

PROF. SALTZER  
→ Schneider  
Ugator too! MDL.

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**JUL 19 1971**  
**J. H. SALTZER**

TO: DISTRIBUTION  
FROM: D. R. VINOGRAD  
DATE: JUNE 16, 1971  
SUBJECT: STACK HEADER FORMAT CHANGE

The following note is intended to propose a modification to the stack header format as now defined. The reason for this change is to make the consequences of certain kinds of program bugs easier to detect both for the user and the system programmer.

Stacks are data bases which are write permit to the user within the current ring. As we have discovered from sad experience, malfunctioning programs have a great tendency to generate pointers with a relative offset of zero and then store through them. For this reason many of Multics data bases have been designed with a buffer of 8 to 16 words starting at offset 0.

As the stack is now structured, should the information in the first 8 words become invalid the process may terminate in a manner which precludes even off-line/development machine debugging.

Therefore I propose that the stack header be modified to include an 8 word buffer starting at location 0. This area would be available for use by the user with the proviso that system experience has shown that data stored here can be destroyed by program malfunction.

This will involve changes to the following programs:

- a) Fim
- b) Level
- c) Gate
- d) li
- e) Makestack
- f) Signal\_
- g) Bootstrap1

Estimated time is about 1 man week.