

# TWO NEW PANGRAMMIC CHALLENGES

MARK ISAAK

Sunnyvale, California

## 1. The Case-Sensitive Pangram

The alphabet has 26 letters, but writing uses more than 26 symbols. If I want to display all the elements of a typeface, for example, "the quick brown fox . . ." does not suffice. My first challenge is to create a pangram which, following accepted conventions of capitalization, displays all 26 letters in both upper and lower case.

I have worked on this problem only a little, not enough to produce anything worth publishing. Case-sensitive pangrams are difficult to design because, in normal writing, lower-case letters far outnumber upper-case. A few ways to get more upper-case letters are acronyms, initials, chess notation, and chemical formulae. One could solve this challenge easily by repeating a pangram twice, the second time in all caps for emphasis, but that's cheating.

The challenge may be extended to include symbols besides letters. The digits 0-9 are also commonly used characters, so they may be added. Since numbers may be formed arbitrarily, adding all the digits is not difficult. There are also many punctuation marks and diacritics which may be added. Here, the problem is determining a criterion for which symbols are necessary in the pangram. The printable ASCII characters are the only character set I know which is both common and well-defined, but even it contains characters (such as \, |, ^) which are not typically found in normal writing. Still, some people may enjoy the challenge of writing a paragraph with all 95 printable ASCII characters (space through tilde).

## 2. The Pangrammic List

What is the shortest well-defined list of words which contains at least one word starting with each letter of the alphabet? "Well-defined" here means collected in one place for one purpose. Almost any published list is eligible; the most common such lists are indices and bibliographies of books. But as with pangrammic windows, the pangrammic property must be accidental. Abecedarian children's books, for example, do not count.

A pangrammic list will typically be longer than a pangrammic window because some letters, especially X, are much rarer as an initial letter than in the middle of a word. One index I have handy, for example, has about 2500 entries but none for X.

The shortest pangrammic list I have found is the index in *The Dinosaur Data Book* by Lambert (Avon Books, NY, 1990). The complete index is 1275 entries (assuming I counted right), but counting only the formally named genera (in italics in the index) drops the count to 616 and still includes at least two entries for each initial letter. A shorter list of dinosaur genera, such as from an earlier date, should exist. No doubt other substantially shorter lists remain to be found.