* * * * * * * * * * *

Problems

* * * * * * * * * * *

Send Submissions to:
Lynne A. Price
TUG Macro Coordinator
Calma R&D
527 Lakeside Drive
Sunnyvale, CA 94086

Two problems have been submitted by Jim Sterken, Textset Inc. Both deal with the special treatment often given to the first line of the first paragraph of a document.

First line of paragraph all caps

A test for *Ars Orientalis* required the following:

TWO OWL-SHAPED *TSUN*[a] ATTRIBUTED TO EITHER the Shang or Chou dynasty were examined in the Freer Technical Laboratory to determine their materials, method of manufacture, and age. ...

The first line is in all caps, 8pt instead of 10pt. To do this, I cheated and made the first line with "\hbox{T\eightpoint\rm WO OWL-SHAPED...}".

My TEX quiz question is:

Design a smarter macro to do the line breaking, capitalization, and font switch automatically:

`\beginchapter Two owl-shaped ...`

Paragraph with dropped initial

Consider:

V̇ery often a fancy book will begin chapters with a dropped initial like this ...

Note that it's not   V̇ery ... will ...

Question:

How can TEX be made to do this generally?

Editor's suggestion: Since TEX is privy only to the font metrics, which do not include a specific definition of character shape, this type of kerning doesn't seem possible without providing further information. But if one specific alphabet were always to be used, it might be possible to provide several additional values for each letter, e.g. the proportion of the letter's width at several heights chosen such that the appearance of a text letter set beginning at that point would have a pleasing appearance.

* * * * * * * * * *

Letters et alia

* * * * * * * * * *

OBSERVATIONS ON TEX
FROM A DIVERGENT VIEWPOINT:
A CRITICAL COMMENTARY

Some years ago, the American Mathematical Society began use of a computer typesetting program written by Science Typographers, Inc. (STI) for composition of many of its mathematical publications. At the time, the Society found the STI language the most effective and efficient of the computer composition languages which were intended for setting complex mathematical formulations and were available for testing.

During the years since, Jim Roesser and Roger Jones, co-founders of STI, have worked to improve the language, adding new features—many at the Society's request—and increasing its versatility. When TEX appeared on the scene, the AMS began investigating its potential as a language by which authors with access to computing systems might communicate their manuscripts to the Society in ways which could eliminate some of the costs of scientific publication. TEX showed much promise in this area, and considerable effort has been, and is

being, expended to see whether this promise can be realized.

(Both systems have their strengths, however, and it is likely that the AMS will continue using both well into the future. TEX itself, in fact, is still in limited production use at the AMS for typesetting mathematical literature; the STI program continues to be relied on heavily for that. TEX is in regular use at the Society for typesetting material requiring very complex page layouts which the STI program would handle with greater difficulty. We expect that TEX82 will be put into production use for mathematical typesetting during the first quarter of 1984. Here and elsewhere, of course, TEX has been used to typeset very many mathematical documents.)

Jim and Roger have followed with interest the development of TEX at Stanford, at the Society, and elsewhere. Both have attended TUG meetings. At the meeting at Stanford in July, Jim was often critical of TEX's approach to mathematical typesetting. Thinking that the TEX community might benefit from Jim's criticisms, I asked him to write them into an article for TUGboat. Jim declined, but told me that he would write up some comments for his own staff from his notes. He promised to send us a copy, which we could use as we liked.

The following article is Jim's analysis, unedited. His criticisms are occasionally sharp, but generally are based on his very great experience as a mathematical typesetter. We publish it in the hope that, where his criticisms are well-founded, the TEX community may move the development of TEX in directions which answer them. If so, we will have benefited.

Following Jim's article are commentaries by Don Knuth, Dave Fuchs, Mike Spivak, and Richard Palais, and, lastly, by Barbara Beeton of the AMS, who, probably more than any other person, is qualified to compare the strengths and weaknesses of the TEX and STI programs. The series closes with a final statement from Jim. TUGboat will welcome constructive responses to any of these statements from its readers.

Sam Whidden

* * * * * * * * * *

Editor's note: Camera copy for Jim Roesser's memo was prepared at Science Typographers, Inc., using the STI typesetting program. The typesetter was a Harris 7400, and fonts from the Times Roman family were used.