

SWITCHING SYSTEMS MANAGEMENT
NO. 3 ELECTRONIC SWITCHING SYSTEM
OPERATIONAL FEATURES
DYNAMIC SERVICE PROTECTION

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2. OPERATION

2.01 When in effect during a period of unusually large numbers of line originations, DSP gives preference to serving originations from lines marked *essential line* in translations. In the following discussion of the DSP operation, a class A line is any line which is marked *essential line* in translations and a class B line is any line which is not.

2.02 When a line scan is done of all lines in the office (line scans of all lines in the office are usually done every 100 msec), information on line status is placed in the *line origination hopper*. The line origination hopper is a memory block which serves to identify lines bidding for dial tone. The block is ten words long, and it can contain the identity of a maximum of five lines.

2.03 Lines are taken from the line origination hopper by the *input monitor program*, which performs necessary translations which in turn allows the connection of the line to a customer digit receiver and the return of dial tone.

2.04 A *line origination hopper overflow counter* is provided in memory to increment and decrement a count of overflows from the line origination hopper.

2.05 Before entering the program loop which processes the entries, the value of the line origination hopper overflow counter is checked. The counter is incremented by one each time the line scan program finds the line origination hopper full. The counter is decremented by one (a) if its value is not zero when the input monitor program finds the line origination hopper empty and (b) if

Figure

1. Dynamic Service Protection Flow Diagram	4
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1. GENERAL

1.01 This section describes the operation of dynamic service protection (DSP) in the No. 3 Electronic Switching System (ESS). This section also describes assignment requirements for DSP, the effect of DSP on Network Administration measurements, and administration procedures for DSP. The network administrator has a joint responsibility with Network Maintenance for executing DSP and should be familiar with the operation and administration of DSP.

1.02 Whenever this section is reissued, this paragraph will contain the reason.

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enough time remains to invoke the line scan program. Any time the value of the counter is greater than 4, the program will attempt to activate DSP. If DSP is already activated, no further action is taken.

2.06 When the loop which processes the line origination hopper entries is entered, the entries are examined one at a time. If an entry *is* idle, it is removed from the hopper, the address register is updated to look at the next entry, and a check is made to see if all entries have been processed. If an entry *is not* idle, a check is made to see if time is left to process the entry. If time is available, a check is made to see whether DSP has been activated. If DSP has been activated, the very first busy entry in the line origination hopper is serviced without checking its class (A or B). After one entry in the line origination hopper has been serviced, only class A entries will be served. Any class B entries found will have their line status bits set to idle and be removed from the line origination hopper without being served.

2.07 A class B line can be processed while DSP is activated only if it is the first valid busy entry when the loop which processes the line origination hopper entries is entered.

2.08 DSP results in a dial tone delay for most class B customers. When DSP is deactivated, the preferential treatment provided to class A lines terminates. DSP is deactivated when the value of the counter is equal to or less than 4. Because of the complex increment/decrement system used to activate DSP, it may remain activated for several seconds after the overload condition is gone.

2.09 When DSP is activated, the ESS (a) lights a lamp marked DSP on the system status panel, (b) sounds a minor alarm, and (c) prints the message REPT DSP on the maintenance teletypewriter (TTY) channel. When DSP is deactivated, the ESS extinguishes the DSP lamp on the system status panel and prints the message REPT DSP CLR on the maintenance TTY channel.

Note: *DSP activation will not be allowed by the No. 3 ESS unless a TTY message allowing activation is entered.*

2.10 The network administrator may allow the activation of DSP by use of the following TTY input message:

ALW:DSP!

The ESS will respond with ØK if it sets DSP activation to the allowed state and will respond with NG if DSP activation is already in the allowed state.

Note: *When DSP activation is allowed, an overload condition is still necessary before class A lines are given preferential service.*

2.11 The network administrator may reset DSP activation to the inhibited state by use of the following TTY input message:

INH:DSP!

The ESS will respond with ØK if it resets DSP activation to the inhibited state and will respond with NG if DSP activation is already in the inhibited state.

2.12 DSP activation will also return to the inhibited state after a system initialization of level 3 or above.

2.13 The operation of DSP is shown in the flow diagram in Fig. 1.

3. ASSIGNMENT REQUIREMENTS

3.01 A line is designated as an essential line on the ESS 3100 form. Any line so designated will receive class A treatment. For information on the ESS 3100 form, consult the No. 3 ESS Translation Guide (TG-3).

3.02 No specific office equipment is designated for use by essential lines in the No. 3 ESS. An essential line may be assigned to any office equipment number.

3.03 No specific fraction of the lines in a No. 3 ESS office must be assigned as essential lines. However, for the No. 3 ESS to provide adequate service to essential lines when DSP is in effect, no more than 10 percent of all lines should be marked *essential*.

3.04 The determination of which customers should be designated as class A or class B is a matter of local operating company policy.

4. EFFECT ON NETWORK ADMINISTRATION MEASUREMENTS

4.01 When DSP is in effect, two Network Administration measurements become ineffective: *total dial tone delay* and *dial tone blockage peg count*.

4.02 These two measurements should be discarded if collected during a period in which DSP is in effect.

5. ADMINISTRATION

5.01 DSP is to be used only under conditions established by local operating company policy. The network administrator, following company policy, is jointly responsible with the Maintenance force for determining if DSP should be allowed. In normal operation, it is recommended that DSP be left in the inhibited state.

5.02 The network administrator should see that DSP is not allowed unless conditions established by company policy prevail.

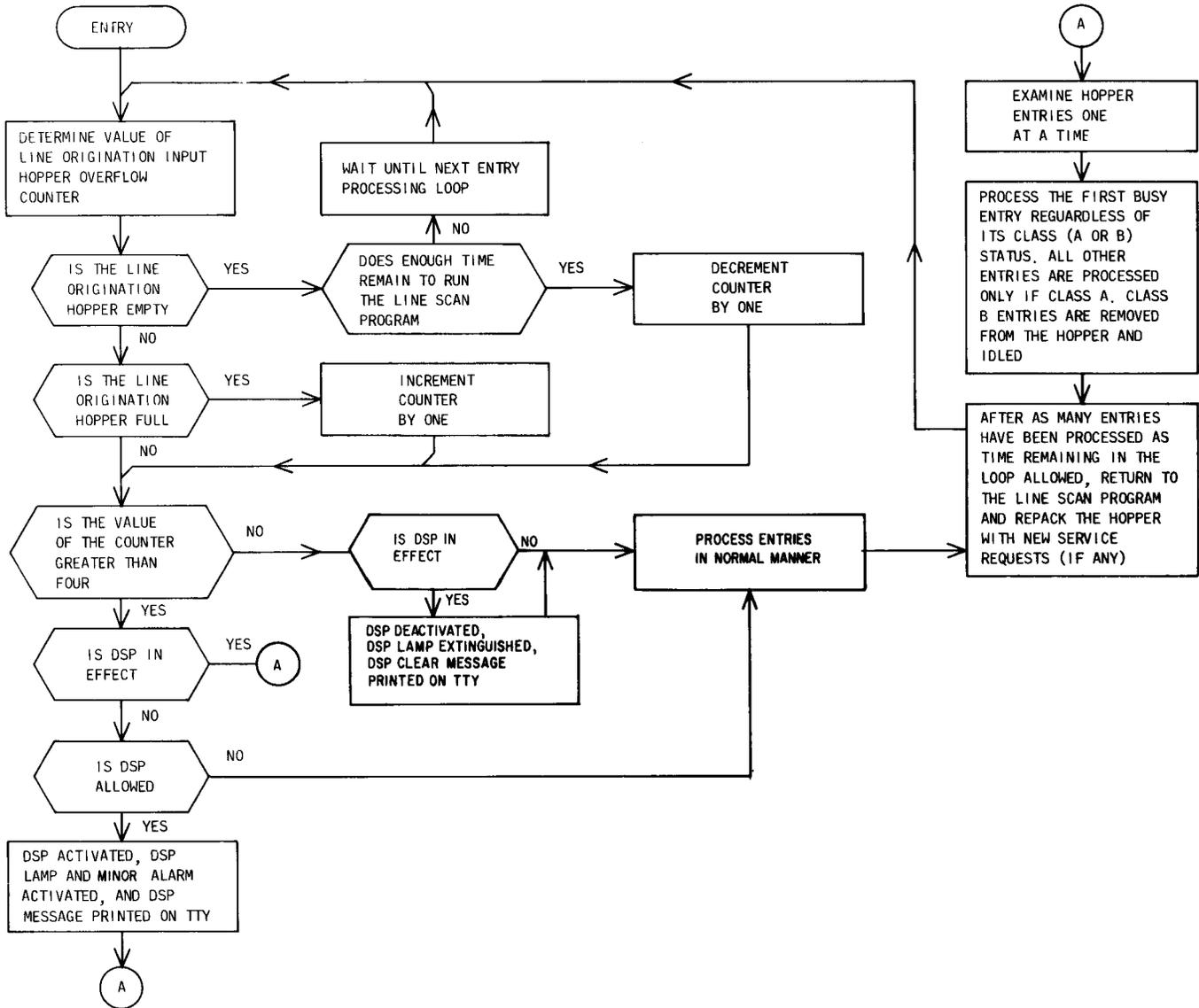


Fig. 1—Dynamic Service Protection Flow Diagram