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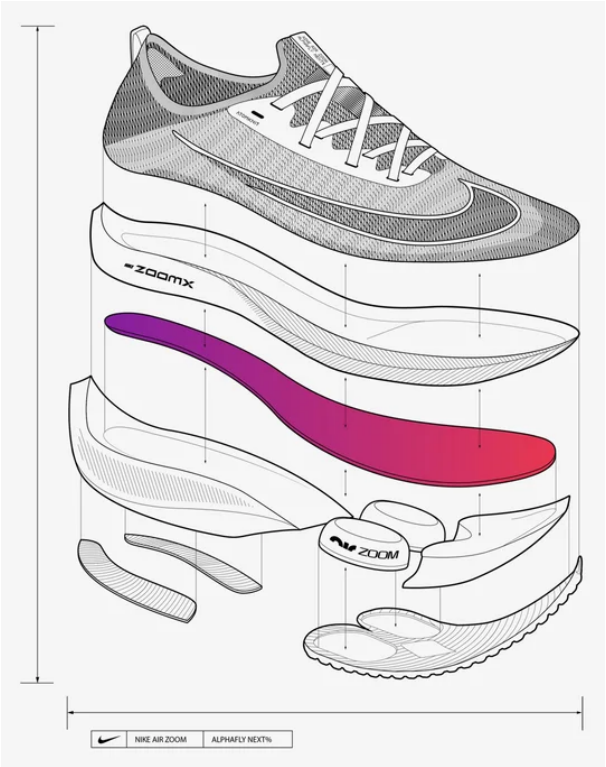
Why Nike's Alphaflys should be race legal

The year 2019, INEOS 1:59 challenge where professional marathon world record holder attempts to do what no man believed that could be possible: Breaking the 2 hour barrier in the marathon. Since the dawn of the 26.2 miles race, the idea of going the pace of 4:32 minutes per mile for 26.2 miles was a tall-tale. The billionaire CEO of the company INEOS, Sir Jim Ratcliffe says "It would be an extraordinary achievement. It's almost super-human, isn't it really? To break two hours in a marathon is quite unthinkable" (Masters). Then Eluid Kipchoge on May 8, 2019 did the unthinkable and finished the marathon in an astonishing time of 1:59:40.2. First time in the history of world athletics to see such a barrier broken. Some critics say that he broke the record because of how the pacemakers were placed, or that he is the best marathoner with 10 straight wins in the marathon or the course was a grade zero flat course. I'd argue it all helps but I know that the shoes he wore made a significant impact on this record. Since this race, the shoes that Eluid Kipchge wore, Alphaflys, and their predecessor shoes have been making world records and in the distance-running with the five fastest times (Bloom). Since this phenomenon, The World Athletics bans these shoes from competitive racing (Reddinger). The Nike Alphaflys shoe ban should be lifted because the technology helps the sport just as swimmers use technology to advance their sport and it helps overcome the fear of technology.

What makes Nike's Alphafly shoes so successfully efficient? Which led to a race ban in the highest athletic tier? According to Nike.com, "Our premiere racing shoe is loaded with new

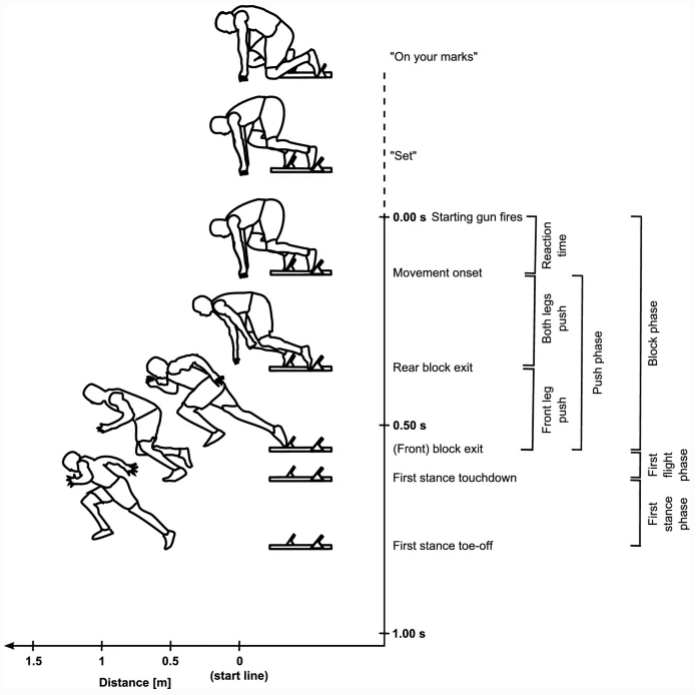
technology and innovation that includes two ultra-responsive Air Zoom pods in the forefoot and additional ZoomX foam in the heel“ (“Alphafly”). Some of the technology that it has that changed the sport of running is the ZoomX Peba foam, Zoom air pods and the carbon fiber plate. As seen in Figure #1 which shows the layers of the famous Alphafly shoes. Studies have shown ZoomX Peba foam is more responsive than other foams and gives a better energy storage (Hoogkamer). Showing forth, The Alphafly’s Peda Foam has technological advantage over the foams in other shoes. An article in 2020 tells us that the Xzoom Peda foam combined with the Carbon Fiber Plate can give up to 2% to 10% improved running economy (Klein). The carbon fiber plate is highlighted shown the figure #1. The running economy is a huge advantage when in a race where you are taking 4000 and more steps like in the 5000 meter race or the marathon. Lastly, the Xzoom airpods were created to get even more energy return than just the PEBA foam itself (*Alphafly next%*). With all this technology made the Nike Alphafly a work of technology advancement that overwhelmed the world with record-breaking mechanics.



The sport of running can be seen as Track & Field, Cross Country, Road Races and so much more. In Track & Field, we can see how technology has helped for many personal and world records to be broken like with the track surface, starting blocks and spikes. The sport of running in laps has been a staple since 1896 when the modern Olympics first started (“The

Olympics"). Even if it is called Modern Olympics, the technology that we have now was not present in the Olympic games in 1896. In early days of track & field, they used a track surface of grass, clay or even cinder (Dixon et al. 2-3). If bad weather was present, track performances would worsen. According to The Science and Engineering of Sport Surfaces, the Australia Olympic games of 1956 is when they saw the first synthetic track, in which was a mix of rubber and asphalt. 12 years later in the Summer Mexico Olympic games of 1968, they saw the first Polyurethane "Tartan" track surface (Dixon et al. 2-3). Polyurethane is a type of rubber that maintains its form but still allows the athlete to accelerate. The benefits of this track is that the weather won't affect performance as the other track surfaces like on a rainy day. Also it is the same track surface we use today. This technology advancement boosted athletes to perform to their highest potential but this wasn't banned.

Another technological advancement to track & field is the starting block. Others might ask why the starting block? What is it? The starting block is an instrument where you place your feet on two pedestals, helping athletes so that they don't slip when the starting gun goes off. As seen here in Figure #2, how athletes take off from a block to a sprint start. A study which shows the difference in times between a block start (using a starting block) and a Split-leg start (start with legs spread-out with slight bend in the knee). With 14 elite athletes, they found out that block starts

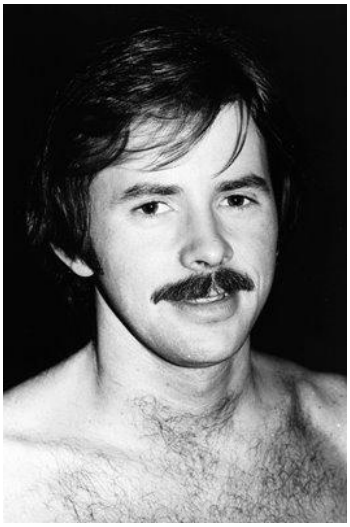


are more efficient and faster than split leg starts in the span of 30 meters (Macadam et al.). In other words, athletes who use starting blocks will have a technological advantage over athletes who don't use it. The IAAF still doesn't ban Starting blocks even though the technology helps advance world records.

Lastly, another advancement that isn't banned is spikes. Spikes are the shoes that have a couple spikes in the bottom pointing down to the ground. When stepping, the spikes go into permeable surfaces like a pin into a quartet board. In a sense, the spikes are used to get more traction and to slip less. According to Christopher Glaeser, the track spikes started selling in the late 1800's when sold with a heavy cow leather sole and metal bottom. Then with new technology the creator of Adidas created the first spikes that used rubber bottom and canvas (Glaeser). In which the star athlete Jesse Owen, who won 4 gold medals at the Berlin 1936 olympics, raced to beat the world's best athletes in the 100 meter and 200 meter dash in Adidas shoes. After the victories, the track & field association took note of Jesse's performance in the Adidas spikes. In which, was an advantage compared to other shoes but still was allowed to be worn. With all these advancements, they weren't banned because it added to the sport. Therefore the Nike Alpha Fly shoes should not be banned; because just like the track surface it gives more energy return, just like the starting blocks it helps keep momentum, and just like spikes they are another pair of shoes we put on to race.

Not just in the sport of Track & Field have technology directly advanced the sport and their record. We can see this in the Sport of swimming, maybe there might not be a rubber track to swim in but the technology advances that have directly improved records are the swimcap, the skimmers and the goggles. The Swim cap is also called a bathing cap and a swimming cap. But why would I use a swimming cap? Well according to OpenwaterHQ, swim caps are used to

reduce under water drag, help you feel fast, get your hair out of the way, hair shedding won't happen as much, Scalps and hair won't be exposed to UV rays and Chlorine, and provides safety during open water swims (*The disadvantages of not wearing swimming caps*). BBC news reporters say "Bathing cap development has followed much the same route as swimming trunks and costumes. Early caps were made of fabrics like cotton and silk" (*From silk to sharks*). The swim cap was originally introduced as only a fashion statement in the early 1900's. Started as only used to protect the virtue of women and protect the hair from getting wet. Later on the swimming cap began to be used for competitive swimming making it a technology advancement to further the sport of swim.



Just like the swim cap, came along the swim goggles introduced into the sport of swimming. According to Swimswam.com; The use of goggles in competitive swimming started with David Wilkie who wore home-made goggles to protect himself from his chlorine allergy. He later on completed with his invention and won a gold medal in the commonwealth games ("History of goggles"). Later on, swimmers of all regions began to wear goggles in competitive racing because of David Wilkie's success. In which, show forth the advancement of technology that gave advantage to swimmers who had goggles.

Not just in equipment has there been advance but also in the pool like the use of Skimmers or guttered pool. "Later, in 1976, the guttered pool was introduced. Instead of the waves created by the swimmers splashing back and causing resistance, the edges of the pool served as a drainage system, constantly carrying water away and redistributing it in a less

resistive fashion" (Epstein). Before this the swimmers had to deal with other swimmer waves and would detract from racing. Just like the Tartan Track, another technological advancement to the setting of the sport. If it be the swim cap that helps you keep your hair on or Goggles to help see through the chlorine filled pools or even the skimmers that make the sport of swimming more enjoyable for the athlete. The sport of swimming is a great example that technology improved as athletes improved to progress their sport. The same applies to Nike's Alphafly to the sport of Track & Field.

Technology can be seen everywhere if it be in the Olympics 200m breaststroke to the 400 meter dash on the Polyurethane track. Technology has been over time feared and in track & field also. In a point this fear of new technology has been seen before like in the 1900's with the factories, or even the 1960's with the "The Brush Shoes" and how this would affect the sport in general. Fear of new technology has been a problem since the industrial revolution. This fear is called technophobia. An Economist says, "Since the dawn of the industrial age, a recurrent fear has been that technological change will spawn mass unemployment" (Vardi). A fear of new technology has been a topic since they built computers. The Alphaflys is just another fear of technology to the sport. That a way to overcome this fear is to accept and ban the shoes from professional running. Some might argue that the ban was like the ban on Puma No. 296 shoes. Shoe #296, also called "the Brush Shoes", was Puma new prototype spikes for the 1968 olympic games. What makes these spikes special from the competitors' is that not only do you see 6 spikes but 68 spikes were on every pair of Brush Shoes. Giving it a lot more traction than the normal 5 or 6 needle spikes. When tested, John Carlos broke the 20 second barrier for the 200 meter race (McKnight). Eventually the IAAF, or now called World Athletics, banned them from

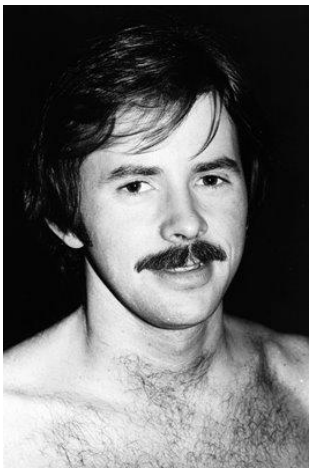
professional racing saying “shoes may not exceed 11 spikes”(“Athletic Shoe”). Shawn Hoy, Saucony’s vice president of global product, argues saying,

> “Having said that, there’s nothing particularly fair about elite running. If you’re a Nike runner, you’ve got advantages that a Saucony runner doesn’t have. If you’re a Saucony runner, you’ve got advantages an unsponsored runner doesn’t,” Hoy continued. “If you can train at altitude in Kenya, that’s a little different than being able to train in Providence, Rhode Island. I think the fairness conversation has also become kind of an unfortunate sidebar in this whole thing. … But the genie is out of the bottle, and now we’re trying to put it back in. It’s just leading to a messy conversation.” (Kilgore)

Whatever it may be, there are always disadvantages. We can’t ever have an equal playing field. If they unban the Alphafly, they would be allowed to even the playing field and to overcome technophobia.

In Conclusion, The Nike Alpha Fly shoes are a start of a new era of running, running with newer technology. Just like when they introduce the synthetic track or the lightweight spikes or even the block start. This technology will help further running like swim caps, skimmers and goggles in Swim. Even though this pair of shoes gives an advantage, so does anything else in the train regime. This is what the future will look like. The IAAF needs to unban these shoes from professional running. There is no need to be scared of a faster future.

Figure #3- Photo of David Wilkie



David Wilkie Great Britain Olympic Champion Swimmer 1980. 19 Dec. 1980.

https://www.sportphotogallery.com/swimming/david-wilkie-great-britain-olympic-champion-swimmer-1980-37612/

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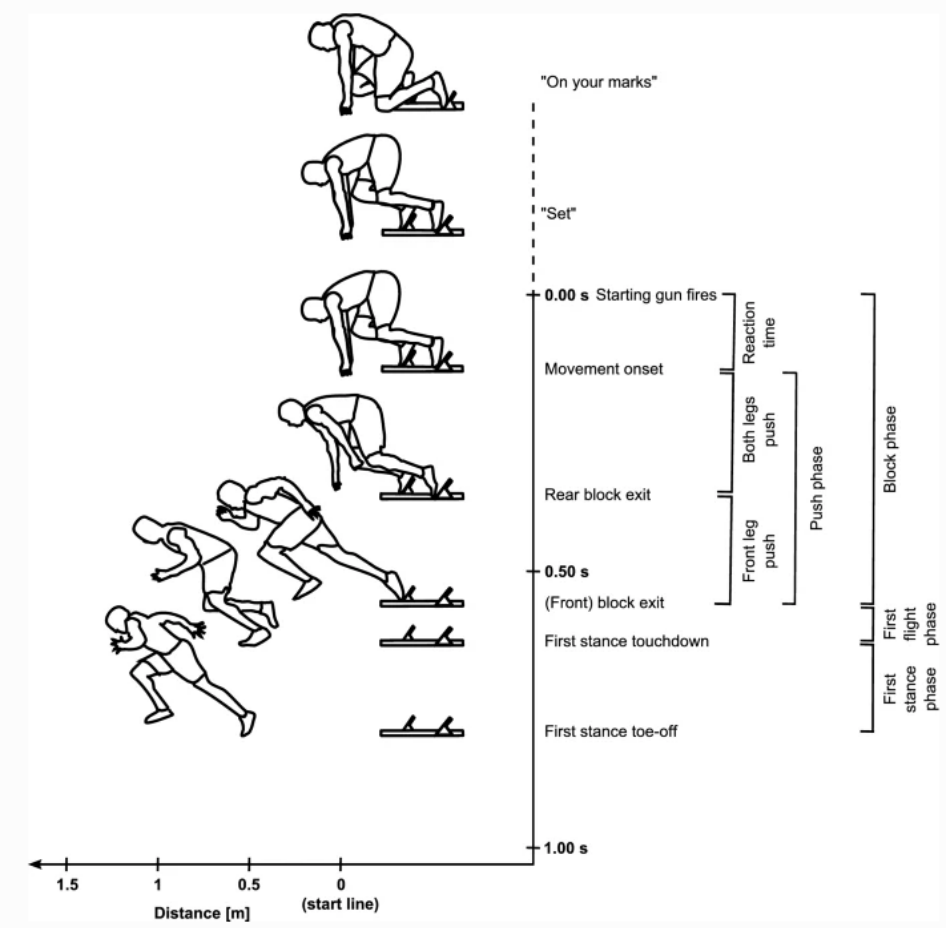
Figure #2



This despites starting block biomechanics
https://link.springer.com/article/10.1007/s40279-019-01138-1

Figure #1

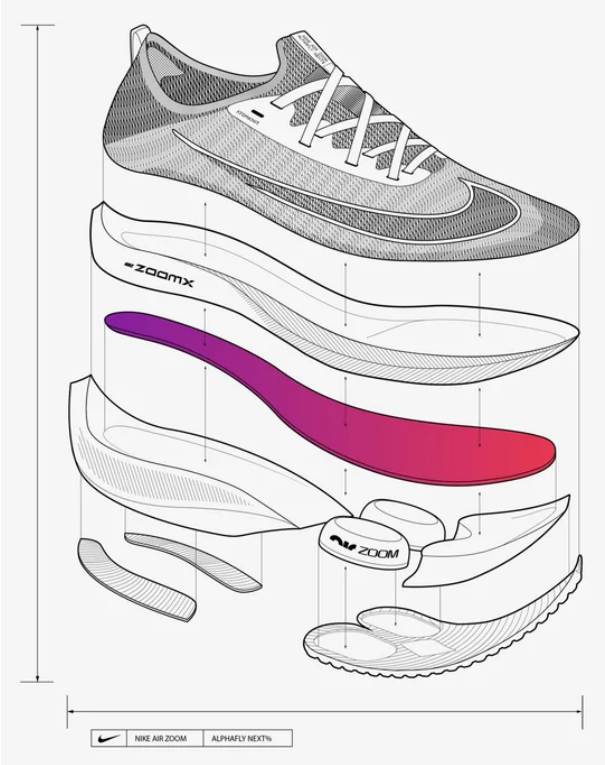


Figure #1 displays the parts of the Nike Alphafly shoes from the Flyknit upper to the Xzoom foam, the carbon fiber plate, the Xzoom air pod with the midsole and lastly, The rubber grip outsole. The highlight part is the carbon fiber plate. Source is from "Alphafly next%." *Nike.com*, https://www.nike.com/running/alphafly.

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