Identification

Associative Memory clear function
J. H. Saltzer

Discussion

The 645 processor contains a small associative memory
in which it retains page table words and segment descriptor
words recently retrieved from core memory. Since many
times the same segment will be the target of successive
or near-successive accesses, the associative memory can
reduce significantly the number of times reference must
be made to core memory for SDW's or PTW's.

As a diagnostic device, a manual switch on the processor
control panel can be thrown, to remove the associative
memory from the processor/core memory interface path.
As presently arranged, if the associative memory is in
operation, and then switched off, it retains its then
loaded collection of SDW's and PTW's. If at some later
time the associative memory is switched back into operation,
its by-now outdated collection of SDW's and PTW's will
be used by the processor, with probable catastrophe.

An appropriate modification to prevent this possibility
is to execute a "clear associative memory" function whenever
the associative memory is switched into operation.