PHOTOGRAMMETRY

There were two Photogrammetry sessions. The first session was chaired by Ellen Knapp of Computer Sciences Corporation, and the second session was chaired by Roy Welch of the University of Georgia.

P.F. Grosso of Image Graphics, Inc. presented the paper "High Speed, Large Format, Flatbed Photocomposition Systems". One of the major technological advancements in plotting has been the replacement of a standard optical photohead with a computer controlled cathode ray tube exposure head. This advancement has resulted in plotting capabilities 20 to 200 times faster than before. In this paper Grosso describes both the hardware and software of the system.

Jerry Robinson of the Chicago Aerial Survey presented the paper "Digital Terrain Services at Chicago Aerial Survey". Robinson describes generation of digital terrain data using the Zeiss C-100 Planicomp analytical stereo instrument; edit of the input data by computer display; edit of the computer generated contours on the M & S Interactive Graphics System; plotting of topographic maps by computer plotter; and computer output of engineering cross sections from the digital terrain model data. The ability to perform this processing on a mini-computer has allowed the Chicago Aerial Survey to implement the technology as a practical production tool.

Robert Leighty and John Benton of the U.S. Army Engineer Topographic Laboratory presented the paper, "Hybrid Digital/Optical Feature Extraction System". (Paper not included in proceedings.) This system combines the best attributes of digital and optical image/feature extraction processing. This hybrid system will use microprocessors for various control and firmware processing stages, with system management being performed by a small minicomputer. Visual interaction will be provided through both monochrome and color video monitors and manual intervention will be through a trackball or joystick. Output of the system will be identified cartographic features to be used in supporting both military and non-military sectors.

William O. Lucoff of Cal. State at Hayward presented a paper entitled "The Use of Computer Generated Maps in Interpreting Urban Forestry Data". Lucoff describes a method for digital processing of urban tree inventory data from small scale (smaller than 1:30,000) infrared aerial photography. He describes how the data was collected and processed into a form that could be used for producing contour and trend surface maps. This technique has aided planners in developing urban tree policies.

William R. Detwiler of Systemhouse Inc. presented the paper, "An Analytical Photogrammetric Solution to a Civil Engineering Problem". Detwiler describes a photogrammetric approach to assist the developer in expanding a shopping mall. To do this each surface of the structure is photographed using a 35mm camera. The results are then mapped on an analytical stereplotter. The advantages of this method are; cheap cost ($3000), little on site time (8 hours), and quick delivery of the final product (one week later).

John K. Powell, Glenn L. Osick, and Thomas G. Miller of the U.S.G.S. presented the paper "Practical Experience in Integrating Conventional Photogrammetric Compilation and Digital Mapping Techniques". They describe the use of conventional stereoplotters combined with voice entry of attributes, interactive editing, and automatic drafting techniques for the production of digital products as well as conventional topographic maps. Using the process, two major goals of the National Mapping Program have been achieved simultaneously; the processing of both a digital and a graphic format of the standard series general purpose maps.

J.E. Turek and D.J. Walker of Image Graphics, Inc. presented the paper "Large Format Laser/Scanner Plotter System". They describe a system capable of both scanning inputs in the form of opaque hard copy on photographic film and plotting positive or negative outputs on film. This system is capable of scanning an image 50" x 70" in 30 minutes with a resolution of 40 lines/mm. Details of the Laser Scanner/Plotter System hardware and software, performance level achieved and sample recordings are also included.