SCIENCE HILL
VISUAL HANDBOOK

This handbook is intended not as a complete guide to every visual detail of the Science Hill Visual Program, but instead to be a reference manual that can help you prepare for band camp and encourage a successful season.

TABLE OF CONTENTS

I. POSTURE

Everyone's body type is different. We all carry ourselves in certain ways and stand differently in our day to day lives. Because of this, defining posture is key to success in the marching activity. Posture is as important to marching technique as breathing is for playing an instrument and is only justified by having a positive effect on our ability to play well on the move.

There are two primary positions to which the following explanations apply. These positions are called ***set*** and ***standby. Standby*** is generally called when members are receiving instruction and ***set*** is called when members are preparing to perform an action.

Posture Build-Up

Performing the ***Posture Build-Up*** exercise is done from bottom up, serving as a checklist to build into the ***set*** position. There are 6 reference points in the ***Posture Build-Up*** exercise:

Feet/Ankles
Knees
Pelvis
Sternum/Chest and Shoulders
Arms
Crown of the head

Feet/Ankles

The feet should be placed at a 45-degree angle with the heels/ankles touching and with space between the big toes. The desired amount of space can be checked by using your fist as a guide for measurement; placing it between the arches of the feet.

Knees

Ideally, we want the legs to appear as straight as possible without totally locking the knees. To achieve this, lock the knees entirely by flexing the quadriceps and then relax slightly. At this point, the knees should be vertically aligned with the ankles.

Pelvis

The pelvis, or hips, should align vertically with the knees and ankles. To achieve this, roll the hips slightly forward, under the ribcage.

Sternum/Chest and Shoulders

This is, by far, the most crucial part of the exercise for playing well on the move. The sternum should be in line with the front of the pelvis. To achieve this, the muscles in the chest, back, and between the ribs should be as relaxed and soft as possible.

****Do not "lift up", straighten your back, or puff out your chest.**** Doing so will inhibit the amount of air your body is able to inhale and exhale.

Two important points regarding this:

- Your ribcage is not stationary; it is full of muscles between every single rib and is constantly moving. The ribcage expands outward and contracts when we breathe and this is exaggerated when we breathe deeply. This expansion can only be maximized if those muscles are relaxed and soft.
- Your spine is not, and never will be, straight. It is made up of four curves that serve as a spring-like shock absorber against gravity. These curves are located:
    1. Where the head meets the spine (neck).
    2. Where the ribs meet the spine (upper back).
    3. Below the ribs and above the pelvis (lower back).
    4. Where the spine meets the pelvis.

  Because of their locations, if we try to straighten our backs, the ribcage becomes compressed and limits how deeply we can breathe.

With this in mind, allow the ribcage to sit directly on top of the pelvis. The shoulders should feel heavy, pulling down toward the ground, also in line with the pelvis, knees, and ankles.

Arms

To correctly position the arms in the "set" position: make a fist with the left hand, FULLY extend both arms down, out to the sides, and up above the head. Place the right hand over the left fist and lower the hands down to the space between the nose and mouth (about 6 inches from the face), imagining that your elbows are resting on an imaginary table. In this position, the wrists should have no break, creating a straight line from the elbow to the knuckles. The forearms should create a 90-degree angle. The shoulders should remain low and heavy as in the previous step.

Crown of the head

The final step is to center the skull on top of the spine. To do this, find the crown of your head (the point in the back/top where your hair spirals) and make it the highest point of your stature; as if there were a string attached and someone was pulling it upward. Doing this allows your skull to rest on the structure of the spine, releasing any excess muscle tension in the neck.

By the end of this exercise, all six reference points should be vertically aligned with each other.

For the ***standby*** position, all of the aforementioned points of posture apply *except* for the arms. The arms will be down and resting against the front of the body with the left hand in a fist and the right hand covering in front.

II. INSTRUMENT CARRIAGE - Brass

Playing

In the playing position, you should keep your forearms at the same 90-degree angle that was found in the Posture Build-Up exercise. The default horn angle at playing position at all times is 10 degrees above parallel to the ground. When on the field, it should also be angled in toward the press box so that the full effect of the show that has been designed is communicated to the judges.

Carry

Hold the horn in the left hand such that the bell of the instrument is parallel to the ground and the crook beside the mouthpiece is at eye level. The right hand remain on the valves like in playing position. The instrument will be held only a fist's width away from the sternum. Your elbows and forearms no longer need to be at a 90-degree angle and can relax down beside the horn. This ensures that, when marching, the chest stays relaxed and that you are only using the muscles in your back to support the instrument.

Woodwinds

Your carriage will be defined and clarified by the woodwind captain and section leaders.

III. MARKING TIME

The mark time is important because it gives the performer a sensation of marching and it helps establish a strong understanding of timing in the feet. If the entire band comes to an individual understanding of their own timing responsibilities, then the show/production will be presented in its most complete, coherent form.

When marking time, the feet come together to be in a parallel track with the big toes touching. The ***platform*** of the foot (the front half of the bottom of the foot from the middle of the arch to the tips of the toes) will remain on the ground while the heel comes up off the ground to be just above the ankle bone of the other foot before lowering back down. The heel should strike the ground on each downbeat.

IV. MOVING FORWARD

The goal of this technique is to accentuate long and extended leg-lines. This is done through minimal knee bend, and a high level of body awareness. To help keep the knee from bending excessively, we must keep our heels low to the ground while also flexing our big toes inside of our shoes. A general rule of thumb is that we will not ever *pick up* our feet; they will glide through the grass.

- The forward march technique begins with a full one-count initiation where the performer must use their right quadricep to push themselves forward. (In rehearsal, performers will be given 8 counts from the metronome or the instructor before executing the first step. Therefore, the full one-count initiation will occur on count 8, with the first step landing on the following count 1).

- Immediately following, the left foot glides through the grass with a flexed big toe and low heel.

- The left foot should hit the ground in the center-most, fleshy, and calloused part of the heel. At this point, the left foot should be pointing straight forward and the right foot should still be in its original 45-degree angle.

- By the second step, both feet should be pointed straight forward in a parallel track.

- On the final step of a move, the right foot will ***place**** at a 45-degree angle on the platform. The left foot follows to meet the right foot, also at a 45-degree angle, returning us to the ***set*** position. Altogether, this motion is called a ***place-close***.

  *To create a proper place step: point the foot, creating a straight line from the hip to the knee and to the tip of the big toe. From here, rotate the leg to face outward at a 45-degree angle. When making contact with the ground, the pinky toe should hit the ground first.

V. MOVING BACKWARD

Like the forward marching technique, two key components of backward marching are long leg-lines and low heels. The difference is that, when moving backwards, we march on the platforms of the feet rather than the heels. It is important to understand that while we are raised up on our platforms, there should only be about an inch of space between the heel and the ground. This is to maintain a long leg-line. A good way to find this position is to raise all the way up onto your tiptoes and slowly lower down until you feel the ground. Then, raise up slightly.

- Also like the forward marching technique, backward marching begins with a full one-count initiation; pushing simultaneously backward and slightly upward to elevate the heels.
- After the push count, the left foot should glide through the grass and hit the ground with its platform. At this point, we should be on the platforms of both feet; the left foot pointing straight forward and the right foot still in its original 45-degree angle.

- By the second step, both feet should be pointed straight forward in a parallel track.

- On the final step of a move, the right foot will ***place*** at a 45-degree angle on the platform. The left foot follows to meet the right foot, also at a 45-degree angle, easing the body weight back down onto the whole of both feet, returning us to the ***set*** position.

VI. SLIDES

A ***slide*** can be defined as a movement where the upper body is facing a direction different from where the lower body is travelling. Slides occur more often in marching shows/productions than almost any other type of drill movement, so it is important we learn to properly execute them.

Finding the proper position for a slide is a matter of understanding that the necessary rotation consists of both a sideways twisting motion and an upward, elongating motion. To find this position:

- Go to ***set***.
- Rotate the pelvis and thighs 30 degrees. If rotating to the left, the right knee should bend a bit to allow the rotation without any sort of pain. If rotating to the right, the left knee should bend.
- From there, rotate the abdominals to be 60 degrees.
- Then, the sternum should rotate to 90 degrees.

When forward-marching in a slide, the back leg will definitely bend slightly to allow for a full upper body rotation. When backward-marching in a slide, the leg-line will not change.

VII. DIRECTION CHANGES

All direction changes will include a ***place*** step on the final count of the old direction and a step directly into the new direction on the following count. The place will always be with the right foot and will either pointing straight forward or at a 45-degree angle.

Forward to backward: Place straight forward, re-articulate count 1 of backward
Backward to forward: Place straight forward, re-articulate count 1 of forward with the heel
Forward to left: Place straight forward
Forward to right: Place at a 45-degree angle
Backward to left: Place straight forward
Backward to right: Place at a 45-degree angle

Generally speaking: any direction change to the *left* will use a place pointing straight forward and any direction change to the *right* will use a place pointing at a 45-degree angle. This is only a guideline, as there are many different kinds of direction changes that will be defined on a case-by-case basis.

VIII. STEP-OUTS

Step-outs are a tool we will use to master the skill of playing on the move. They will be performed on the initiation of every playing exercise we do in horn arc. Step-outs are essentially the combination of 3 skills already discussed in this exercise: forward march, forward-to-backward direction change, and marking time all within one 8-coint action. Executing a proper step-out can be broken down into two halves, each representing 4 counts of the total action:

Go to ***set***.

First 4 counts
Count 1: Take one full step forward.
Count 2: Place with the platform of the right foot *directly in line with and parallel to* the left.
Count 3: Push backward one step.
Count 4: Bring the right foot in the meet the left *in a parallel track*.

Second 4 counts
Count 5-7: Mark time.
Count 8: Place-close at 45-degree angles.

XI. READING THE FIELD

When learning and rehearsing/cleaning drill, we use the field as a giant grid. Our positions on the field, or ***dots***, are determined by a set of directions akin to coordinates on a graph. Below is a list of terminology that will be used to understand and locate a dot.

Steps: In marching band we measure distance in "steps." 8 steps fit inside the space of 5 yards. This is referred to as an ***8 to 5*** step and is equal to 22.5 inches. In Ex. 3, these increments are indicated by the small and faint blocks that create a giant grid.

Side 1 and Side 2: From the director's/audience's/press box's perspective, side 1 is the left side of the field and side 2 is the right. The 50 yard line is the dividing point. These sides could also be referred to as sides A and B or Left and Right. Regardless, their positioning is based off the director's/audience's/press box's perspective.

Yard lines: There are 21 yard lines on an American football field. The center line is the 50 yard line. Yard lines count down in 5 yard increments to the goal line, also called the 0 yard line. The band performance area includes the end zones which extend 10 yards past the goal lines.

Inside: measured toward the 50 yard line.

Outside: measured toward either end zone, away from the 50 yard line.

In front of: measured toward the director's (home) viewpoint.

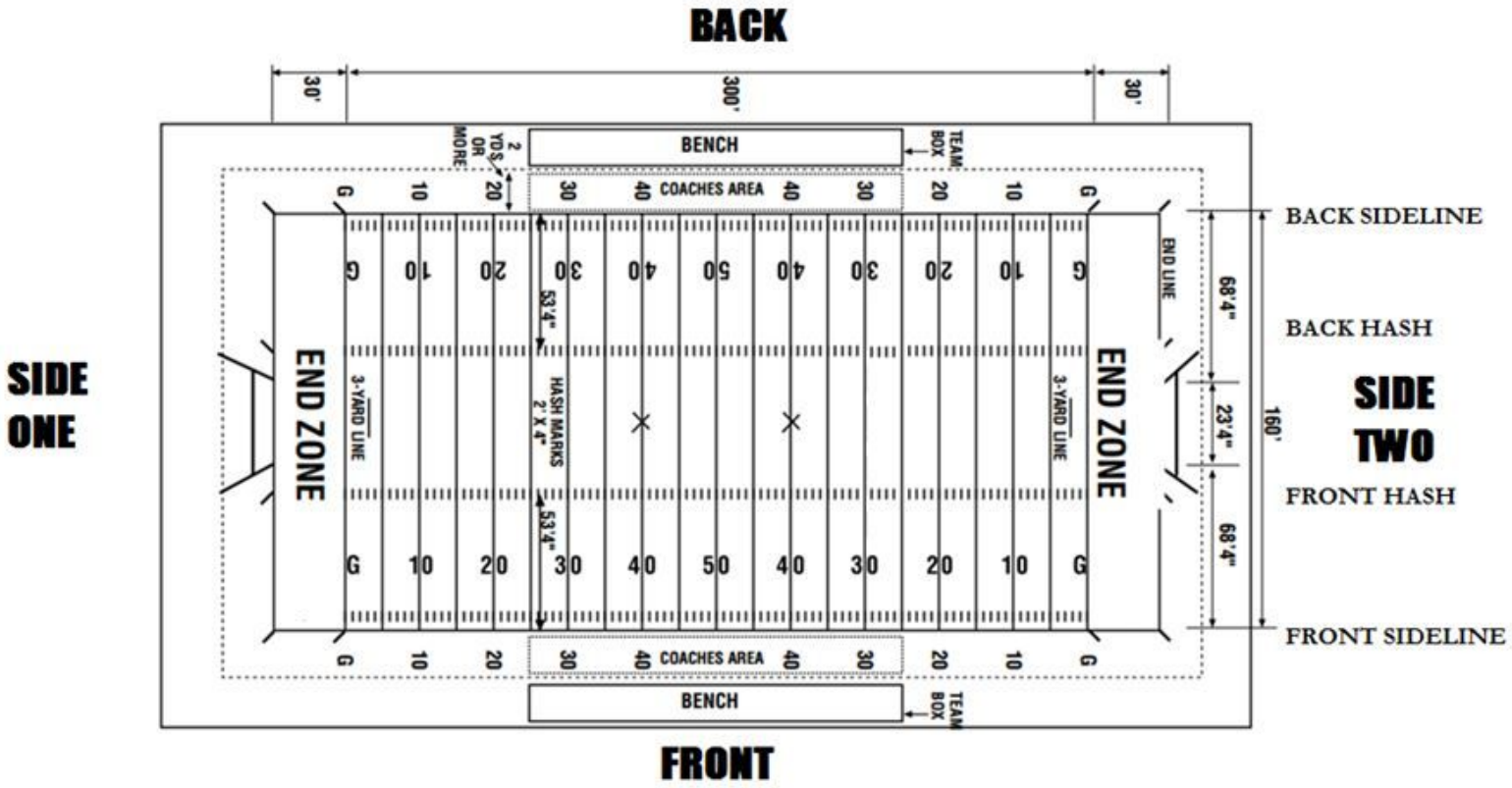
Behind: measured away from the director's (home) viewpoint.

Sidelines: The sidelines are the front and back boundaries of the football field. The front sideline is nearest the director's viewpoint. The back sideline is on the opposite side of the field.

Hash Marks: The hash marks intersect the yard lines in the middle of the field. The front hash is nearest to the director's viewpoint. The back hash is nearest to the back sideline.

Ex. 1 has every necessary part of the field labelled for quick reference.

Ex. 1



Ex. 2

Set	Move	Side A-Side B	Back-Front
#34A	0	1.0 stp outside Side B 45 yd ln	12.0 stps behind Front side line
#35	8	2.0 stps inside Side B 45 yd ln	8.0 stps in frnt of Front hash
#36	8	On 50 yd ln	on Front hash
#37	8	On Side A 45 yd ln	5.0 stps behind Front hash
#38	12	3.0 stps outside Side A 45 yd ln	8.0 stps behind Front hash
#39	12	On Side A 40 yd ln	7.5 stps behind Front hash
#40	12	3.5 stps outside Side A 35 yd ln	6.5 stps behind Front hash
#40A	16	3.5 stps outside Side A 35 yd ln	6.5 stps behind Front hash
#40B	12	3.5 stps outside Side A 35 yd ln	6.5 stps behind Front hash
#41	8	0.5 stps outside Side A 30 yd ln	1.75 stps behind Front hash
#42	16	3.5 stps inside Side A 25 yd ln	11.5 stps in frnt of Back hash
#43	16	1.0 stp inside Side A 35 yd ln	8.75 stps in frnt of Back hash
#44	16	2.25 stps outside Side A 45 yd ln	0.25 stps in frnt of Back hash
#45	16	1.25 stps outside Side A 45 yd ln	3.25 stps in frnt of Back hash
#46	16	0.25 stps inside Side A 40 yd ln	11.75 stps in frnt of Back hash
#47	16	On Side A 45 yd ln	9.5 stps behind Front hash
#47A	28	On Side A 45 yd ln	9.5 stps behind Front hash
#48	16	1.5 stps outside Side A 40 yd ln	10.25 stps in frnt of Back hash
#49	12	1.25 stps inside Side A 35 yd ln	7.25 stps behind Front hash
#50	12	2.25 stps outside Side A 40 yd ln	3.0 stps in frnt of Front hash
#50A	8	2.25 stps outside Side A 40 yd ln	3.0 stps in frnt of Front hash

Ex. 2 is an example of what a performer's coordinate sheet may look like. Each dot (also referred to as ***sets***) is given a series of instructions to locate.

Look at the first set, #34A. Under the column labelled **Side A-Side B** is what we will call the side-to-side relationship (could be thought of as the *x* axis of a graphing coordinate). The column labelled **Back-Front** is just that; the front-to-back relationship (the *y* axis). To find this dot on the field:

1.0 stp outside Side B 45 yd ln: You will find the 45 yard line on Side B (the right side). Then, you will move one 8 to 5 step outside of that line (outside meaning the direction *away from* the 50 yard line).

12.0 stps behind Front side line: You will find the front side line and move twelve 8 to 5 steps behind it (meaning *away from* the director/audience/press box).

Using these two sets of directions, we can locate this specific dot on the field, which can be seen in Ex. 3. Ex. 3 shows the layout of a football field as a graph. You can clearly see every single 8 to 5 step, as well as the yard numbers and hashes.

Ex. 3