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Title- **Typesetting ACS and APS Meeting Abstracts - Issue 2**

Date- **January 3, 1977**

TM- **77-1531-1**

Other Keywords- **Text Formatting**

Author	Location	Extension	Charging Case- **49090-001**
D. Edelson	**MH 1A-319**	**3347**	Filing Case- **49090-1**

ABSTRACT

The abstracts required for submitting talks to American Chemical Society and American Physical Society meetings can now be photocomposed using a convenient package of TROFF commands. This system offers highly improved legibility in photoreproduced meeting programs, automatic setting of mathematical and chemical formulae, and better utilization of the available space.

The system is implemented on Center 127's UNIX system and on the Honeywell-6000 at Murray Hill.

This memorandum supercedes MM-75-1532-39.

Pages Text 3	Other 1	Total 4
No. Figures 0	No. Tables 0	No. Refs. 11

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Case- 49090-001 -- File--49090-1

date: **January 3, 1977**

from: **D. Edelson**

TM: **77-1531-1**

MEMORANDUM FOR FILE

1. INTRODUCTION

Technical societies have increasingly turned to photo-offset methods for producing meeting programs and abstract booklets. To minimize costs, they are produced directly from material submitted by the authors. This not only requires that the copy be of high quality but that it conform to a rigid format dictated by the layout of the society's publication.

A cursory glance through some the these recent programs indicates that most of the material is typed on a standard typewriter, with ragged right margins, and is highly variable in quality (and consequently legibility). Occasionally one finds an abstract with justified right margins, and one presumes that the author (or secretary) has either taken the time to do this manually or has used a text-formatting program (like NROFF(1)) such as have become fairly common computer software. The earlier availability at Bell Laboratories of computer driven photo-typesetting equipment and software (2,3) led this author to investigate its application in this area (4). Two easily used "programs" for automatically producing these documents were developed, one for American Chemical Society and one for American Physical Society requirements. The extension of these typesetting facilities from a "private" system to one of general availability to the Honeywell user community at Murray Hill (6) has recently resulted is a widespread interest in the application of these packages. Accordingly the earlier "programs" have been updated to recognize the Honeywell implementation; including STARE simulation, and have also been revised in keeping with the recent update of the software system (TROFF) as well. In addition, several features requested by various users have been added, and the instructions for use have been clarified by the experience obtained.

The advantages of the system have proven to be:

1. Neatness in appearance along with consistently high graphic quality.
2. Automatic conformation to society regulations.
3. Incorporation of mathematical and chemical typesetting in the body of the abstract.
4. Production from a single typing of both the abstract for the meeting program and the internal document to accompany the Request for Publication Release (presently available on UNIX only).
5. Typesetting can put more text within the dimensions allowed by the societies; or, conversely, space in the publication can be better conserved.
6. Ability to test the size of the abstract against the limitations imposed without actually typesetting the document permits the author to interactively revise the text to fit within the allowed space.

2. IMPLEMENTATION

Apart from the requirement that the body of the abstract being submitted fit into an allocated space, the ACS and APS submittal procedures are considerably different. The APS allows the author to place the abstract, along with other pertinent information, on a plain sheet of paper, while the ACS requires it on a specified form with several other items to be filled out. Consequently two separate formatting packages were written. The ACS package produces the abstract only, intending that it be cut out and pasted on the previously completed submittal form. The APS package produces the entire submittal form directly. Both also produce a separate typewritten abstract in Bell Labs format to accompany the Request for Publication Release (through the NROFF program, presently available on UNIX only).

The packages are contained on read-only files in the author's directory. They consist of a sequence of NROFF/TROFF commands among which the user inserts the desired text at locations identified by comment lines containing instructions and identified with the sequence "---". The user reads the file into a text editor, ED on UNIX (5,9) or QED on Honeywell (10), uses context searching to find the ---'s, and either INSERTS (using the .i command) the information requested, or EXECUTES the editing commands given. Upon completion, the file is copied into the user's directory and submitted to NROFF or TROFF. Equation setting is also allowed (7). More complete instructions are contained in the program files.

3. USAGE

It is assumed that the user is familiar with the editor being used, and with the basic operation of the TROFF system, as well as EQN if it is being used. The files and SYSTEM-level commands used to produce the document from the completed users file are:

	UNIX	**HONEYWELL**
ACS abstract file	/usr/de/chemabs	edelson/chemabs
APS abstract file	/usr/de/physabs	edelson/physabs
Format internal release document. Note that the document preparation macro package (8) is employed, so that a user may use (with caution) any of the commands contained therein, as well as basic NROFF or TROFF commands.	nroff -ms -T<term. type> file or neqn file | nroff -ms -T<term. type>	not available
Typeset abstract	troff file	troff [&] -ph file
Typeset abstract with equation setter	eqn file | troff	troff [&] -eqn -ph file
Test size of abstract without typesetting	troff -a file [>tempfile]	troff [&] -tx file

This last simulates the typesetter but outputs a representation of the document to the user's terminal or printer [or optional file]. At the conclusion of typesetting either of the two following comments are typed on the standard output:

n lines remaining

or

abstract too long; *n* lines over

where *n* is the amount of space remaining or over, rounded (approximately) to an integral number of lines. Therefore one can test the abstract for correctness, appearance, and size before actually going to the typesetter. Note that in the Honeywell instructions above the optional batch indicator & will send the output to the user's batch station, while its omission will return it to the user's terminal (via BFOR). Also, any of the other device options (-st for STARE, etc.) may be used. UNIX may also direct the output to a Honeywell device through GCAT (11).

4. BLEMISHES

Both formats require the abstract to be headed by title and author lines which incorporate a mix of capitalized, underlined, and plain text. The actual setting of these lines is accomplished in parts, with the result that the appearance as regards justification and punctuation is not always optimal. This is especially true when there are many authors from more than one institution. It then becomes the users responsibility to "tune" the text to a more pleasing appearance by the use of better punctuation, insertion of additional (unpaddable) spaces, hyphenation, line breaks, etc. It is always assumed that the leading authors are from BTL, and in the ACS case, that the leading author will present the paper; if this is not the case, some rearrangement of lines will be necessary.

Due to the pecularities of the interaction between EQN and TROFF, the use of EQN within a string definition, as in the title line of the abstract, may occasionally require special handling. Troubles may be encountered if the string exceeds one line and is continued with invisible newlines. In such cases it is advisable to separately define the EQN material in strings immediately after the .EQ, delim $$, .EN sequence and reference these strings in the title or footnote.

5. ACKNOWLEDGEMENT

The author is indebted to J. F. Ossanna for many helpful suggestions and a few programming tricks with TROFF. Appreciation is also to the several users of these packages in recent months who have made useful suggestions for additional features as well as for the clarification of the operating instructions.

D. Edelson

MH-1531-DE-UNIX
Attachment
References

REFERENCES

1. J. F. Ossanna, TM 74-1271-14, September 11, 1974; TM 76-1271-13, October 11, 1976.
2. B. W. Kernighan, TM 73-1273-10, November 27, 1973.
3. J. F. Ossanna, TM 74-1271-4, April 19, 1974; TM 76-1271-13, October 11, 1976.
4. D. Edelson, TM 75-1532-39, November 12, 1975.
5. K. Thompson and D. M. Ritchie, UNIX Programmer's Manual, 6th Ed., May 1975.
6. V. B. Turner, TM 76-8231-4, March 1976.
7. B. W. Kernighan and L. L. Cherry, TM 74-1273-3;TM 74-1271-3, March 11, 1974.
8. M. E. Lesk, TM 74-1274-24, November 22, 1974; TM 76-1274-16, October 8, 1976.
9. B. W. Kernighan, TM 76-1273-8, August 3, 1976, and references therein.
10. BTL Honeywelll Manuals MHCC-002, MHCC-003, MHCC-004.
11. Undocumented UNIX program.