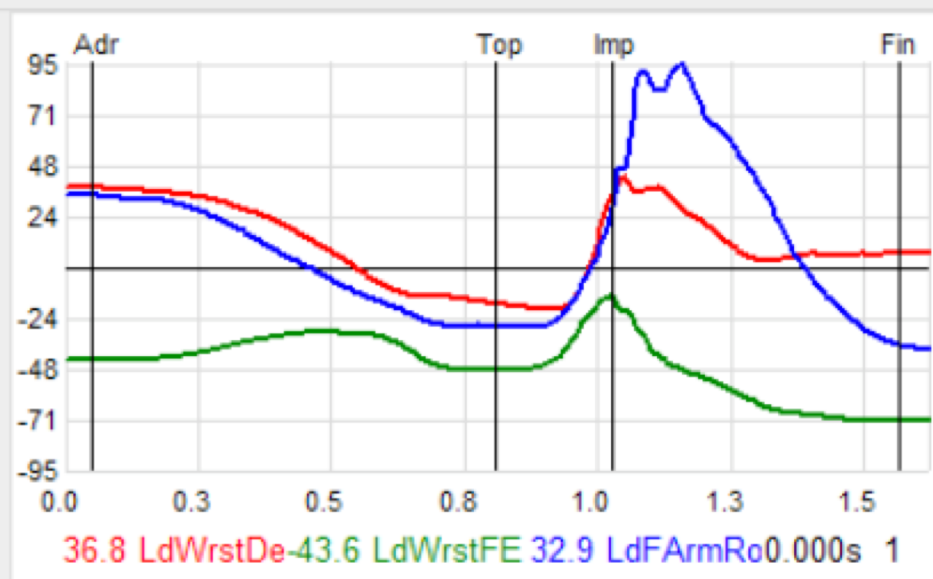
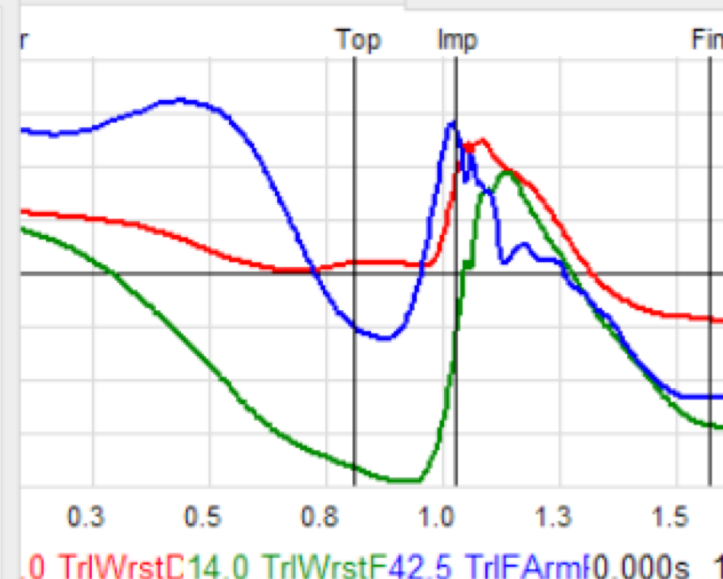
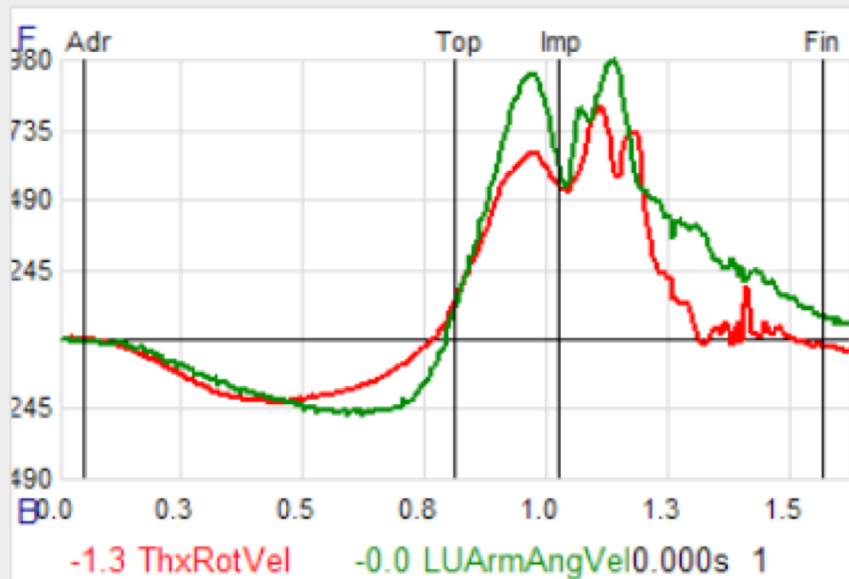
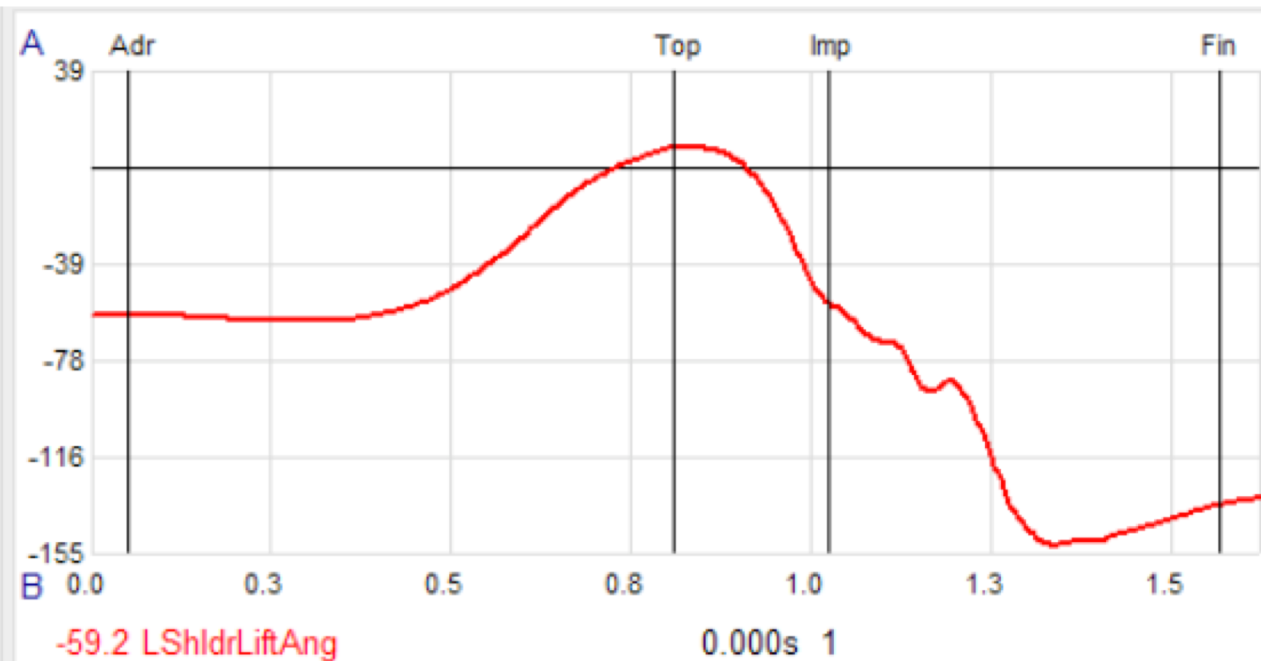
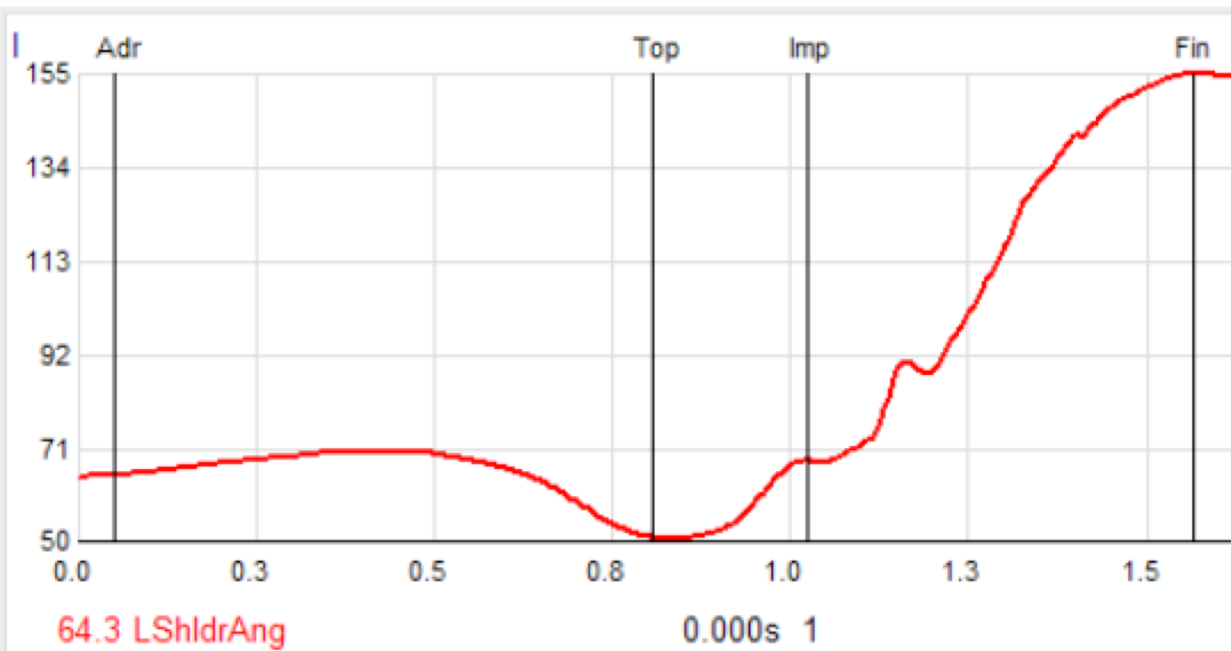


# Topics

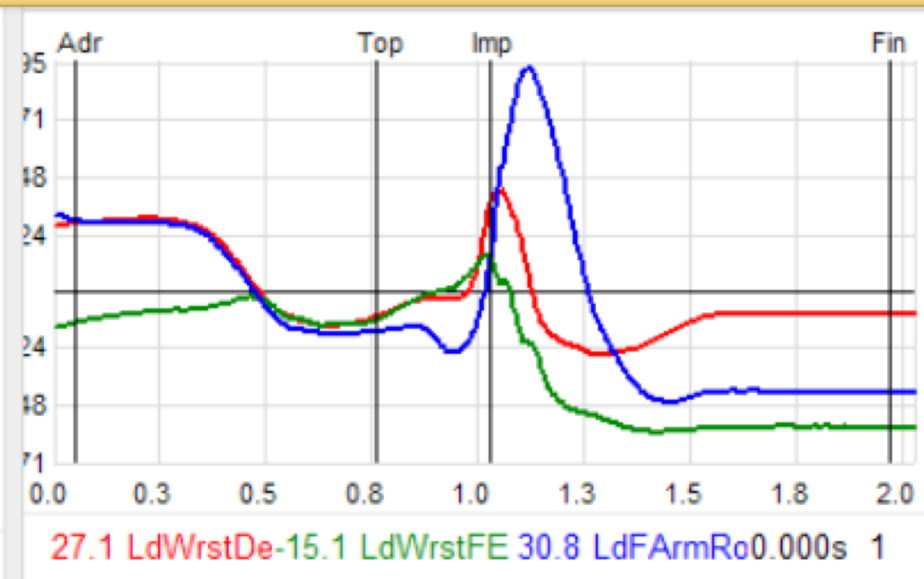
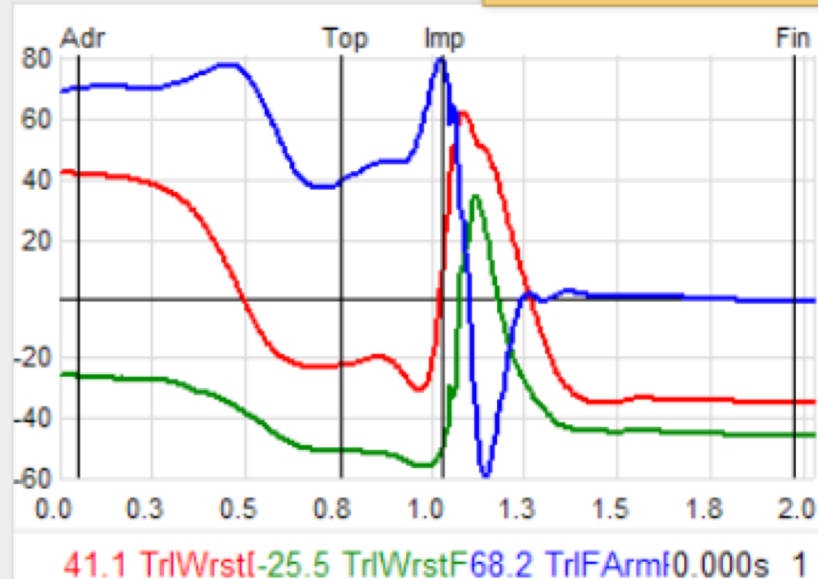
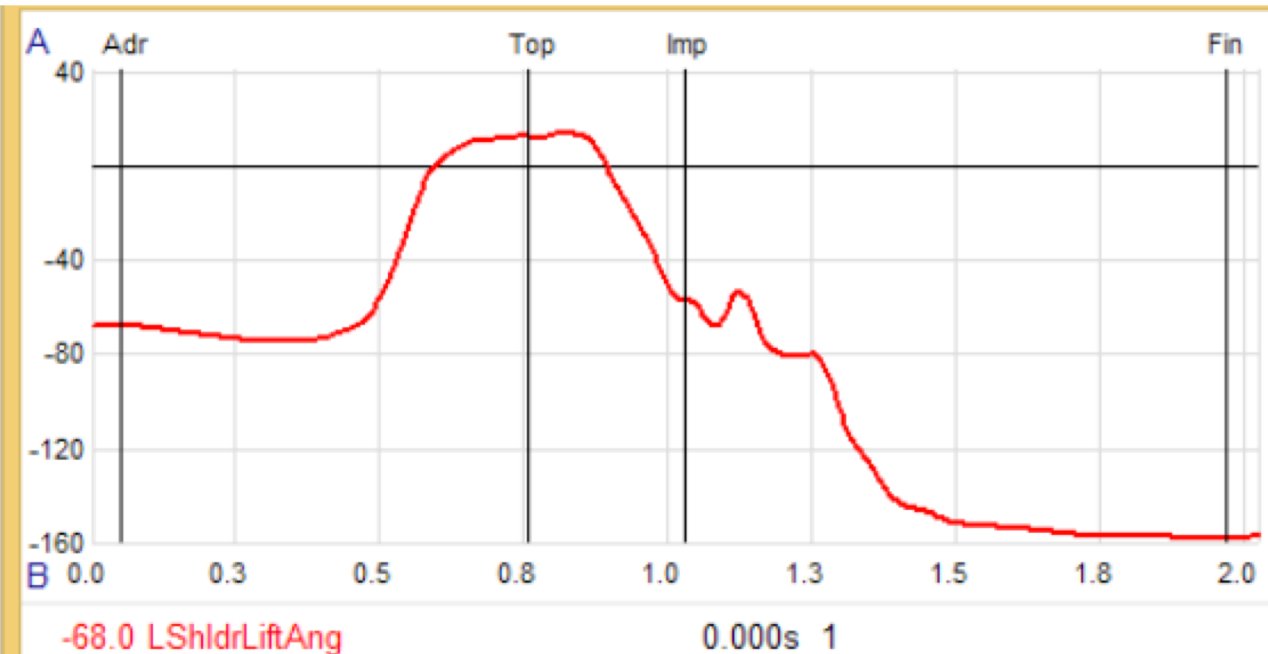
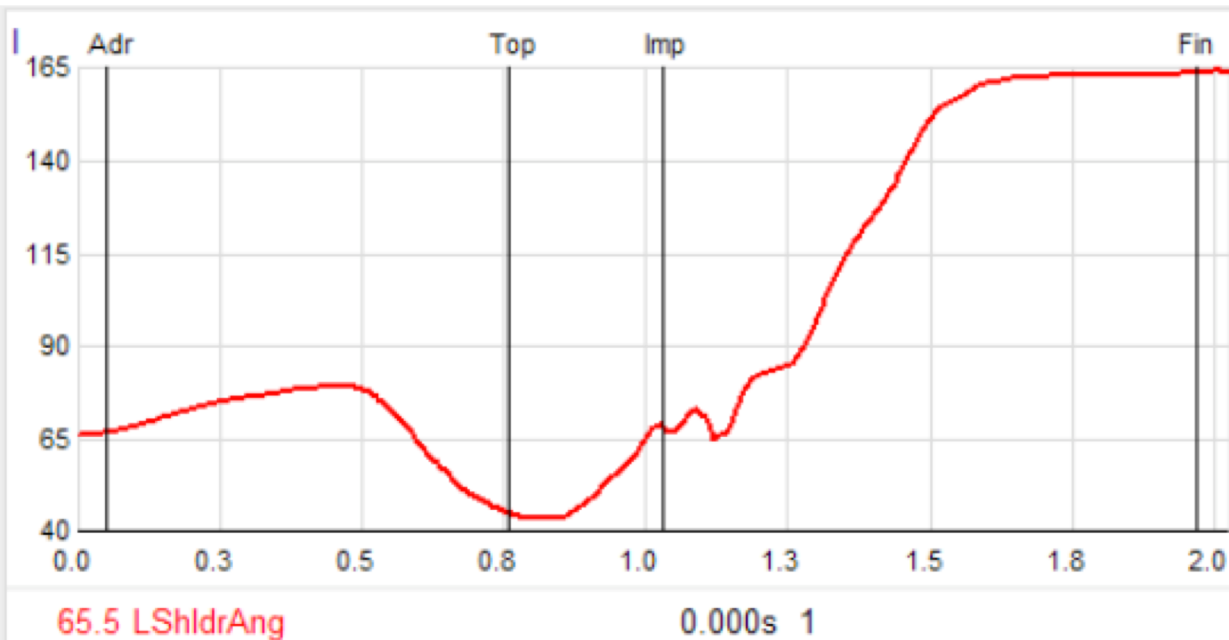
- 3D – Lead arm shoulder in transition – lift, lag, shallow
- Anatomy – Ankle/Foot coupled movements
- Coaches Questions/Swing Discussions

# Pro 1



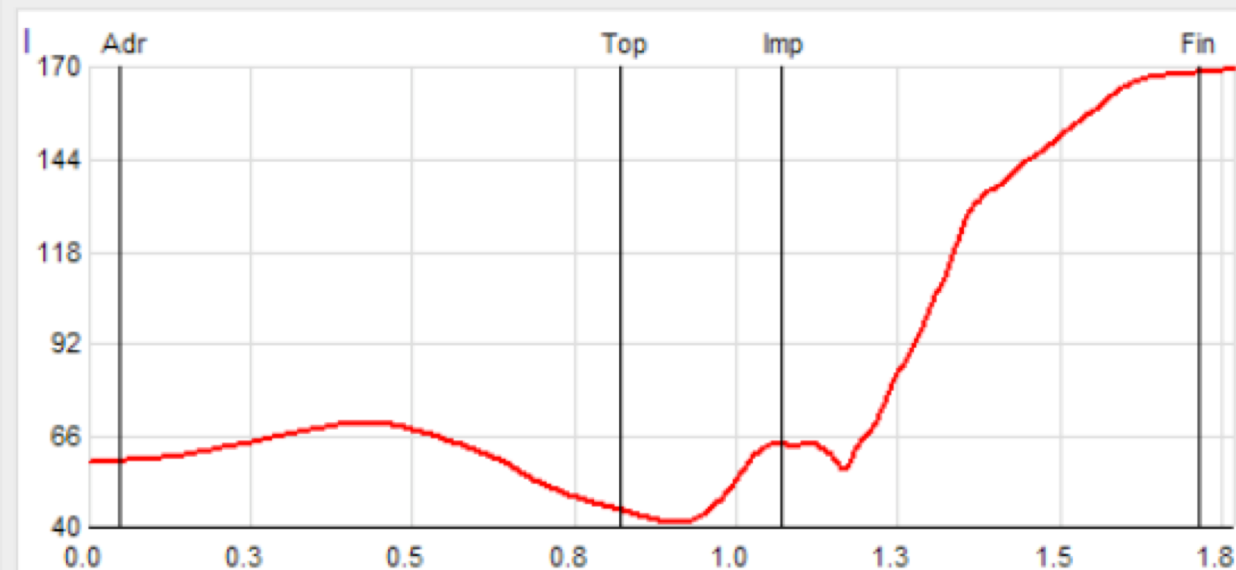


# Pro 2



Pro 3

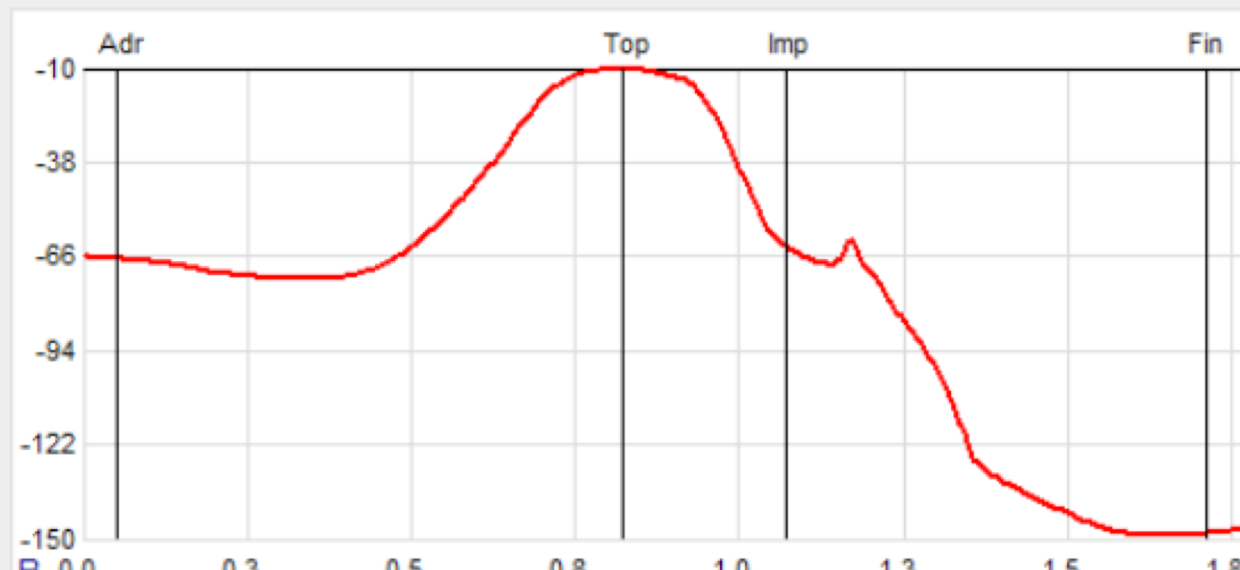
Lead Shoulder Angle - Driver 4 - Waite Grant



58.0 LShldrAng

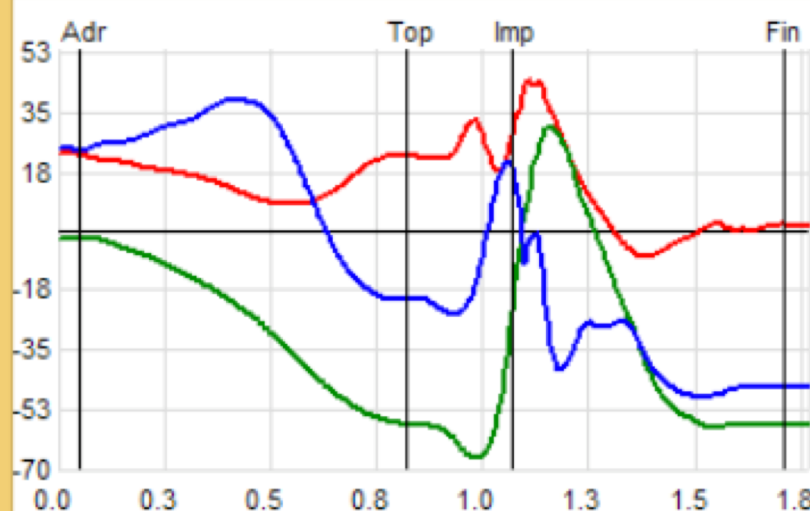
0.000s

Lead Shoulder Lift - Driver 4 - Waite Grant



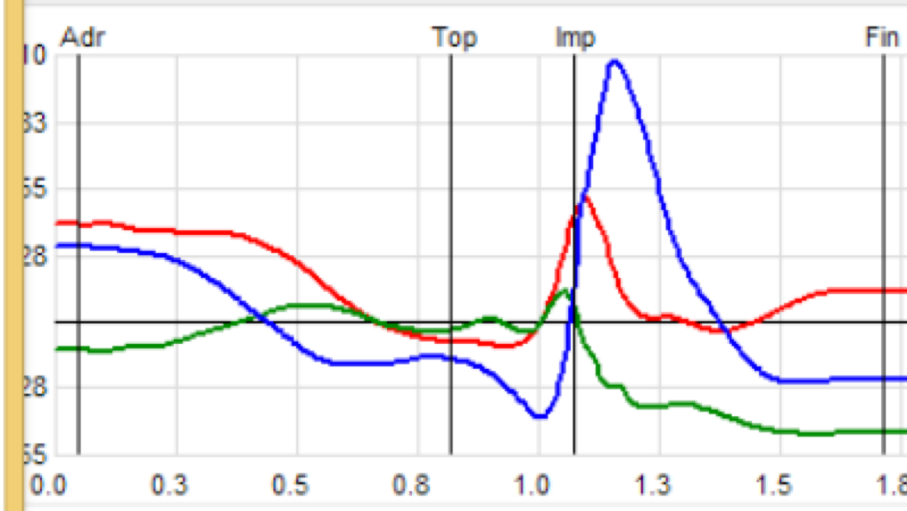
B

Trail Wrist Angles - Driver ...

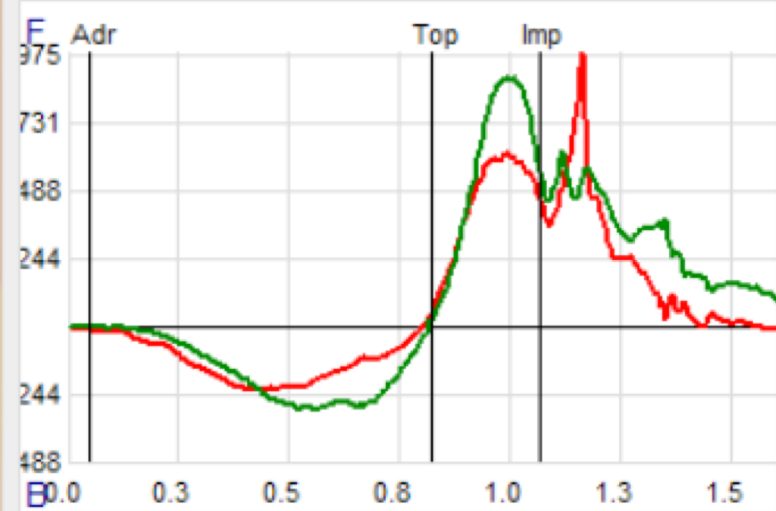


22.1 TrlWrstD -2.3 TrlWrstF 23.8 TrlFArmI 0.000s 1

Lead Wrist Angles - Driver 4 - Wai...

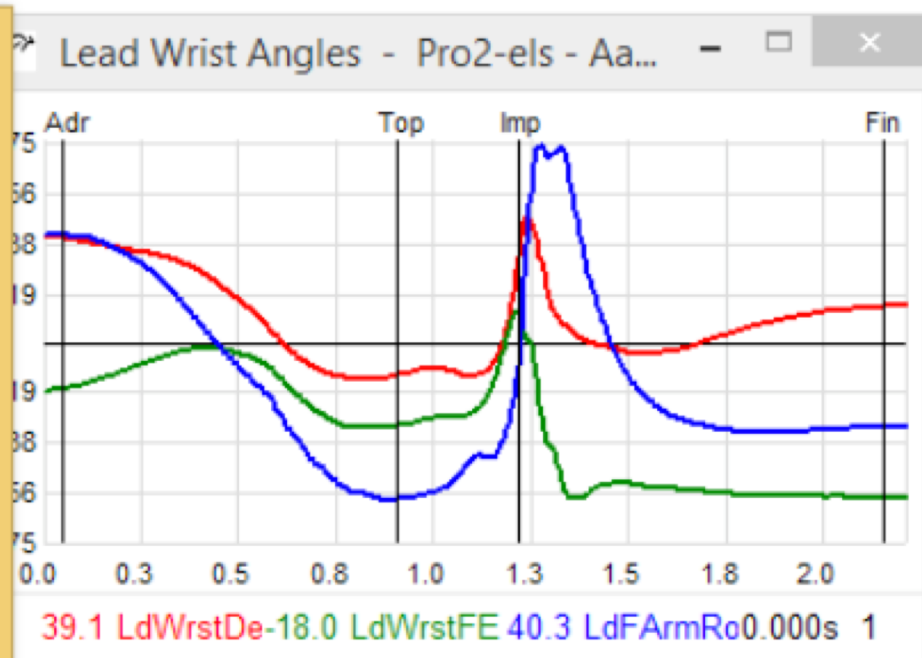
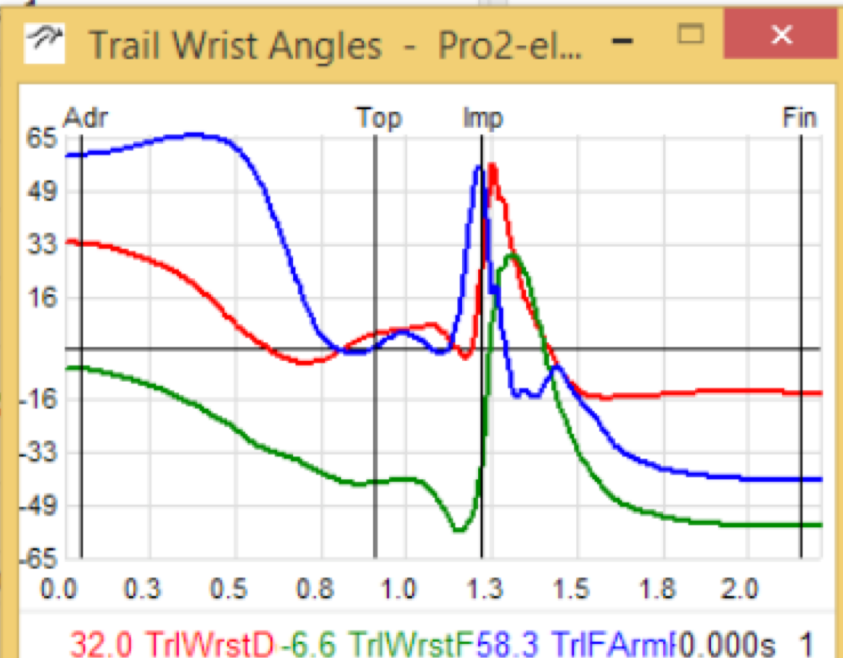
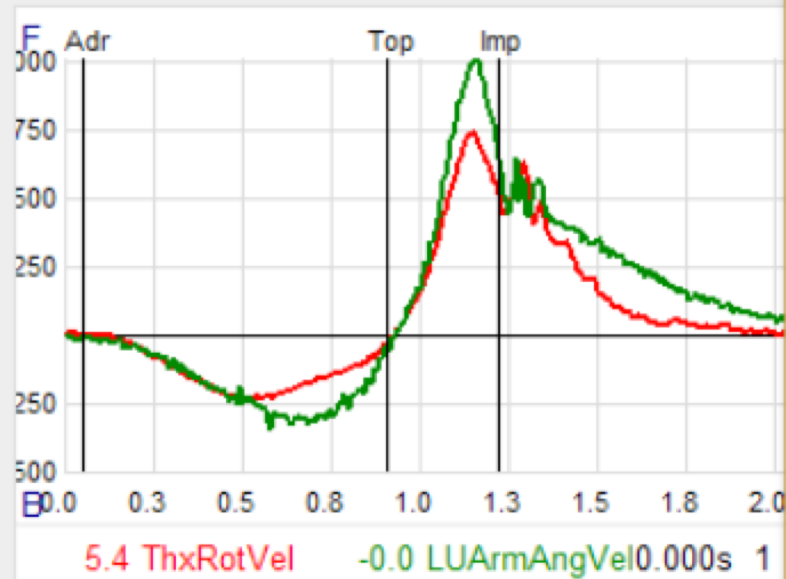
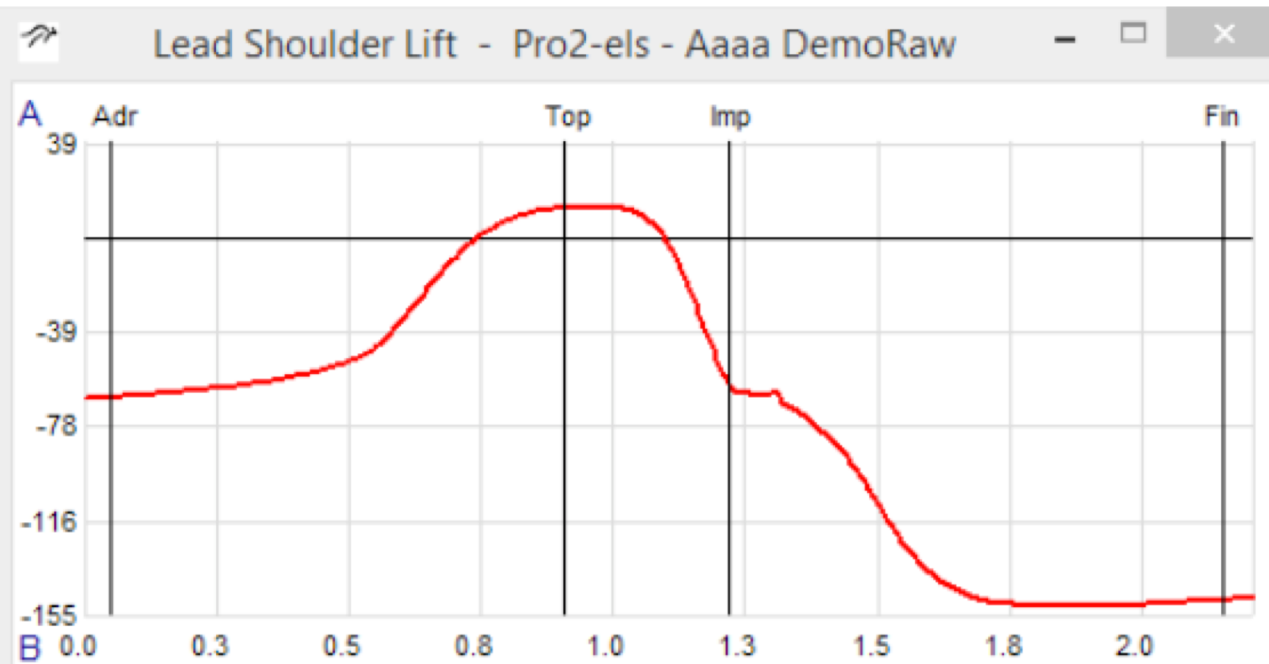
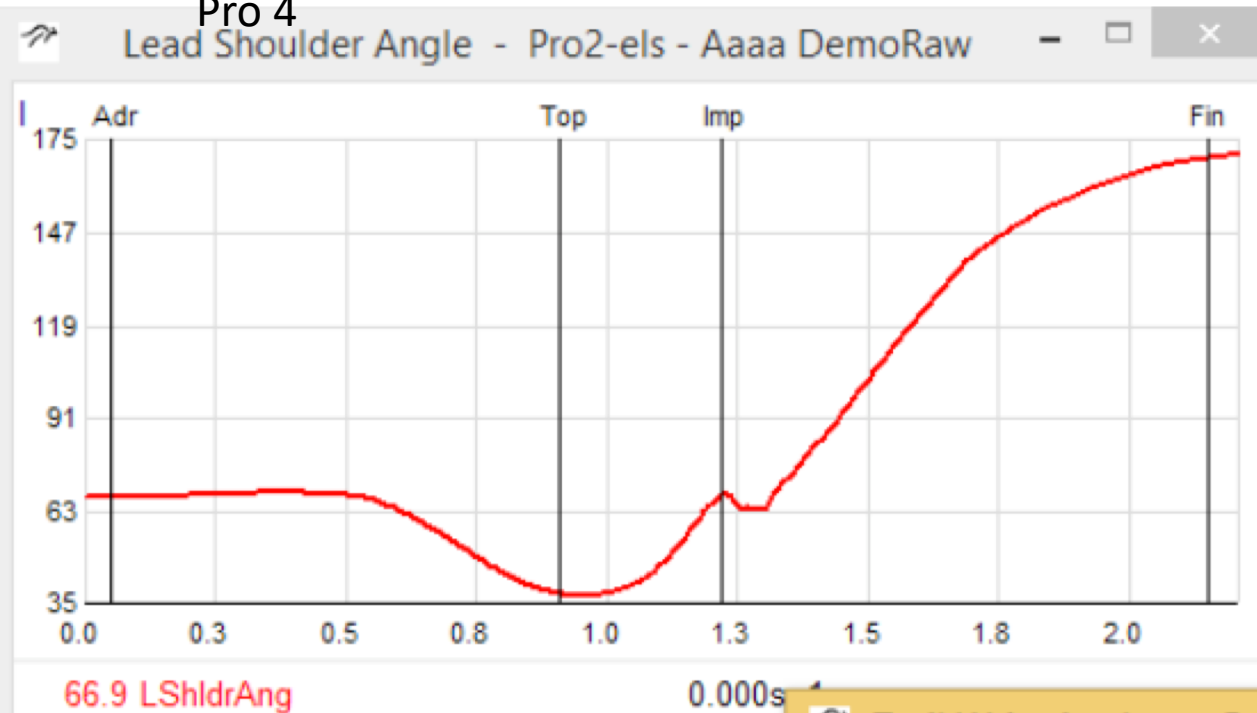


40.5 LdWrstDe -12.1 LdWrstFE 30.6 LdFArmRo 0.000s 1



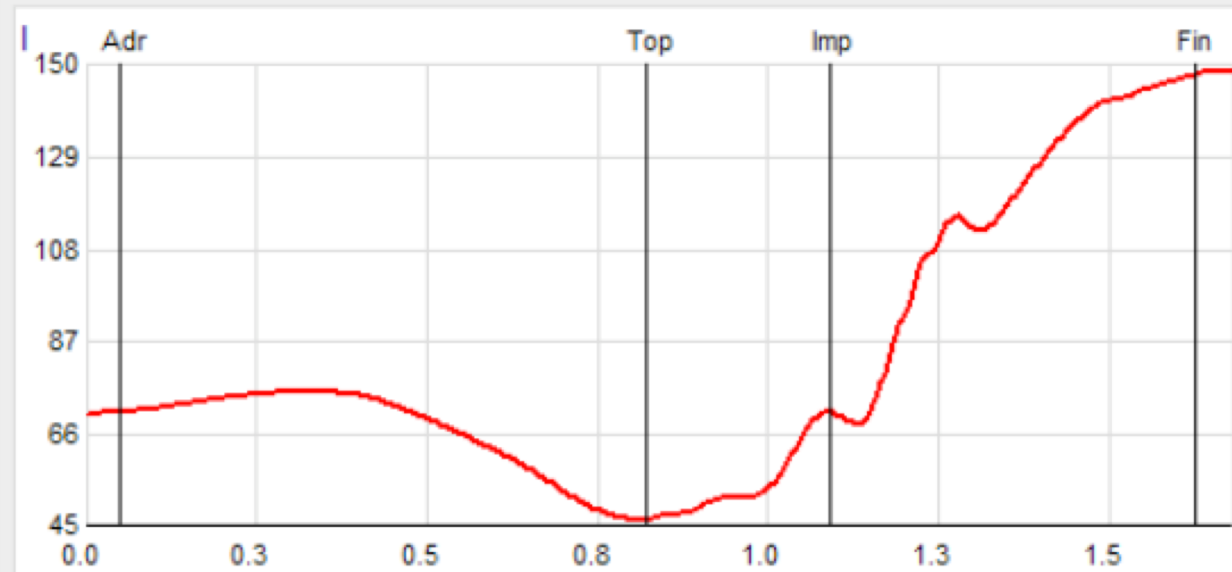
-8.5 ThxRotVel -0.0 LUArmAngVel 0.000s 1

# Pro 4



Pro 5

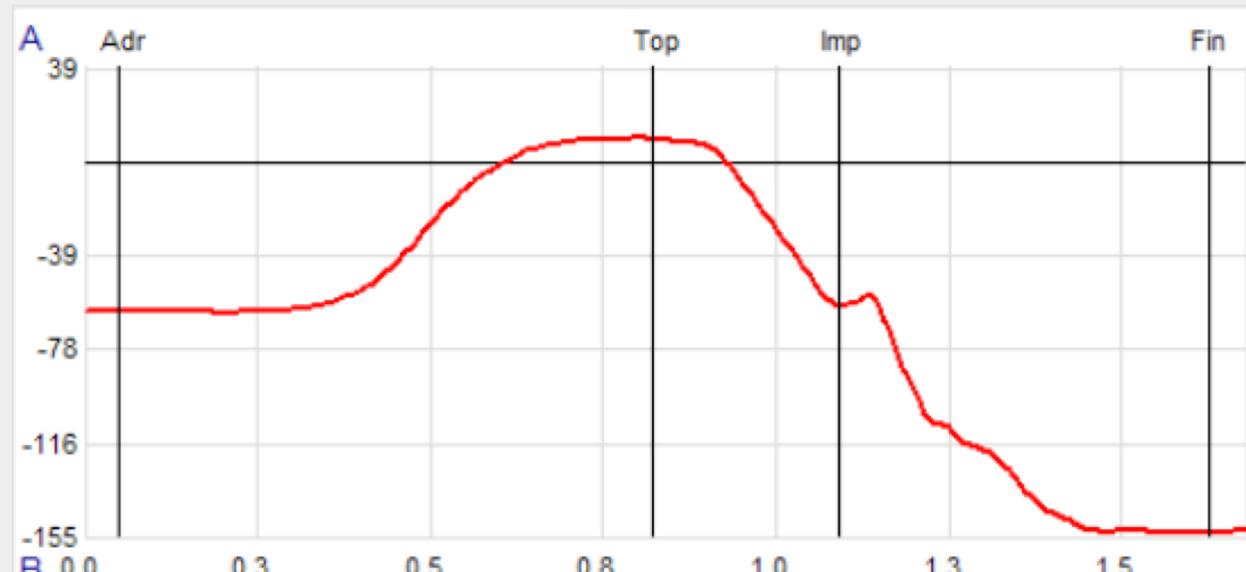
Lead Shoulder Angle - Lovell good - Aaaa DemoRaw



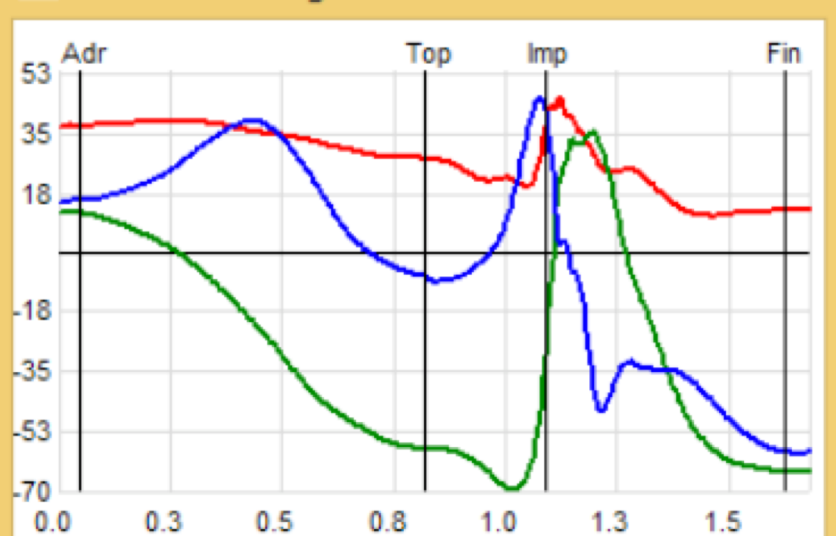
70.2 LShldrAng

0.000s

Lead Shoulder Lift - Lovell good - Aaaa DemoRaw

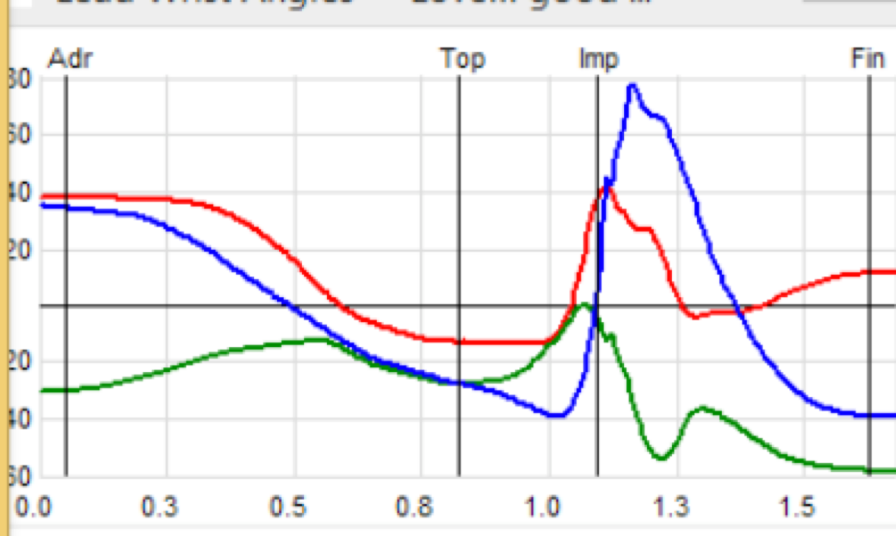


Trail Wrist Angles - Lovell good - Aaaa DemoRaw

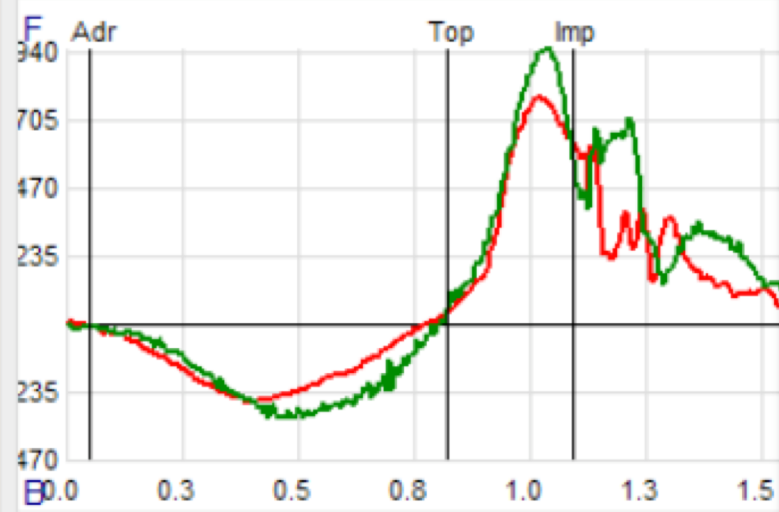


36.5 TrlWrstD 11.0 TrlWrstF 14.5 TrlFArmI 0.000s 1

Lead Wrist Angles - Lovell good - Aaaa DemoRaw



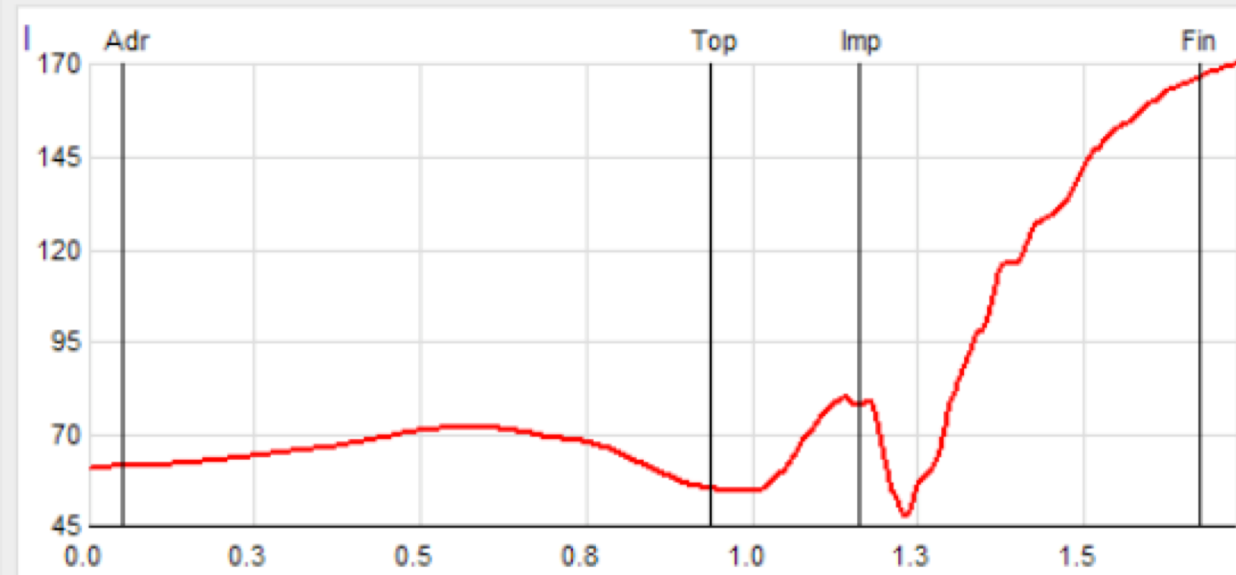
37.4 LdWrstDe -30.3 LdWrstFE 34.3 LdFArmRo 0.000s 1



4.5 ThxRotVel -0.0 LUArmAngVel 0.000s 1

Am 1

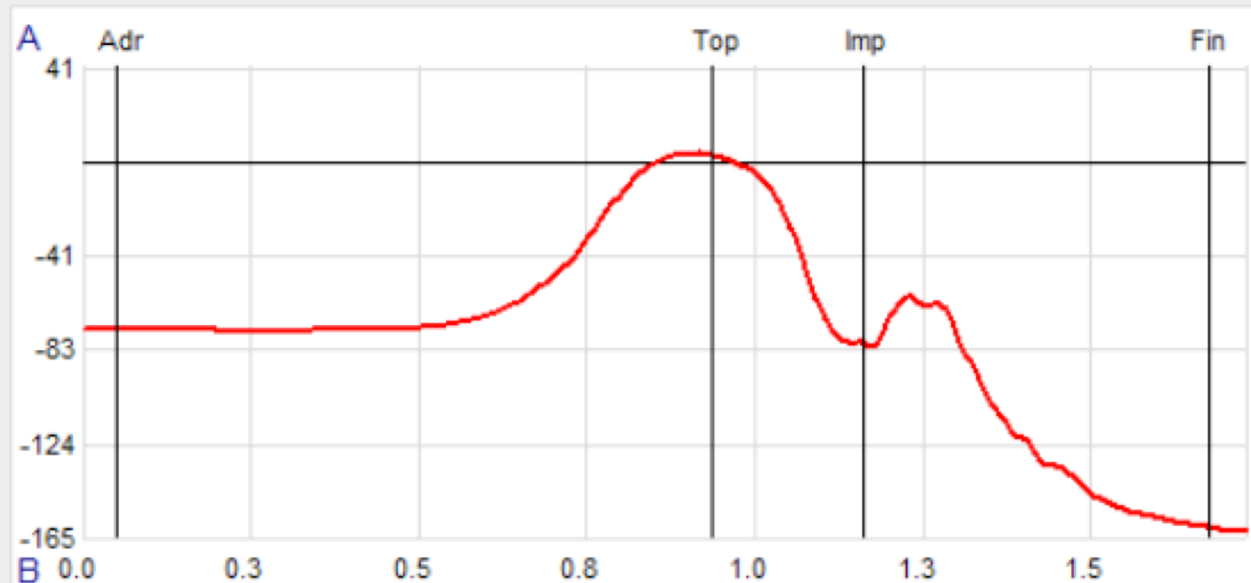
Lead Shoulder Angle - 2 driver 3 good -



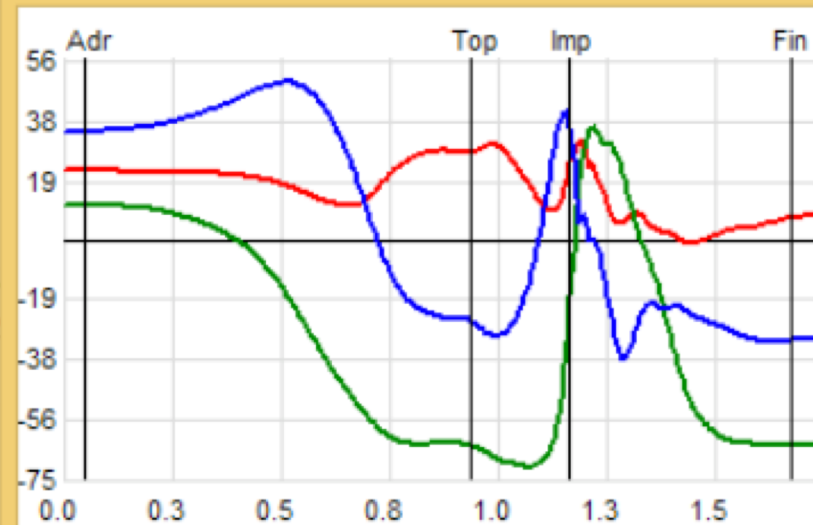
60.6 LShldrAng

0.000s

Lead Shoulder Lift - 2 driver 3 good -

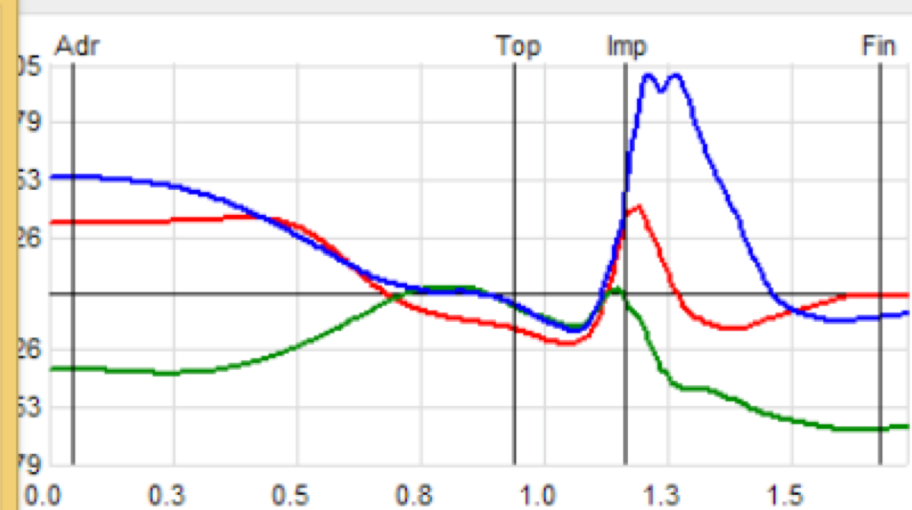


Trail Wrist Angles - 2 drive...

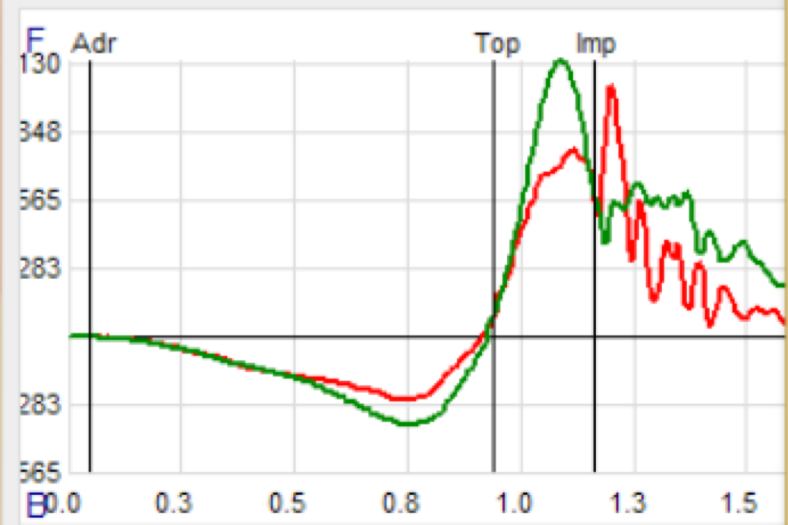


21.4 TrlWrstC 10.5 TrlWrstF 33.2 TrlFArmI 0.000s 1

Lead Wrist Angles - 2 driver 3 go...



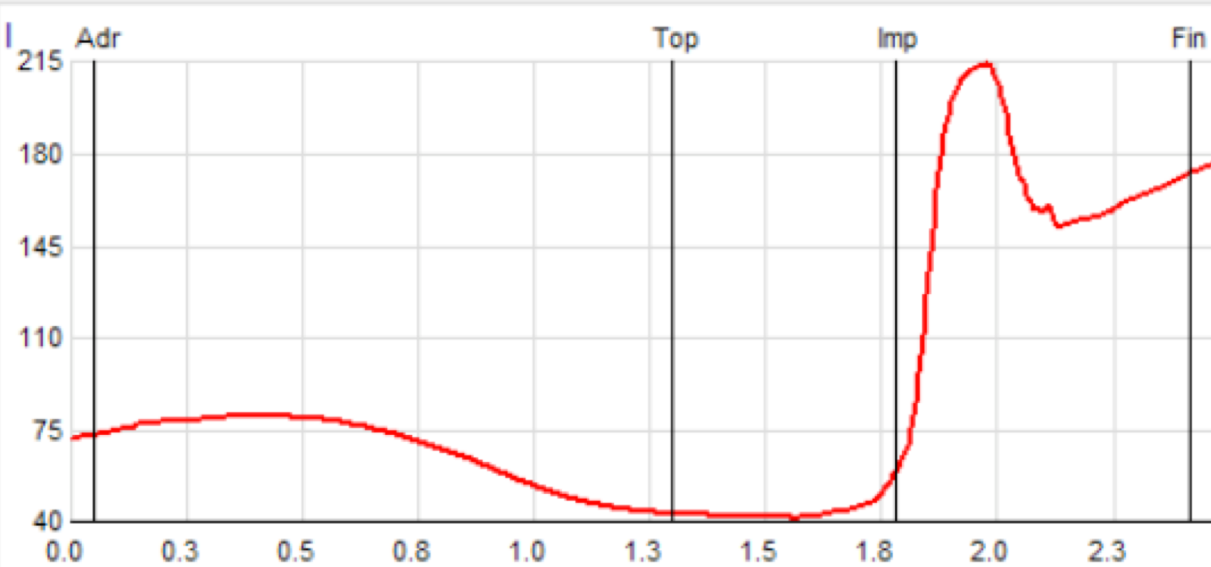
31.7 LdWrstDe -35.4 LdWrstFE 52.4 LdFArmRo 0.000s 1



-1.4 ThxRotVel -0.0 LUArmAngVel 0.000s 1

Am 2

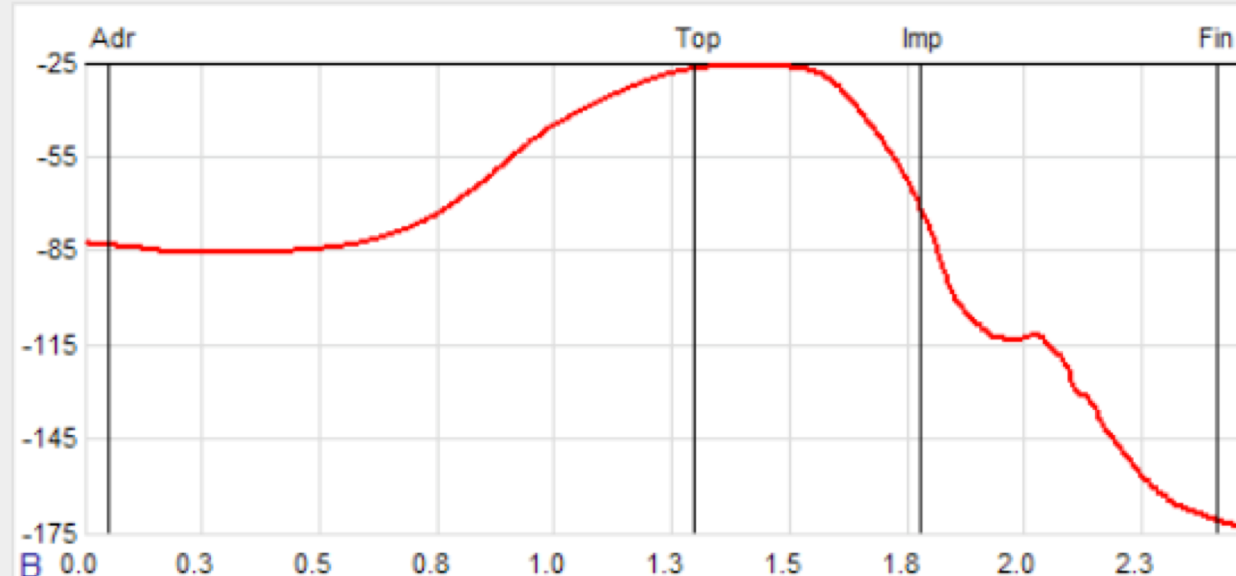
Lead Shoulder Angle - Driver 2 good -



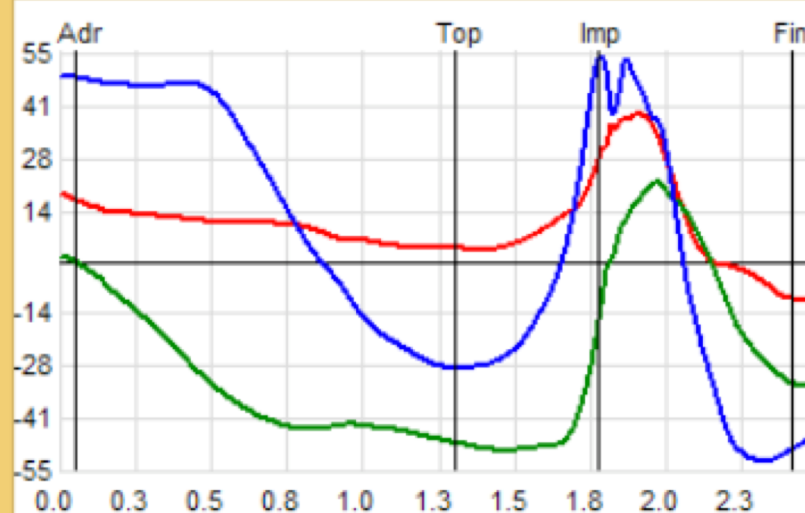
71.3 LSHldrAng

0.000s

Lead Shoulder Lift - Driver 2 good -

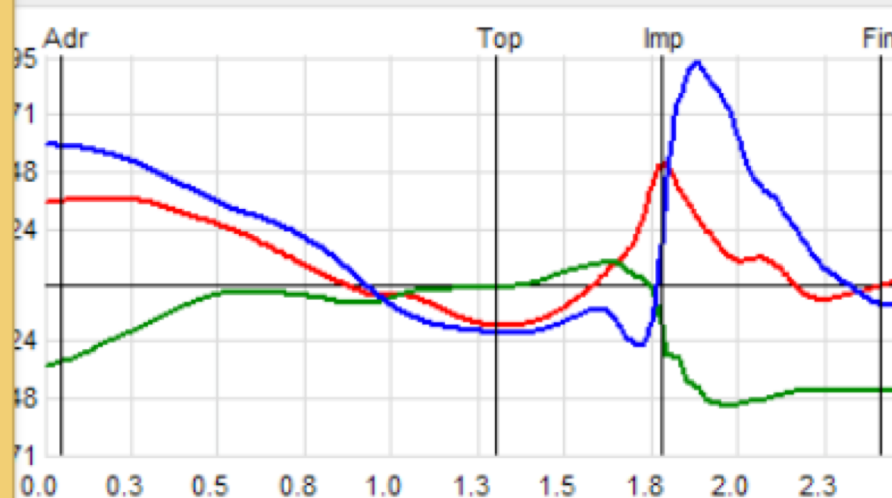


Trail Wrist Angles - Driver ...



17.3 TrlWrstDe 1.3 TrlWrstF 48.2 TrlFArm 0.000s 1

Lead Wrist Angles - Driver 2 good...

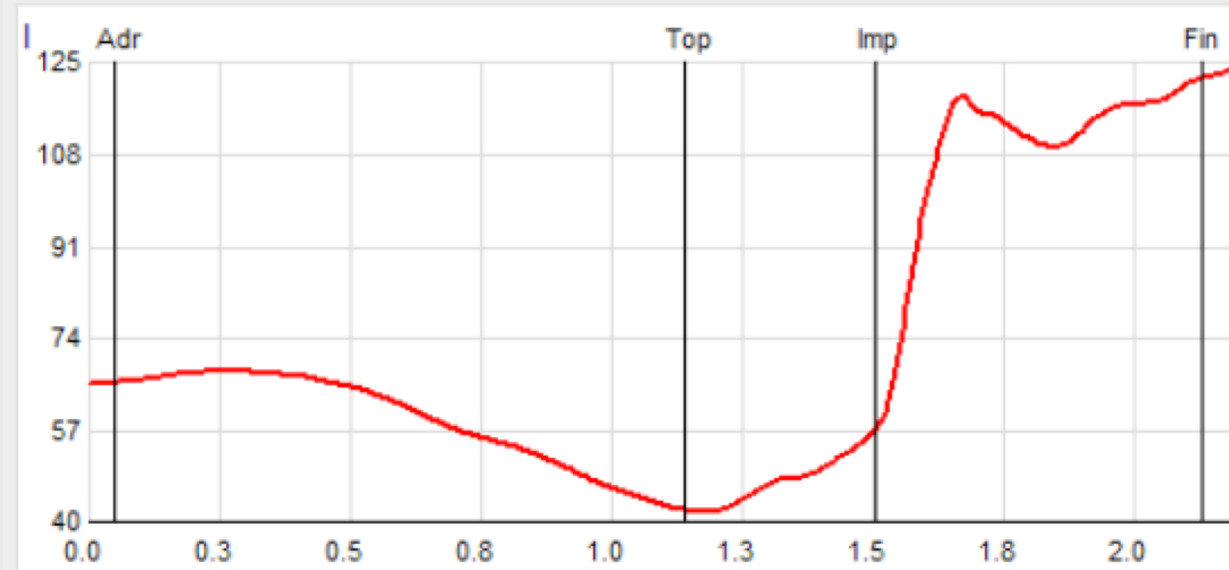


34.2 LdWrstDe -33.9 LdWrstF 57.5 LdFArm 0.000s 1



Am 3

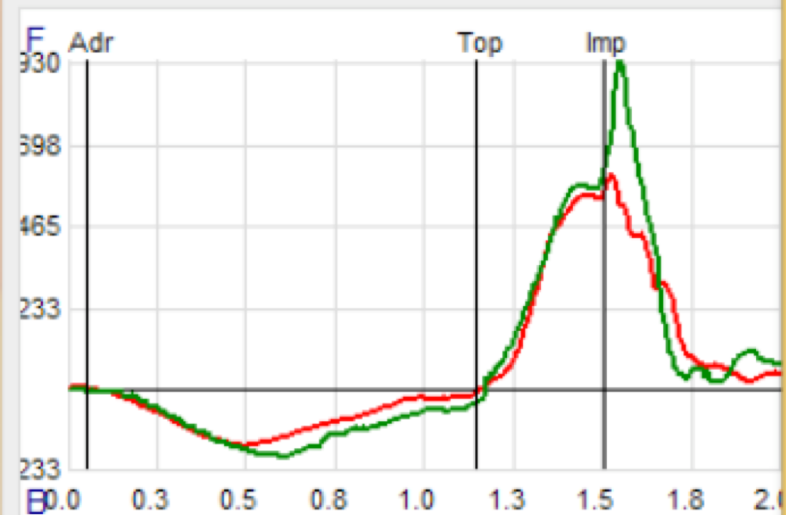
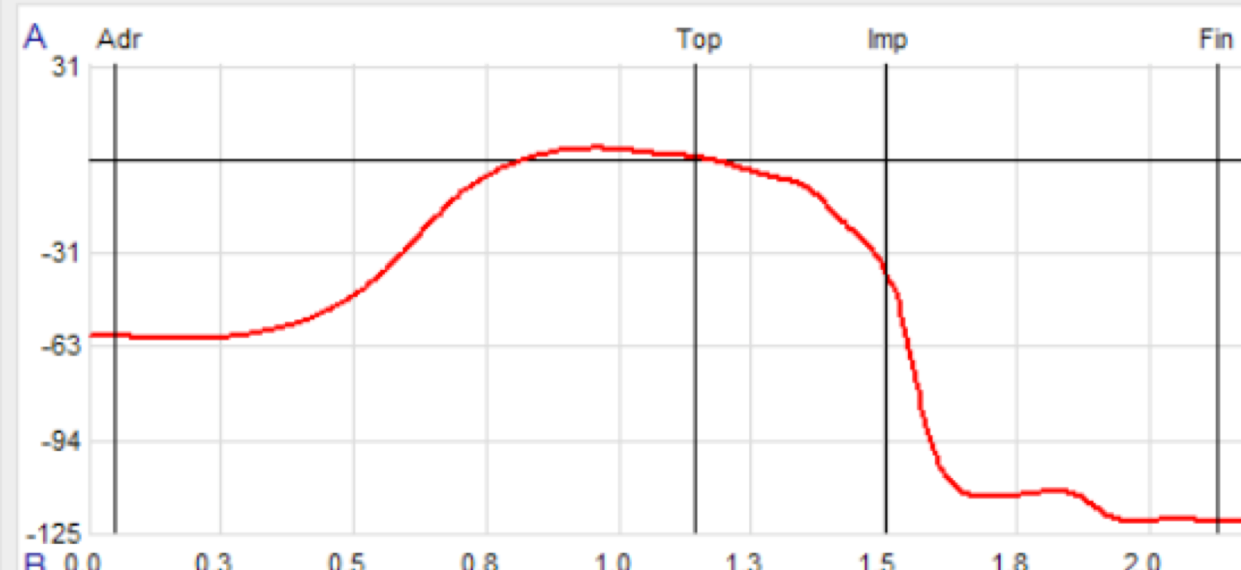
Lead Shoulder Angle - 1 Driver 2 -



65.5 LShldrAng

0.000s

Lead Shoulder Lift - 1 Driver 2 -

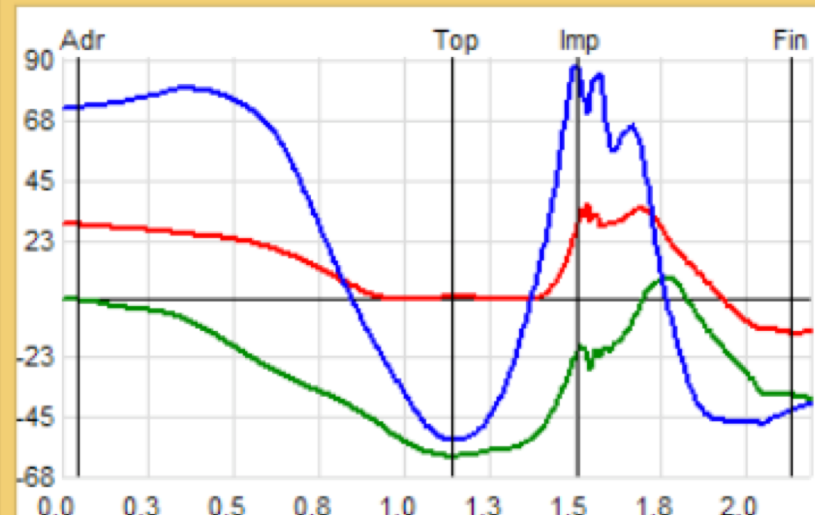


1.3 ThxRotVel

-0.0 LUArmAngVel

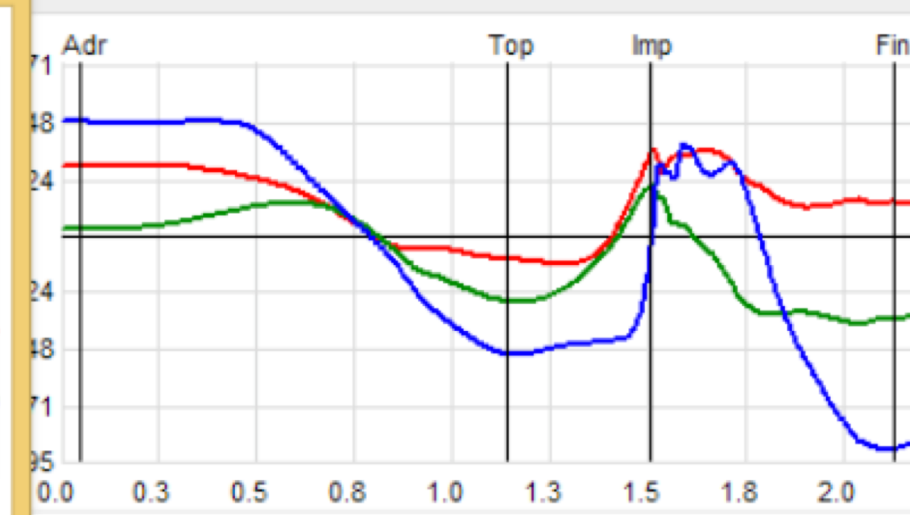
0.000s

Trail Wrist Angles - 1 Drive...



27.8 TrlWrstD -0.1 TrlWrstF 70.3 TrlFArmI

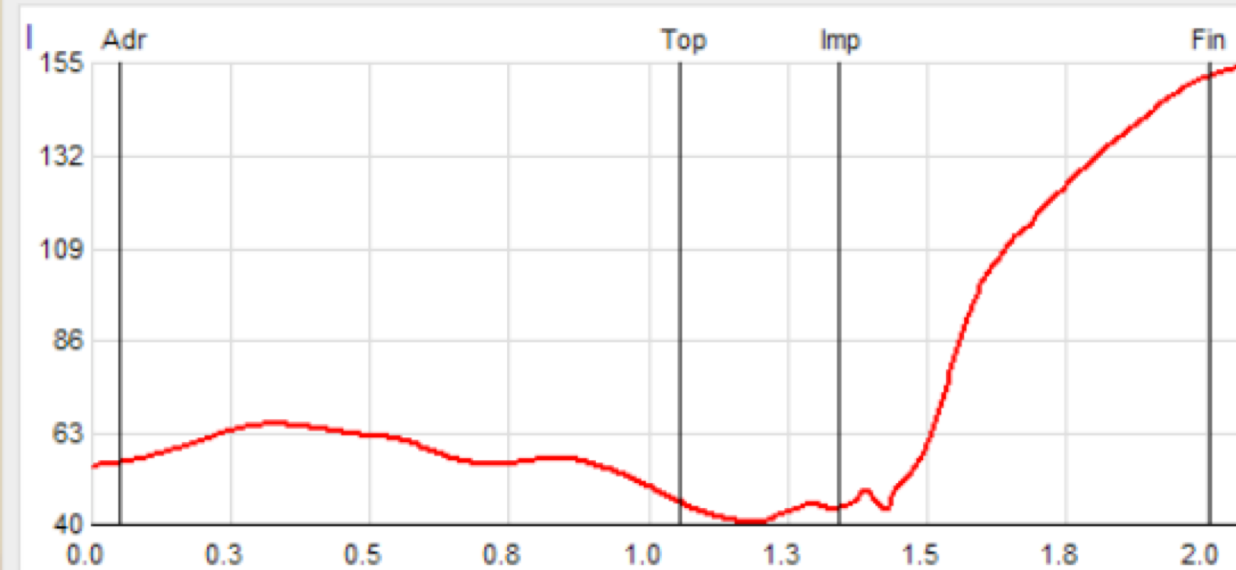
Lead Wrist Angles - 1 Driver 2 -



28.6 LdWrstDev 2.5 LdWrstFE 47.1 LdFArmRo

am 4

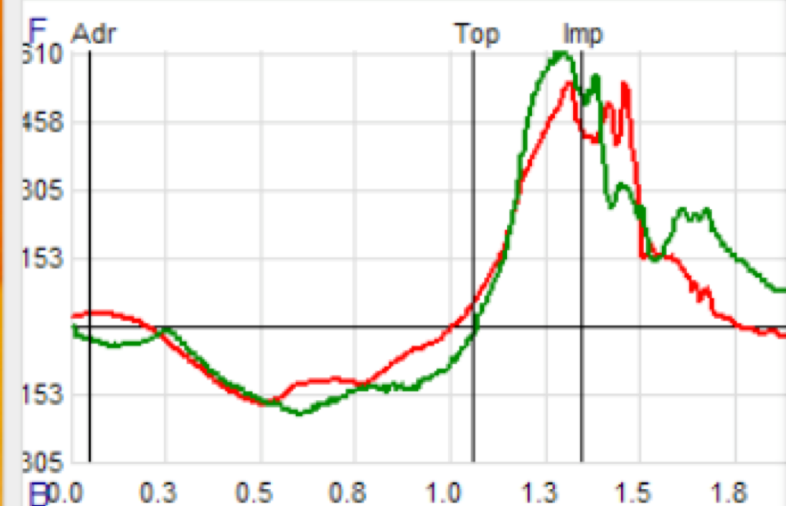
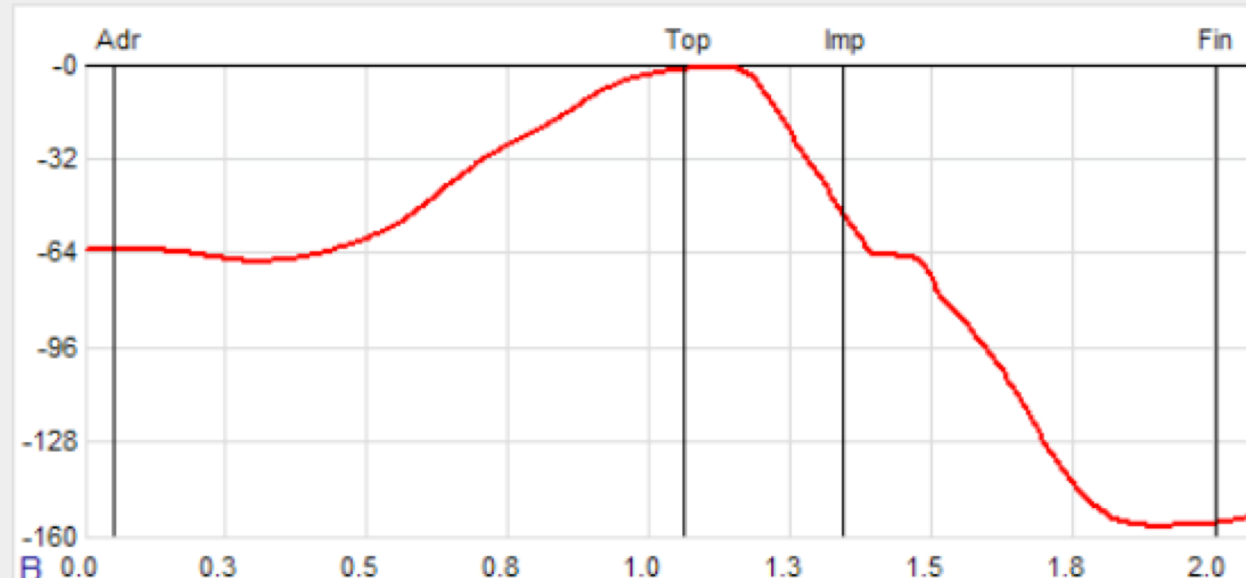
Lead Shoulder Angle - Driver 2 hook -



54.4 LShldrAng

0.000s 1

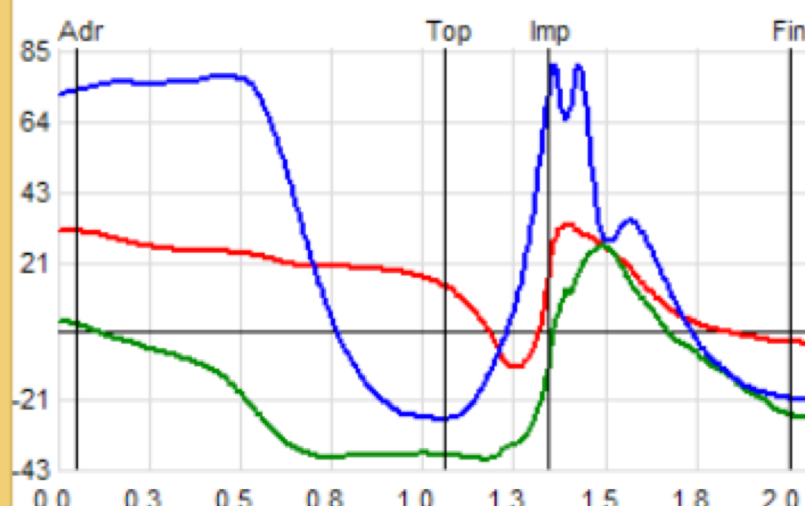
Lead Shoulder Lift - Driver 2 hook -



21.3 ThxRotVel

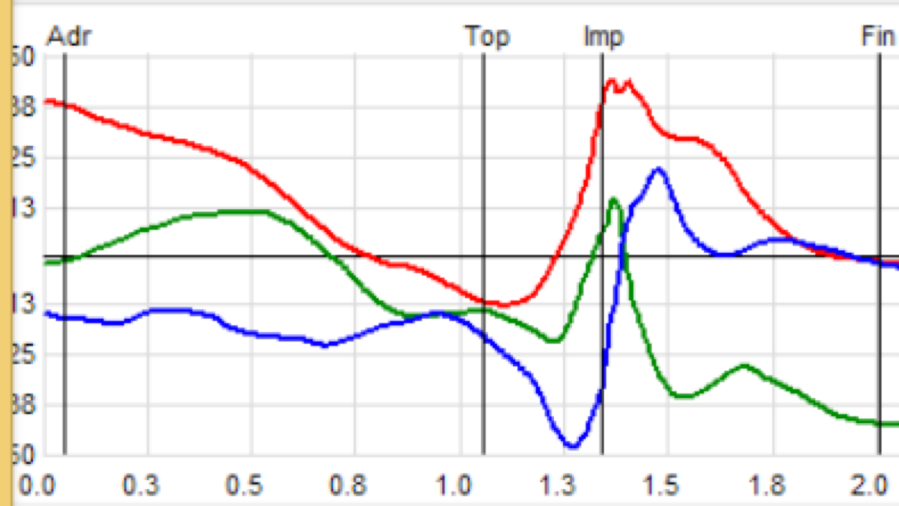
-0.0 LUArmAngVel

Trail Wrist Angles - Driver ...



30.2 TrlWrstDe 2.9 TrlWrstF 71.3 TrlFArmf

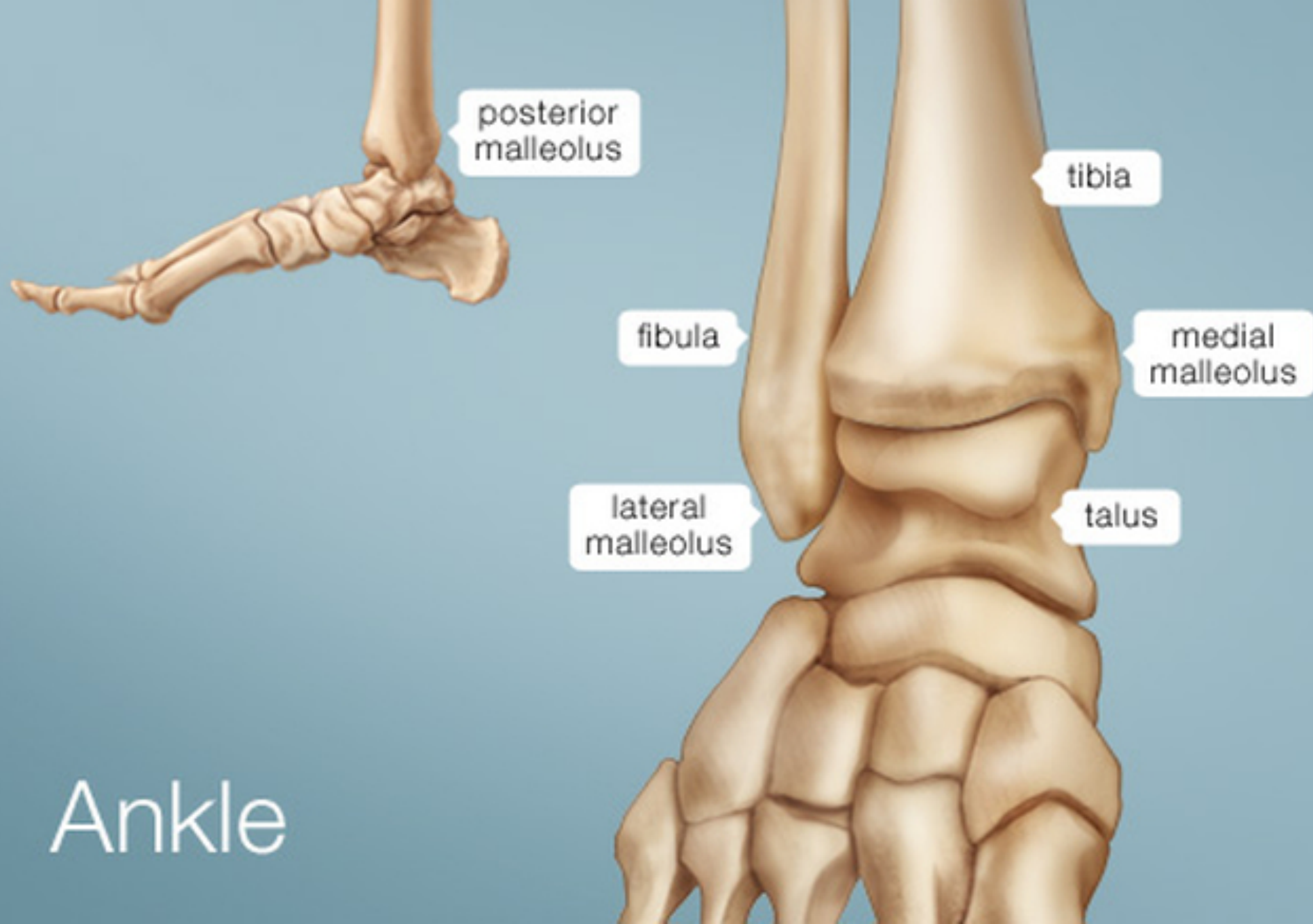
Lead Wrist Angles - Driver 2 hook...



38.0 LdWrstDev -2.3 LdWrstFE -14.9 LdFArmRo



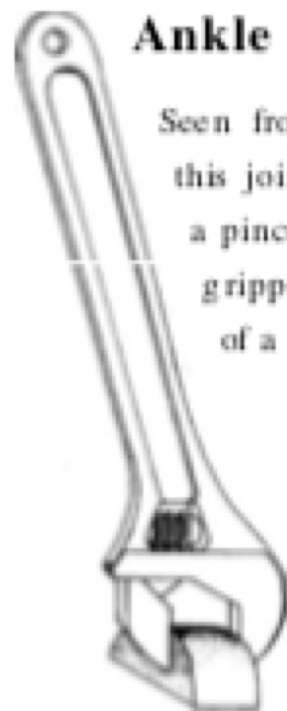
# Foot and Ankle Anatomy



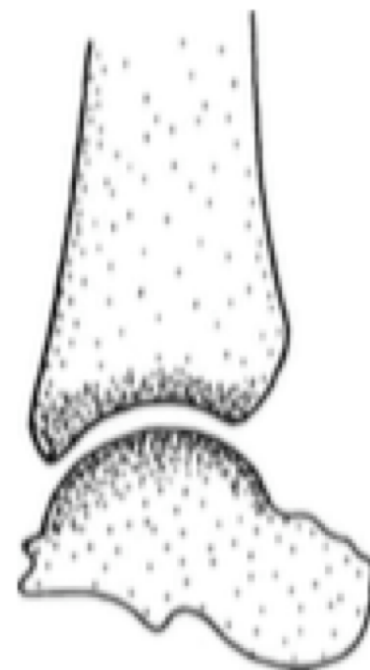
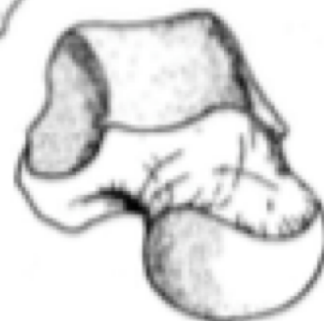
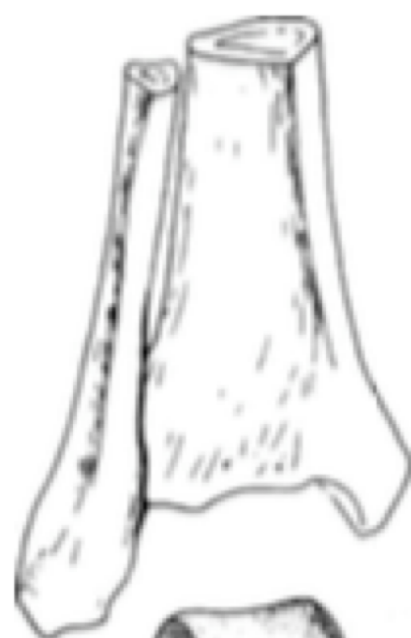
Ankle

## Ankle joint

Seen from the front,  
this joint resembles  
a pincer or crescent wrench  
gripping a section  
of a hemisphere.



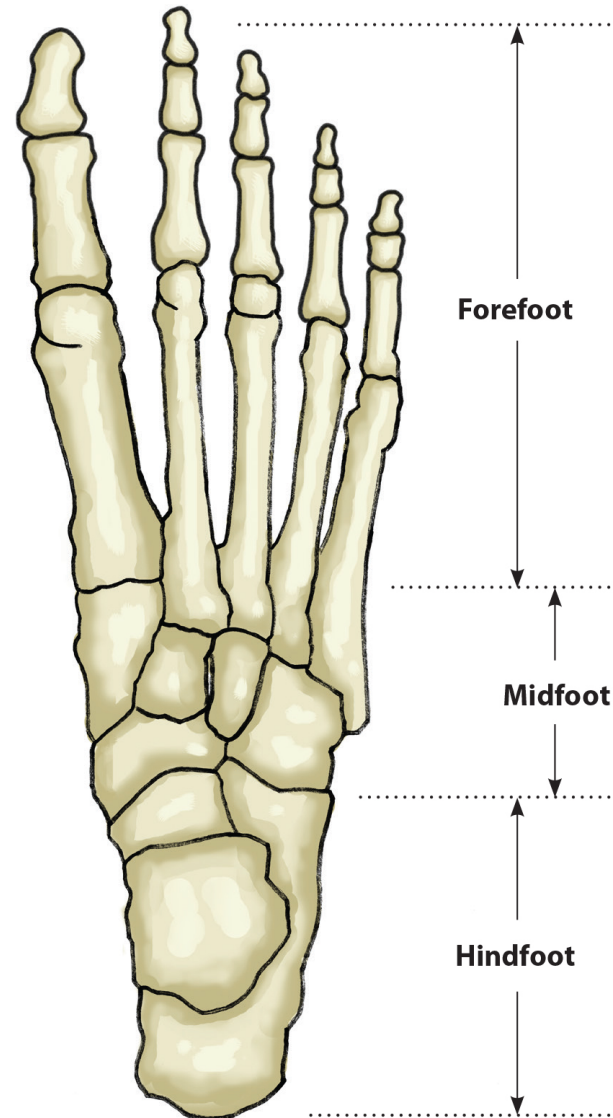
The lateral and medial malleoli,  
and distal tibia, fit against  
the three facets of the talar body  
(see below).

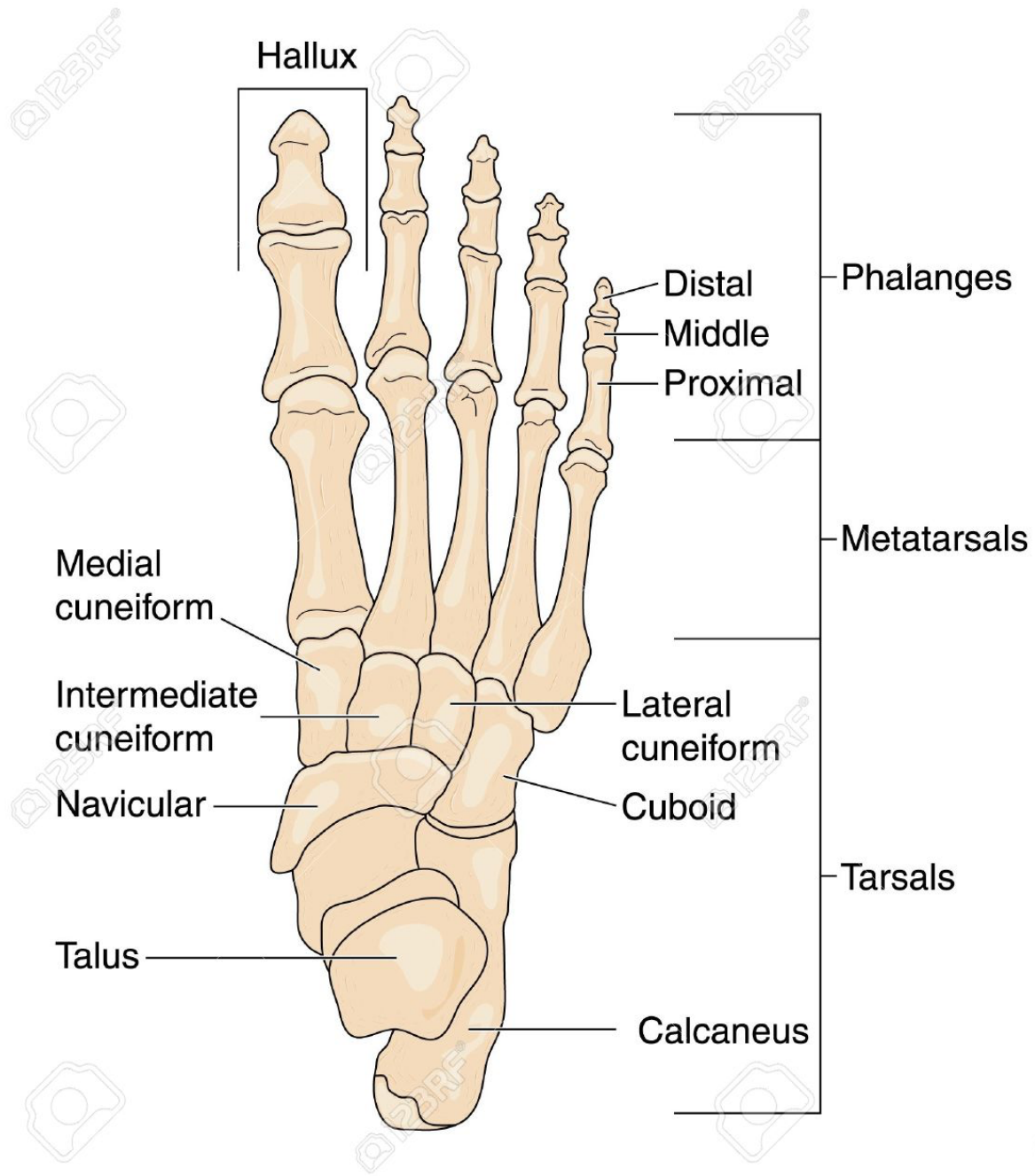


Seen from the side,  
the cartilaginous superior  
and inferior articulating  
surfaces appear  
concave and convex,  
respectively.

### **Superior view of the foot.**

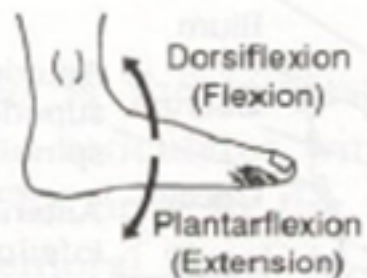
The human foot contains three sections: the hindfoot, midfoot, and forefoot. Lisfranc injuries involve damage to the bones or ligaments of the midfoot.







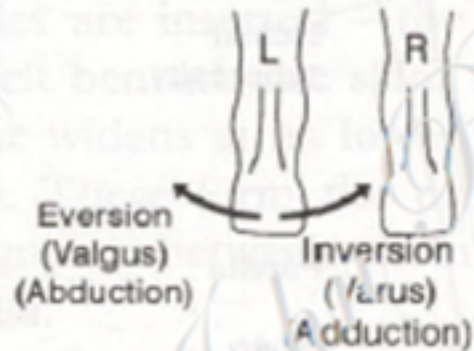
# ANKLE



# TOES



# HINDFOOT



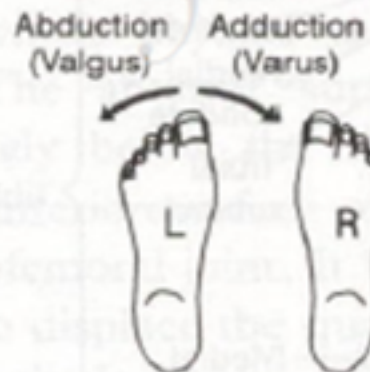
# SUPINATION

= inversion  
+ plantarflexion  
+ adduction

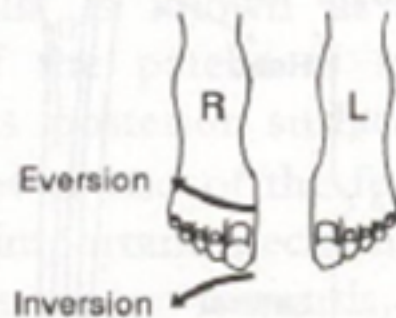
# PRONATION

= eversion  
+ dorsiflexion  
+ abduction

# FOREFOOT

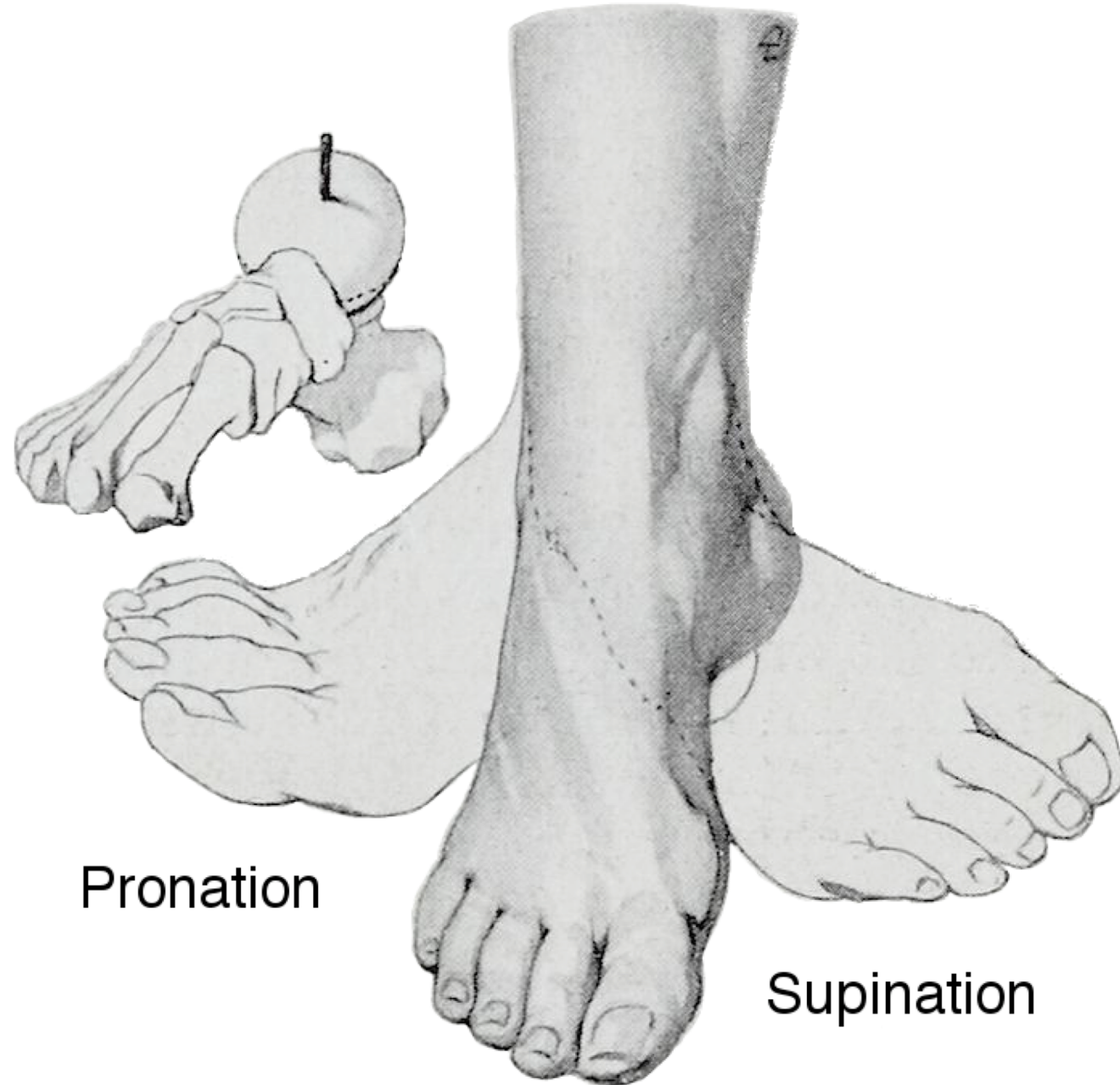


# FOREFOOT



# Basic Terminology

- Pronation (Arch lowering)
  - Position of Eversion, Abduction & Dorsiflexion
- Supination (Arch Rising)
  - Position of Inversion, Adduction & Plantarflexion
- Varus - Inversion
- Valgus - Eversion
- Forefoot - Structures distal to midtarsal joint
- 1<sup>st</sup> Ray
  - 1<sup>st</sup> metatarsal, medial cuneiform & navicular
  - NOT hallux





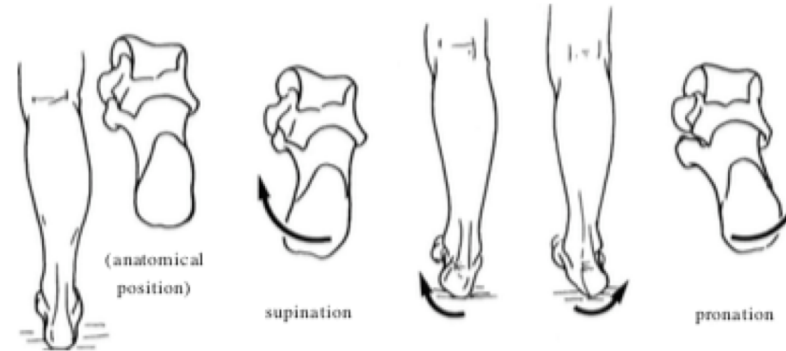
### Mobility of subtalar joint

The subtalar joint sits below the ankle, at a vertical angle.

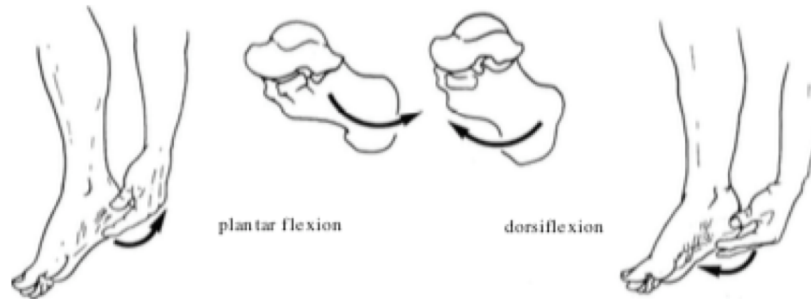
This gives it greater ROM than the ankle, but its ROM is still limited.

We will look at possible movements in three different planes, with and without support.

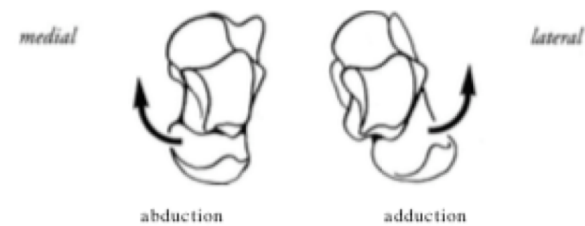
**Frontal plane** (back view, with support): calcaneus is tilting sideways below the talus



**Sagittal plane** (without support): calcaneus is moving front to back



**Transverse plane** (view from above): calcaneus is moving while turning under the talus



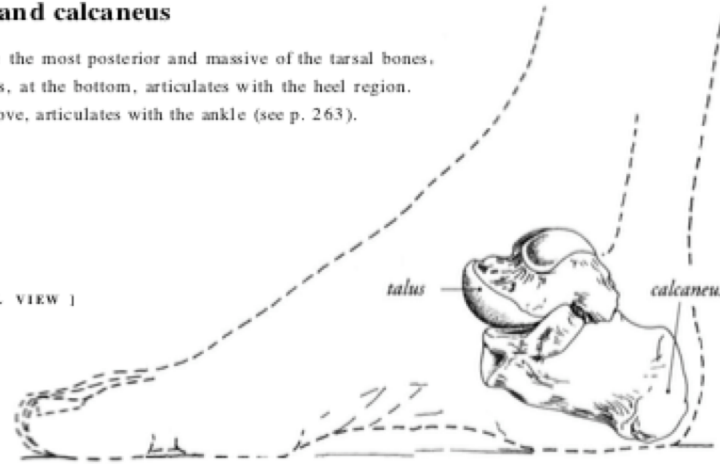
### Talus and calcaneus

These are the most posterior and massive of the tarsal bones.

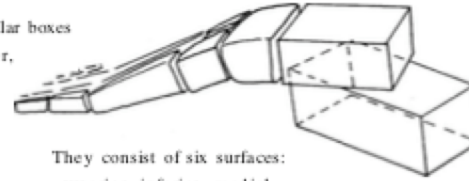
Calcaneus, at the bottom, articulates with the heel region.

Talus, above, articulates with the ankle (see p. 263).

[ MEDIAL VIEW ]



These bones are like two rectangular boxes set at an angle on top of each other, with the talus pointing medially and the calcaneus pointing laterally.



They consist of six surfaces:  
superior, inferior, medial,  
lateral, anterior,  
and posterior.

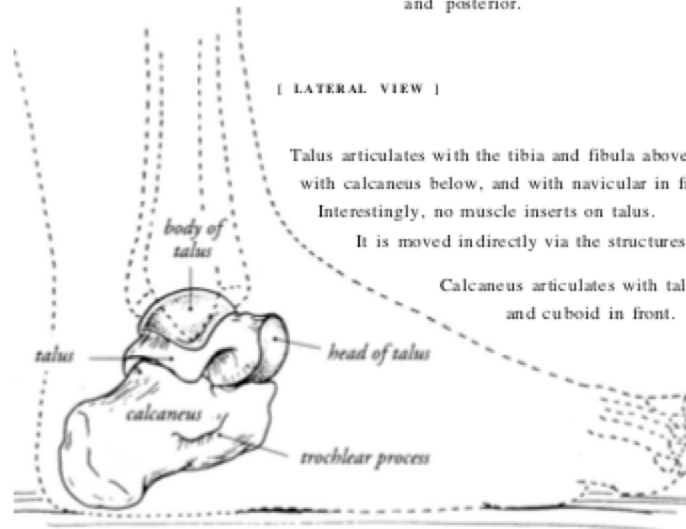
[ LATERAL VIEW ]

Talus articulates with the tibia and fibula above, with calcaneus below, and with navicular in front.

Interestingly, no muscle inserts on talus.

It is moved indirectly via the structures surrounding it.

Calcaneus articulates with talus above and cuboid in front.



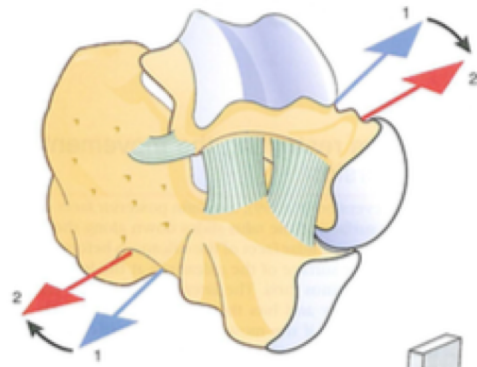


Figure 53

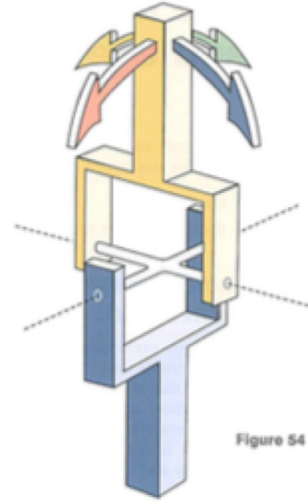


Figure 54



Figure 55

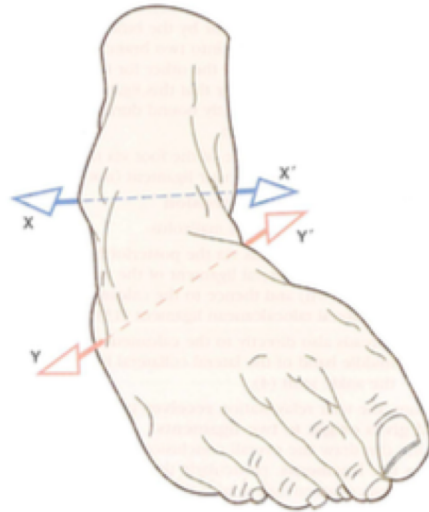
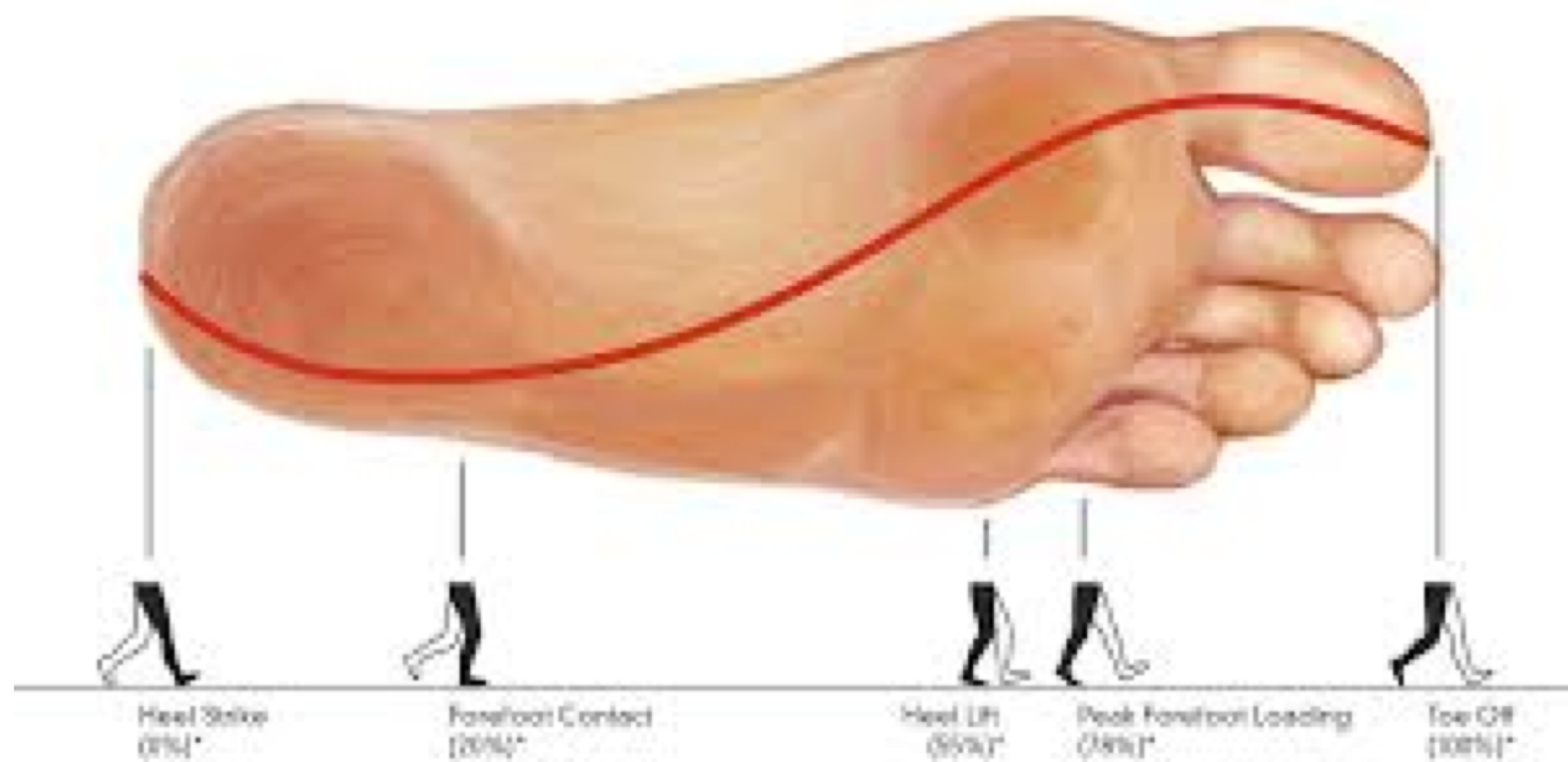


Figure 56



Figure 57



\* percentages indicate time through stance phase

INTERNAL  
ROTATION

MALALIGNMENT OF KNEE

PRONATION

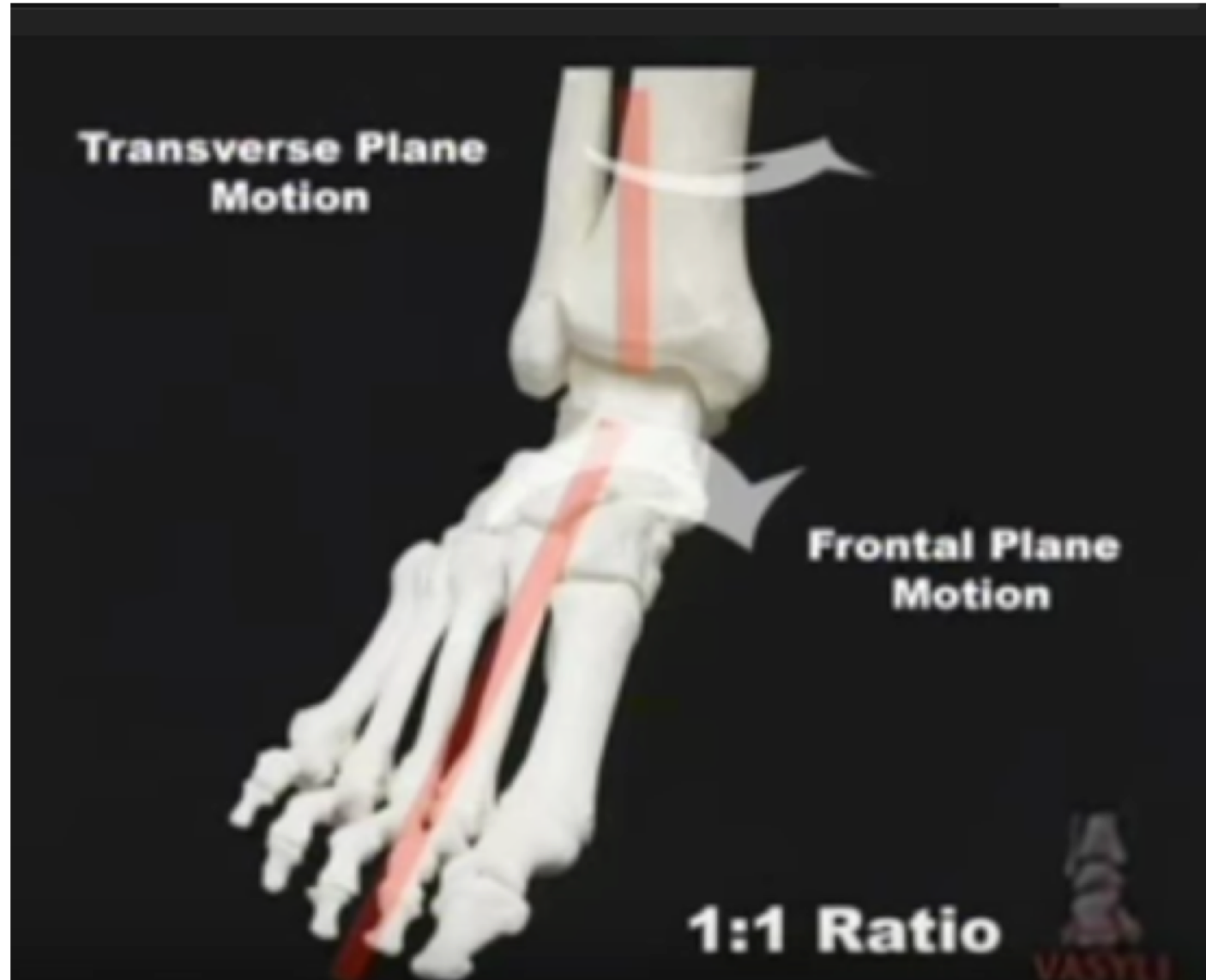
UNLOCKS THE FOOT  
"KEystone"



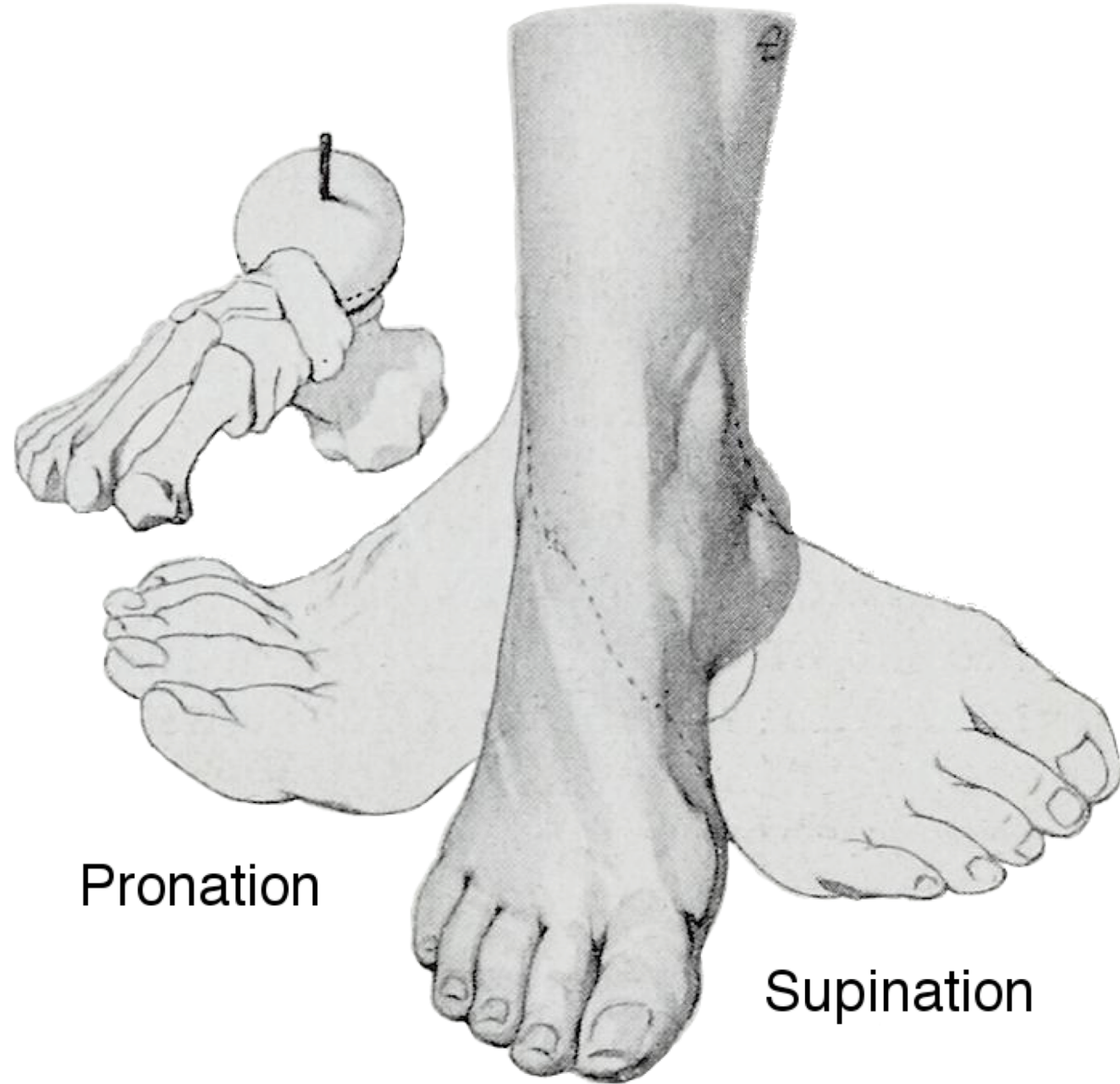
THE FOOT-K  
ARTHROKINE  
RELATIONSH

# Excess Pronation

1. Calcaneus Eversion
2. Internal Tibial rotation
3. Flattening of arch
4. Excess weight on 1<sup>st</sup> meta tarsal







Pronation

Supination

Biggest issues I have are hitting the ball fat/thin and hitting off the toe. I constantly struggle with finding a consistent bottom of the swing, and when I do, the contact is always off the toe. My typically ball flight is a big hook, so I'm assuming the swing path is from the in to out. When I do rarely get solid contact, I do hit a 2-3 yard tight draw - which is my preferred ball flight from my good playing days. Even swings with ball on the tee are off the toe hits with big hooks with ball flight starting at or slightly right of target and then hooking left or a big push if I try to not let the face close at impact.

I tried to fix the toe issue by standing closer to the ball, which hasn't helped - the stance now seems to be fine. I have tried to fix the issue by swinging left, and try to get more OTT - basically my cut swing, trying to get the club head more in front of my hands on the downswing. But that quickly results in pull hooks to pull slices. I tried to fix hitting off the toe issue by putting a tee outside of the ball and try to knock the tee out, but it makes my transition too quick and I end up throwing the club well behind the ball.

The fat/thin and off the toe contact issues are obviously exaggerated on the course which makes for a not so enjoyable experience, especially when I've played somewhat decent golf before.

All of these issues probably result in too many things to think about while playing, I'm sure that's not helpful. In the past, I've always been able to swing at my best with one or two simple swing thoughts.

My hope is to find consistent contact, and would love to be able to play my best golf again. I'm 100% committed and willing to put in the work. Let me know if you can think of fixes I should try or any particular videos I should watch on your site, prior to our lesson.



Biggest issues I have are **hitting the ball fat/thin** and **hitting off the toe**. I constantly struggle with finding a **consistent bottom of the swing**, and when I do, the contact is always off the toe. My typically ball flight is a **big hook**, so I'm assuming the swing path is from the in to out. When I do rarely get solid contact, I do hit a 2-3 yard tight draw - which is my preferred ball flight from my good playing days. Even swings with ball on the tee are off the toe hits with big hooks with ball flight starting at or slightly right of target and then hooking left or a big push if I try to not let the face close at impact.

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Day 2



















# Robbie

- Attached is a video of one of my students very early on in our time working together. I am curious where you would likely take this golfer. Since, we have worked diligently on trying to delay the positive out of plane shaft rotation by getting the sweet spot above the hands path for longer in the backswing as well as earlier downswing ulnar deviation in the lead wrist. His swing direction has moved from -10 to zero, but he struggles with low point being too far back at times. What are your thoughts?



# Robbie

1. What are your thoughts on McClean's elimination theory for introducing new motor patterns (starting complex and working backwards; eliminating the shot intention, the ball, the club etc.) and how that relates to the four stages of awareness?
2. For golfers who don't/can't side bend and rotate, how do you help them decide what ball flight they should play? I find for most a fade is often better for irons but trying to manage the path with the driver gets tricky. What do you prioritize?
3. What are some of your favorite drills for keeping the mass above the hands in the takeaway and during the setting phase? I have several juniors who struggle to manage it when the shaft pitch gets much flatter than the original shaft "plane" in the backswing.

# Jon

1. In your opinion what does using the big muscles in the swing mean ?
2. What moves first in the backswing , besides there being a slight pressure shift forward to start is it the club , the lead hand or the lead shoulder ?
3. What moves the hands on the proper arc on the backswing ?
4. Can you further explain the back 45 downswing move ? Is it a diagonal shift of pressure from the trail heel to the front toe that corresponds with this . I see people misunderstand this move by squatting down but staying on the back foot ?
5. Have you tested any of Mike Adam's screens ? Where did he get them ?
6. How can you load into the ground on the way down without pushing up out of it ?

# Chris

1. Some coaches teach going from external rotation to internal rotation with the right arm/shoulder is the fastest producer of speed.  
Right arm adduction. Thoughts?
2. Is there a default fulcrum between the right and left hand on the handle of the club? Would bracing with the handle transfer speed?
3. Can you give a detailed presentation of transferring speed from the handle to the club head?