

7. TRANSPLANT

7.1. Introduction

The TRANSPLANT routine is called by each statement that requires interpretation. It moves the Analysis Record across to the Stack entering the values of any Phrase Variables required and then calls the relevant routine for interpreting the statement.

7.2. TRANSPLANT

There are seven different types of words which appear in the Analysis Record. The action is as follows in each case:-

1. F_0 set. The word is moved with no alteration.
2. F_1 set. The ampersand is altered to point to the absolute address.
3. F_2 set. A simple Block word. The Block Word and following protected words are moved without alteration.
4. F_2 and J_4 set. The B' word. In this case the word following the block word is modified by adding B72 to it. This occurs, for example, in A_3 where this has an analysis record B'_N where N is position of A_3 in L.S.E. The B72 added, therefore, gives the absolute pointer to A_3 in the Stack.
5. F_2 , J_4 and J_2 set. The B'' word. In this case the second word after the Block word is set to B72 and the third word is assumed to represent a variable [ABN] and its value is taken. The analysis record for [LABEL] is of this form. The third word gives the number of the label and B72 defines which routine it belongs to. The analysis record for [PI] is similar.
6. F_3 set. P word. In the case of a Phrase Variable the correct

pointer is obtained by the routine:-

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In the simple case the contents of the LSE. position for this variable are taken. However, it is possible that the Phrase Variable may have an index. In this case it is necessary to compute the value of the index at this point and then move down the analysis record until we point to the sub-analysis record corresponding to this occurrence of the variable.

7. F_3 and J_4 set. P' word. The entry is a Parameter to the routine in which case B72 is added so that the entry made points to the L.S.E. for the routine.

Once the TRANSPLANT has taken place, the routine to INTERPRET the instruction is entered via the modified DOWN entry. This will update the stack and store in the L.S.E. for the routine entered the top level &'s; that is, the parameters for the routine entered.