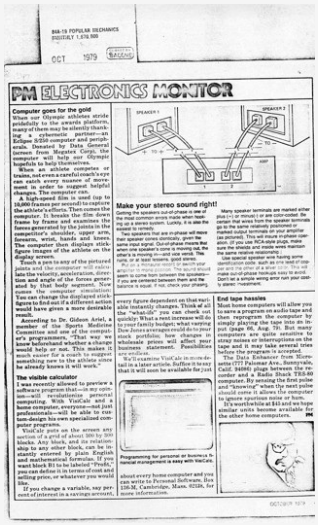
Computer goes for the gold

A high-speed film is used (up to 10,000 frames per second) to capture the athlete's efforts


PM ELECTRONICS MONITOR

Computer goes for the gold

Make your stereo sound right!

End tape hassles

Code	**adi-pub-01209**
Title	Computer goes for the gold
Subtitle	A high-speed film is used (up to 10,000 frames per second) to capture the athlete's efforts
Name	Popular Mechanics
Author	Unknown
Published on	Monday, October 1, 1979
Subject	Biomechanics; Capture; Media; Sports
URL	https://arielweb.com/articles/show/adi-pub-01209
Date	2013-01-16 15:40:49
Label	Approved
Privacy	Public

Article Synopsis

In October 1979, Popular Mechanics reported on the use of the Eclipse S!250 computer and peripherals in training Olympic athletes. The computer, donated by Data General, was used to analyze high-speed film of athletes' movements, breaking down each frame to examine the forces generated by various joints. This allowed coaches to suggest improvements based on precise data. The article also previewed VisiCalc, a software program that allowed users to custom-design their own computer programs. The program was expected to revolutionize personal computing by making it accessible to everyone, not just professionals. The article also discussed common errors in setting up stereo systems and how to avoid them.

This PDF summary has been auto-generated from the original publication by arielweb-ai-bot v1.2.2023.0926 on 2023-09-28 03:42:28 without human intervention. In case of errors or omissions please contact our aibot directly at ai@macrosport.com.

Below find a reprint of the 1 relevant pages of the article "Computer goes for the gold" in "Popular Mechanics":

84A-19 POPULAR MECHANICS
MONTHLY 1,670,000
OCT 1979

PM ELECTRONICS MONITOR

Computer goes for the gold

When our Olympic athletes stride pridefully to the awards platform, many of them may be silently thanking a cybernetic partner—an Eclipse S/250 computer and peripherals. Donated by Data General (screen from Megatex Corp), the computer will help our Olympic hopefuls to help themselves.

When an athlete competes or trains, not even a careful coach's eye can catch every nuance of movement in order to suggest helpful changes. The computer can.

A high-speed film is used (up to 10,000 frames per second) to capture the athlete's efforts. Then comes the computer. It breaks the film down frame by frame and examines the forces generated by the joints in the competitor's shoulder, upper arm, forearm, wrist, hands and knees. The computer then displays stick-figure images of the athlete on the display screen.

Touch a pen to any of the pictured joints and the computer will calculate the velocity, acceleration, direction and angle of the forces generated by that body segment. Now comes the computer simulation: You can change the displayed stick-figure to find out if a different action would have given a more desirable result.

According to Dr. Gideon Ariel, a member of the Sports Medicine Committee and one of the computer's programmers, "That way we know beforehand whether a change would help or not. This makes it much easier for a coach to suggest something new to the athlete since he already knows it will work."

The visible calculator

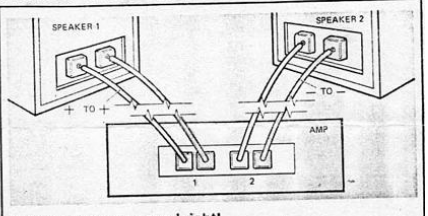
I was recently allowed to preview a software program that—in my opinion—will revolutionize personal computing. With VisiCalc and a home computer, everyone—not just professionals—will be able to custom-design his own specialized computer programs.

VisiCalc puts on the screen any section of a grid of about 300 by 300 blocks. Any block, and its relationship to any other block, can be instantly entered by plain English and mathematical formulas. If you want block B1 to be labeled "Profit," you can define it in terms of cost and selling price, or whatever you would like.

If you change a variable, say percent of interest in a savings account, every figure dependent on that variable instantly changes. Think of all the "what-ifs" you can check out quickly: What a rent increase will do to your family budget; what varying Dow Jones averages could do to your stock portfolio; how changes in wholesale prices will affect your business statement. Possibilities are endless.

We'll examine VisiCalc in more detail in a later article. Suffice it to say that it will soon be available for just about every home computer and you can write to Personal Software, Box 136-M, Cambridge, Mass. 02138, for more information.

Programming for personal or business financial management is easy with VisiCalc.



Make your stereo sound right!

Getting the speakers out-of-phase is one of the most common errors made when hooking up a stereo system. Luckily, it is also the easiest to remedy.

Two speakers that are in-phase will move their speaker cones identically, given the same input signal. Out-of-phase means that when one speaker's cone is moving out, the other's is moving in—and vice versa. This ruins, or at least lessens, good stereo.

Put on a monaural record or switch your amplifier to mono position. The sound should seem to come from between the speakers—if you are centered between them and the balance is equal. If not, check your phasing.

Many speaker terminals are marked either plus (+) or minus(-) or are color-coded. Be certain that wires from the speaker terminals go to the same relatively positioned or marked output terminals on your amplifier (as pictured). This will insure in-phase operation. (If you use RCA-style plugs, make sure the shields and inside wires maintain the same relative relationship.)

Use special speaker wire having some identification code, such as one lead of copper and the other of a silver color. This will make out-of-phase hookups easy to avoid. Don't let a simple wiring error ruin your costly stereo investment.

End tape hassles

Most home computers will allow you to save a program on audio tape and then reprogram the computer by simply playing the tape into an input (page 66, Aug. 79). But many computers are quite sensitive to stray noises or interruptions on the tape and it may take several tries before the program is accepted.

The Data Enhancer from Microsette (777 Palomar Ave., Sunnyvale, Calif. 94086) plugs between the recorder and a Radio Shack TRS-80 computer. By sensing the first pulse and "knowing" when the next pulse should come it allows the computer to ignore spurious noise or hum.

It's worthwhile at $45 and we hope similar units become available for the other home computers. PM