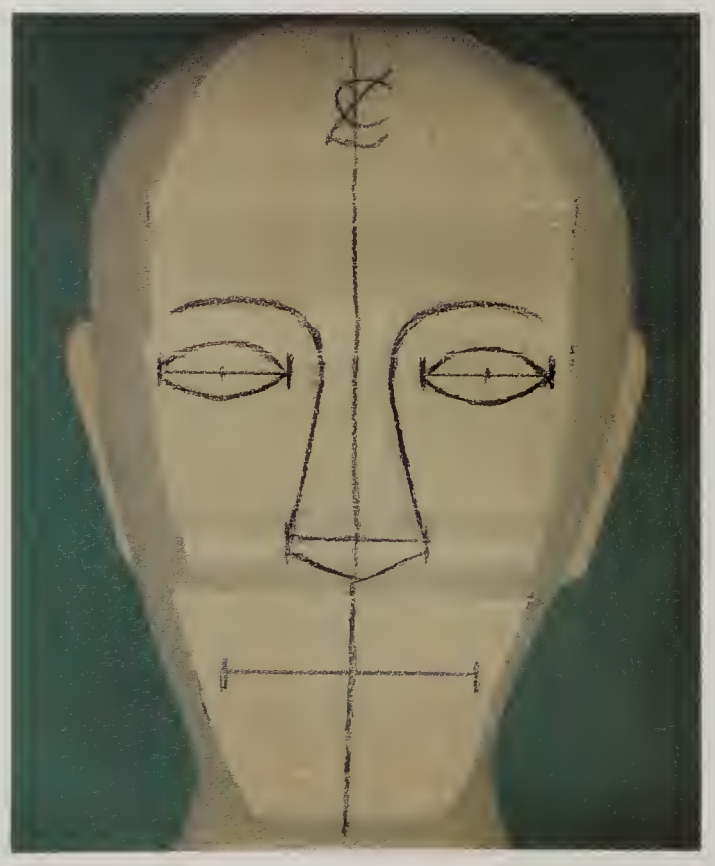


a) remove stock from sides of face up to h
(leave enough stock to shape curls, splits,
etc.



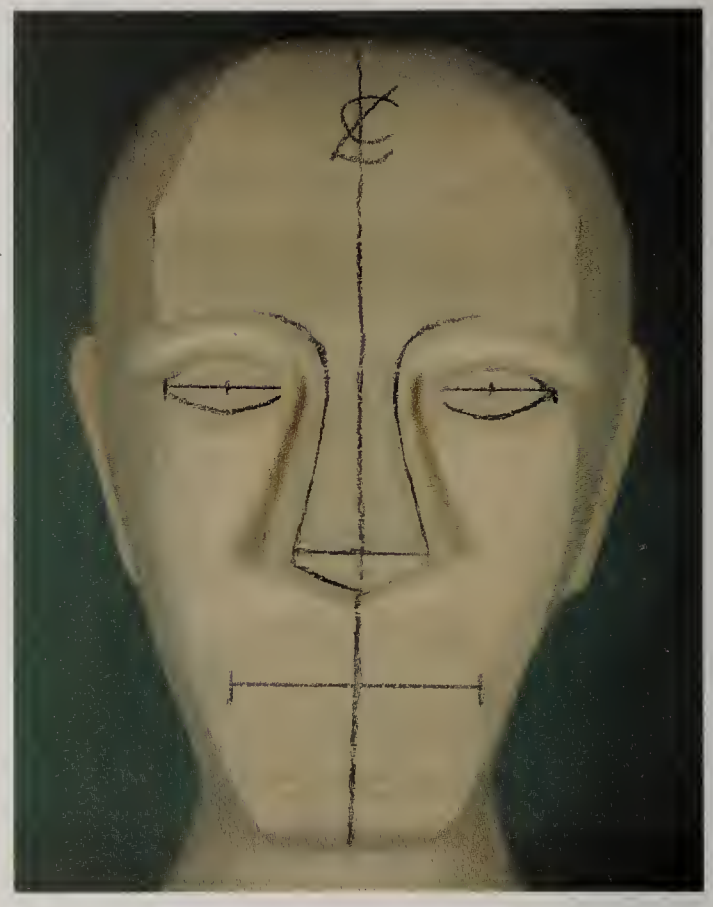
b) round back of head, stopping short of ear areas
c) relieve squared out ears

3) Layout

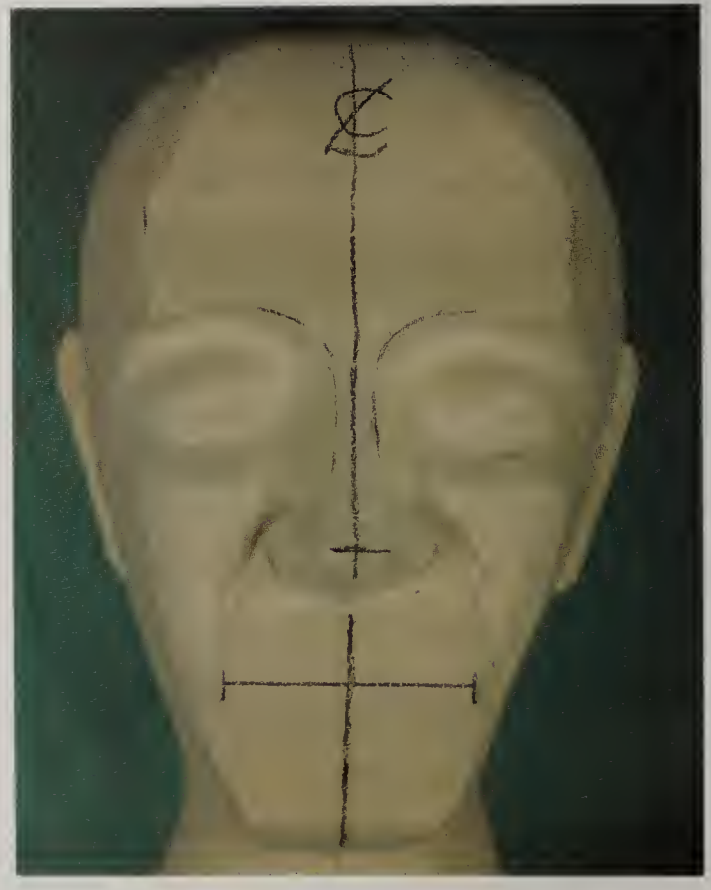


a) re-establish vertical centerline of face, if necessary
b) establish horizontal centerline for eyes.
c) proper eye shape/size for width of head
d) width and size of nose
e) line of eyebrows
f) horizontal C/L and width of mouth

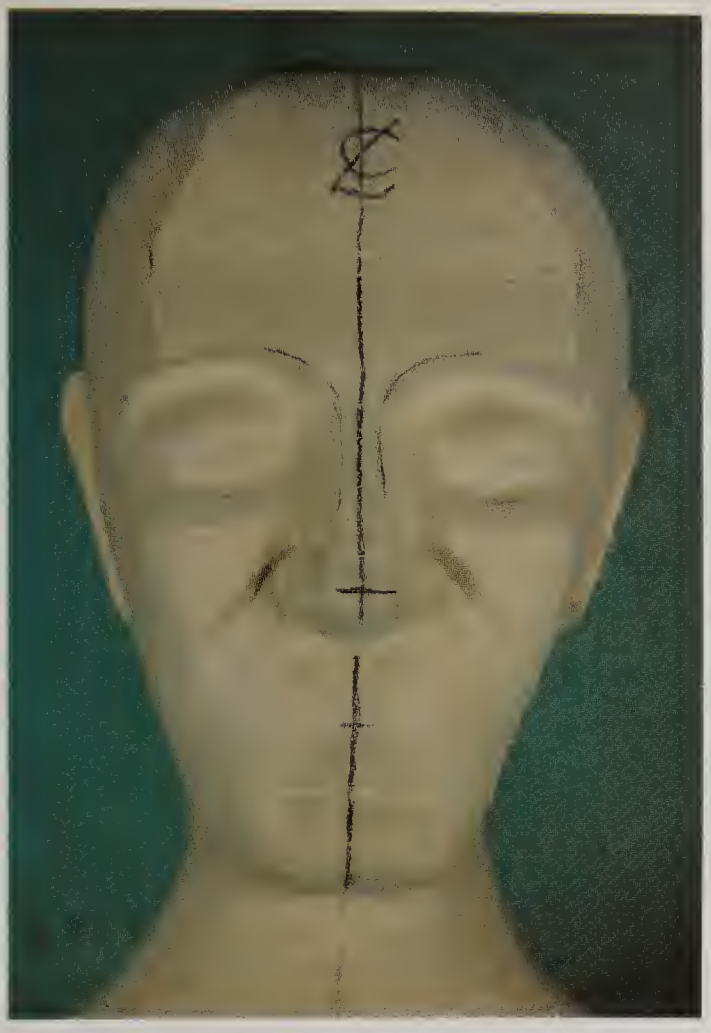
4) Carve



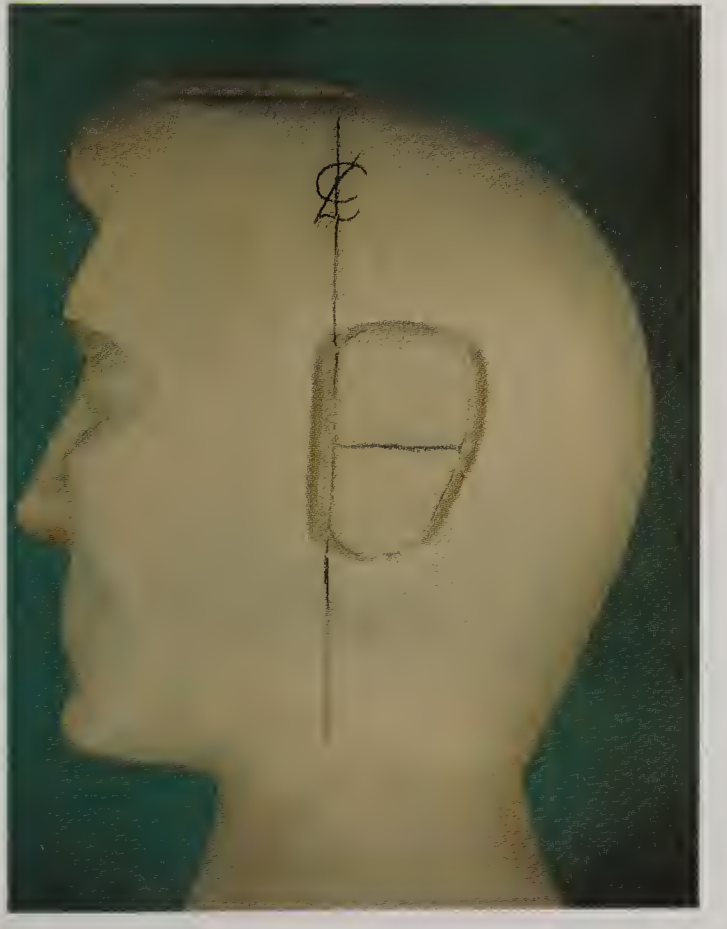
a) stock away from nose and bottom of eyebrows
b) outline extremes of eye mounds
c) remove excess stock from cheeks
d) nostril slope



e) rough shape nose
f) rough shape eye mounds

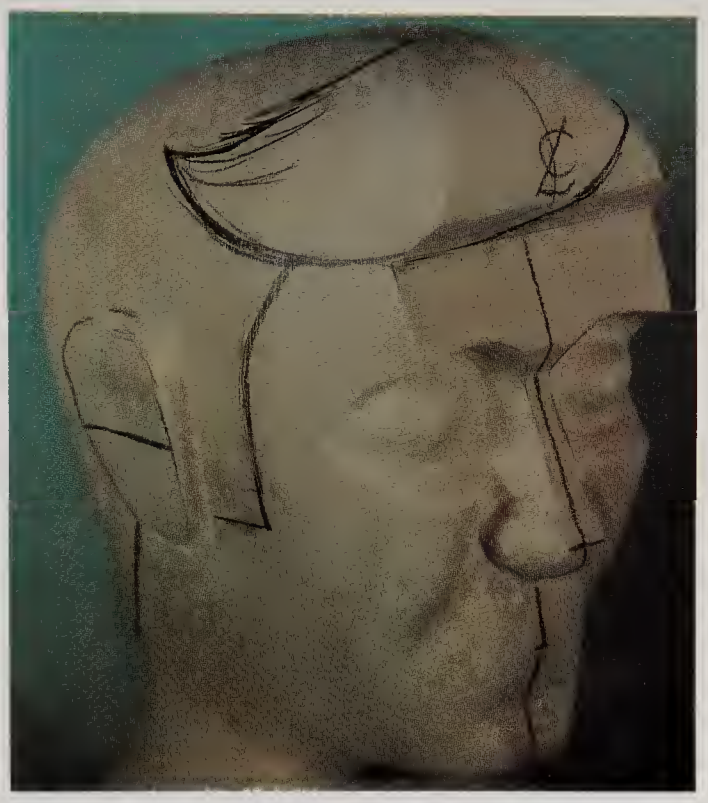


g) rough shape mouth mound



h) shape outline of ear

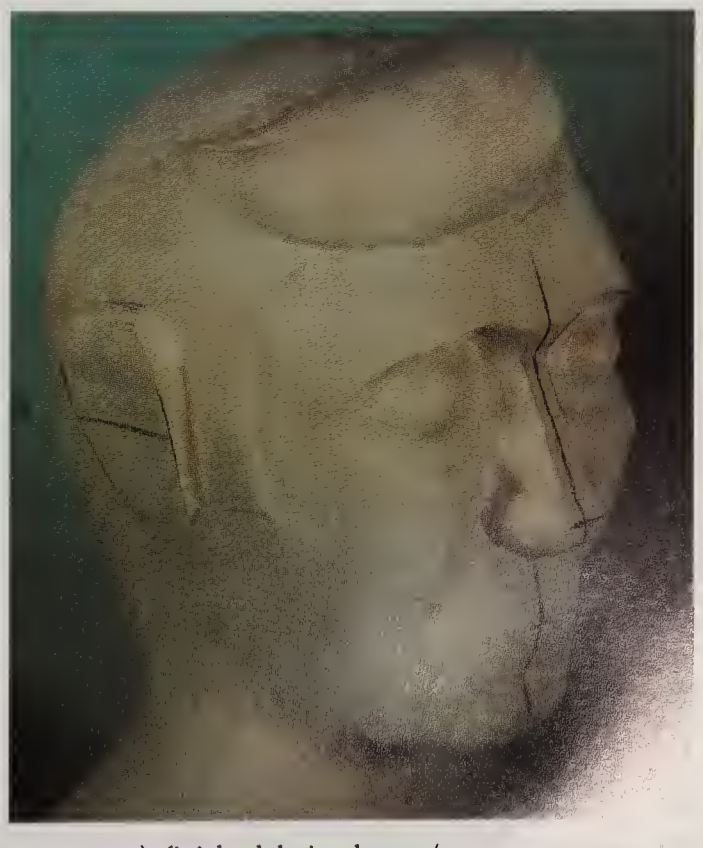
5) Layout



a) edges of hairline and general shape of entire hair mass

(consider the entire hair mass and overall hairstyle at this time—the part, the sideburns, the direction or flow of hair, overhang at nape of neck and forehead, and any other outstanding features that will be included as a part of the finished carving)

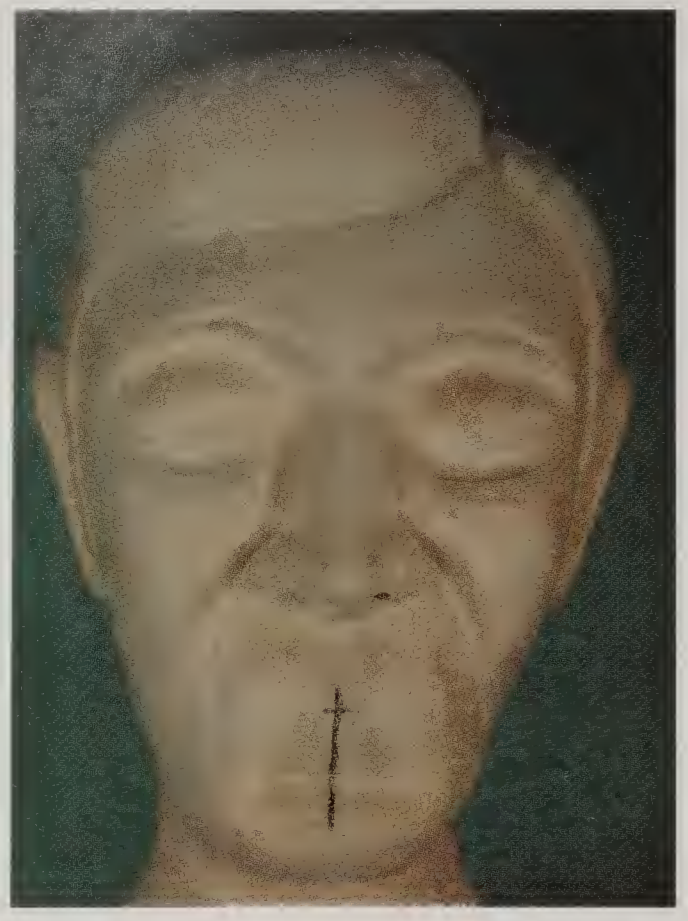
6) Carve



a) finished hair shapes/masses, [illegible] hair overlays, waves, and curls.

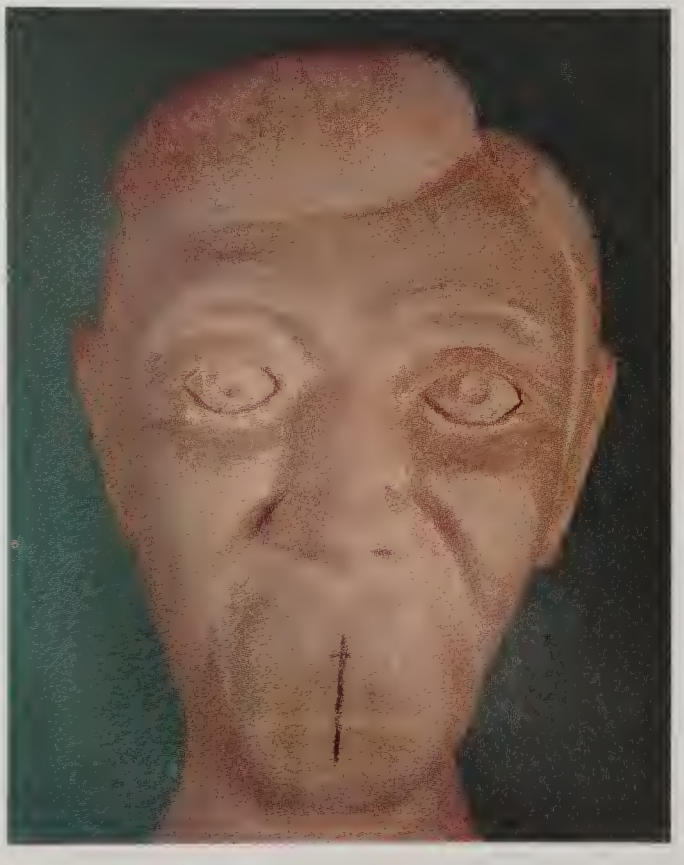
(see Shaping and Texturing Hair)

7) Layout & Carve



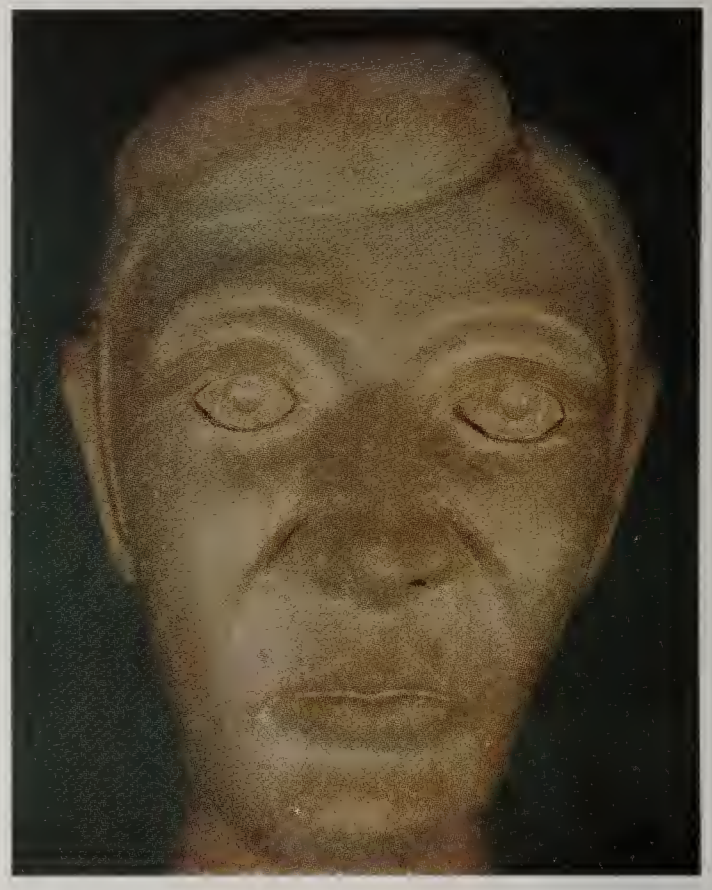
a) finished shape of nose
(see Nose Worksheet, Carving Sequence, and Reference Photos)

8) Layout & Carve



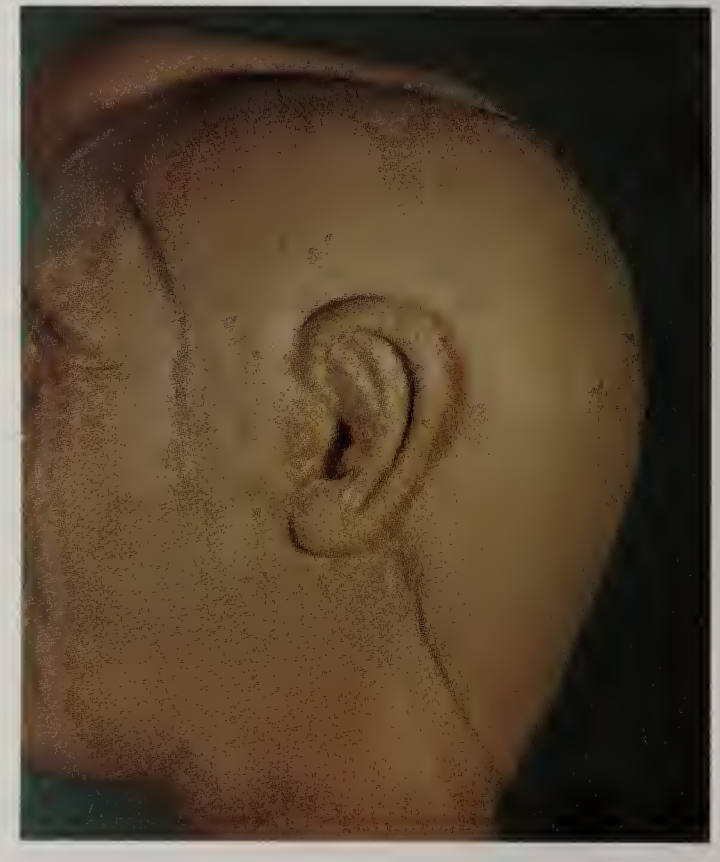
a) finished eye mounds and eyes
(see Eye Worksheet, Carving Sequence, and Reference Photos)

9) Layout & Carve



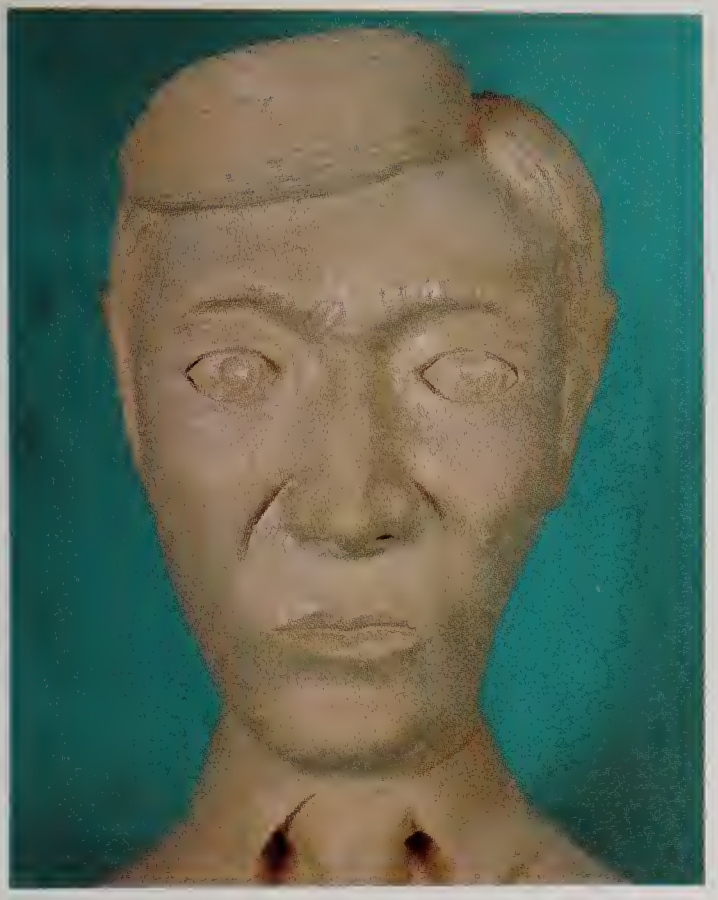
a) finished mouth mound, mouth, naso-labial folds, and chin
(see Mouth Worksheet, Carving Sequence, and Reference Photos)

10) Layout & Carve



a) finished ears
(see Ear Worksheet, Carving Sequence, and Reference Photos)

11) Layout & Carve



a) final shaping and depths for facial depressions, such as hollows of temples, cheeks, tear pouches, and area above the chin.

b) final shaping and heighths for raised facial surfaces such as chin, cheeks, and forehead.

(see **Humps and Hollows**)

13) Layout & Carve

a) appropriate wrinkles and age lines

(use caution as to how many and how deeply you carve in the wrinkles/age lines—if you want a young face, go easy on number and depth of the aging lines. Consider the age and look of the face you want before you carve)

(see **Maturity and Aging**)

12) Layout & Carve

a) finish texture of hair and eyebrow masses
(see **Shaping and Texturing Hair**)

How to Develop an Original

For those of us that can't draw worth a mention, it is very difficult to transfer a mental image to a two-dimensional image, or, make a drawing of it. Strangely, many can carve what they can't draw, but it takes a two-dimensional template or pattern of some kind to allow them to begin to create in the three-dimensional domain, or, carve the image in the round. I sometimes envy those who come from a drawing or cartooning background, who, if asked to draw a nurse, a plumber, an old man, or whatever, can not only draw the subject realistically, but can caricaturize the subject, and still enhance the drawing by putting the subject in any position or mood that they have a mind to.

I often have to drag the image out of my mind and prepare it for creation in the three-dimensional zone. To do this, I must first laboriously make some representation on paper before I can cut out a blank and allow my mind to visualize, organize, and then decide,
"Sure, that's easy to carve."

DISSIMULATION
A LESSON IN CHEATING

When I give a seminar, as soon as we get by the basics and begin the major project, I push the participants for originality. As we commence the project, I counsel them to change it as they see fit. "Don't be afraid to originate," I urge. "If you don't like the short hair style, change the working drawings to make a long hair style, or a no hair style, or a beard, or a mustache, etc..."

On clothed, full-bodied figures, if you don't care for the long sleeves, change the working drawing to short sleeves and bare arms. If you want shoes or sneakers instead of boots, or bib overalls or suspenders instead of a belt and loops, sketch them on the working drawings, then carve the blank that way.

"Make the carving one of *your* originals," I preach, and the usual response to my sermon is, "that's easy for you to say, you can draw!"

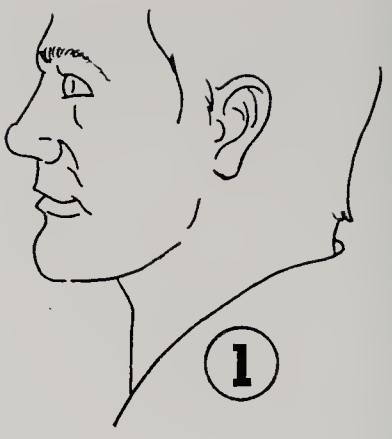
The truth is, I have never been able to draw to my satisfaction. Strangely, I can carve what I see in my mind far better and to greater detail than I can draw it. I can carve a robin, with all its feather groups puffed out against the chilly Spring wind. I can carve that bird almost to infinite detail with ease and enjoyment, but it takes great effort to draw the general shape of the bird itself, let alone any feather detail. This effort usually involves a tracing method that allows me to keep the best results of my drawing/tracings and allows me to redraw and/or reposition what I don't want.

The first time I showed a group this easier way around the struggle to draw and change what they wanted to carve, they tried it, and one older man exclaimed, "Look at this! It's so easy it's almost like cheating!"

We've decided to call the method *dissimulation*, simply because it sounds better than *cheating*.

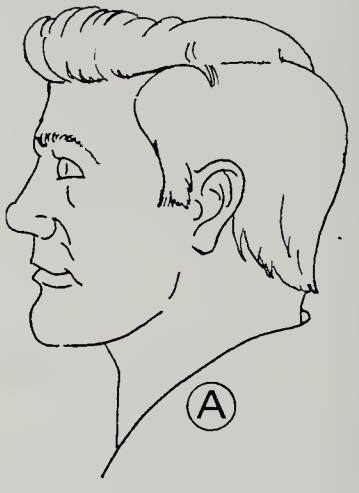
The following outline is offered as a guide only for those who wish to originate, but have difficulty in drawing what they perceive in their minds. It is offered as an example of how a simple facial outline can be transformed into as many different characters or individuals as the imagination will allow.

As I recall, I traced the initial outline from a photographic advertisement in an outdoor magazine. I have since come to prefer taking my own photographs of live models from the front as well as the side.

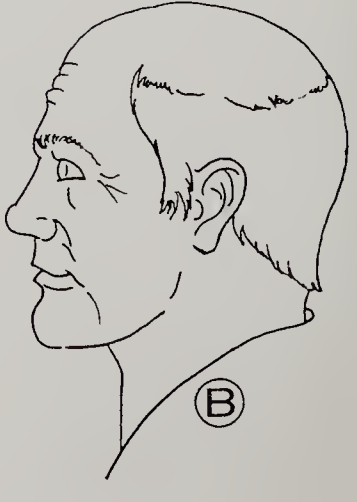


Initial Tracing

The drawings on pages 48 & 49 have been reduced to 75% of the author's original size. To restore to that size, enlarge to 133%.



Initial Tracing with Hair



Initial Tracing without Hair

Initial Tracing with Hair and Beard

Initial Tracing as Sailor

Initial Tracing as Cowboy

Initial Tracing as Soldier

Initial Tracing as Deacon in Derby

Initial Tracing as Business Man

Procedure

The following steps can be applied to a full bodied figure as well as a face or bust.

1) Decide on a subject.

2) Decide what position the subject will be in, what action is intended, and/or what the subject will be doing.

3) If you are working from someone else's drawing, a photo, or a working template, carefully trace the outline and whatever detail you wish to keep onto a piece of quality tracing paper. Call this the initial copy.

4) Lay a blank piece of tracing paper over the initial copy, and draw a change over one area. For example, if the change is a hat, draw a hat, then pivot or bend the traced hat on the head by moving the drawing over the initial copy.

Whatever you want as an addition, the same system applies, draw or trace over the initial copy. Keep each area of change as small a possible, and concentrate on that area until you are satisfied. If it doesn't look right the first time, do it over again. Remember, you've always got the original.

5) Redraw only that area you wish to change, position it, redraw it if necessary to improve it, then add it to your drawing by tracing the remaining part of the initial copy to it.

Maintain anatomical accuracy by applying anatomical axioms and proportion. If you can't draw the change you want out of mind, use any reference material you have as a copy.

Keep in mind that none of us look the same. Thank heaven for the diversity of size, shape, and shade we have available to carve and paint. Not only are we different from person to person and feature to feature, but within pairs of features or from side to side on the same feature.

These differences work for us on the one hand and against us on the other. Because a carving is static, meaning that it is immobile, rigid, and passive, it doesn't have movement to escape detection of any flaws or errors by the carver, or differences from the norm that were a part of the subject being carved. For example, the nostril openings differ in shape and size on the same nose in reality, but if they are carved or sculpted any way but with a symmetrical shape and size, it detracts from the carving.

If you are a beginning carver, or one versed in carving technique, but not facial anatomy, don't attempt an absolute likeness carving until you gain a complete understanding of anatomy.

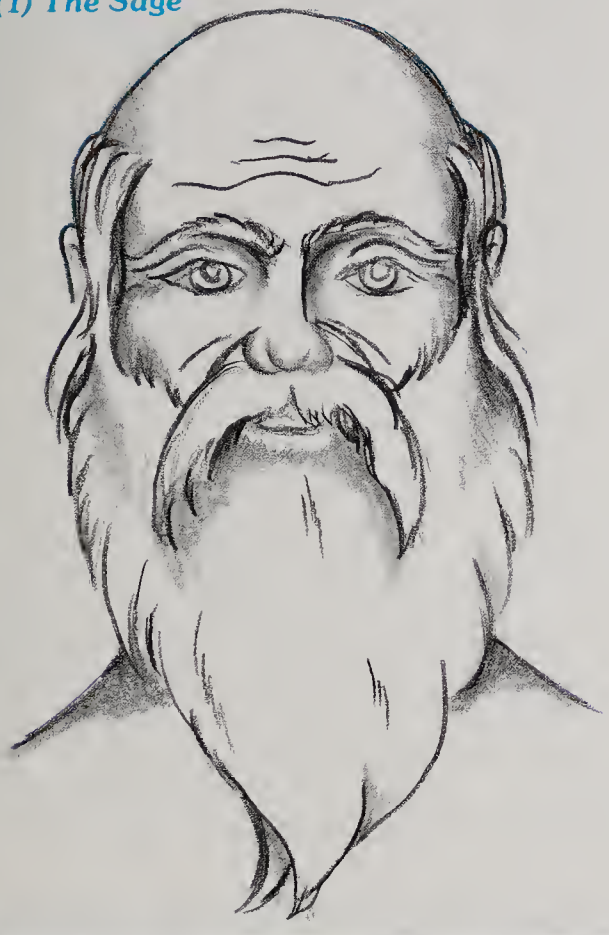
You may be asked to carve someone's mother, sister, relative, or loved one, or someone well known to the recipient of your work. As is often the case, the subject to be carved may either be deceased or far removed from where you might have a chance to study his/her features first hand, and the only references you have may be a few old photos to effect a three-dimensional likeness from.

Before you accept a commission such as this, don't forget that the person who commissions you to do the carving, or the recipient of the carving will have had, in all likelihood, a lifetime to cherish, study, and become familiar with every minute detail, expression, and nuance of that face that you have been asked to carve from a few photographs.

Establish strict criteria for commissions such as these, for they are the most difficult of all.

Feature Bust Carving Projects

(1) The Sage



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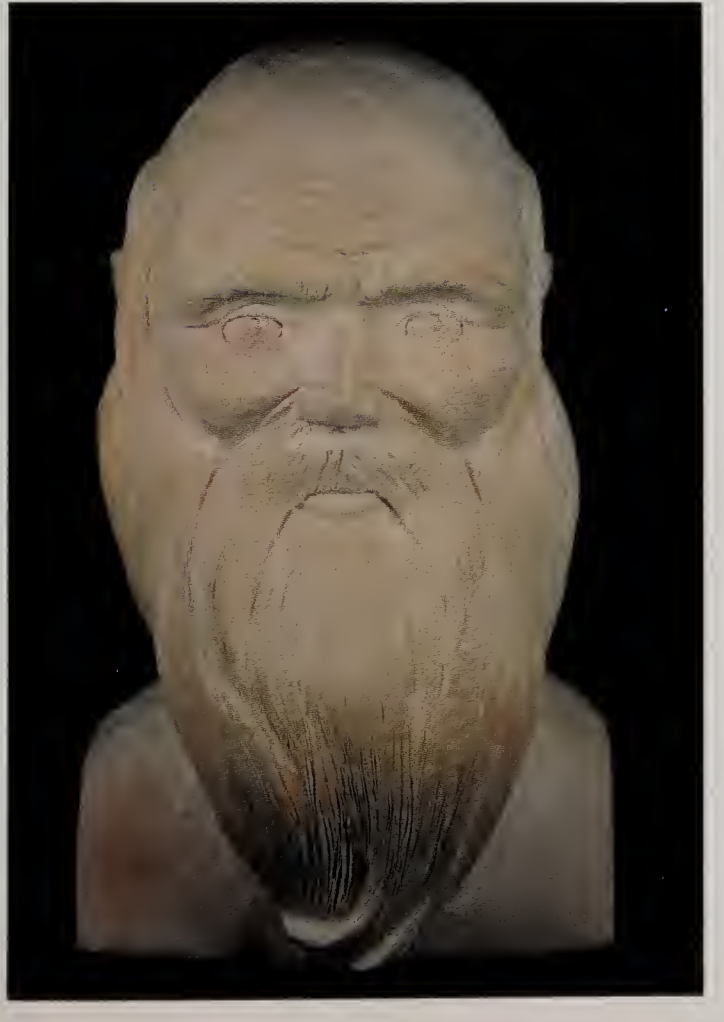
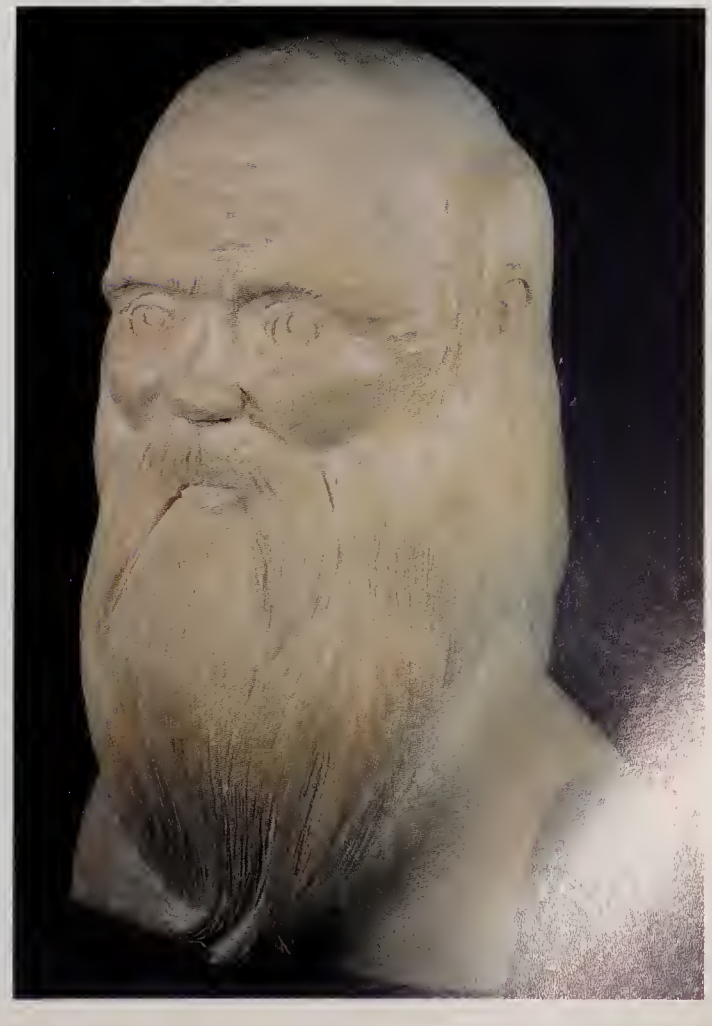
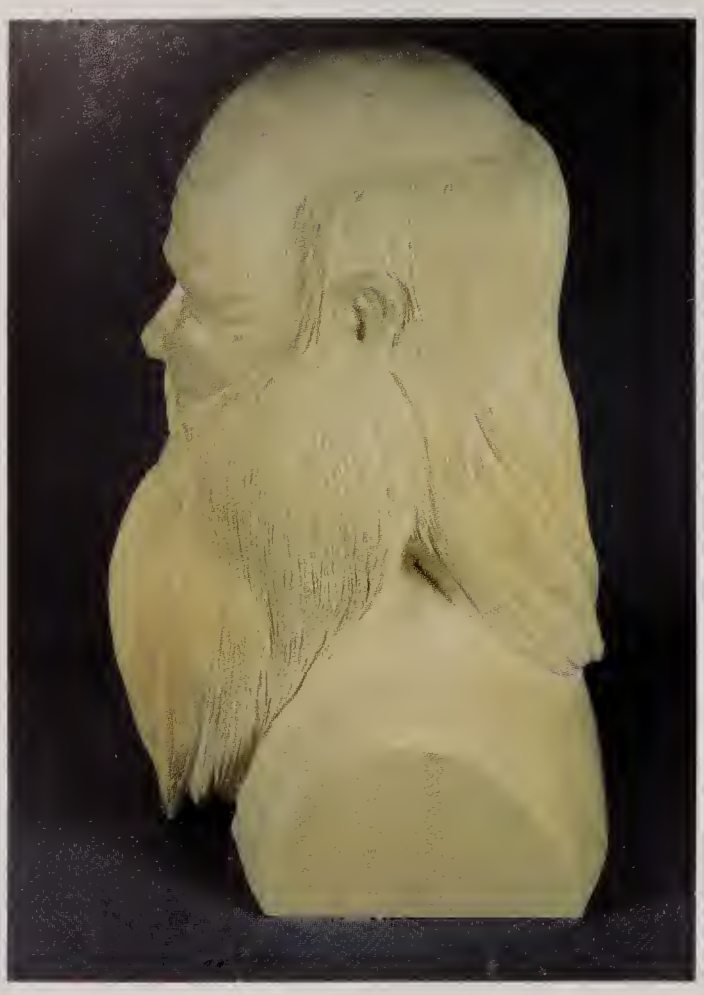
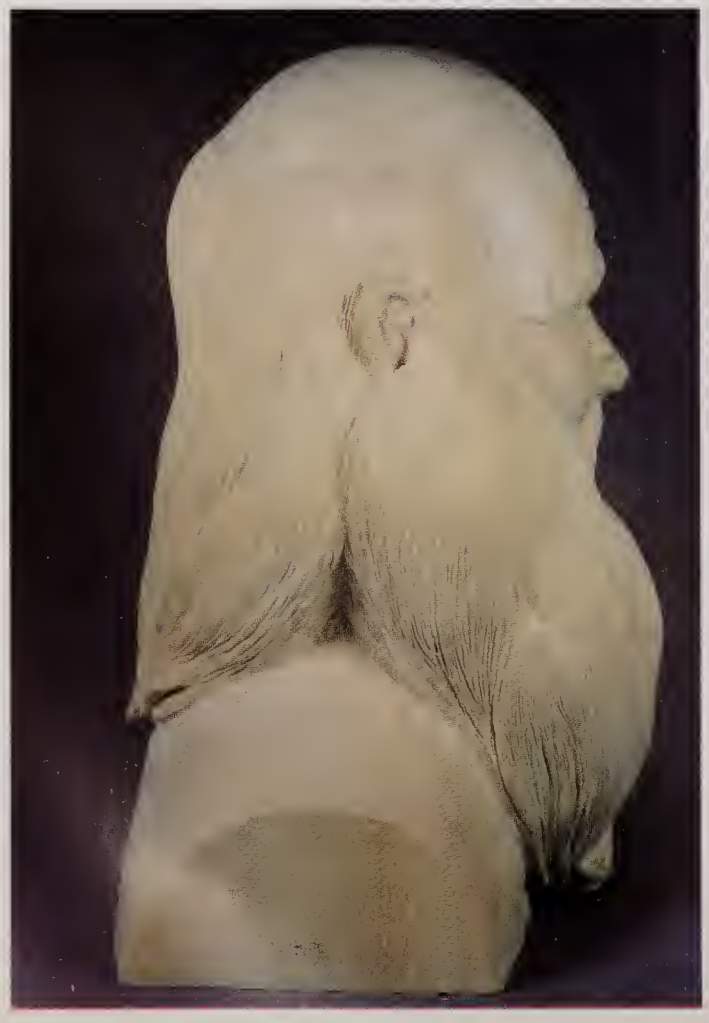
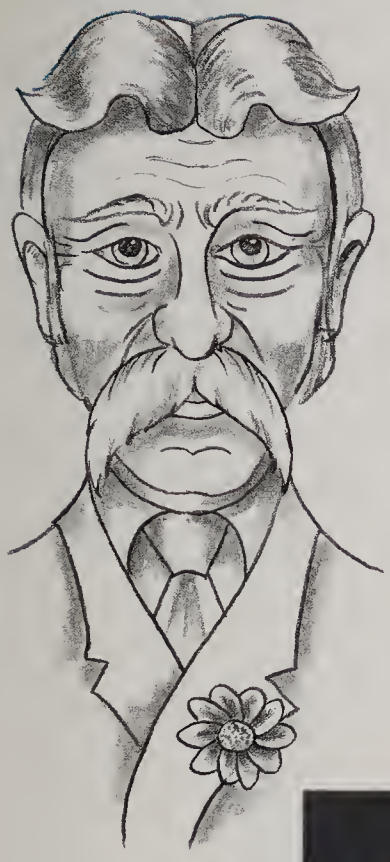


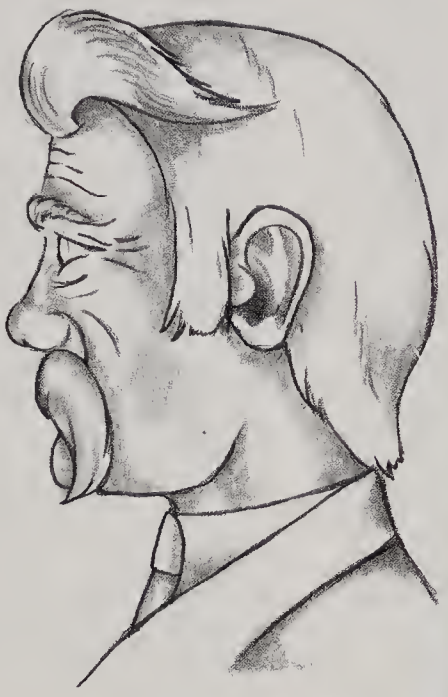


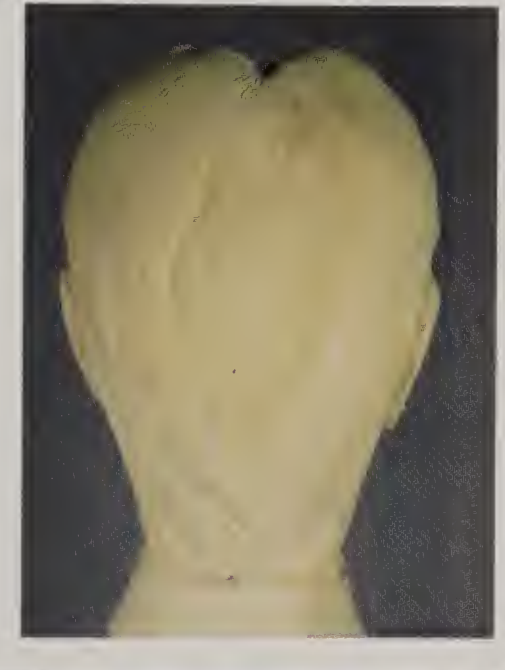


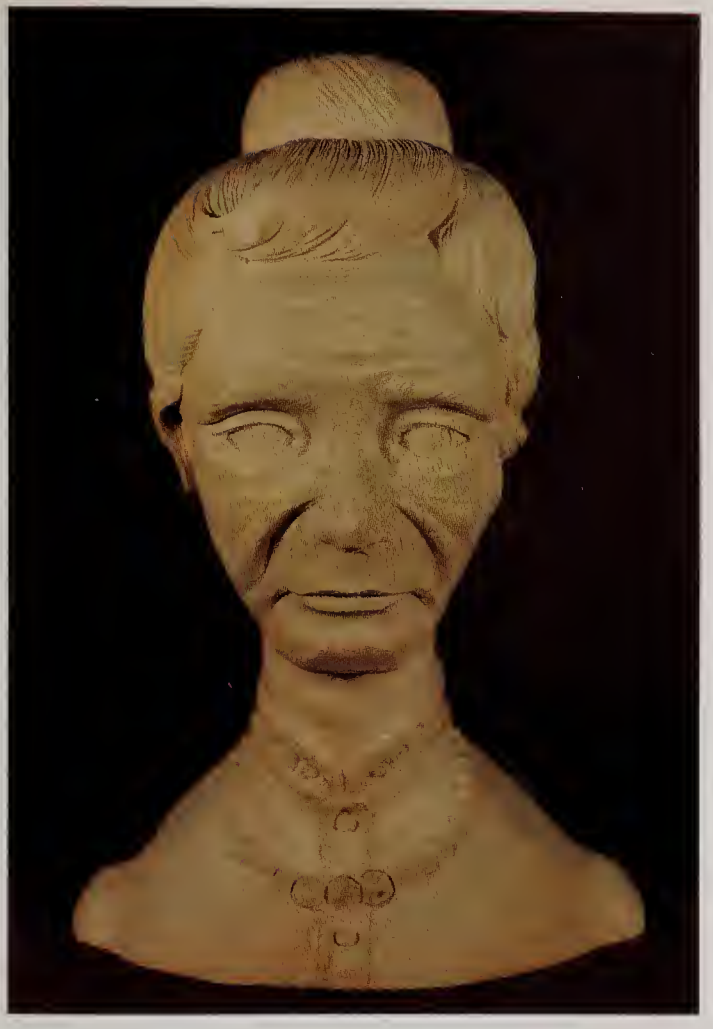


(2) The Old Timer

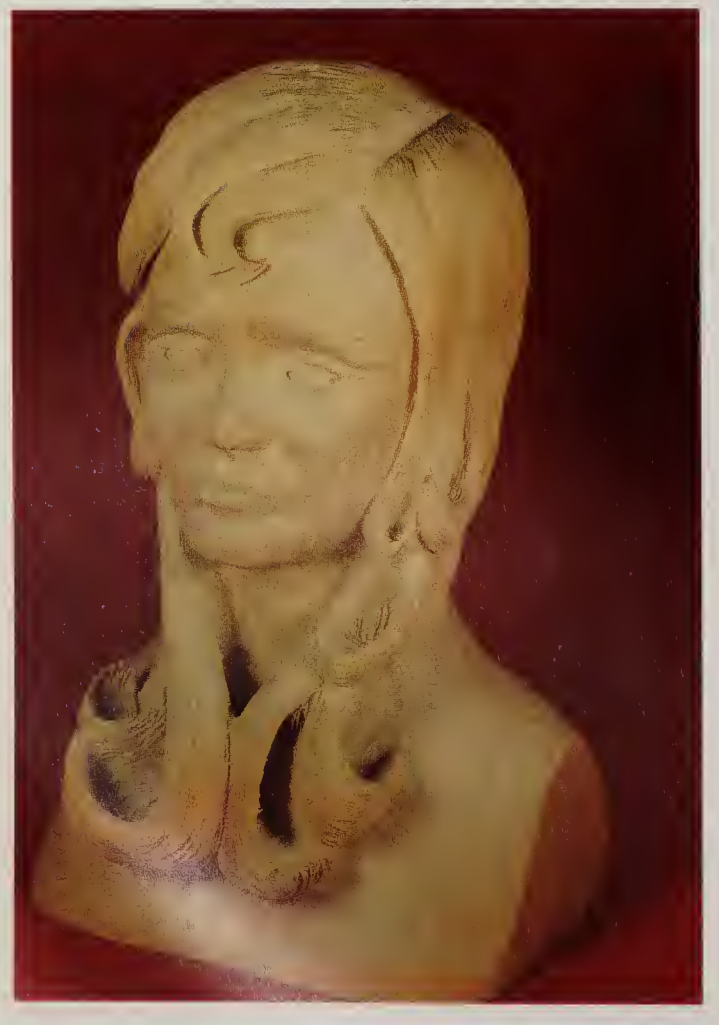




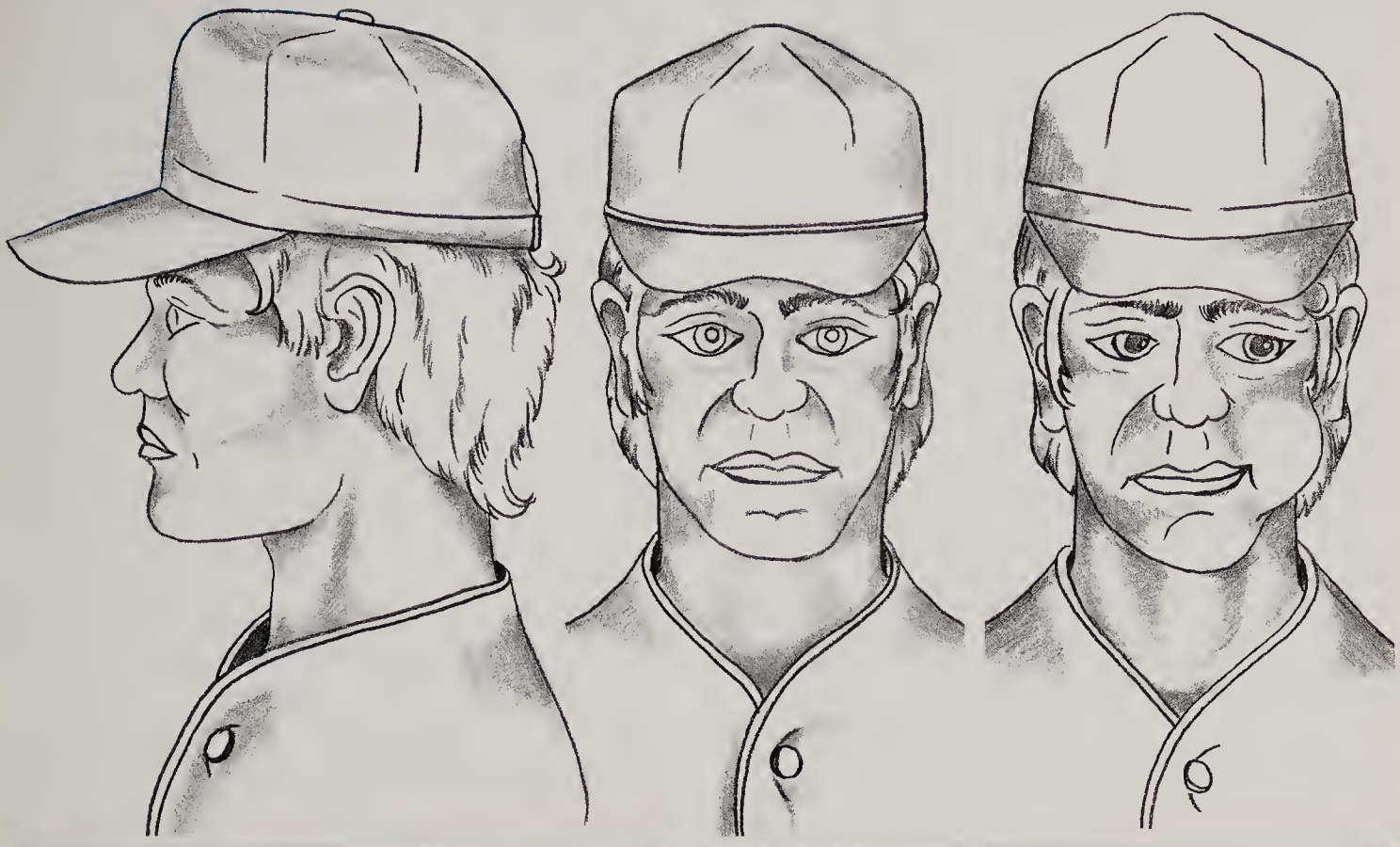


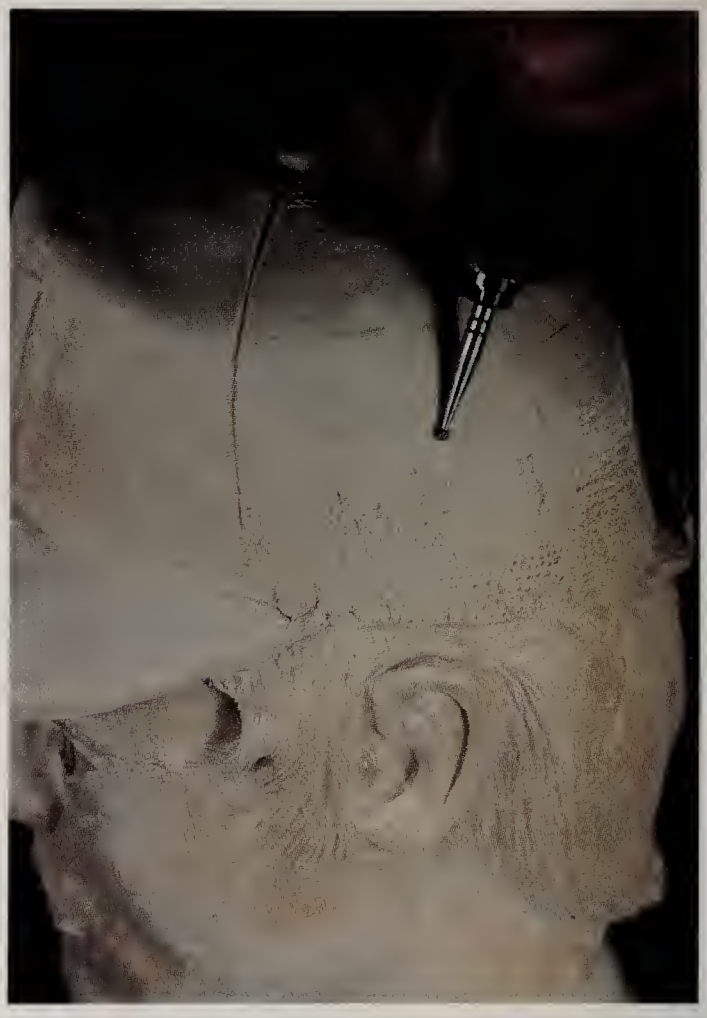


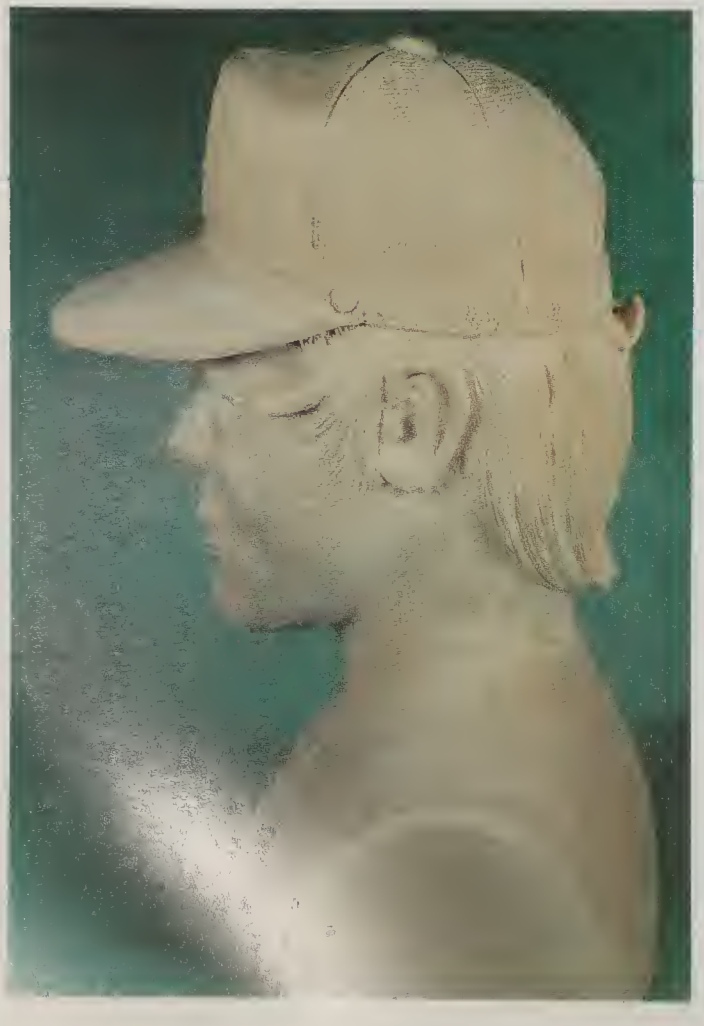
(4) The Country Girl



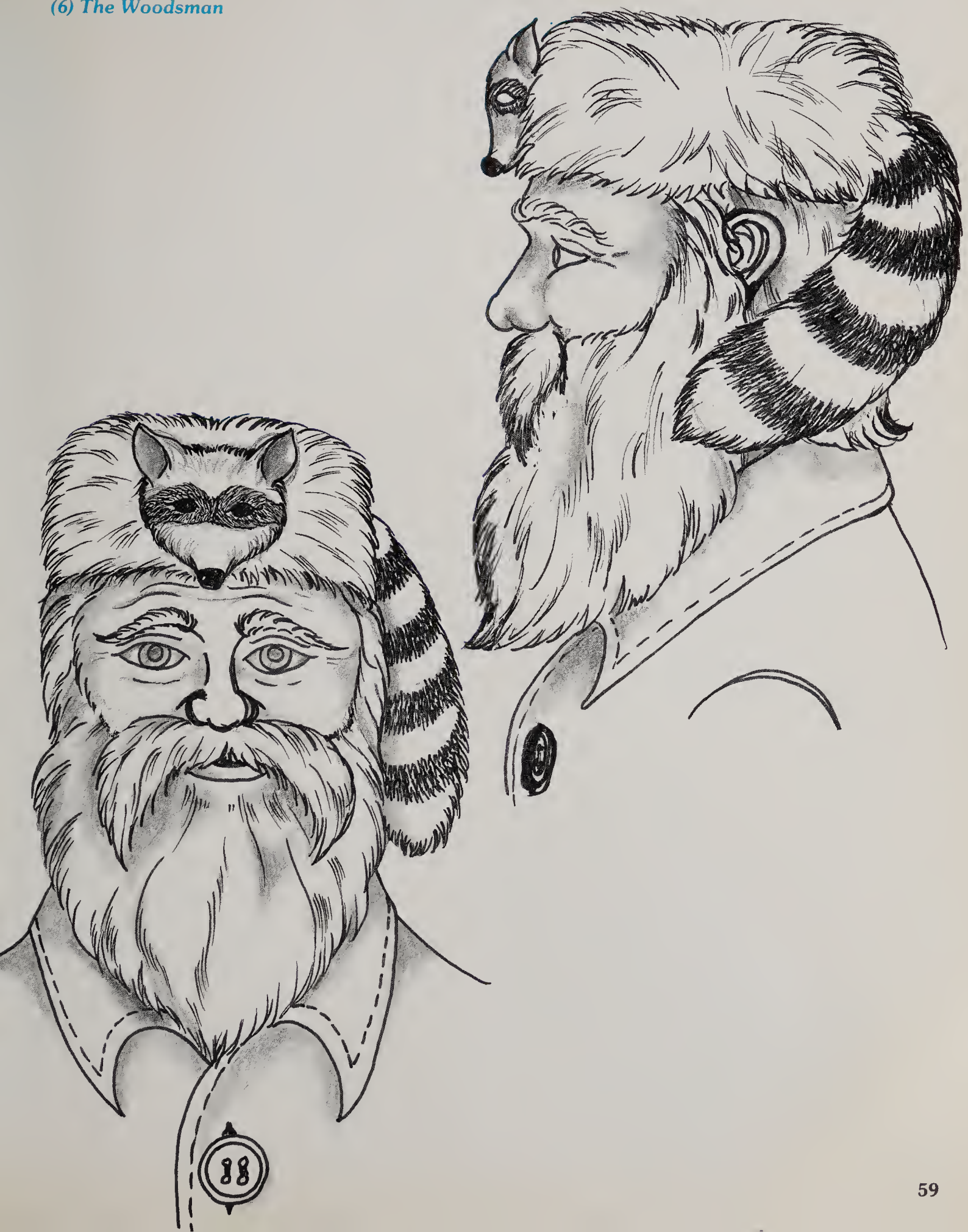
(5) The Baseball Player

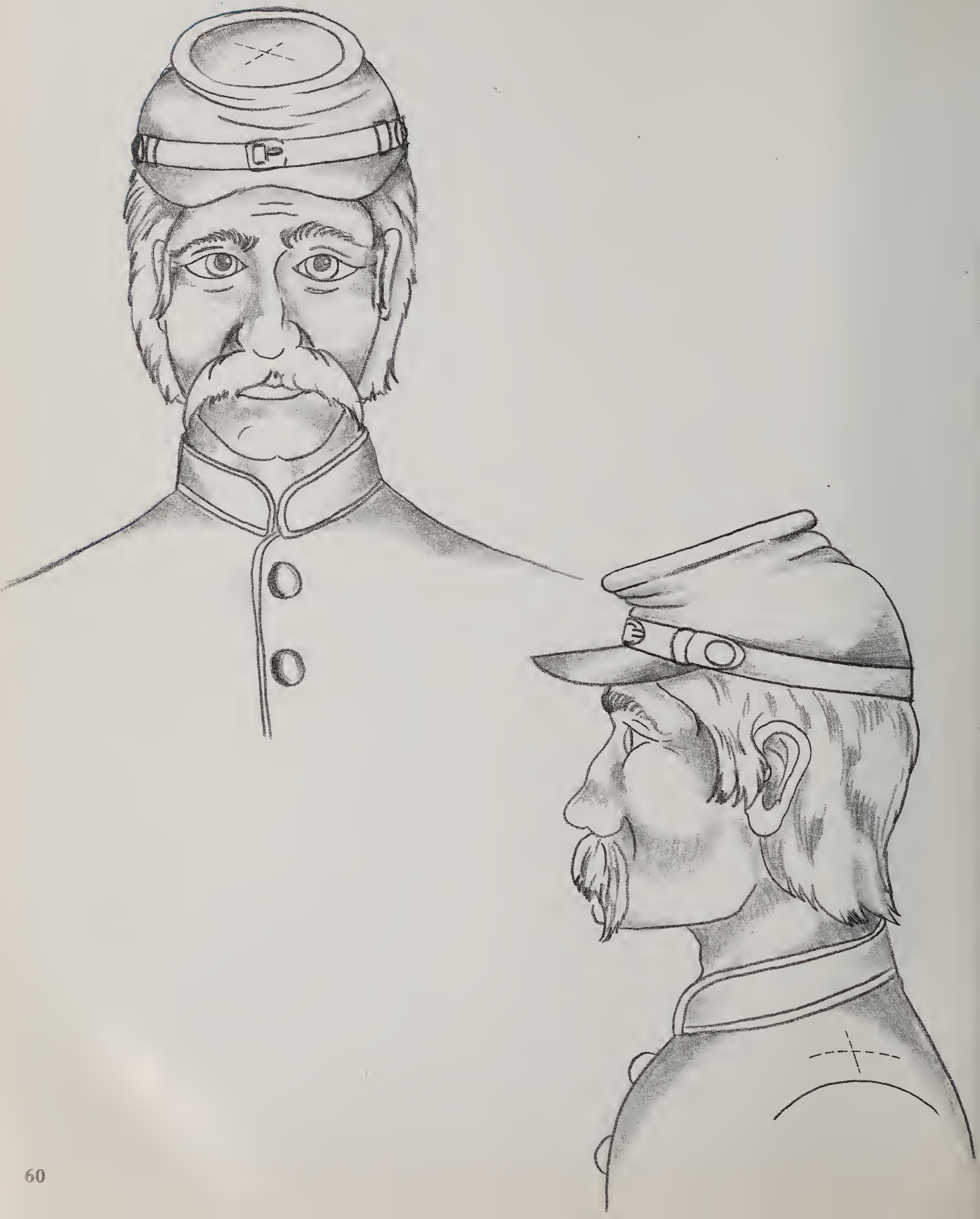




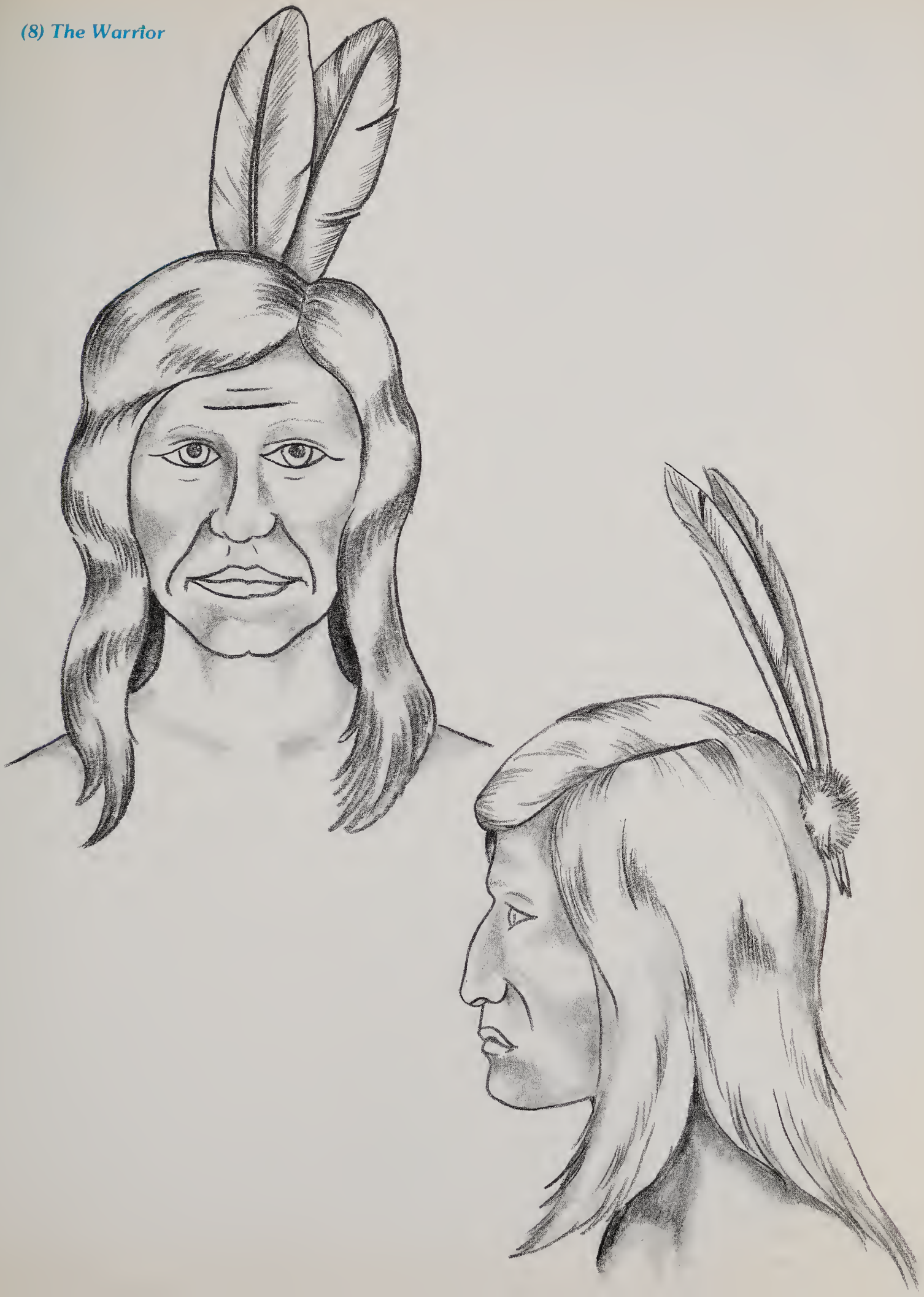


(6) The Woodsman





(8) The Warrior



More Carving Books from Schiffer Publishing

Caricature Relief Carving with Larry Green. Larry Green. Pattern design by Mike Altman. Photography by Steve Smith. The "Misty Creek Carvers" have combined their talents to create a host of original caricatures to give beginning and experienced carver hours of carving enjoyment. The caricatures are carved in the relief style from 3/4" wood. The carver will benefit from Mike's expertise in caricature design, Steve's full-color photos and Larry's step-by-step carving instructions. Each step to carve a female graduate, a cowboy, and a male basketball player is illustrated with a full-color photograph and helpful description. The book features 22 additional patterns, including a nurse, tourist, salesman, Uncle Sam, bride and groom, preacher, scuba diver, hunter, golfer, and more. A pictorial gallery includes completed carvings of all patterns featured in the book.
Size: 8 1/2" x 11" All color 64 pp.
Over 300 color photos 23 Patterns
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Carving Traditional Woodspirits with Tom Wolfe. Tom Wolfe. Text written with and photography by Douglas Congdon-Martin. When Tom Wolfe published his first book on Woodspirits, Tom Wolfe Carves Woodspirits and Walking Sticks, we had no idea how popular it would become. Thousands of people saw it, bought it, and asked for more. So here it is, a new collection of Woodspirits, this time done in the traditional Bavarian way. Carved from a section of a tree, the branch forms the hat. Of course Tom brings his own inimitable style to the carving, making it lively and creative. As always he takes the carver step-by-step through the carving process. There can be no pattern, because each Woodspirit springs from a unique piece of wood. But the technique and the sequence of carving can be easily learned through the step-by-step color illustrations. A gallery of several Woodspirits will give the carver many ideas about the variety and variations they can obtain when they release the Spirits from the Wood.
Size: 8 1/2" x 11" All color 48 pp.
Over 200 color photos soft cover
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