Gier Algol storage allocation during program execution

Drum store: 320 tracks of 40 words of 42 bits

Core store 1 k words

Storage for variables used as a strack

Run time administration

Copies of 2 to 20 program segments

Translated program divided into segments of track length

Variables of outermost block

Variables of blocks activated at the moment

Storage unused at the moment
Gier Algol storage allocation during one of the 9 compilation passes

Core store of 1 k words

Track T-1

Track 0

Thick arrows show data traffic

Buffer storage
Input to pass n
Output from pass n

General pass administration

Available for lists and stacks used by the pass n program

Output from pass n-1

Output from forward pass n

Drum store: 320 tracks of 40 words

T tracks available during compilation

During compilation each track is used to hold 160 10-bit bytes

Pass no. Direction Compile functions Checking functions
1 Forward Input character analysis Micro structure check
2 Forward Assemble identifiers Syntax check
3 Forward Syntax analysis Multiple declarations
4 Backward Collect declarations at block begin Check that uses match declarations
5 Forward Distribute declarations
6 Forward Process expressions
7 Forward Addressing of variables
8 Forward Program addressing
9 Backward Rearrange tracks on drum

Eliminating syntactic faults in source program found in pass 3:

Source program Fault detected in pass 3

:xxxxxxxxxxxxxxxx?yyyyyyyyyyyyyyyyy:

Skipped during pass 4 Skipped during pass 3