The Golf Swing

Have you ever wondered what your golf swing looks like?

Well, SiTek can help you with the answer. A position measurement system can relatively easily be built around a SiTek PSD. The other necessary ingredients are a couple of light emitting diodes, a camera lens system and some electronics. The diodes are attached to the objects to be measured i.e. the golf club. One or several "cameras" pick up the emitted light and image it as small light spots on a built-in PSD, in the same way as on the film in a photo camera. When the emitted light spot hits the detector its position is determined in the x and y plane.
The unique precision of this SiTek PSD is the key to the ability to measure minute changes in the position of the light emitting diodes. The light sources ate controlled electronically to maintain a constant intensity on the PSD surface. This feature permits a wide depth of field without adjusting the lens aperture. The light emitting diodes are activated sequentially to give about 600 samples per second and using optical and electronic filtering prevents any influences from ambient background.
A computer is used for the analysis of the obtained position values. Parameters such as position, speed, acceleration, rotation and stick figures can easily be extracted and recorded or presented in some graphical form. Examples of actual measurements of the movements of the tip of a golf club can be seen in figures 2 to 4.

Explanations to figures:

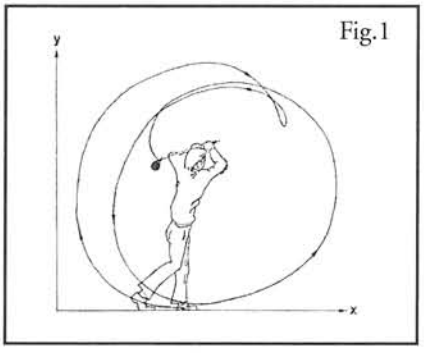
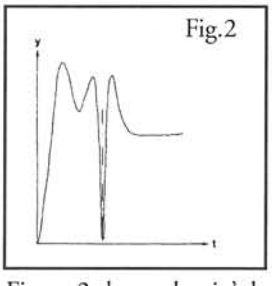


Fig. 1 shows a golf player with a light emitting diode attached to the tip of the club.



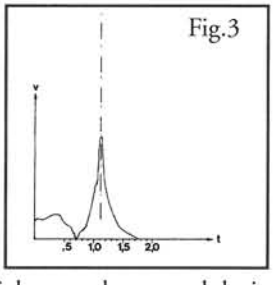
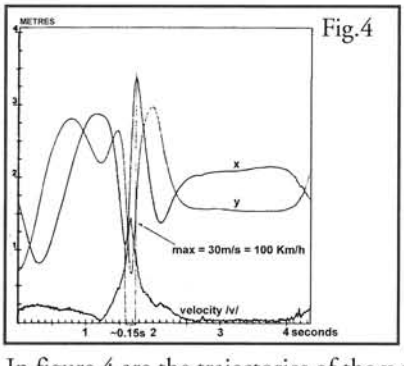


Figure 2 shows the tip's height over the ground during the swing and figure 3 shows the velocity of the tip.



In figure 4 are the trajectories of the x and y positions of the tip. Speed is also shown here and it can be seen that when the y coordinate has its minimum (when the tip hits the ball) the speed is at its maximum =100km/h