NEGATIVE REEL 3

Herb: SCENE 1 - This as I remember is a continuation of the last scene that we had on the other tape where you were working with glass.

Don: This is a continuation of pressure work demonstrating the detachment of parallel flakes. One will notice there will be a little nibbling of the edges each time the artifact is moved forward. There is a slight nibbling on the edge to get enough material to prepare a platform for seating the tool. This looks fast, actually removal is much slower. Notice the flakes drop down each time the artifact is moved ahead.

Herb: SCENE 2.

Don: This is another style of flaking technique. The back of the left hand is held on the inside of the left leg. Fingers are protected by a piece of leather and the flakes are taken off between the index and the second finger of the left hand. This provides space between the fingers for dropping the flake and flakes will not crush. The flakes may be recovered in their entirety for they are not fractured or broken. This is a diagonal style parallel flaking. This method produces flakes in reverse and simulates the same technique of a left handed worker, as shown in a previous scene. The tip of the pressure tool will nibble along the leading edge of the projectile point.

Herb: When we looked at this before you made some comments about the positioning of the thumb on the pressure tool, will you go back over that again?

Don: Using this method, the projectile point is secured by the thumb, unlike other methods whereby the artifact is secured by the four fingers. In other positions, the thumb is free and it is not used for the pressure flaking. With this method, the thumb withstands all the pressure. If the film is run slowly, you will notice the upward stroke of the pressure tool towards the thumb is removing a little stone to prepare a platform. Now the pressure is being applied inward and downward. Now there is a little nibbling off to move the edge back

so it is directly in line with the next ridge. The next flake is taken off. You will see a repeat of this same technique of moving the edge back to get it in line. Now the tool is going to be seated. The pressure is inward, downward and diagonal toward the tip. These flakes are started at the tip and will run towards the base.

Herb: SCENE 3.

Don: This is a preform that was produced by using direct freehand percussion. This is the first stage of retouching to remove all of the irregularities. If there are any hinge fractures left on the surface, they can be eliminated by flaking from the opposite edge and guiding the flake to meet these hinge fractures. This is the normal technique that I use for pressure flaking. There are numerous and different techniques. This happens to be one particular technique used for pressure flaking.

Herb: Don, I want to call attention to something that we talked about before and, that is, the action of the knee. I will turn this back on so that they can see the action of that knee.

Don: Notice the placement of the hands between the two knees. Each knee is pressing together scissorlike, and the hands are supported against the inside of both thighs, bringing pressure between the two knees and against the hands. But the downward, as well as the inward, pressure is controlled by the hands. There is enough flexing of the flake to allow one to control it during the detachment. The platform preparation is much the same as the one we just saw only it is in reverse. In this particular technique, the shearing method was not used. The edge was ground and, therefore, it is not necessary to prepare a platform each time a flake is removed. These flakes were removed by direct downward and inward pressure and this technique leaves a deep bulb and pronounced ridges on either side of the bulb of pressure. This demonstrates hand-held pressure

fluting. This particular example shows how I apply the inward pressure as I very gradually apply the downward pressure in order to avoid breaking the tangs off when the pressure is applied. This pressure flaking was well controlled and, therefore, it left the fluting flake attached to the artifact. The channel flake is not detached, but it has been freed from the base of the artifact. This shows the fluting flake still attached. If the flake had progressed to the distal end of the projectile point, it would have removed the entire tip. But it was stopped, purposely by the operator, at a certain position. It should have carried slightly further, but this is to demonstrate the type of technique used in hand-held pressure fluting.

Herb: Don, you mentioned that you purposely stopped the flake. How did you stop it from going and taking the tip off?

Don: It's a touch that one developes. One becomes aware of the exact time and he immediately relaxes the pressure. One must preprogram himself for this operation. Terminating a channel flake in this manner is called a step-fracture. It is not a hinge fracture, because the hinge fracture has a rounded end. This is a square break and the flake was pulled out. If I had continued to apply additional pressure, the flake would have followed on through and would have taken off the tip. It is very difficult to control the flake and terminate it at the right position without removing the tip.

Herb: You are talking about the pressure of the instrument or the pressure of your thumb against it?

Don: The pressure of the instrument against the platform on the artifact.

Herb: So I assume that when you felt it beginning you released the pressure of the instrument and that caused it to flute out.

Don: Time interval of channel flake parting from the base is very minute. I mean by this that the period of time to release the pressure is so infinitesimal

that it takes a great deal of practice to develop a touch that will leave the flake still attached.

Herb: If the person knows that in order to cause a short fluting out just releases the pressure. If you would have followed through with your instrument, you would have taken it all the way down the material?

Don: If I had allowed the channel flake to travel a little farther before releasing the pressure, we would have had a much better channel flake and our step-fracture would have been nearer the tip, rather than where it is. But being able to hinge fracture a channel flake and stop it at just the right position is difficult. The stopping is hard to gauge and it is difficult to repeat this technique with every attempt. A rudimentary fluting can be accomplished by this method. It is very doubtful that the Lindenmeier folsom was ever produced with this method. Producing a Lindenmeier folsom requires the help of an anvil and support of the tip in order to feather the flake out to the distal end. Mechanically, it is not possible to accomplish the Lindenmeier folsom fluting technique by the use of this method.

Herb: Don, now we've discussed a little bit before about the protection you give your hand, you've mentioned that obsidian is extremely sharp. And here is one picture that shows a good detail on how you set up your material to protect your hands. What do you have, just a flap of leather with a hole for your thumb?

Don: That is ordinarily all the protection I use for pressure retouching to remove very small and parallel flakes. But, here you will notice in the palm of the hand there is a folded piece of leather to support the tip of the point so it will not be pushed through the hand.

Herb: SCENE 4 - What do you have here, Don?

Don: This is a random flaking technique. I am preparing the platform for each individual flake. The percussion preform is turned over and examined for imperfections and irregularities preparatory to removing the heavy ridges left by the percussion work. This is the initial work to shape the preform in a

regular manner so that ripple flaking may then be done. This is called the primary retouch method. The flakes are not regular, but they are making the artifact fairly uniform so that it can be pressure retouched and be finished into a smooth and regularly shaped artifact.

Herb: SCENE 5.

Don: This scene shows a style of pressure flaking. We need some extreme close-ups to show the detail of how the pressure tool is placed on the edge. This edge has been turned then ground, or rubbed, with an abrasive stone to make a very regular edge. This shows pressure being applied directly inward. The pressure tool is held in a different position even though it appears that this scene is a repeat of the others. The tool is thrust almost directly inward. But notice that the angle of the tool is changed to compensate for the lack of less outward pressure. This will cause the flakes to feather out more easily, without leaving a lot of step-fractures on the artifact.

Herb: Don, when you say inward do you mean right into the edge of the material?

Don: Yes, at the proper angle.

Herb: The proper angle is about what?

Don: I can't give it to you in degrees, Herb, and the angle can be calculated only by experience and practice. But, the angle of pressure is quite different from other techniques and the angle of force follows the ridge left by the previous flake. And then by rolling the left hand slightly, it will cause the flake to break loose at the top then the flake is thrust entirely across the face of the artifact. But there is a little rotation and movement of the left hand in relation to the pressure tool held in the right hand.

Herb: This probably is the point where we would need an animated drawing of some sort to demonstrate this angle.

Don: Right. The tool is placed underneath the knuckle of the right hand, but the thumb is resting on the left hand to insure greater accuracy in the placement of the tool.

Herb: SCENE 6.

Don: This one appears to be a repeat of the technique shown in a former scene of using a deer horn billet held vertically for percussion work. This shows the removal of blades.

Herb: Don, I think one of the things here though that we have that we didn't have in the other scene is a better shot of the way that you are holding the instrument. I think that we have a better shot here of how you are holding your instrument than we did on the other one where we had a better shot at what was happening to the material.

Don: Right. There the flake was removed. You can see the flake shatter a little from too much end shock. You see the undulations here from considerable end shock, but here the flake was removed from the base to the end of the core.

Herb: Don, you mentioned end shock, I want to go back over this again so that we are sure we got it. What causes this end shock and what is it?

Don: My interpretation of end shock may not be ethical and it may be difficult to understand, but the material we are using here has almost perfect elasticity and it has the power to expand and contract. A good illustration may be when one is playing croquet, he places his foot on a ball which is against another ball. Then by striking the ball held by the foot, the other ball will be projected. The same thing happens when you strike on the platform and the flake is detached. The shock from the base of the flake is transmitted the full length of the flake to the distal end, sometimes causing breakage. The force will be projected and your flake will pull itself apart from the contraction and expansion. A blade is sometimes weakened because of these forces set up stresses and strains. A blade tool is not nearly as strong as a core tool because of these internal strains set up from projecting this amount of force on

the proximal end of the flake or on the platform. The material has been compressed and expanded sometimes leaving slight lines of weaknesses. Because of this a blade tool is not quite as strong as one made from a core. When a blade is made from a core, all the external material has been removed without shock to the artifact.

Herb: NOTE: On these definitions we need an introductory shot, or shots, showing samples of what is a blade, what is a core, a lot of things, so that as we are talking about these. This will be more for people like myself who do not understand it as well, but we need a series of shots demonstrating and showing all of the various things that Don is talking about blades, cores, etc. We will pick those up from this script and build this sequence from this script.

Don: This shows the face of the tool. Notice the ridge you can see as the core was turned. The ridge which guides the flake is going to be directly under the point of impact. We'll line it up. This next one should be successful. You had it timed perfect. That was a nice flake, very useful for making a projectile point, a knife, a blade or scraper. Any of these flakes can be utilized for a variety of tools or used just as they are struck off. Notice the flatness of this flake. The billet does not cause the undulation and compression characteristic of the use of a hammerstone. Examine the slight difference between this and some that were previously shown using the hammerstone. The flake is quite flat as you can see from the angle of this example.

Herb: Now, the flatness of that flake is caused more by the instrument than by the structure of the stone, is that right?

Don: The structure of the stone doesn't play a great part in the flatness of the flake. The mechanics and the speed at which the force is applied has to do with the flatness of the flake. This obsidian is struck very fast, because the billet we are using is extremely light. So this is a much faster stroke than would be necessary if a hammerstone were used.

Herb: Let me check my thinking. If I hit that very fast, I have a tendency to get a flat surface, but if I hit it slower and with a heavier stone I'll stand a chance to get a curve surface.

Don: It will start to undulate as the force is dissipated. And if the force is dissipated before it comes to the end of the core, it will result in a hinge fracture and not a step-fracture and it will move out with a rounded end on the end of the flake and it will ruin the core. If this happens, one must recover the core by removing additional material from the base of the core in order to have a ridge to guide removal of the next flake. This scene is the use of a hickory hammer handle. To show the effect of a wooden baton or billet. This handle is quite light, for this heavy blade removal. However, a billet of wood can be used if sufficient speed is used for this process, and a flake can be detached. This produces a distinctive type of flake. The bulb at the proximal end is usually disfused slightly. If this same technique is used on a bifacial tool, the edge of the bifacial tool will imbed itself in the wood and be pulled off, leaving the very slight marks of bulbs of force. This is particularly adaptable here because, with a tool of wood, one doesn't have to attain nearly the same degree of accuracy.

Herb: What happens if you hit too far inside with a wooden tool, no flake will result or does it fracture the stone? So the billet has been good for experimental work, because the accuracy is not nearly as important by using a wood billet as it is by using a hammerstone.

Don: This was successful and hit just right on the edge. It removed a blade entirely. There were some little tears on the sides. You can see some fragments flying in the air, but the blade was removed in its entirety. Notice the slight shattering of the proximal end of the blade from shock. The hit was delivered too far inside the core this time, and no flake was detached. It was changed slightly so that the operator can line up the ridge with the direction of the blow. If you noticed the flake, there was a nice long thin one that extended from the base to the tip of the core. There are not too many undulations on this blade. Had the billet been slightly heavier, there would

have been even less undulations, but the tool is a little light for this heavy blade removal. Notice the left hand automatically braces itself and moves the core into the tool to counteract the force that is going to be delivered by the billet. Notice the direction of the flake as it is being removed. See how it will follow and bend around the lower end of the core as the tip is detached. This method seems to work considerably different than where one is applying a downward and outward pressure. The flake is not removed nearly as fast. I don't know just what the speed of the film is here, (Herb: it is 64 frames). Well, this is quite a slow speed compared with the highspeed Red Lake camera, yet it can still be observed as to how the flake travels from the base outward and as it is bent over the surface of the core.

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COMMENT

Don: One thing that possibly one fails to do is to show the character of these flakes after they have been detached and what they look like. All we are doing, at present, is just showing the motions. But we do have these flakes available, we saved these and, I think, they can be photographed and associated with these set of films.