



Computer age hits sports

Spalding has already changed the design of their golf clubs



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Article Synopsis

The article discusses the work of Computerized Biomechanical Analysis, Inc. (CBA), a research company that analyzes human motion. The company uses special tracing equipment and high-speed computers to record and process motion data. This data can be used in various motion-related areas, such as sports, to improve individual performance and reduce injuries.

CBA's research has already led to changes in sports equipment design, such as golf clubs and athletic shoes. The company is also conducting research on football shoulder pads to reduce sports injuries. Much of the company's research is focused on helping individuals with mental retardation and Muscular Dystrophy.

The company was conceived in 1971 by Dr. Gideon Ariel and is currently located at Dartmouth College. All profits from the company are used to finance research in non-profit areas.

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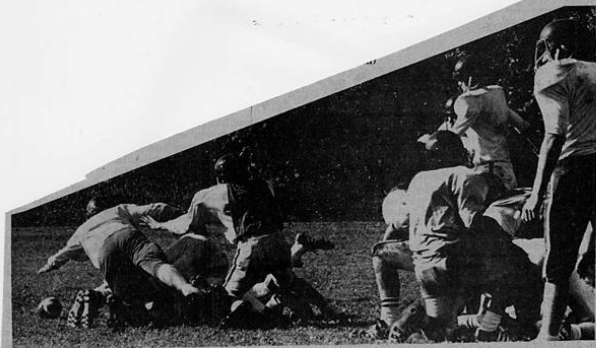
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Below find a reprint of the 1 relevant pages of the article "Computer age hits sports" in "Amhert Record":



Computer age hits sports, coaches note

By BILL BALLOU
If Babe Ruth had Computerized Biomechanical Analysis, Inc. at his disposal, who knows what he might have done.

It's questionable whether or not the Babe could even have pronounced it, and it's highly unlikely that he would have understood what it was.

Basically, Compn...let's call it CBA for short, is a research company organized to analyze human motion. Conceived in late 1971 by Dr. Gideon Ariel, it has been located at Dartmouth College in New Hampshire and just two months ago relocated in Amherst at 316 College St. Simple enough, eh?

Slow motion cinematography is used

to record any desired motion and special tracing equipment enables data to be processed directly by a high speed computer. Appropriate programming results in a breakdown of the data.

That's it, more or less simply and very much condensed.

The data can then be used in all sorts of motion-related areas, including sports. For instance, it can be used to improve individual performance (coaches take note, the age of the computer is here), to help reduce injuries, or aid in the design and manufacture of equipment.

Much of the research the company has done has been with the mentally retarded and in the area of Muscular Dystrophy. It was, in fact, Muscular Dystrophy research that got the whole thing going.

Ariel who is an Asst. Professor at UMass and an internationally known expert in the field, was at Dartmouth coaching the Olympic track team. Ken Weinbel, now a company Vice-President, had a son with Muscular Dystrophy. Ariel had supper at Weinbel's house one night, and Weinbel asked if there might be any practical application of Ariel's research in the treatment of the disease. That got things going.

Some of CBA's research has already

started changing sports equipment. Like golf clubs, for instance.

"Spalding has already changed the design of their golf clubs," said Ariel. "They had a machine that was supposed to reproduce the golf swing, and they designed their clubs using that as a basis. We found that the machine really didn't simulate the swing at all."

And for those still trying to unlock the secret of a sub-90 round, CBA research has also determined that the best golf swing is not one that follows through.

(See, you were right all along.) They've also designed new athletic shoes, working on the principle that every athletic event has separate and distinct motions so every shoe should be designed differently.

Currently in the works is research on football shoulder pads. It would seem that with the enormous amount of injuries incurred in sports from the high school level up, the field of equipment redesign would be a fertile one.

The entire CBA staff, Ariel says, is connected with UMass. He and Weinbel are Vice-Presidents, M. Ann Penny, a UMass grad student is President.

"We take no profit out of the company," Ariel says. "The money we make from industry is used to finance our research in non-profit areas like mental retardation."