

The Forsaken 500 Meter Oval

Why Do We Run the Distances We Run?

by *Alphonse Juilland*

At first sight the "classic" distances we run or watch, from the most modest all-comers meets to the Olympics, seem entirely rational: begin with a quarter lap or 100, double to half a lap or 200, double again to a full lap or 400, then again to two laps or 800. However, at this point the something happens and the pattern breaks down: where we expect four laps or 1600 meters, the distance is a quarter lap short, 1500 meters. The next race does not return to doubling the number of laps, eight or 3200, it doubles instead the distance of the previous race to 3000, seven or eight laps plus or minus a half. Next, the 5000, is twelve or thirteen laps plus or minus a half, followed by the 10000, exactly twenty-five. Not the most consistent sequence, to be sure.

How track has managed to contrive this somewhat erratic succession is difficult to reconstruct without access to early archives, to documents and minutes of the IAAF, IOC and national federations which led to the design of 440-yard ovals in Britain and, temporarily, to 500-meter ovals on the Continent. Whatever rationality permeates the sequence of today's "classic" distances, it has emerged from tensions and compromises between the British Isles and the Continent, between the English and the French, between yards and meters, between 440-yard and 500-meter ovals, to mention only those which can be inferred from the insufficient information at our disposal.

Straights, Turns and Ovals

Regardless of distance, ideal races are run in straight lines. This was the case not only for the shortest race contested at Olympia, the so-called *stadion*, a little less than 200 meters, but also for the longer races, the *diaulos* (2 lengths of the stadion, roughly 400), the *hippios* (4 lengths, roughly 800), and the *dolichos* (generally 20 lengths, roughly 4000), all back and forth as many times as required by the length of the event. Always multiples of the *stadion*, the longer races required sharp turns around the so-called *kampters*, small columns or posts which separated the runners at both ends.²

¹ For an earlier version of this chapter, cf. "Why Do We Run The Distances We Do?/Pourquoi Courir de Telles Distances?" IAAF REVIEW, 1995, Issue 4.

² How the turns were negotiated is not entirely clear. Cf. *The Olympic Games in Ancient Greece*, p. 164.

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Fast forward to the second half of the XIXth century when the British, the real inventors of modern track, had to bend straight lines into ovals to allow spectators to watch races from start to finish. The outcome was a plethora of multi-sized ovals which graced the playing fields of England's colleges and universities. Between 1852 and 1886, the British built ovals as short as a quarter mile and as long as a half: 440 yards (Addiscombe 1852, London 1886), 586.66 (London 1868 and 1873, Cambridge 1868), 603 (Preston 1881), 604 $\frac{2}{3}$ (Manchester 1858), 651 (Manchester 1863), 880 (Islington 1852). Such an abundance of riches raises a question: Why did the British settle for 440-yard ovals? The key factor was their infatuation with the mile: four laps covered exactly the distance while allowing the longer races to start and finish on the same line. True, so did two laps on 880 ovals, but the larger size argued both economically and visually against them. It is from this original decision that "the distances we run" were first derived in Britain: half a lap or 220, a full lap or 440, two laps or 880, four laps or 1 mile, eight laps or 2 miles, twelve laps or 3 miles, twenty four laps or 6 miles.

A Puzzling Sequence

This perfectly rational sequence was disrupted when competitive running crossed the Channel and "invaded" a Continent accustomed to measure distances in meters rather than yards. The 220, 440 and 880 required only slight adjustments to yield their closest metric equivalents, the 200, 400 and 800. But instead of doubling the 800, two laps into four, Continentals stopped 100 meters short of 1600 to settle for 1500, four laps minus a quarter. They next doubled the 1500 into 3000, the equivalent of seven or eight laps plus or minus a half, then converted the 3 miles into 5000 meters, twelve or thirteen laps plus or minus a half, and the 6 miles into 10000 meters, exactly twenty five laps.

What is behind this somewhat capricious sequence which begins by doubling distances and laps, then reduces the duplicated distance by a quarter lap, then shifts to doubling distances rather than laps to settle for the closest metric equivalents of three and six miles? Obviously the turning point, the "metric mile" can't be the result of a desire to best approximate the mile in meters, for 1600 meters is closer to 1609 than 1500, minus 9 as against minus 109 meters. Something else has interfered, a "sleeper" which is the decision to build 500 rather than 400 meter tracks. To be sure, the key factor behind the inconsistencies of the "classic" sequence or races was the size of the track: built with a three lap "metric mile" in mind, the 500 meter tracks threatened for a time to undermine the hegemony of the British 440-yard ovals and their 400 metric equivalents. At the first modern

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Olympiad in 1896, distances were measured in meters on a 333.33 oval whose turns were so sharp as to give the Greek organizers no choice but to cancel the 200.

The 500 Meter Ovals

Thus, measuring races in meters instead of yards affected the size of the oval: the second modern Olympiad was contested on a 500-meter track, the Pré Catelan in Paris's Bois de Boulogne which had hosted the first 1500 races on record, Michel Soalhat's 4:16 $\frac{2}{5}$ of May 26, 1895, and Albin Lermusiaux's 4:10.4 of June 16, 1896. The American Charles Bennett put the same oval to good use to shatter the metric mile record in 4:06 $\frac{1}{5}$ on his way to Olympic gold. However celebrated, this jumbo facility was hardly adequate. In fact,

there was no track. The grass field was uneven and in many areas sloped. Discus and hammer throwers watched as their efforts landed in trees that surrounded the field. French officials, lukewarm at best about the Games, never even considered removing the trees or destroying the grass in order to make a cinder track. They contented themselves with marking off various racing distances on the green turf of the little open field known as Pré Catelan. The 500 meter oval was not even level.³

For a time 500 meter ovals tended to proliferate on the Continent: in France it was Colombes which replaced the improvised Pré Catelan, in Italy, Milano's Stadio Communale, in Germany, the National Stadium in Erfurt, to mention only those which hosted world records. The French broke seven (Soalhat 1500, Lermusiaux 1500 and 3000, Bouin 3000, Deloge 3000, Toquet-Daunis 5000, and Fleurac 5000), the Americans two (Bennett 1500 and 5000), the Germans also two (Harbig 800 and Herrmann 3000), and the Italians one (Beccali 1500). If the earliest record on a 500 meter oval goes back to 1895, Soalhat's 1500, the latest came seventy years later, Herrmann's 3000 in 1965. Although most 500 ovals were later converted into 400 facilities, a few over-sized dirt or cinder tracks are scattered throughout the towns and cities of Europe like the carcasses of oversized dinosaurs, forgotten relics of a past era.

If the three-lap relationship between 500 ovals and the 1500 is obvious, the question remains which of the two was the chicken and which the egg. Scheduled at the first modern Olympiad, the 1500 would seem to have been the locomotive, if it were not for the fact that the Athens oval was only 333.33 at a time when Soalhat and Lermusiaux had already established world

³ The Associated Press and Grolier, *The Olympic Story*. Danbury 1979, p. 41.

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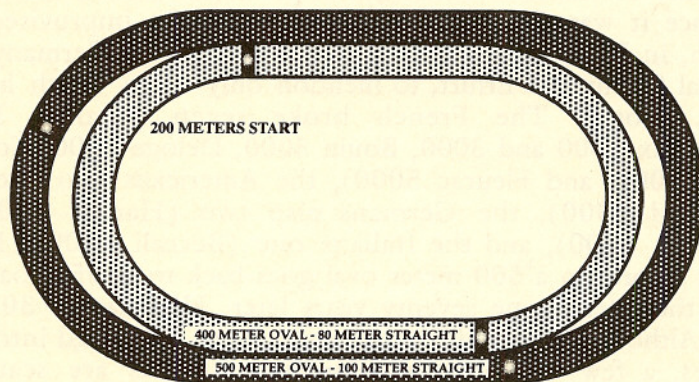
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records on the Pré Catelan 500. Whichever came first, it is clear that French influence, mainly through Pierre de Coubertin, the father of modern Olympics, was decisive in establishing the 1500 as the metric equivalent of the mile, which started a relatively short-lived trend toward building 500 ovals.

The Virtues of 500 Meter Ovals

When the IAAF rejected the metric 500 ovals in favor of the mile-derived 400, the world of track forsook a number of advantages which are worth remembering. To begin with, the wider turns and longer stretches bring 500 ovals closer to the straight line ideal. True, 800 ovals would have been even closer: in principle, infinitely large ovals would reconvert all races into straight line contests.

A good illustration of certain disadvantages inhering the smaller ovals is Mike Marsh's predicament in the 200 final of the U.S. 1995 Nationals. Olympic champion and holder of the second fastest time in history, Marsh's chances were compromised by an unlucky draw which relegated him to the "tightest" lane, the first. The consequences of such unfortunate draws were mitigated by the longer and milder turns of 500 ovals which handicapped inside-lane sprinters much less, the tightness of their first lane corresponding to that of lane 9 of 400 tracks.⁴



Another advantage is that 500-meter ovals surround larger infields which reduce the risks of injury by flying javelins, hammers and discuses. In the last 10 years, the javelin has been redesigned twice in order to shorten the length of throws 400 infields could no longer contain. Similar changes are in store for the hammer and

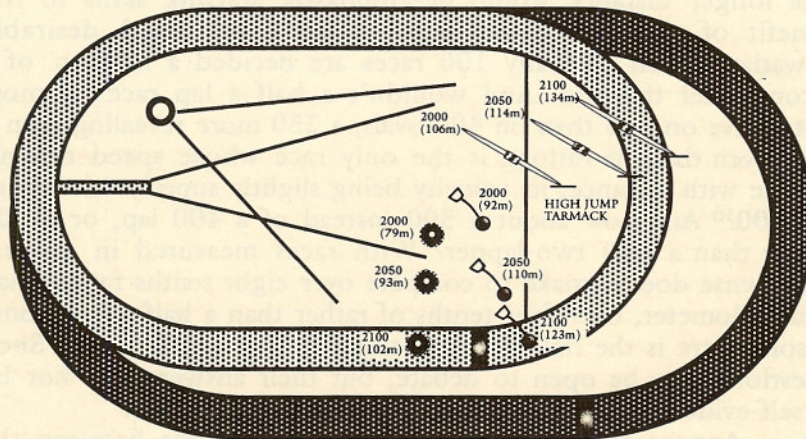
⁴ On a 400 oval, the milder curvature of lane 9 offers an advantage of about 1.2 seconds, a little more than 1 meter over lane 1. (Morton, "An Analysis of World Records for Lanes", in A.T.F.S. Bulletin, 1/1998 May). See also Jed Breckner's list of world records for lanes in the April 1997 issue of the same Bulletin.

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discus: if they continue to progress at the rate projected by the exponential curves of their records, hammer throws will exceed the boundaries of 400 infields by the year 2010, discus throws by 2030. Such changes would be at least postponed on 500 ovals whose infields are 40 meters longer and 20 meters larger than those of 400 ovals.



Enlarging the oval to 500 meters would also do away with the "moving start" of the races which do not begin on the same line they finish. If nine spectators out of ten find out where the next 1500 or 5000 will start only when runners gather before the gun, it is because the distances in question are not genuinely metric but metric compromises of distances originally measured in yards going back to the 440 ovals designed with the mile in mind. That the classic races have their roots in the peculiar distance of 1609 meters should make it clear how arbitrary they are. Once we realize that there is nothing classic about the "classic" distances we may feel free to experiment with alternatives.

The Races of 500 Ovals

Applied to 500-meter tracks, the fractional logic of 400 ovals would yield the following distances:

1/10 lap	= 50
1/5 lap	= 100
1/4 lap	= 125
1/2 lap	= 250
1 lap	= 500
2 laps	= 1000
3 laps	= 1500
4 laps	= 2000
6 laps	= 3000
10 laps	= 5000
20 laps	= 10000

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Aside from the fact that multi-lap races start and finish on the same line on 500 ovals, they consist of full laps rather than start with part of a lap, which plays havoc with intermediate timing.⁵ As for sub-lap races, could fractions of the larger ovals be preferable? Could racing one quarter of a 500 oval be more relevant than one quarter of a 400 oval, would a 125 sprint be preferable to the 100? The longer distance would de-emphasize starting skills to the benefit of sheer speed, a shift many would find desirable nowadays when so many 100 races are decided a fraction of a second after the gun. And wouldn't a half a lap race be more instructive on 500 than on 400 ovals, a 250 more revealing than a 200 given that the furlong is the only race whose speed doesn't decline with distance, its velocity being slightly superior to that of the 100?⁶ And how about a 500 instead of a 400 lap, or a 500 rather than a 400 two-lapper? With races measured in meters, what sense does it make to compete over eight tenths rather than a full kilometer, over four tenths of rather than a half, whose only *raison d'être* is the mile-derived length of the smaller oval? Such questions may be open to debate, but their answers may not be as self-evident as we have been accustomed to assume.

Appearances notwithstanding, the tensions between the British Islands and the Continent, the English and the French, yards and meters, 400- and 500-meter ovals have resulted in compromises which are not easy to entangle. On one hand, Continentals have prevailed in that races are now measured in meters, no longer in yards; on the other, the British have imposed their views in that races are contested on the smaller 400 mile-derived ovals, not on the larger genuinely metric 500 ovals. The same is true for the "classic" distances which are basically approximations of distances originally measured in yards. If the measuring system were truly metric, why should athletes run only 4/5ths instead of a full kilometer, 800 rather than 1000 meters, why 4/10th instead of a half, 400 rather than 500 meters? Not to mention that the larger ovals still survive in the 1500 and its 3000 double, both out of place on 400-meter tracks which require quarter lap and half lap adjustments.

Whatever its virtues of the larger 500-meter ovals, their resuscitation is not in the cards. Since the IAAF ruled in favor of the smaller ovals, a relatively short but solid tradition has implanted roots which should be left undisturbed, if for no other reason than the millions required to rebuild the larger ovals as well as the accommodations surrounding them.⁷

⁵ True, the 400 and 800 do not start where they end on 500 meter ovals, which they do on 400 meter ovals.

⁶ See "Is the Furlong Faster than the Century?"

⁷ For a temporary solution which consist of reducing the track to 6 lanes by removing the three inside lanes see [chapter]

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Is There Life Left in in the Old 500 Meter Ovals?

Does this mean there are no lessons to learn from our nostalgic excursion into the past, from this confrontation between new and old, between 400 and 500 meter ovals? Well, perhaps a few.

To our knowledge, all surviving 500 tracks have grass, cinder or dirt surfaces. Perhaps a rich national federation may be persuaded to cover one of these antiquated ovals with a synthetic surface. A 500 all-weather track once available, the IAAF may consider scheduling periodically, say every other year, a major international meet whose races would duplicate the profile of some of the glorious encounters of the past, e.g., the 1939 Harbig-Lanzi confrontation in Milano. Races would be contested both over the classic distances and over the equivalent fractions of 500 ovals with 200s starting before mid-curve, 250s at its beginning, 400s at the top of the backstretch, 800s half way down the backstretch, not to mention a full lap 500s and a two-lap 1000s.

For the classic distances, the IAAF could ratify parallel bests established on 500 ovals as statisticians do for indoor records broken on ovals of different sizes. Symbolically, it could begin by reactivating Harbig's celebrated 1:46.6 as the first "long track" 800 record, Beccali's 3:49.0 for the 1500, and Herrmann's 7:46.0 for the 3000. Bests would be ratified for fractions or multiples of 500 ovals, 125, 250, 500, 2-lap 1000, 4-lap 2000, 6-lap 3000, 10-lap 5000, and 20-lap 10000 meters, a more rational sequence of distances than those we call "classic" today. ▲

Rethinking Track & Field Athletics; The Future of the world's oldest sport.

This article, taken from a soon to be published book on athletics titled, *Rethinking Track & Field Athletics*. It was written by the late Alphonse Juillard. Permission to reprint from the estate of Alphonse Juillard. Please watch for more details (and excerpts). The book, which we highly recommend, will be published in mid to late Fall 2002. Watch upcoming issues of American Track & Field for more provocative excerpts from *Rethinking Track & Field Athletics*.

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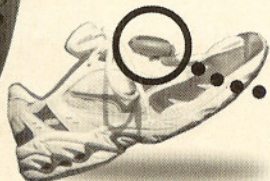
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books and discovered that President Dwight D. Eisenhower, who also commanded the Allied troops at the Normandy Invasion in World War II, ran the 4 x 400 meter relay for his high school in Abilene, Kansas.

Michael Johnson Retires

Michael Johnson, the world record holder at 200 meters and 400 meters, retired at the end of 2001. Actually, MJ ran in 2001 as a farewell tour. His last international event was the Goodwill Games, and his last farewell event was in Japan. Did you know that MJ was not even the best runner at his high school? One of five children, MJ told ATF that his parents expected one thing of him—that he do his best. Our favorite MJ race ever was the semi-final in the 400 meters at the '99 World Champs in Seville, Spain. When MJ hit the turn, he was on pace for a world record. Then he literally turned off all the cylinders, and ran under 44 seconds! We wish MJ and his family the very best.

How Did You Start Running?

Steve Scott the American record holder in the mile, and a man who has run over 136 sub-four minute miles, started out as a baseball player. His mom, who ran everyday, would coax Steve out of the house to run with her. Running with his mother gave him the running bug, and he focused on running in his junior and senior years of high school, eventually becoming one of the best American milers in our sport's history. Think about this one: Steve Scott once finished a 3:49 mile with a 52-second last lap!

Connie Price-Smith Retires

Connie Price-Smith started out as a basketball player and ended up being one of the most prominent throwers in our sport. Connie has been part of four World Champs teams, and has inspired a new generation of women throwers. We wish Connie and her husband/coach, John Smith, best wishes in 2002.

Special thanks to the USATF Media Department, Hal Bateman, www.cal-track.com, and www.atf-athlete.com.