CHAPTER_6

TECHNICAL POINTS, SUGGESTIONS AND SHOOTING PRACTICE

This chapter is aimed at providing archers and coaches with supplementary information on the various important technical points addressed in the preceding chapters. In addition, it is also an aid in identifying common faults and provides suggestions how best to correct these.

Further, various shooting exercises and practice drills are discussed, which are practiced by the Korean National Team and the Australian Olympic archers, but can be tailored to suit the skill level and ambition of each individual archer.

CHAPTER_6

TECHNICAL POINTS, SUGGESTIONS AND SHOOTING PRACTICE

1_BODY POSTURE

Photo No. 54_Posture / Yoon M J

Maintaining a steady center of gravity position during the shot is very important, not only for accuracy, but also for consistency from shot to shot.

To assist in maintaining a consistent and repeatable body posture, archers should visualize that a straight steel rod is going right through their body, stuck into the ground, and exiting through the head. This will assist to keep the body in the same position during the entire drawing and releasing process.

2_SCAPULAE POSITIONING

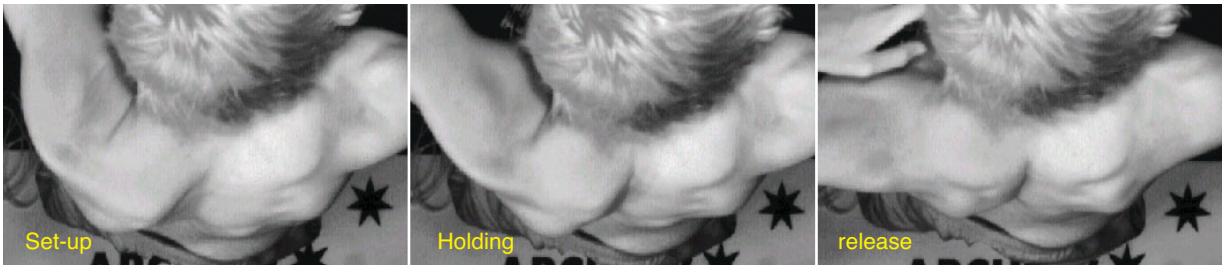

Photo No. 55
_The Scapulae Movement

The three photos of photo No. 55 provide a rare opportunity to observe the scapulae movement of one of Australia's top elite archers, David Barnes (left handed), from set-up through holding and release. At set-up, the Scapulae can be seen to be positioned in the near final position. During holding, the Scapulae are coming closer together and the left scapula comes out further. At release, it can be seen that David maintains his back tension, which is confirmed by the Scapulae coming closer together after the release.

The correct biomechanical positioning of front and rear Scapulae gives a more efficient set up and is crucial to the success and consistency of every shot. When archers view themselves in the mirror when at full draw, in-line with their aim, the right scapula should be visible.

To assist the archer further, a piece of bright tape can be attached to the right scapula (RH archer), so that when practicing the draw in front of a mirror the archer should be able to see the tape when the correct position has been achieved.

Photo No. 56
_ Shoulder Alignment Correction

To aid the archer in achieving the correct scapula alignment, the coach can assist as shown in Photo No. 56.

3_SETTING REAR SCAPULA

It is important to position the rear scapula correctly to be able to maximize the use of the stronger lower Trapezius. This should be done as part of the set-up. This will be assisted by raising the bow when setting-up and then drawing to a few inches below the anchor point. The drawing arm and hand must be raised as one unit, without changing scapula positioning.

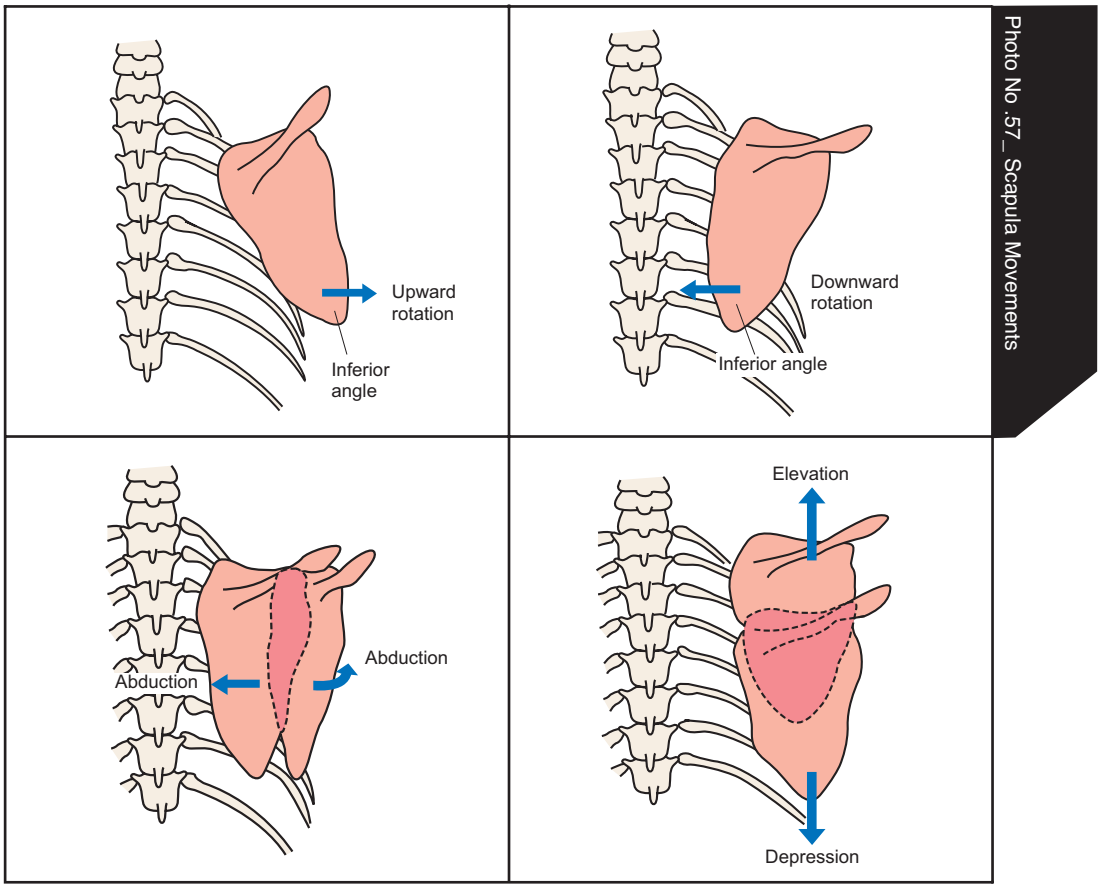

Photo No .57_ Scapula Movements

When commencing the draw, the back of the drawing hand must be in the position that it will sit on the face. Any rotation on the face while coming to anchor will vary finger pressure on the string.

Furthermore, while raising the drawing arm when anchoring, the rear shoulder and scapula must stay in position. Refer also Chapter 3, Step 6 and 7.

4_ELBOW ALIGNMENT

The sketches below show three different configurations of the drawing elbow.

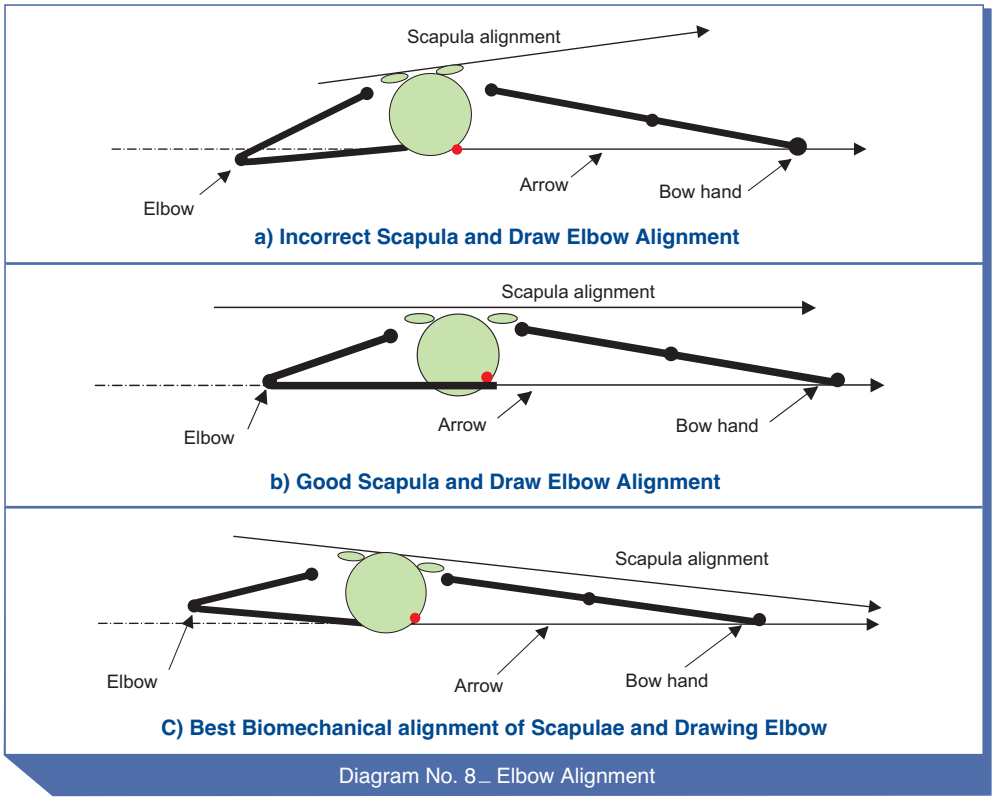

Diagram No. 8_ Elbow Alignment

Diagram 8a) is biomechanically weak, as it does not utilize the bone structure fully and relies more on muscle power to maintain elbow position, causing fatigue and inconsistency. Because of the mechanical forces involved, there will also be a tendency for the hand to come away from the face promoting a forward release.

Diagram 8b) is biomechanically strong, as it fully utilizes the bone structure and muscle power most effectively, not only reducing fatigue but promoting a cleaner more effective and consistent release.

Figure 8c) is biomechanically best. Some archers can get behind the line of the arrow, which makes it easier to execute a good shot, even on the potential "weaker" shots, as mechanically there is a built-in margin for error.

Photo No. 58
– Loading steps / M. FRANGILLI

5_HIPS AND SHOULDER RELATIONSHIP

The shoulders must be rotated such that, when an arrow is laid across the Scapulae, it points to the right hand side of the target (RH archer). Quite often we see that archers will also rotate their hips in line with the target, irrespective of their stance.

Obviously, when that is the case, it is a parallel stance, irrespective of the feet position. The hip position determines the stance. With an open stance, the hips therefore, must be open to the target, as this will also create some torque just under the rib cage, adding to the stability.

6_HOLLOW BACK

This is a trait displayed by many archers and is mainly caused by pushing out the chest when drawing. In addition, this can be further aggravated when archers are instructed to distribute more weight on the balls of their feet. They often accomplish this by leaning forward and moving their hips backwards thereby, making it even worse. To correct this, the body as a whole, should look like it is slightly leaning forward to get the 60-70% / 40-30% weight pressure distribution on the feet, which will position the center of gravity more towards the middle of the feet, providing a more balanced arrangement. In addition, the sternum must be tucked in, pushed towards the navel, when drawing the bow. The latter can be illustrated by having the archer visualize their own reaction, to being punched in the stomach.

7_SIDE ANCHORING

To be able to obtain the correct drawing alignment, it will be necessary to employ a slight side anchor, which will result in a better eye position and drawing elbow alignment.

If the string is positioned touching the tip of the nose and center of the chin, it will be near impossible to come in line as recommended. Additionally, it can result in the head being tilted back or forward.

Care must be taken not to have too large a side anchor as the chin could interfere with the string on release, affecting string harmonics.

8_EYE POSITION

A more face-on position to the target is possible when employing a slight side anchor, which is biomechanically stronger. Even though a more face-on position to the target is recommended, over rotation must be avoided as this could reduce the blood flow to the arteries embedded in the muscles of the neck.

To demonstrate that a more face-on position gives greater strength to the bow arm, carry out the following experiment.

Have the archer stand with both arms out to the side raised horizontally and with the head and eyes looking straight ahead. Tell the archer that you are going to press the archer's left arm down, pushing down on the wrist. The archer must resist this push down as much as possible, while continuing to look straight ahead.

You will find that the archer is able to strongly resist this push down.

Photo No. 59 – Side Anchoring

Now repeat this exercise with the archer maintaining the same position, but now have the archer look left as much as possible with the eyes only, without rotating the head. It will be found that it is easier to push the arm down, as biomechanically the archer is now weaker. It will also be found that the shoulder will come up resisting the push.

Therefore, this is another important reason to employ a side anchor position.

9_EYE FOCUS

As discussed in Chapter 3, The Shot, eye focus must be maintained from 'holding', throughout aiming, expansion, release and follow-through, until the arrow hits the target.

Eye focus is especially critical when aiming off, due to varying wind conditions throughout a competition. The eye focus, when aiming off, must not be allowed to wander to the Gold during the execution of the shot. The subconscious mind otherwise, will automatically move the sight pin towards the Gold on release.

A good exercise for aiming off and practicing eye focus is to draw horizontal lines from the top and bottom of the nine across the target face. The area where we want the arrows to land is between the two horizontal lines in the red scoring area of the 8 and 7. If the cross wind goes right to left, we will use the right hand side reds and the left hand side when the wind is left to right. The objective is to group the arrows in the red area between the two horizontal lines, without going past the 8 ring into the Gold. At the same time, this will take the focus off the Gold.

10_IMPORTANCE OF LITTLE FINGER

There is a separate muscle, the 'extensor digiti minimi' muscle which controls the little finger of the drawing hand. Any change in position of this little finger will also affect the tension in the muscles of the other drawing fingers. Therefore, the position of the little finger during the holding and release is extremely important and must be in the same position from shot to shot.

To demonstrate this fact, carry out the following experiment-

Bend the little finger until it touches the pad just below the bottom joint of the little finger. While keeping the little finger bent, try to straighten out the other fingers without creating tension in the other fingers. Also, wriggle the little finger up and down and see what happens to the other fingers. It will be found that it is near impossible to straighten the ring finger and to a lesser extent the other fingers. Therefore, it is necessary to maintain a consistent position of the little finger from shot to shot, as it can change the tension in the drawing fingers and affect the way the string comes off the fingers.

There are a couple of ways to maintain a constant little finger position from shot to shot. One is, to have the archer touch the tip of the thumb and the tip or first joint of the little finger, but must it be the same for every shot.

However, it is strongly recommended to have the little finger touch the neck when at full draw, so take note of clothing, e.g. the little finger could get caught up in a shirt collar, with obvious consequences.

11_HOLDING

One of the more difficult points for a coach to teach the archer is the loading /transfer phase. It should normally take about half a second from anchoring to get to holding. See diagram No.9 below. Initially, half a second is generally too short a time to execute this phase. For this reason, tell the archer to take approximately 2 seconds for this phase. Usually they can then achieve this. Once they have learned and understood this important part of the process, it should take them no more than about half a second with practice.

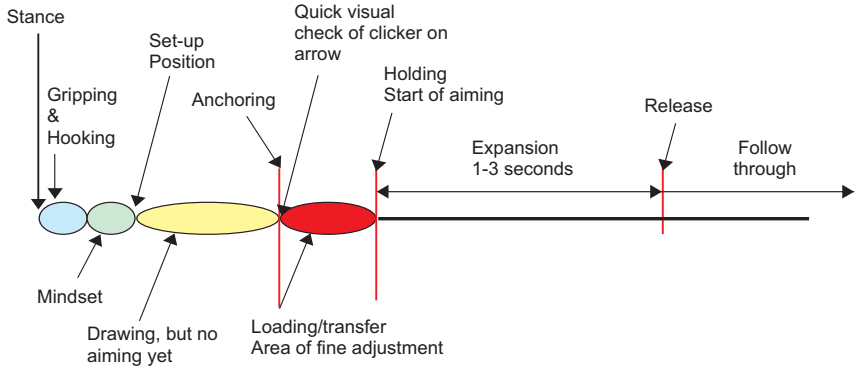

Diagram No. 9 _ KSL Shot Cycle

12_BOW ELBOW JOINT POSITION

Photo No. 60_ Elbow / Ying He

A common fault with many archers, including many experienced archers, is that the inner surface of the elbow joint is rotated anti-clockwise, facing upwards. This is biomechanically very weak and it will tend to push the front shoulder up and create muscle antagonism.

The Humerus (upper arm bone) should be rotated clockwise (right-hand archer) so that the inner surface of the elbow joint is near vertical. This will align the bone structure of the arm into the strongest possible unit. This, coupled with a low front shoulder, will permit the strong compressive force of the drawn bow weight, to be distributed most efficiently.

13_STRING PICTURE

As discussed in Chapter 3, The Shot, eye focus must be maintained on the aiming mark from the hold, throughout aiming, expansion, release and follow through, until the arrow hits the target.

String picture is strongly recommended to be on center shot position. Refer to Diagram No.10, String Picture on the following page.

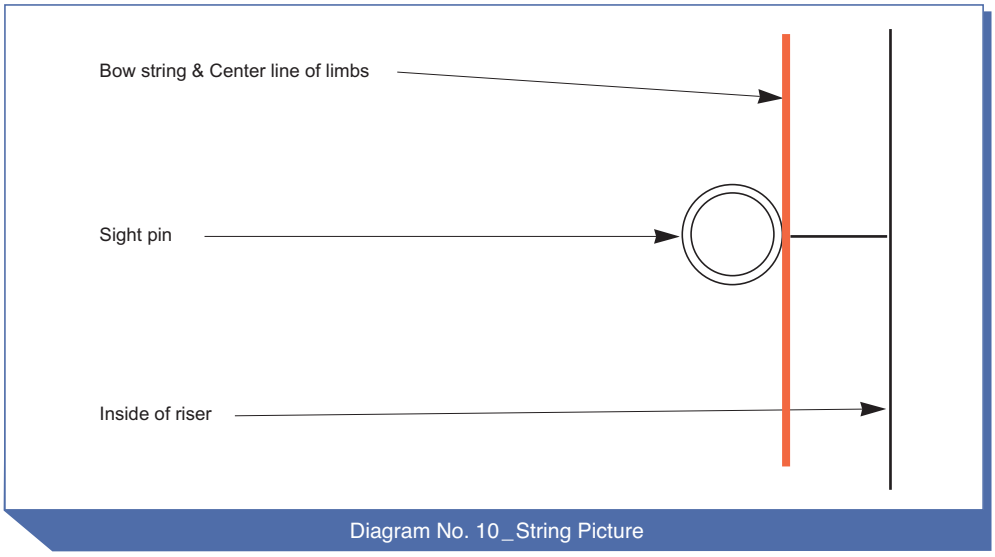

Diagram No. 10_String Picture

There are varying thoughts on the best place to align the string, which range from aligning it with the outside of the sight pin to aligning it with the outside of the riser. However, having the string positioned, as shown above, is strongly recommended, as it offers various advantages.

Firstly, the eye is aligned with the arrow and with the center of the bow permitting a good head position.

Secondly, the string is easily seen at all times especially during the aiming, expansion and follow-through. If the string is in a position other than center shot, it is easy to lose sight of the string position, especially during the expansion time when the string picture could move. Basically, it is like the rear sight of a rifle, at all times keep the sights aligned.

14_WEIGHT DISTRIBUTION

As has been stated previously, the body weight distribution on the feet should be about 60-70% on balls of the feet and 40-30% on the heels, to enable maximum horizontal force to be generated.

To facilitate this pressure distribution, the recommendation is to use shoes which have a bit of a heel, or shoes with in-soles rather than flat soled joggers. Shoes that provide support for the ankles will further add to stability.

Experiments, using force plates, have shown that the use of in-soles in the shoes aided in achieving this 60-70% / 30-40% pressure distribution. It moved the center of gravity more forward from the heels towards the middle of the feet and provided a much more stable platform. For further information refer to Cl.25, Footwear for more details.

15_RELEASE AND FOLLOW THROUGH

A common problem is that on release the hand comes away from the face. There can be various reasons for this. Listed below are some of the common problems:

Problems

- A change of focus resulting in losing the connection with the back and as such no proper back tension is maintained throughout the shot.
- The biceps could be too relaxed, allowing the included angle between forearm and upper drawing arm to open up on release.
- The elbow could be dropping too much and not go far enough behind.

- The drawing elbow is in front of line of arrow
- The drawing hand is allowed to drop on release to touch the shoulder.
- The concentration is on letting go, rather than on maintaining back tension.

Some solutions are:

Solutions

- Back tension must be continued for 1-2 seconds after release, to prevent collapse.
- The drawing forearm and hand should be as relaxed as possible. Again refer to the KSL Shot Cycle Diagram.
- Ask the archer to think of reducing the included angle between the drawing forearm and upper arm when releasing and to let the hand follow the facial contours. This can further be assisted by putting one or two pencils vertically in the crook of the arm. The archer will need to prevent the pencils from dropping throughout the shot and release.
- Ensure proper alignment of the Scapulae, which will bring the archer more in line.
- The fingers should be coming off the string as relaxed as possible. If the fingers are straightening on release, it is an indication that the fingers are opened consciously and back tension is lost. (See also Cl.18, Releasing the String)
- Visualize the drawing fingers being connected by a steel chain to the drawing elbow. This will create a very relaxed forearm and it will take the tension out of the back of the drawing hand, allowing the back of the hand to become long and flat. In addition, it will further aid in engaging the back muscles the promote a smoother and more effective release and follow-through.

16_FINGER TAB

It is recommended not to use a shelf tab. The shelf tab prevents a solid and consistent position between the hand and the jawbone and as such has a greater potential to move up and down on the face and create changes in finger pressure.

It is further recommended that a finger spacer be used to provide for a more relaxed draw hand. Without a finger spacer the archer has a tendency to spread the fingers to avoid pinching the arrow, but as a result will create extra unwanted tension in the fingers.

Every time, make sure to set the fingers in the same place on the tab and the tab on the string. It is very important to visually check this when hooking/gripping on every shot; any variation here will translate in high or low arrows.

17_FINGER SLING

To make the bow jump cleanly out of the hand on release, a finger sling must be used. There are various types of slings, one being a bow sling which attaches to the bow below the handle. Second, the wrist sling and thirdly the finger sling, which goes around the bow and loops either over the middle or index finger and thumb.

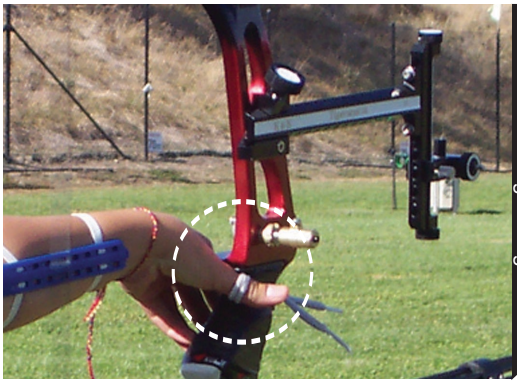

Photo No. 62_ Finger Sling

There are various opinions as to which one is the best.

The finger sling is recommended for the more experienced archer. However, as with any finger sling there is a subconscious tendency to try to grab the bow on release or with the finger sling to spread the fingers to prevent the sling slipping off. All of these reactions will cause torque on the bow.

The archer must learn to let the bow jump cleanly from the hand. To teach an archer to let the bow jump cleanly, the shot should be made without a finger sling and the coach should catch the bow on release. Refer Photo No.62 below. This is easily done, and after a few times the archer will get the proper feel of letting go of the bow, without tensioning the fingers of the bow hand.

Photo No. 62 _Release Practice

18_RELEASING THE STRING

The string must be released by the total relaxation of the string fingers, thereby allowing the string to push the fingers out of the way. More often than not, we see the fingers of the release hand opening up till the fingers are just about

straight. This is a sure indication that the archer consciously is trying to open the fingers on release.

A good initial method of teaching how the string should feel leaving the fingers is by drawing the string back 1 or 2 inches and letting the string push the fingers out of the way. The fingers must stay pretty much in the same bent position when releasing, as when placed upon the string. This is the feeling the archer must try to reproduce when letting the string go at full draw.

A better method would be to bend the bow arm and bring the bowstring and bow towards the face. This will then allow the draw elbow, rear shoulder, and scapula and draw hand to be properly positioned, when carrying out this experiment. Again draw the bow string 1 - 2 inches back and carry out the same release action but push through with the bow hand and have a full follow through, as with a normal shot.

19_OPEN CHEST

Many archers when at full draw are too tight in the chest muscles. This prevents them from expanding through the clicker. As an exercise, clasp the fingers together in front of the chest with the elbows horizontal and the Scapulae in the correct position. Now pull as hard as possible trying to pull the fingers apart, holding your breath. Then start to breathe slowly, relaxed and evenly, relaxing the chest muscles, but continuing to pull with the same intensity. Carrying out this exercise will give the feeling of what the chest should feel like when expanding through the clicker.

20_CLICKER

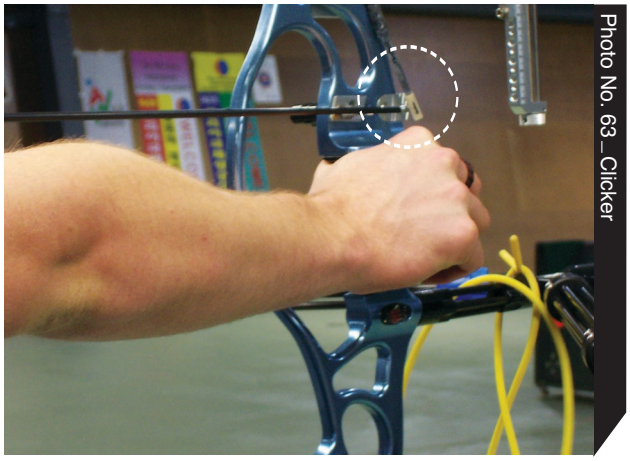

Photo No. 63_Clicker

When trying to establish the correct position of the clicker for beginning archers, have them draw the bow to their physical anchor, with the proper positioning of the shoulders, Scapulae and bow arm. Then have them bring the drawing elbow in line with the arrow. Do this a couple of times with an arrow in the bow, but not under the clicker and watch for consistency of draw length. Then set the clicker approx. 3-4mm from the end of the point, before expansion. Now repeat and let them draw about three times with the arrow under the clicker, but they should not be looking at the arrow point while drawing. Check for consistency and adjust clicker accordingly.

The coach should check this at least every 3 - 6 months for experienced archers, taking into account changes in physical characteristics, such as height, weight, body size change and any technical changes, which might have occurred in the period.

21_50/50 BALANCE

The balance in the shot expansion must be 50/50. An imbalance of this ratio will affect the center of mass. If there is an imbalance, either the front will go forward or, more likely, the dominant drawing side, being the strongest, will take over and the archer will lean backwards away from the target. On release, this would result in the bow arm coming across the front of the body.

Generally, the drawing side will be the more dominant side, which will be proportionally stronger than the bow arm and front shoulder assembly. Therefore, if it is apparent that an archer's dominant side is taking over, then the archer should be told to use more bow arm side to maintain proper balance.

22_FACE AND NECK REGION RELAXATION

The face and neck should be fully relaxed throughout the shot, which can be facilitated by making a smile and conscious relaxation of the neck muscles part of the preliminary set up of the shot. If the shot is properly executed there should be no head movement at all.

23_HIGH GRIP / LOW GRIP

The high grip requires more strength and under competitive pressure tends to put more tension in the wrist causing pressure point variances, resulting in high and low arrows.

With a low grip the bones of the hand and arm are in a more efficient configuration which will aid a more relaxed bow hand.

Refer to Chapter 2, Cl.10, Grip Pressure Point and Wrist Position for more details.

24_EYE DOMINANCE Vs DEXTERITY

Research by Geraint Griffiths, Clinical Director of Sports Vision Service UK shows the following break down amongst elite international archers which show the following. (Sample 70)

- Right hand/Right eye 84.3%
- Left hand/Left eye 10%
- Right hand/Left eye 2.85%
- Left hand/Right eye 2.85%

This particular research indicates that there is approximately a cross dominance of 5.7%.

Conventional wisdom in the past has advocated that if an archer is cross dominant then the dominant eye determines the handedness, e.g. Right handed person being left eye dominant should shoot a left handed bow. There has been a lot of debate on this, but the pendulum seems to be swinging the other way. Some of the top coaches, both in archery and pistol shooting, now advocate that a right handed archer, being left eye dominant, should shoot with the dominant hand, rather than the handedness being determined by eye dominance. Biomechanically this is better, as the dominant hand side is the more coordinated side.

FITA states, in their new Entry Level Coaching Manual, albeit cautiously, "To

date, good results have been achieved using either criterion. Hand gives a better manual ease, control and strength".

For a cross dominant archer the dominant eye might need to be occluded by an opaque lens, to still allow light to enter the eye. If, for instance, an eye patch is used to totally block out the light from the eye, the pupil of the other eye will open more and could cause eye fatigue during the course of a tournament.

However, an archer can learn to aim with the non-dominant eye by wearing an eye patch over the dominant eye for a period of a couple of months. This will train the brain to aim with the non-dominant eye, which should continue after the eye patch is removed. Even though there are no left-handed archers in Korea, there are cross dominant archers, which have included archers on the Korean Olympic Team.

25_FOOTWEAR

Footwear is one of the most neglected areas, even though it should be considered as part of equipment.

The feet contain 26 bones or about one quarter of all the bones in the body. There are some 107 ligaments and 19 related muscles. The structure of the feet is very complex and inherently unstable. It is therefore important to reduce fatigue and instability in this area.

The majority of archers usually wear running shoes or joggers. Running shoes have generally spongy inner soles, which might be beneficial for jogging and running, but they do not add to the stability for archery. For archery, it is better to

Photo No. 64
– Special Competition Footwear

use a flat soled shoe with a hard inner sole to provide for greater stability. This has been researched and confirmed by force plate experiments, using the "Insole" system.

26_TIMING

There is a maxim in real estate, which states
"LOCATION, LOCATION, LOCATION!"
In archery it is,
"TIMING, TIMING, TIMING!" If the timing is off, the shot will be off.

27_How can we shoot better in windy conditions?

Firstly, in windy conditions, it is recommended that we aim off. Initially, we adjust our sight during the practice for the average prevailing wind. Once the scoring starts, it is suggested not to make any further sight adjustments to compensate for changing wind conditions. If we do, especially under competitive stress, we can become terribly mixed up. In the end, we do not know where the sight should be anymore. It is better to leave the sight where it

is and aim off. Whenever we aim-off, the eyes must stay focused on the spot we aimed at, until the arrow hits the target.

The better archers in the wind, are the better eye controllers.

Four points for shooting better in the wind.

- Eye control
- Be more relaxed

  (Most archers tighten up in the wind and try, erroneously, to make a "strong" shot).
- Maintain a consistent triangle between shoulders and chin.
- Maintain timing

  (In windy conditions the tendency is to focus too much on aiming, causing tension in the body and loss of timing)

RECOMMENDED SHOOTING PRACTICE

28_HOW MUCH PRACTICE

The amount of practice will depend on what level of expertise an archer wishes to achieve. To be able to perform at the highest level, clearly a lot of practice will be required. Once an archer has the correct technique and is ready to compete then 200+ arrows a day practice, 6 days a week should be the norm, even though in Korea, high school archers in years 10-12, shoot on average more than 500 arrows per day, sometimes even 1,000/day.

However, once an archer has reached a high level of competency than this may be reduced to 200-300 arrows per day, 6 days per week to maintain the feeling and technique.

Archery is very much a feeling sport; therefore there should only be one day off during the week otherwise the feeling will quickly be lost. This is the same for professional golfers, world class tennis players and most other professional sports.

29_EYES CLOSED SHOOTING PRACTICE

Eyes closed training practice for obvious reasons should be carried out close to the target, approximately 5 -10M maximum and safety should be a major issue.

Shooting with the eyes closed will allow the archer to focus on the process only, without the visual distractions of the target and aiming. It is particularly good if trying to work on a specific part of the form, as it will increase the focus and heighten the feelings. It will consciously train the subconscious mind to recognize what the true feeling of the shot should be.

30_BLANK BUTT SHOOTING

Blank butt shooting is an extension of shooting with the eyes closed. It should also be used for warm-up and cool-down before training or competition. The focus must be on the right technique and feeling the shot.

Photo No. 65
– Blank Butt Shooting
/ France and Denmark

It should further be used, when working on specific points of the form, so that the total focus is on technique and not on scoring.

31_SHOOTING IN THE WIND AND AIMING OFF PRACTICE

Shooting in the wind and aiming off should form part of the regular training program. The timing for shooting in the wind is even more important than normal.

Most archers tighten up and try too hard when it is windy. In windy conditions it is even more important to relax, as tightening up and trying harder will just create more tension in the body affecting the shot adversely.

Never use the wind as an excuse for poor form. The shot should be prepared and performed as any other shot. It is essential to maintain form and timing and have confidence in your shooting ability. Aim as best as you can and accept that some arrows will score lower due to the wind factor. The wind can be the reason for lower scores, but never an excuse for bad form.

When doing aiming-off training, in windy or normal conditions, the archer must try to hit the 5 or 6, to take the focus away from the gold.

32_TIME INTERVAL BETWEEN SHOTS

Experiments have been carried out to determine if the time interval between shots has an impact on arrow velocity, especially in relationship to finals matches in Olympic Match Play, where the time between shots can be very short.

Experiment 1 - three highly skilled archers of National Standard were used to shoot two ends of three arrows, each in a 150 second period.
Experiment 2 - these same archers to shoot two ends of three arrows, each in a 30 - 50 seconds period.

The results were as follows

ARCHER	150 SECONDS MPH	30 - 50 SECONDS MPH
1	132, 128, 136	134, 135, 135
46 lbs	133, 129, 135	135, 135, 135
2	128, 132, 132	131, 131, 131,
43 lbs	128, 129, 135	131, 132, 131
3	133, 137, 135	135, 136, 136
48 lbs	138, 134, 133	136, 134, 136

Table No. 1 –Arrow Speed

It can be seen that there is quite a variation in arrow velocity when shooting three arrows in 150 seconds, when compared to shooting three arrows in 30-50 seconds. The latter

experiment shows an incredible consistency in velocity, which can not be ignored. It is extremely difficult, if not impossible, to maintain intense concentration for more than about three seconds before other thoughts start to intrude. Therefore, rapid shooting can have a distinct advantage in the FITA Championship Elimination Round Match Play, when all archers shoot at the same time. In addition the archer should be both physically and mentally fit for this mentally stressful type of competition.

33_IMITATING FORM WITH A RUBBER BAND

Photo No. 66 –Korean Students Training

To enable a beginning archer to learn proper form, a Theraband, surgical rubber tubing or a light training bow of about 15lbs should be used. The objective is for the archer to learn and understand what proper form means and feels like. If a beginning archer is given a bow and arrows and put in front of a target, the archer's main focus will generally be to try and hit the Gold, irrespective of how this is achieved. In Korea, archery is taught, starting at year 4 primary school level, around the age of 9- 10. During the first 3-6 months, they are taught the correct skills through various exercises, to promote proper bone alignment, stance and muscle usage, right from day one. This is accomplished without the use of a bow through mimicking with and without a rubber band.

This very methodical practice to teach the fundamentals of archery is used in Korea with great success. However, while this method may not be suitable to other countries, it is strongly recommended that this method be used with beginning archers, even if only for the first 10 minutes at the beginning of each lesson.

34_MIRROR PRACTICE

Photo No. 67_ Video Delay System & Mirror Training, French Team

Practicing form in front of a full-length mirror will provide for instantaneous feed back to the archer. This would be best suited for indoors, where the mirror can be mounted on wheels and be placed at various angles to the archer. Vertical and horizontal lines can be drawn on the mirror or alternatively tape can be used. These vertical and horizontal lines will assist the archer to check the various alignments of his form.

This type of practice can be further enhanced by using a video camera focused on the archer, coupled to a variable delayed video signal box with a feed to a TV monitor, which is in view of the archer. When the archer executes a shot it will be played back on the TV monitor with an adjustable delay of between 2 to 30 seconds. This type of instantaneous feedback is invaluable, as it prevents an archer from practicing the incorrect form, without being aware of it.