Report of the 1986 Rochester Forth Conference Graphics Working Group

The Grapics Working Group was chaired by **Paul Snow**. Those in attendence included:

James C. Brakefield
J. Brooks Breeden
Max Hugelshofer
John Lundin Jr.
Harry Parker
Walt Pawley
Dennis Ruffer

The primary activity of this working group was a discussion of the nature of the PostScript page description language's (a Forth-like language used in Apple Computer's LaserWriter) underlying fundamentals. The concepts of "path" and "marking" were explained, the idea being that the path is a description of the objects to be marked onto the page. Path descriptions are marking engine (ie. printer or screen) independent and work through the concept of a current transformation matrix (as well as a number of other "current" elements such as the "pen shape", "pen color", "clip region", etc.). Marking refers to the process of generating specific data for each pixel (picture element or dot making up the display) and is necessarily marking engine dependent. With this decoupling of paths and marking, many useful and interesting effects can be obtained simply by modifying the current elements - things like concentric round cornered rectangles for borders and white text inside black text for hollow characters or stretched and leaning text.

Marking techniques were also discussed, particular attention being paid to algorithims for filling arbitrary paths. Mr. Snow let a number of "tricks" out of the bag. Several attendees wanted to know how the text and graphics were mixed in one document and were surprized to find that they aren't: text is drawn, just like all the other graphics, from a mathematical description of the shapes of the characters.

Group members expressed a desire to do much of this with a more classical Forth approach and mention was made of the **Small Graphics Package** by Ray Duncan. Further it was believed that it was available on LMI's bulletin board at (213) 306-3530. Several attendees recommended a book on the subject by Bruce Hartwick, the title of which escaped everyone.

The group's time too rapidly coming to a close, it was heartily agreed by all that Forth was a great way to implement graphics!