A HYPERHYPERCUBE OF SIDE TWO

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In the August 1971 Word Ways, Darryl Francia challenged the reader to produce a hyperhypercube (a word cube in five dimensions) out of 80 suitably-chosen two-letter words. The array on the right represents the best solution I have been able to obtain. 73 of the words are found in Webster's Second or Third Editions (one, OP, is found in the Addenda to the Third); 5 (FY, IG, IW, RY, YK) are obsolete words from Webster's First Edition; 2 (UA, UK) are found in the Times Index-Gazetteer.

To read off the words from the array, one must read two across words, two down words, and one diagonal word. For example, the D in the top left corner appears with the two across words DA and DE, the two down words DI and DU, and the diagonal word DO. Similarly, the F appears in the two across words IF and FA, the two down words EF and FO, and the diagonal word FY.

For the record, here is an alphabetical listing of all eighty of the words in the hyperhypercube:

```
ae di eu hy lo om re uk
ah do ew le ma on ry um
ak du fa if na op se up
al ea fo ig ne or so us
an ee fy in ni ou su ut
at ef ga ir no ow te wa
au el gi iw nu pa ti ye
aw em go ka ny pu ty yk
da en he la oh py ua ym
de es ho le ok ra ug yu
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The puzzle is subject to the following clues for solution:

1. D and E are found in Webster's Second Edition.
2. In every two-dimensional slice of the cube, the letters are in alphabetical order.
3. The cube is symmetrical about the diagonal from top left to bottom right.

For example, the word "DE" appears in the top left corner of the cube, along with the words "DA" and "DE" of the two-dimensional slice at the top, and the words "DI" and "DU" of the two-dimensional slice at the left.

To give an example of the puzzle, the word "DE" is found in the top left corner of the cube, along with the words "DA" and "DE" of the two-dimensional slice at the top, and the words "DI" and "DU" of the two-dimensional slice at the left.

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