



Ariel Dynamics Inc. Media Library - Video

Frank Shorter



Code	adi-vid-01067
Title	Frank Shorter
Subtitle	APAS Analysis of Gold Medalist Shorter
Description	Analysis of Gold Medalist Frank Shorter before and after Injury
Subject	APAS;Favorite;Performance Analysis
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Synopsis

Frank Shorter, one of America's finest marathoners, played a significant role in inspiring people to take care of their bodies through running. He attributes his success to being at the right place at the right time, and to his training which focused on form and biomechanics rather than strength. He believes that as training reaches a certain level, the focus should shift to improving form.

In 1976, scientific research in sports was not as advanced as it is today. Now, researchers can study an athlete's form, measure the friction coefficient of their foot when they land, and even determine the type of shoe that would be most efficient for them. This information can be used to develop training and shoe development programs to help athletes run faster.

Shorter, who suffered an injury, believes that having information about his form from 1972 has helped him in his recovery. He suggests that being able to compare his current form to his form before the injury is a valuable tool. High-speed photography and computer programming are used to illustrate and compare his running styles.

The use of technology in sports, Shorter argues, is crucial for athletes to feel that they have done everything they can to prepare. Despite having the best technology in the world, the U.S. does not utilize it enough in sports. If used effectively, it could help athletes reach their full potential.

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Audio transcription

Frame	#	Time	Spoken text
	0.	00:00:00	You may recall that the first runner in the Olympic Stadium that day was a fake, but the
	1.	00:00:19	running phrase that Frank Shorter's whole middle victory inspired is certainly no fluke.
	2.	00:00:25	And today remains one of America's finest marathoners.
	3.	00:00:32	Every morning I go out and I see all those people out in the street and they're running like crazy
	4.	00:00:36	and you're the one man who had a lot to do with people getting interested in taking care of their own bodies.
	5.	00:00:42	Well I think I was at the right place at the right time and again there's a luck element involved in everything that you do
	6.	00:00:51	and I was lucky that the training I had done was right.
7.	00:00:54	And I think I was also again fortunate that I came along at a time in the scientific development of the sport	

Frame	#	Time	Spoken text
	8.	00:01:01	<i>that my type of training was all I needed to do.</i>
	9.	00:01:05	<i>There's all that luck involved because the Americans have been very behind in the sophistication of the scientific research on sport.</i>
	10.	00:01:12	<i>We do lots of scientific research but then the other countries use our data and then they transfer to the athletes.</i>
	11.	00:01:18	<i>Now we're finally doing it here.</i>
	12.	00:01:20	<i>And I may have been one of the first that people started to look at because my advantage in running is not strength.</i>
	13.	00:01:27	<i>It is form in biomechanics.</i>
	14.	00:01:29	<i>And as you reach a certain level of training I think you get to a point of diminishing return in terms of just the physical effort that you put out.</i>
	15.	00:01:38	<i>And then you have to get to the point where you can improve your form.</i>
	16.	00:01:42	<i>And it's a very difficult thing to do.</i>
	17.	00:01:44	<i>You can't visualize it in your own mind and reproduce it.</i>
	18.	00:01:48	<i>You have to be able to see it.</i>
	19.	00:01:50	<i>And I think you're starting to see this in a lot of runners now.</i>
	20.	00:01:53	<i>True, in 1976 there weren't people like Gideon Ariel on the scene.</i>
	21.	00:02:00	<i>They were behind the scenes.</i>
	22.	00:02:02	<i>Now I think they really are in the forefront.</i>
	23.	00:02:04	<i>Frank, always in scientific pursuits there seems to be some model.</i>
	24.	00:02:09	<i>He's going to become a model now and people are going to try to imitate this guy.</i>
	25.	00:02:13	<i>I think what they'll do is they'll study his form to see just what makes him so efficient.</i>
	26.	00:02:17	<i>And you know they do amazing things now.</i>
	27.	00:02:19	<i>Like they can put him on a treadmill and measure the friction coefficient of his foot when he lands.</i>
	28.	00:02:24	<i>And they can see even what kind of shoe he should wear.</i>
	29.	00:02:28	<i>Some shoes will give him a better friction coefficient than others.</i>
	30.	00:02:31	<i>So they can not only see what makes him good, what allows him to flow along as he runs.</i>
	31.	00:02:37	<i>They can see and study just exactly what he might have done in the way of weight work or training to improve that form.</i>
	32.	00:02:44	<i>So it's going to be a combination of sort of taking the fine points, the good points of the superior athlete.</i>
	33.	00:02:51	<i>And then trying to generalize enough so that you can develop weight programs, even shoe development programs to get the athlete to run faster.</i>
	34.	00:03:01	<i>The great thing about getting and having the information on me from 1972 is now I think I'm totally rehabilitated.</i>
	35.	00:03:08	<i>I think my strength is back where it should be.</i>
	36.	00:03:10	<i>It would be very interesting to be tested again to compare just to see how close I can be to the same efficiency that I had before I was injured.</i>
	37.	00:03:19	<i>And that's a great tool to have because otherwise you never know.</i>
	38.	00:03:23	<i>And there's always the uncertainty and that's when the psychological element comes in.</i>
	39.	00:03:27	<i>It now gives me a means to psychologically know that I am recovering back to the point where I was before.</i>
	40.	00:03:32	<i>I hope.</i>
	41.	00:03:33	<i>Hope has arrived.</i>
	42.	00:03:34	<i>Frank, after your muscle pull, you did have a tendency to favor your stronger leg.</i>
	43.	00:03:38	<i>But with the technique of filming your running style of high speed photography and programming it into our computer through a sophisticated tracing process called digitizing.</i>

Frame	#	Time	Spoken text
	44.	00:03:46	We're able to illustrate your running style, the one that you used in 1972 to win a marathon gold medal.
	45.	00:03:51	Now we can compare that technique with your present form.
	46.	00:03:54	You know, getting on the top line, you see him in 1972, right? He looked pretty smooth to me.
	47.	00:03:59	In 1982, when he recovered from the injury, you really are coaching the same style.
	48.	00:04:04	Now when he was injured, the central quality was a little bit different.
	49.	00:04:09	If we look on it from a multiple trace point of view, you'll see that the trace is a little bit different.
	50.	00:04:15	On the top, you see him a little bouncing.
	51.	00:04:18	That's when he just recovered from the injury and he's going up and down.
	52.	00:04:22	But when you look on 1982, it's almost completely straight.
	53.	00:04:26	Yeah, completely straight. That's a great runner, Frank. Sure.
	54.	00:04:29	You're saying, getting that head from bouncing up and down and you'll be a faster runner.
	55.	00:04:33	Yes, in fact, the look on his upper body is as important as the lower body and you don't want to bounce with it.
	56.	00:04:40	If we're going to use instruments, if we're going to make measurements, then why not use the finest instrument?
	57.	00:04:47	And the other is the psychological feedback.
	58.	00:04:50	Every athlete, I think, once they get to the highest level,
	59.	00:04:53	every athlete has to feel that he or she has done absolutely everything they can to prepare.
	60.	00:04:58	And now the biomechanics and the other physiological testing are just an element in that training.
	61.	00:05:03	It's just necessary for your own sense of competence to do that now.
	62.	00:05:07	In this country, we have the best technology in the world.
	63.	00:05:10	We put a person on the moon, but we don't use this technology to people like Frank.
	64.	00:05:15	If we would use that, he would be on his own moon, which was in the winning gold medal.
	65.	00:05:20	Yeah, the interesting things. You go to East Germany and you see all the application they're doing to their athletes and all the literature is in English.

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