real, integer, Boolean

W is set up with the corresponding type, and a check is made that DECTYP is zero. If not, this would mean that we were already in a declaration (as DECTYP is set to zero on ;) such as

begin real integer a.....

DECTYP is then set up with the type from W, and DEC is called with a parameter of 1. This in effect looks back over its shoulder to see whether this is the first declaration in a block (if it is DEC will have to update Current Block Number, DECSTA etc).

ERRORS

FAIL 47; illegal declaration

FAIL 76; misplaced delimiter

array

The subroutine DEC is used as described above, and a check is made on DECTYP. The failure path is exactly like the one above, where we are already in a declaration other than real, integer or Boolean (e.g. "begin string array....").

If DECTYP is set to real, integer, or Boolean, it is further limited to array; if DECTYP is 0, ALGOL specifies that a non-type array is treated as a real array, and DECTYP is thus set. MAMPS (Make Array Maps) is then stacked.

(i) so that inspection of the top of the stack can show us that we are in an array declaration(this is particularly important when the array bound variables are themselves nasty things like procedure calls), and

(ii) so that the relevant object program can be generated at the end of the array bound list (see] flowchart)

ARRCOU becomes zero ready to count array names (see , (comma) which calls DECL (3))

e.g.: begin real array A,B,C,D, [.....

ERRORS

FAIL 72 ; illegal declaration