

---

---

## Introduction

---

---

With this issue of the Journal we mark a return to publication after a lengthy delay. During this time we have moved the Institute for Applied Forth Research back to 70 Elmwood Avenue, enlisted a new Editor-in-chief, Dr. James Basile, and a new US Editor, Dr. Mahlon Kelly. Dr. Hans Nieuwenhuÿzen continues to serve us as European Editor. We also mark Thea Martin's leaving the Institute in 1987. Since the Institute's founding she served as its Executive Director and through Volume IV she was the Managing Editor of the Journal. We wish her well in her new endeavors.

The Journal is now fully computer typeset using the facilities of Cargo Cult Studios, Inc. in Rochester, New York and Xerox Ventura Publisher. We have installed a similar system at Long Island University to assist in formatting documents. We prefer to receive accepted manuscripts on 5 ¼ inch diskettes, 360K [although 1.2MB diskettes are also acceptable], MS-DOS, ASCII format. A new set of author's guidelines have been prepared acquainting the electronic publishing novice with the subtleties of this trade. This guide grew out of our discovery that an electronically-readable document can be nearly as difficult to format as its paper cousin, unless precautions are taken.

We begin this Journal with a paper by Dr. Noble, who finds that Forth offers a suitable replacement for Fortran in numerical analysis. Perhaps two of the major advantages Forth offers over Fortran, and many other languages, is its inherent extensibility and ease of optimization. However, as the author notes, the lack of a standard mathematical library has severely limited Forth's acceptance.

Dr. Grossman addresses part of Noble's concern over Forth, by providing an efficient Brent-type solver for equations of the form,  $f(x)=0$ . He has included a SKETCH word for interactively examining equations and in Forth's spirit, the complete source code in Forth-83. This code makes use of the earlier work of Duncan and Tracy in devising a Forth standard floating point extension.

Mr. Feucht then offers an alternative to conventional fixed or floating point computations: log point. Under certain conditions, this set of words may allow faster and more accurate computation, particularly if the word size is limited and multiplications and divisions predominate. Again, the complete source code is provided in Forth-83 form.

Mr. Roye completes the reviewed papers with a discussion of exception handling. He notes both the need for and past methods of, handling program exceptions, and proposes a simpler mechanism than that developed by Guy and Rayburn. Roye uses the F83 version of Forth-83, and has included his source code.

During the past decade many in the Forth community have worked toward a Forth standard, including Dr. Nieuwenhuÿzen, our European Editor, and myself. During the past year we have seen the growing acceptance of the American National Standards X3J14 effort towards this end. The Institute is a member of the X3J14 Technical Committee which is committed to creating an acceptable, and usable, standard Forth.

Hence, we are pleased to begin the Journal's involvement in this effort with a paper by Mr. Shifrin which details the history, inner workings and results of the ANS process. In addition, we have included the official technical committee minutes of the first two meetings. Later issues will also carry subsequent meeting minutes as they are ratified. In presenting them here we have agreed not to edit them. Thus, they provide a window onto the deliberations of not just the Technical Committee, but the Forth community as a whole, since anyone who cares may actively participate by submitting proposals, joining the TC, or, later, commenting upon the draft standard.

We round out this issue with a brief paper by Koopman on his 32 bit Forth processor recently cast in silicon by Harris Semiconductor and abstracts from the 1987 euroFORML and FORML Conferences. Papers from both of these conferences can be found in a single Proceedings published by the Forth Interest Group in San Jose, CA.

Last, it is worth noting a new Forth-oriented organization on the horizon: the Association for Computing Machinery has announced the formation of a special interest group on Forth, SIGForth. Details on joining can be found on the next to last page of the Journal. We welcome this effort and the growth of the Forth community it harkens.

Lawrence P. Forsley  
*Publisher*