Supplemental Training

Warm Up Drills

Sprint

https://www.youtube.com/watch?v=5F71gzoZErQ&t=182s

- A skips 2 x 20 meters
- B skips 2 x 20 meters
- Ankling 2 x 20 meters
- Cycling 2 x 20 meters
- Fast leg right 2 x 20 meters
- Fast leg left 2 x 20 meters
- Fast leg alternating 2 x 20 meters
- Straight leg bounding 2 x 20 meters
- Bent leg bounding 2 x 20 meters

Aerobic Work

- Forward skips (big arms) 20 meters
- Backward skips (big arms) 20 meters
- Lateral shuffle (big arms) 20 meters each direction
- Single leg squat 5 times then run out for 20 meters each leg
- Forward skips (arms across body) 20 meters
- Backward skips (arms across body) 20 meters
- Wide outs 5 times then run out for 20 meters (back and forth)
- Speed skater 5 times the run out for 20 meters (back and forth)
- Single mountain climber 5 times each leg the run out for 20 meters
- Retro running heel to butt 20 meters
- Double leg mountain climbers 5 times then run out for 20 meters
- Retro running heel to butt 20 meters

Stretching

https://www.youtube.com/watch?v=R1gk_tHVxn4

There are many types and definitions of stretching. Research over the past 30 years has challenged the conventional thinking about what stretching does and what flexibility means. With the potential dangers of stretching incorrectly, as well as the limited time in Tigres, traditional post workout stretching will not be done as part of our practices.

If you absolutely feel like you must stretch, please consider doing Active Isolated Stretching during your own time. It is a method that does not involve the stretch reflex, so performance isn't compromised and if done correctly, is much safer than traditional static stretching.

Here is a website with links to quite a few studies related to stretching (it is primarily focused on stretching as a warm up, but much still applies in general): http://bretcontreras.com/what-does-sports-science-research-have-to-say-about-warming-up/

Strength & Mobility

Whether the athlete is a sprinter or distance runner, becoming a better athlete (stronger and more explosive) will not only help performance, but will also help greatly in preventing injury, improving running economy (form and technique), and will increase the athlete's ability to do more work.

Historically, when doing this type of work, athletes have focused on strengthening and creating flexibility in specific muscles (i.e. stretching a hamstring or doing a hamstring exercise). Current beliefs are moving towards training movements or creating strength and flexibility within a range of motion specific to the sport (in this case running).

Core

- Prone Elbow Stand
- Running V-Sit
- Lateral Plank Left
- Back Hyper and flutter kick and crawl with arms
- Lateral Plank Right
- Flutter Kick V-Sit
- Back Hyper Scissor Breaststroke
- Indian Sit Crunches
- Scissor over/under V-Sit

Hip Mobility

- Iron cross
- Donkey kicks
- Scorpion
- Donkey whips
- Hurdle seat exchange
- Knee circle

Bruin – Medball

- Push ups
- Christian Smith Drill
- Russian Twist
- Burpees
- Medball Bridge – (advanced optional)
- Medball Pushup (changing hands)
- Medball Squats
- Push ups
- Burpees

The number of repetitions, sets or time should be increased as the season goes on as well as be adjusted to the capability of the athletes.

Plyometrics

The most important factors in determining jumping and sprinting performances is the ability to quickly apply forces to the ground. Previous research has shown that faster runners can apply greater amounts of force down into the ground during the brief ground contact period than slower runners. This high rate of vertical force application leads to shorter ground contact times as well as longer stride lengths, thus allowing the faster runners to attain greater maximum speeds.

What many fail to realize is that gains in strength can only be transformed into power by applying very specific power training methods. For decades it has been probable that one of the most successful methods of training is the employment of plyometric exercises.

Also known as reactive training, the stretch – shortening cycle, or stretch reflex. The exercises known popularly as plyometric are those in which the muscle is loaded in an **eccentric** (lengthening) contraction, immediately followed by a **concentric** (shortening) contraction. It has been demonstrated that a muscle that is stretched or pre-tensed before a contraction will contract more forcefully and rapidly. What many fail to realize is a third type of force known as isometric which occurs just before touchdown of the foot before the eccentric contraction, and again at full support just before the concentric contraction.

Plyometric Routine

- Straight leg bound regular bound
- Single leg straight leg bound RT. right-right-left-left

- Single leg straight leg bound lift
- Lunge jumps
- Power skips frog hops
- Backwards Paw Sprint
- Side shuffle bound
- Single leg hop right
- Single leg hop left

Speed Development

The goal of a speed-development workout is simply to "call on" the fibers that aren't recruited in large numbers when jogging or even running threshold or race pace. The improved coordination between your metabolic system and bodily mechanics from these workouts will result in faster, more efficient running at other effort levels.

150 In and Outs

On a 150m run, accelerate gradually during the first 50m; then run the middle 50m at your maximum speed, then cruise out of that rhythm the last 50m.

Start with three to four of these and work up to six to eight with each middle 50m getting a bit faster. Don't worry about anything other than the pace of the middle 50m.

Take as much rest as you want, as the intent of this workout is not to endure anything, but rather to recruit more fibers. You gain nothing by speeding up the recovery. You are not recovered enough until you can successfully run the middle 50m at your absolute maximum speed. We want that middle 50m patch to be your maximum speed, while still running under control and relaxed in your neck and shoulders.

30 Meter Max Patch

Once you've done several weekly sessions of 150 In-n-Outs, you can progress to this workout. To start, you'll do three to four of the 150m In-n-Outs. Then you'll run 2-3 x 30m at 97 percent; though technically you're not running at your maximum, most people will actually run a bit faster with the cue of "97 percent" rather than "all-out" or "as fast as you can" because they will stay more relaxed in their neck, face and shoulders.

The recovery is 2-3 minutes walking. Yes, walking. Running 30m at 97 percent is metabolically powered by the phosphocreatine system, and 3 minutes of walking will allow that system to replenish nearly all of ATP needed for the next 30m sprint.

Speed Ladders

http://www.youtube.com/watch?v=sOAA-_lGyUw

http://www.youtube.com/watch?v=7RHVnGwoU1E&NR=1&feature=fvwp

- In and out steps
- Lateral shuffle
- Side laterals
- Forward hop
- Siderocker
- Icky shuffle

Sprinting Mechanics

Head

- Keep your head still and naturally in line with your spine
- Relax your jaw and neck muscles
- Focus your eyes down the track

Shoulders

- Relax your shoulders to keep from shrugging, which will lock your hips
- Power upper body movement with your shoulders, not your arms

Arms/Hands

- Balance leg movements with your arms; the arm on your lead leg side should go back, and vice versa
- Swing your arms forward to a closed place at a 135-degree angle in front of your body and backward to an open place behind your body. Bringing your arms too far forward or backward will throw off your balance and waste energy

Posture

- Maintain a neutral posture. A forward or backward tilt at the pelvis will decrease range of motion in the hips, adding injury- causing pressure to the hamstrings

Front-Side Mechanics

- Raise your lead leg to a locked horizontal position with your hips held high
- Adjust the angle between your shin and foot to 90 degrees or more
- To start a forward swing, extend your lead leg at the knee
- Prepare for contact by stabilizing your ankle and keeping your toes up
- Land with a flat, mid-foot strike
- Swing your landing leg two to four inches in front of the hip to apply force on contact. If you swing too far, your body will naturally brake. If you don't swing far enough, you'll lose stability.

Starts

How To Set Blocks

- Front black pad is set 2 feet from start line
- This will be your "power" leg or jumping leg
- Back block is set 3 feet from the start line
- This will be your "speed" leg (kicking leg)

Positions At Starters Commands

"On Your Marks"

- Walk from behind blocks past the starting line and loosen legs.
- Don not "show boat" (draw attention to yourself), but take 3-4 seconds and proceed back to blocks
- Put hands on track and back into block: front pedal first
- Heels off pedal, toes curled under
- Position hands behind starting line with fingers together
- Create bridge with thumb and fingers (fingers parallel to start line)
- Rock forward until shoulders are over hands, elbows locked
- Drop head
- Remain still

"Set"

- Raise hips with front knew 90 degrees, back leg at 120 degrees
- Come up steadily

- Toe on track on front foot
- Utilize the back leg to lift hips
- Put pressure on both blocks
- Relax front leg
- Concentrate on back pedal
- Look downward at the track
- Relax neck
- Don’t raise head
- Remain still and relaxed

“Pow”

- Push off with both feet (try to move block)
- Drive arm of power leg forward
- Take a long, low, powerful first stride
- Gradually lengthen stride through acceleration process
- Gradually work your way to sprint posture – this should take at least 20 meters

Oregon Drill

The Oregon Drill is used for several reasons during the Tigres track season.

- It combines work on both aerobic and anaerobic energy systems.
- Teamwork and running as a team is reinforced.
- Running on the infield creates a break from the stress of running on the track.
- It eliminates traffic on the track.
- Changing speeds during races is simulated.
- It is a way for coaches to have the ability to monitor all groups at the same time.
- Below is the description by Pat Tyson from Mead High School in Washington.

OREGON DRILL

This drill, which I also described in chapter 5, was originally devised as a rehab running drill for Oregon athletes coming back from injury, but at Mead I found it was also a great way to work on mechanics. This is a meat-and-potatoes staple that serves several purposes. First, we do it barefoot and on grass. (Form issues tend to become more apparent with shoes off). Second, it's simple to set up. Use cones to designate three running lanes that are about 20 meters wide and 80 meters long. This would be end zone to end zone if it's on a football field. You want one lane along each sideline and one through the middle (see figure 7.5).

The first lane is for easy pace. The middle lane is for medium, or cross country race pace, and the third lane is for a gradual pick-up to closing sprint speed. Runners jog slowly the 20 meters between cones to switch lanes. When runners complete the third lane, they jog easily back to the start and repeat the progression. Run this drill for 30 minutes nonstop. At the end of the season, as we were tuning up for the state championship, we ran this for 20 minutes.

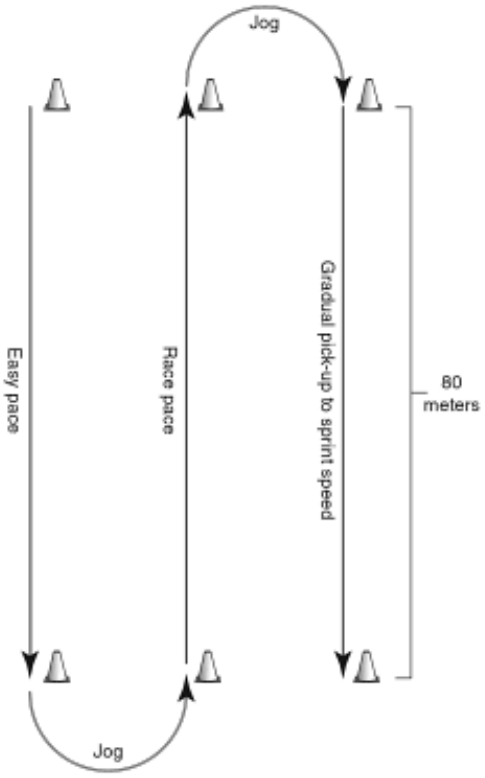

FIGURE 7.5 Oregon drill setup.

While the athletes are running, watch or even videotape the workout. Break the overall group into smaller packs of five or six. The Oregon drill is free flowing and requires minimal input. Use this time to analyze the form of the runners and take notes about deficiencies you might see. This drill incorporates fartlek with its speed changes, which allows you to analyze form and how it changes from one gear to the next. Review this information with the runners through video or make critiques as you watch.