

TRAINING PROGRAMS SUPPLIED BY
U.S. SOCCER

These training programs are designed to aid the referee in preparation for the physical aspect of officiating at the highest level. It will also help in preparing for the interval test which will be administered at professional camps and Referee Training Seminars.

But first, there are a few background items to be considered.

First, the center referee covers as much ground as the ball during a match or around 10,000 meters, consistent with what most players run.

Second, the pattern of running is a little different from the player. Referees do more lateral and backward running than the players, but fewer sprints. The running pace of the referee is a bit more constant than that of the player.

Third, the referee is frequently 10-15 years older than the field players playing the match.

Fourth, the referee dehydrates to a similar degree as the players, but may have no one watching out for them during the match, so the referee needs to adopt some strategies for hydration.

Fifth, because the referee is doing nearly the same work as the player, the referee should follow the same nutrition guidelines as the players (not included in this report).

Sixth, the referee fatigues just like the players and their judgment can be impaired because of fatigue, so training should be sufficient to delay the onset of fatigue.

Seventh, the referee will usually have to travel to each match and a training program will have to take this into account.

Finally, the referee usually trains alone as opposed to the players who have coaches and trainers supervising their work. This means the referee needs training options that can be done alone that are effective in their preparations for the match.

The following is based on games officiated once per week.

To make the description easier, I will assume the match is on Saturday with a travel day on Friday and Sunday. A basic training plan could be the following:

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
travel from and rest	light jog, supporting training	hard day	supporting training	hard day	light exercise to help get over travel fatigue	match

The idea is to get 2-3 'hard' days in a week to maintain or even improve fitness. The match 'counts' as one of these days, so each would need to find 1 to 2 days a week for some hard work. These would be non-consecutive days with 1 day off the day after a match. If they have a week off, they could just take the unused match day as a rest day or, if so inclined, add a 'hard' day on that unused match day (I'm guessing they would take the day off and that would fine).

Let's go back to where 'Saturday' is match day, so a weekly schedule could be the following:

Sunday – rest, (or travel from match)

Monday – supporting exercises (agility, flexibility, core strengthening, Nordic curls, 20 to 30min of easy jogging)

Tuesday – ‘hard’ day

Wednesday same as Monday (or rest as needed)

Thursday – ‘hard’ day

Friday- travel to match (consider some light exercise upon arrival to help get over travel fatigue)

Saturday – Match, travel from

When their game falls midweek, they would just move shift the days, making say Wednesday now a ‘Saturday’ and follow the same pattern, having only shifted by a few days. If a referee has 10-14 days between matches, maintain the 2-3 ‘hard’ days per week and add light days to fill in.

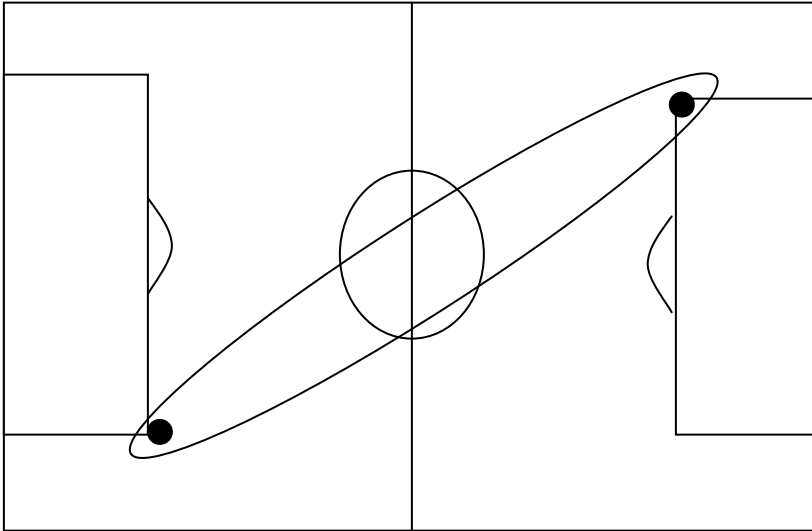
There may be the referee who feels that one ‘hard’ day a week (plus the match) is sufficient. Assuming a Saturday match, the referee might still perform the ‘hard’ day on Tuesday and either do a ‘Monday’ style light workout or take the day off altogether on Wednesday. This would probably maintain their level of fitness, but might not be enough stimulus to improve their fitness.

Before training, the referee should always warm-up to the point of breaking a good sweat. The times for stretching are after breaking the sweat, between sets, after the workout during the cool down and certainly on all other days. The old training line is “warm up to stretch; don’t stretch to warm up.” Flexibility should be directed to the problem areas in soccer: hams, quads, groin, calf, low back. At the end, I list a number of options for core strengthening. Flexibility and core work can be done at home. There are a number of stretching methods, but it is hard to beat 2-3 repetitions of a static stretch, each held for 30 seconds. There are other methods that require a partner that may not be available to the referee.

Following are a number of options for the ‘hard’ day. These choices could be rotated or repeated if a particular workout seems enjoyable and effective.

The ref only needs to add maybe a liter of fluids (32 oz or 2 lbs) for each half.

Training options for the ‘hard’ day follows. Chose any option for the hard day of training. Vary the choices to avoid monotony. Each choice has suggestions on how to increase the workload as fitness improves.



Option #1. Suggestion for training

Normally this workout is done in pairs where one runs and other rests by walking around on the field for a 1:1 work to rest ratio. If done alone, keep track of elapsed time for each run and rest for an equivalent amount of time. The activity is running the diagonal course and all runs should be around 90% of maximal HR (if unknown, estimate as $0.9 \cdot (220 - \text{age})$). For most, this should be a pretty hard stride. Put water bottles at the starting cone and drink as needed. Wear running shoes to force body control while turning. I would not suggest studded boots for this kind of running.

3 clockwise runs, rest (for the amount of time it took to complete the run)

2 clockwise runs, rest

1 clockwise run, rest

1 clockwise run, rest

2 clockwise runs, rest

3 clockwise runs

rest 2-3 minutes

1 counterclockwise run, rest

2 counterclockwise runs, rest

3 counterclockwise runs, rest

3 counterclockwise runs, rest

2 counterclockwise runs, rest

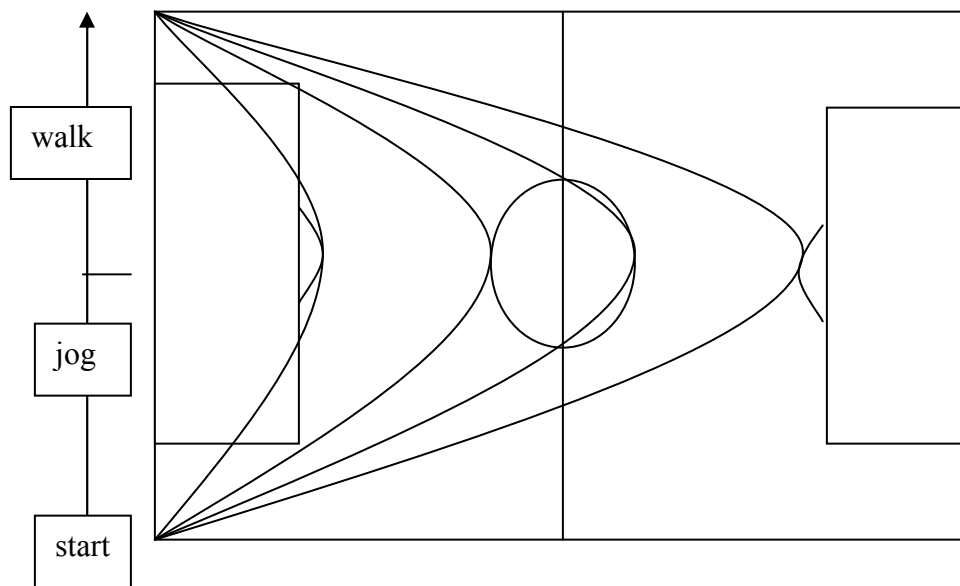
1 counterclockwise run

Cool down.

If this starts out with too much work, cut back by starting with 2 laps first, then increase to 3 as fitness improves.

The referee could also insert a brief rest in the middle of each set that would be dropped as fitness improves.

Monitor the heart rate. As fitness improves, the required pace will become faster.



Option #2 Suggestion for training

Cones are placed at the top of the D, the near and far sides of the center circle and the top of the far D. The course starts at a corner flag. All runs on the field should be at that hard stride for about 90% of max HR. Put fluids along the end line for easy access. Use running shoes to force body control while turning. No studded shoes.

Each loop begins by jogging halfway across the end line, then walking to the far corner. Turn and run around the near D and to the opposite corner, then jog/walk across the end line and repeat to the near cone on the center circle, repeat the jog/walk then run to far cone on the center circle, repeat the jog/walk, then around the cone on the far D. Then reverse the entire process totaling 8 runs.

Active rest for 5 minutes (walking, slow jogging, flexibility, maybe some light agility exercises. Rest, but be active).

Repeat the 8 runs.

Active rest for 5 minutes

Repeat the 8 runs. A total of 24 runs will have been performed.

Cool down.

If this pattern is too much to begin, consider the following progression

4 loops, rest; 4 loops, rest; 4 loops, rest x 2 days

add 2 loops to each set x 2 days

add 2 more loops to each set x 2 days. Each set is now the 8 runs as described above.

Again, monitor the heart rate. As fitness improves, the required pace will become faster.

Here are some traditional 'track' workouts. Track athletes call these 'ladders' where distance increases with each run and then decreases. All runs should be at a pace that elicits 90% of max HR. The pace will vary according to the duration.

Option #3 Suggestion for training

The first option is directed more towards endurance:

30s run, 30s rest
60s run, 60s rest
90s run, 90s rest
120s run, 120s rest
(see note*)
90s run, 90s rest
60s run, 60s rest
30s run

5 min of active recovery

repeat the runs

cooldown

*if the referee feels like the work is too much to go right into the 2nd half of the ladder without a break, rest for a couple minutes then continue. As fitness improves, drop this intermediate recovery period. Remember, watch the clock, not the distance. As fitness improves, so will the distance of each run.

Option #4 Suggestion for training

This variation is a little more speed oriented

30s run, 30s rest
45s run, 45s rest
60s run, 60s rest
75s run, 75s rest
repeat*

5 minutes of active recovery

75s run, 75s rest
60s run, 60s rest
45s run, 45s rest
30s run, 30s rest
repeat

cooldown

*if the referee feels like the work is too much to go right into the 2nd half of the ladder, rest for a couple minutes. As fitness improves, drop this intermediate recovery period. Remember to watch the clock, not the distance. As fitness improves, so will the distance of each run.

Option #5

This workout emphasizes endurance, running strength and recovery. The running distance for this program is shorter, but the reps are greater. Use running shoes. This is best if run on a field with good footing, be it a football or a soccer field. Run along the sideline, walk/recover across the end of the field to the next corner. Put water at each starting corner. Each run will be at a hard stride. The foundation of this workout is the traditional 1:3 work to rest ratio of interval training (15s work:45s rest). It is easy to lose track of the number of runs, so keep track by watching minutes: 1 min = 1 run/recovery pairing.

Start at one corner

Hard stride for 15s (probably 90-100y)

Walk across the field for 45s to the far corner (total elapsed time = 1 min)

Begin running when the 45s has elapsed regardless if the referee feels recovered or not

Run to the other end of the field in 15s

Walk across the field for 45s to the far corner (total elapsed time = 2 min).

Thus, 2 elapsed minutes, 2 runs.

do the following for at least 3 workouts before increasing to the next stage. Strength and 'recover-ability' come slowly.

start out doing 2 sets of 10 runs (3-5 minutes recovery between sets) x 3 days (minimum)

next time, do 1 set of 20 x 3 days

next time, do 2 sets of 15 x 3 days

next time do 1 sets of 30 x 3 days

next time do 2 sets of 20 x 3 days

next time do 1 set of 40

work up slowly for this. No one should start right in at 40 even though they think their fitness is quite good. Cool down afterward. While it appears long and 40 runs means 40 minutes, there still is only 10 minutes of actual work. The total running distance is 4000 yards at this pace. They typical player/referee covers far less at this distance during a match so the runner builds up a significant reserve for late in the match when fatigue normally sets in. This is very effective without being exhausting like the next option.

Option #6

This is a highly effective sprint training program that gets a great return for the investment, but the key word is *sprint*. All reps are to be done all out. Each duration is 30 seconds with 3-4 minutes rest. This can be done on a track (each run will be about 200 meters) or on a stationary cycle. The cycle needs to be one where the resistance can be precisely set, not the typical commercial cycle that lists resistance as "1" or "2" or just as an electronic bar graph, etc. The resistance is set at 0.075kg of resistance per kg body weight. Thus, an 80kg man (176 pounds) would need to set the resistance at 6kg (if you've ever ridden a stationary cycle, that's a lot of resistance!). Normally, a partner un-weights the resistance and the rider brings the revs up as high as possible, nods the OK that they are at peak revs, then the weight is applied all at once and the ride continues for 30s; a very demanding bout of work. Do not do this soon after a meal. (From my experience, keeping a trash can handy is a good idea).

For a 3 week training period (twice a week): Day 1 would be 4 reps. Day 2 would be 5 reps. Day 3 would be 6 reps. Day 4 would be 6 reps. Day 5 would be 7 reps. Day 6 would be 4 reps. Cool down after each workout. Even on the longest day (day 5), the total amount of hard work is only 3.5 minutes. Choose other training options for a couple weeks before returning to this and repeating the same 3-week training period.

Some comments:

1. Do not attempt this without having achieved some measure of fitness. Do a good warm-up.
2. Allow a light day before and a light day or two after. Do not do this if you need to be fresh the next day.
3. Sprinting on a track is risky. In an attempt to maintain speed, people will overstride as they tire, putting their hamstrings at risk. Stay under control. Just because this is a sprint does not mean it is a race.

4. There is good evidence that this program increases both endurance and speed performance, but it is likely the hardest program any referee would ever undertake. They should not go into this lightly.

Option #7

Choose one of the following for a hard workout.

120's: repeat 120y (110m or length of a traditional field) hard run for the length of the field (men ~16-18s; women ~18-20s) followed by a 30 second recovery jog back to the starting line then an additional 30 seconds rest; repeat 10 times. Add reps and pace as fitness improves.

Cones; markers (or cones) at 5 yard intervals 5, 10, 15, 20, 25 yards away from starting point. Out and back to each marker in ~35 to 40s (a total of 150 yards of running in each interval); 20 to 30 or even 40 seconds rest if needed; repeat 10 times. For men, the rest interval is 20-25s; for women rest interval 25-30s seconds. Add reps or decrease recovery time as fitness improves. Use running shoes for body control. Beside, studded shoes will tear up the field and this could upset the groundskeepers.

Some cycle this by alternating workouts. Others might do the 120's during the first half of the season (for strength and endurance) and the cones for the second half of the season (for speed and agility).

Cool down

Option #8

Refs don't sprint nearly as often or as far as players do. But here is an option for training repeated sprint ability.

Measure out 30m. After warming-up, perform sets of six 30m sprints, starting every 30s. So start at time "0" and sprint the 30m (probably 5-6s), run out 10m beyond the finish (don't jam on the breaks at the finish line), trot back around to the start and begin again at the 30s mark. After 6 sprints, active recovery for 2-3 minutes, then repeat. Do as many sets as comfortable. Don't get so exhausted that running form fails. Add sets as fitness improves.

Cool down

There is great amount of emphasis on strengthening the core to promote fitness and prevent injury. I include 10 core exercises for the referees to choose. Most of these exercises can be found in any basic conditioning book and are only a sampling of dozens of other options. These can be done at home. Core training should be a done most every day.

1. **Plank.** Lie prone on the stomach. Lift the body off the floor supported by the forearms (elbows at 90° degrees) and the toes. Keep the body in a straight position (without arching the back or flexing the hips) and hold for 15 to 30 seconds. Lift one foot in the air for added difficulty. Or lift one arm for added difficulty. For maximum difficulty, raise one leg and the opposite arm (very challenging). Add time as fitness improves up to 10 reps for 30 seconds each, then add repetitions.
2. **Pushup plank.** This exercise is the same as the plank, except this is in a pushup position. This is a good exercise at the end of a workout as it challenges most every muscle in the arms, shoulders, and upper back.
3. **Twisting crunch.** Assume a standard crunch position (lying supine, knees flexed, feet flat on the floor, fingers locked behind the head), raise the trunk to about a 45° angle, and then twist from side to side. Make this tougher by extending the legs and pretend to peddle a bicycle while twisting.
4. **Ball roll-ins.** Place the hands on the ground and the top of the feet on top of the ball. Keep the hands in place and bend at the knees to bring the ball toward the trunk. Hold this position for a second and then roll back out. Do not use the hip flexors to accomplish the task. Add reps as fitness improves.
5. **Lying windmills.** Lie supine with the arms extended to the side and raise the legs until they are perpendicular to the floor. Slowly lower both legs to the side as slow as possible while keeping shoulder and back contact with the floor. Bring the legs back up to center and repeat on the opposite side. As reps as fitness increases.
6. **Supermans with a twist.** Lie prone and raise the trunk off the floor with arms extended in front (beginners may place their hands behind their head). At the top of the raise, twist to one side, return to the center and twist to the other side. Lower the trunk to the ground to complete one rep. Make this harder by holding a two to five pound weight behind the head or out in front, if strength allows.
7. **V-sit hold.** Lie supine and bend at the waist extending the legs and arms into the air to form a “V.” Hold this position for as long as possible, return to starting position, rest, and repeat. Add reps as fitness improves.
8. **Plank on a Swiss ball.** Place the forearms on a Swiss Ball with the feet on the ground or place the feet on the ball with the forearms on the ground. Keep the abs and gluteals tight with no arch in the back or flexion at the hips. Hold the position as long as possible. Make it harder by moving the ball slightly from side to side.
9. **Stiff legged V Bends.** This is the same as the previous exercise, but keep your knees straight and move the hips toward the ceiling. The focus of this tough drill is completely on the abs. Add reps as fitness improves.
10. **Lying gluteus pushup.** Lie supine with the feet resting on top of a Swiss ball. Push through the heels to raise the buttocks off the floor as high as possible. Make the body a straight line from the knees to the shoulders. Hold this position for up to 60 seconds. Add time and reps as fitness improves.

Finally, the **Nordic Curl** is an exercise to increase hamstring strength. Kneel down (some like a little padding). A partner behind anchors the feet to the floor. From this erect, kneeling position, slowly lower the trunk toward the floor keeping the back and hips straight. When the movement can no longer be controlled, use the hands to cushion the impact with the floor. Return to the starting position. As one gets stronger, the movement is controlled closer and closer to the ground and more reps are performed. Start out with 5-10 reps then increase control and reps as strength improves. As strength improves even more, have the partner give a gentle push to start the movement. The Nordic Curl is highly effective at preventing hamstring strains.