

Thoughts on Teaching Drill

Jeremy Loui - Updated March 2022

There is a shocking general lack of “nuts and bolts” information on teaching and cleaning drill. So I have attempted to synthesize my experiences as a drill writer and teaching from both the tower and the field. As with most things, there is certainly more than one “correct” way of doing things. Here are just some of my thoughts.

Before Teaching Drill

Before beginning the process of learning/cleaning drill, there are several things that I consider to be important to cover. Below is a list of what I view as most critical visual fundamentals to cover before starting drill. Depending on rehearsal schedule more techniques may be covered, but this is the requisite skill list. I am a proponent of developing a strong fundamental skill set before starting on drill. Technique issues such as poor posture/body facings/horn angles or poor foot timing can cause drill to look dirty.

Musically speaking I also support solidifying musical knowledge before starting on drill. I have generally avoided the use of flip folders and feel music should be in memorized state before starting drill learning. An easily overlooked rehearsal technique that tremendously helps the drill learning process is marking the drill sets into the sheet music. Then rehearse the music by set. This helps reinforce the count structure of the drill and can assist with memorization. When rehearsing marching band show music, incorporating mark time and step outs is tremendously helpful.

Minimum Requisite Visual Fundamentals

- Forwards and backwards Technique
- Direction change technique
- Understanding of various step sizes
- Understanding of body facings
- Definition of heel or arch (or something else) as centered on the dot
- Understanding of +1 and -1 positions
- Check/adjust or dress/cover procedure
- Understanding of field markings and how they relate as visual cues
- Understanding of what part of the body defines the spot (arches, ankle bone, etc.?)

Understanding Dot vs. Form – Moving Beyond the Argument

A frequent discussion among band directors and instructors is whether performers should prioritize the written dot or their perception of the form. While there are certain occurrences where an individual may need to make a choice to compromise the dot in order to maintain the form or vis versa, I prefer to view the dichotomy somewhat

differently. The dot, or the written information, and the form, perceived information, are not independent and are both important pieces of information. It is worth adding that depending on how you work around the margin of error and the degree that Pyware is rounding the coordinates (default is the quarter step but your drill writer can change this) can play into the evaluation of how literally the dot is interpreted.

The Music Analogy

If we think of drill like we do music, a clearer understanding of this can be found. In this analogy the written coordinates are the written notes on the page. And listening in music can be thought of as the equivalent to using your eyes when marching drill. When viewed like this we can see that written information, and the perceived information are in fact complimentary and not oppositional. We would never, well at least very rarely, tell students to ignore what the composer has written and just use their ears to decide what note to play. Students should be working to accurately recreate the music (written information) and their listening (perceived information) is used to help this process. The same is true with drill (written information) and watching/guiding (perceived information). Just as a student should understand their role withing the music (if they're the melody, accompaniment, etc.), student should understand their role within a form.

The Clean Drill Hierarchy

Assuming good posture/technique, well understood count structure, and coherent drill design, there are only three things that impact drill cleanliness.

1. Dot Accuracy

If performers are not in the right spot the drill will not be clean. Obvious, right? However, the accuracy of the written spot is highly important. Accuracy is important from both a consistency standpoint and is frequently critical to structure of drill. If not insistent on the accuracy of spots, forms tend to be inconsistent, change over the course of the season, and/or be the root cause of path issues. There are times when the interpretation of the dot needs a small degree of flexibility, but I prefer to treat these as exceptions. Even when the form takes priority over the written coordinate, the consistency of going to the same spot remains critical.

2. Correct Path

The path is defined by the start and end point (coordinates) which is why it is second in the hierarchy. Most of the time paths are straight, but accuracy of curved paths is also important for consistency and flow of drill. Inaccurate paths will cause spacing issues on the move.

3. Even Step Size

Step size is defined by number of steps over the predefined path. Therefore, path comes before step size. Step size issues will result in people seeming to move ahead or behind the rest of the form, or morphing of the form while on the move.

Inaccurate step size either causes additional dot accuracy problems (if not already solidified) or is compensated for at the end of a move.

Using Visual Cues

As is explained through the music analogy, the objective of the performer is to move from spot to spot along the correct path with the correct step size. As is explained through the music analogy, the use of visual cues, like listening in music, assists with this accuracy. Because of how we view objects in space, and or relatively poor depth perception, as performers left/right location is generally more important than the front/back location. As such the primary visual responsibility is what is in front of the performer/ their cover down.

When something is wrong with the form, I encourage people to find the root cause and not simply move into the form. Blindly yielding to the form without identifying where the inaccuracy is can cause other issues. The following are specific types of visual cues and how to utilize them.

Field Markings

- **Yard Lines** – Utilize yard line crossing counts when cleaning drill.
- **1 Yard Marks** – Perhaps one of the most critical and most overlooked markings. Teaching performers to recognize their relationship to the 1-yard marks can dramatically improve left/right spacing. These are a consistent visual cue and are frequently viewable within the peripheral vision.
- **Hashes** – If you have performances on fields with multiple sets of hashes, it can be worth teaching performers to utilize the various hash locations as additional visual cues. ***HS vs. Texas/NCAA
- **Field Numbers** – Assuming these have been sprayed correctly, they can be used to assist in finding front/back locations. ***Add measurements
- **Center field kick off X** – Located on the 35 yard line (HS fields) or 40 yard line (college fields). This mark is 14 steps from both the front and back high school hash.
- **“Zero points”** or other practice field grid markings- Highly valuable for speeding up the drill learning process, but it must be emphasized that these markings will not be present in performance and should not be used as a visual cue during a rep.

People/Forms

- In direct vertical cover downs, the cue “line your nose up with the spine of the person in front of you” can be very helpful. This can be taught and reinforced when teaching fundamentals.
- Keeping an eye on the form and the spacing between people on the move should be used in the context of determining if there is a dot accuracy, pathway, or step size issue.

- In linear forms, the primary visual responsibility is usually directly forward, and some times diagonally towards the 50.
 - When cleaning diagonals, I tell people to ensure they are in the exactly accurate left to right location (usually referencing the 1 yard marks), then moving forward/backwards slightly ensure they are in the diagonal.
- Sometimes, especially in curves, it can be easier to determine accuracy by looking at ankle bones to make sure they are in the form.
- When checking arcs/circles performers should be able to draw a line between the two people on either side. Then they should be outside of that line.
- When checking arcs/circle it is often fastest to have people face into the curvature towards a focal point.

Other

- Although very situation depended, at times props, podiums, and front ensemble equipment are potential visual cues.

Pacing Drill Learning

Broadly speaking, people seem to fall into one of two philosophies- 1) teach all the drill as fast as possible and then go back and clean or 2) teach slowly and clean as you go. Certainly, there are a multitude of factors that go into choices of pacing, such as rehearsal/performance schedule, staffing, etc. and these factors may force you more one direction or the other. However, given the choice, I am almost always a supporter of moving slowly and cleaning while you go to help ensure that bad habits are not formed.

Coordinate Sheets vs. Drill Charts vs. UDBapp

I have become a huge fan of the UDBapp. Even if resources do not allow for student usage, UDB will sell small numbers of licenses if just the director(s)/staff want to use it. The app has numerous usages, and I would encourage folks to check out some of the videos the UDB team has released on how to get the most out of the app.

Having taught with both drill charts and coordinate sheets, my preferred approach is a hybrid one. I like for all individuals to have their coordinate sheets and for leaders to have copies of drill charts to assist on the field.

Drill Learning

- The first few sets must be learned slowly and thoroughly. Emphasis should be placed on EVERYONE understanding how to read drill and find their own spots. If someone is struggling to find a spot, resist the urge to place them in their spot. Have them read their coordinate out loud and have them find the left/right location, and then the front/back location. Taking the time up front to ensure everyone has a strong understanding of the process and how to learn for themselves is critical.

- “Check. Adjust. Stand-by.” – There are lots of slight variations here, but I highly encourage the development of consistent process for people to evaluate and correct themselves at the end of a rep. **** with call and response
- In terms of adding music to the drill, I have done this multiple ways. I have spent an entire rehearsal block on just putting sets on the field with no music, then added playing in a later block. I have also added music to each set before moving on. The approach can certainly change based on rehearsal structure, complexity of music, complexity of drill, and many other factors. I am particularly a fan of working by chunk or phrase- learning perhaps ~3-5 sets without music. Then adding music one set at a time and doing some cleaning of that chunk while it’s still fresh.
- **Initial Process**
 - Everyone finds set A and stands at “Stand-by” when there. Staff/leadership verifies set is correct.
 - Everyone finds set B and stands at “Stand-by” when there. Staff/leadership verifies set is correct.
 - Reset to set A.
 - Have everyone point to set B and verbalize how many counts the set is.
 - Drum Major or staff calls “Set” and performers go to attention position with a -1 foot position
 - Drum major/metronome/center snare initiates count off. Everyone verbalizes” 5-6-7-8”
 - For the first rep of the first couple sets, I tend to have people face the direction of travel. Just for simplicities sake before we worry about facings.
 - Whether you have people sing or count (my preferred method), insisting on 100% participation is critical
 - Performers end rep frozen in +1 or -1 position
 - Drum Major or staff gives “Check. Adjust. Stand-by.” instruction
 - Feedback given (specify tower first, field first, or other)
 - Reset or find next set

The Rehearsal/Cleaning Process

- Everyone stands in starting set
- Drum Major or staff calls “Set” and performers go to attention position with a -1 foot position
- Optional depending on focus: Stand and play music for the set/chunk
- Drum major/metronome/center snare initiates count off. Everyone verbalizes” 5-6-7-8”
- Performers end rep frozen in +1 or -1 position
- Drum Major or staff gives “Check. Adjust. Stand-by.” instruction
- Feedback given (specify tower first, field first, or other)
- Reset/next set/next chunk

Additional Rehearsal/Cleaning Strategies

- Run chunk with counts only
- Run chunk with only some students playing/ others counting
- Run chunk with air and fingers
- Run chunk or entire song, pausing only briefly on each set without every breaking attention. Can be done with a check/adjust in between or a predetermined number of counts in between.
- Try cleaning of each chunk building backwards. For example, if the focus chunk is Sets 1-4, we'll clean 3 to 4, then go 2 to 4, then 1 to 4
- Have students point to next spot, halfway point, of visual cue before the rep
- Have students point to visual cue and or spot while on the move
- Stop at half-way point of the set
- Run chunk on counts and facing the direction of travel
- Identify yard line crossing counts. Very important with unison movements of blocks. This information is embedded within the UDBapp if you use that.
- “Rewind” or “retrace” – move back to the previous set by facing the spot and marching to it. For some people this is a core part of their teaching process. I tend to use it sparingly. Sometimes when introducing the first few pages of drill so students can get a sense of how all the pieces of the puzzle fit together. And occasionally as a cleaning technique on more complex transitions.
- The information that wind players, percussionists, and guard members need during drill is often different. It can sometimes be helpful to teach or clean drill as separate components. This can be extended to even teaching drill with winds, just percussion, or just color guard.
- Sometimes problem spots are isolated enough you can most efficiently work the spot with one or two sections on the field (while everyone else does something else). I have worked with some groups who teach drill with only a couple sections out on the field at one time.

The Margin of Error

There exists a discrepancy between the way the hashes are laid out mathematically and how the drill grid is typically overlaid on a football field. Given a standard high school field this margin of error is 10 inches per third of the field- or 3 inches total front-to-back. There are multiple ways of accommodating this. Without getting too far into the pros and cons of the various methods, I will just present my preferred method. This involves the use of “zero points” or “gaks” marked at four step intervals front to back that are slightly altered to be just over the 90 inches they should technically be. Please see Brendan Maltese’s guide that I reference earlier and is linked on my website for the simplest way to measure these. Note that a discrepancy also exists with the NCAA/Texas hash marks and there are various ways of accommodating that as well.

Timing and Phasing

[This YouTube Video](#) is the single best explanation of timing and pulse on the football field. Inevitably there are moments in most shows where timing requires extra care and attention. The priority of watching vs. listening can vary from place to place on the field and can change set to set. Going through and helping performers identify if they should be watching or listening can generally fix a lot of issues. The default rule for drum majors is that they should be keeping an eye on the feet of the center snare player and should not be conducting with what they hear.

Fundamentals

Fundamentals must be OMNIPRESENT. Fundamentals of tone production, posture, foot technique, etc. all TEND to suffer when the complexity of learning drill is added. However fundamental technique is non-negotiable and the expectation for good fundamentals must be maintained at all times. Strong training of fundamentals before starting drill is paramount in scaffolding instruction so that performers can be successful.

Ensuring Proper Prop Placement

It is perhaps shockingly easy for on field props to be set up in correctly. Labeling the starting position somewhere on the prop can be helpful. If setting up a prop before the show that is not on a major field marking, you can utilize a premeasured string attached to the prop to quickly gauge the distance from a major field marking. Placing a discreet mark on the center (or whatever part will be in line with the written coordinate) is useful for props that move throughout the show.