FEATURE DOCUMENT
CARRIER GROUP ALARMS
NO. 3 ELECTRONIC SWITCHING SYSTEM

CONTENTS PAGE

FEATURE DEFINITION AND DESCRIPTION . . . 3
1. DEFINITION . . . 3
2. DESCRIPTION . . . 3
3. FEATURE FLOW DIAGRAM . . . 3
4. INTERACTIONS . . . 3
ATTRIBUTES . . . 3
5. STATION/SYSTEM . . . 3
6. LIMITATIONS . . . 3
7. RESTRICTION CAPABILITY . . . 4
8. COST DATA . . . 4
INCORPORATION INTO SYSTEM . 5
9. PLANNING . . . 5
10. HARDWARE ENGINEERING . . . 5
11. SOFTWARE ENGINEERING . . . 6
12. COMPATIBILITY . . . 6
13. OFFICE DATA . . . 6
14. GROWTH/RETROFIT PROCEDURES . . . 6
15. TESTING . . . 6
ADMINISTRATION . . . 6
16. MEASUREMENTS . . . 6
17. RECORD KEEPING . . . 6
18. CHARGING . . . 6
AVAILABILITY . . . 6
19. NEW INSTALLATIONS . . . 6
20. GROWTH/RETROFIT . . . 6
SUPPLEMENTARY INFORMATION . 6
21. GLOSSARY . . . 6
22. REASONS FOR REISSUE . . . 7
23. REFERENCES . . . 7

FIGURES PAGE

Fig. 1—Carrier Group Alarm Translations Layouts 4

Fig. 2—Carrier Group Alarm Feature Flow Diagram 5

FEATURE DEFINITION AND DESCRIPTION

1. DEFINITION

1.01 The Carrier Group Alarm feature provides an arrangement to automatically monitor the appropriate alarms and identify the location of a trouble condition in the carrier system. This can be defined as either a major, minor, or no alarm condition by the operating company.

1.02 The No. 3 Electronic Switching System (ESS) monitors the carrier group alarms via scan points in the master scanner. When an alarm condition occurs, the No. 3 ESS activates the appropriate audible and visual alarms and causes a teletypewriter (TTY) message to be printed which identifies the alarm type and location of the trouble condition.

1.03 The Carrier Group Alarm feature requires both software and hardware. Software is included in the system program and consists mostly of the Power and Alarm Scan (PWSC) program. A remote master scanner applique circuit (SD-1A210-01) is required per eight carrier group alarm circuit alarm loops.

1.04 The Carrier Group Alarm feature is available with all versions of the No. 3 ESS program.

2. DESCRIPTION

2.01 The basic function of the Carrier Group Alarm feature is to report the presence of a trouble condition in a channel bank due to loss of synchronism or voltages in the carrier system.

2.02 A trouble condition in the carrier system causes the associated channel bank to send an alarm signal to its carrier group alarm circuit. The carrier group alarm circuit then isolates and busies the associated trunk circuits of that channel bank. The carrier group alarm circuit also operates a relay which opens an alarm loop which, through a remote master scanner applique circuit (SD-1A210-01), activates a scan point in the master scanner.

2.03 This change of state for the scan point is detected and recorded. When a scan point translation is performed for this scan point, it is found to be associated with a carrier group alarm (see Figure 1). The PWSC program takes this information and causes activation of the appropriate audible alarm and alarm indicator(s) (the operating company can designate whether this is to be a major, minor, or no alarm). The following TTY message is also printed:

x tt REPT CGA ddd ddd xxxxxx ww2

The x designates the alarm class (major or minor), the tt designates the time past the hour in which the alarm occurred, ddd ddd is the row and point of the scan point in the master scanner that has been activated, xxxxxx is a field which should be ignored for this message, and ww2 will indicate OFN (off normal—equipment out of order).

2.04 When the fault has been cleared or repaired, the carrier group alarm circuit idles the associated trunks and closes the alarm loop relay. This changes the state of the scan point and causes a TTY message to be printed. This message is the same format as described in 2.03 (tt is changed to the time the channel bank returned to service and ww2 is changed to NORM (indicating normal equipment operation).

3. FEATURE FLOW DIAGRAM

3.01 A feature flow diagram giving the functional operation of the Carrier Group Alarm feature is shown in Figure 2.

4. INTERACTIONS

4.01 This feature uses the same translations as other office alarms, therefore, will interact with any other alarm feature.

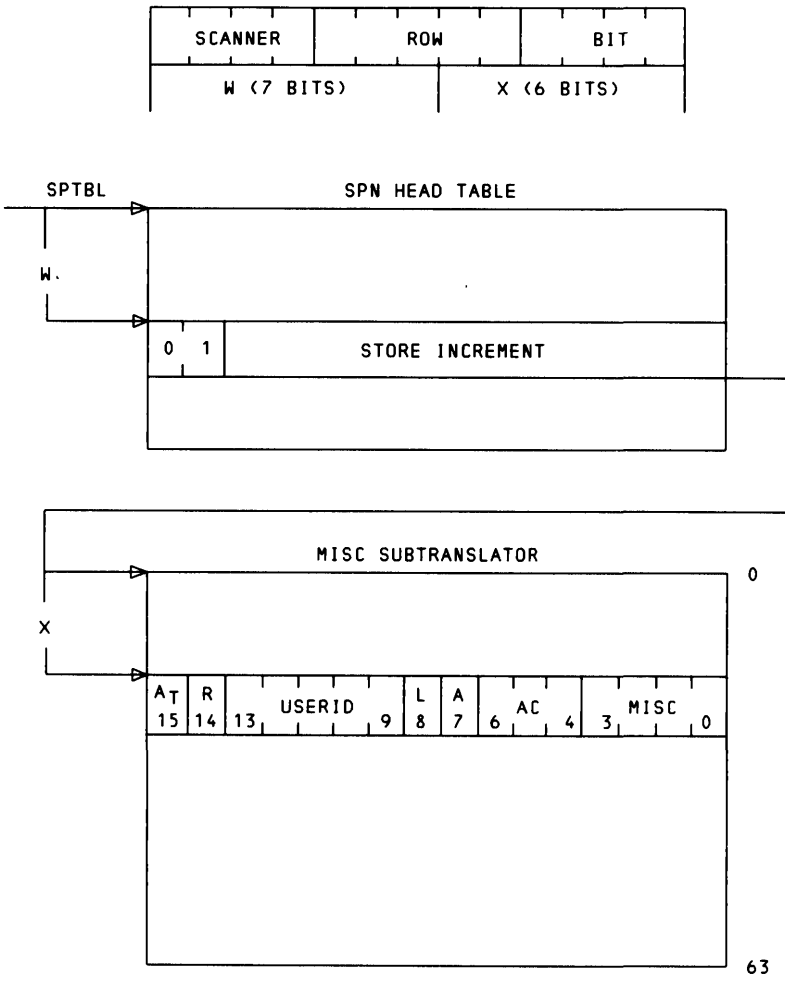
ATTRIBUTES

5. STATION/SYSTEM

5.01 The Carrier Group Alarm feature is provided on a per-system basis and is designed to operate with all carrier systems that may be used with a No. 3 ESS office.

6. LIMITATIONS

6.01 The number of carrier group alarm loops that can be assigned to scan points in the master scanner is limited by the available number of assignable scan points which is 56.



LEGEND:
AT - ACTIVE
R - REPORT
USERID - USER GROUP NUMBER (NOTE)
L - LAST LOOK INDICATOR
A - ALARM
AC - ALARM CLASS
MISC - NOT USED

NOTE:
USERID = 46 FOR CARRIER GROUP ALARMS
(USERID -32 = USER GROUP)

Fig. 1—Carrier Group Alarm Translations Layouts

7. RESTRICTION CAPABILITY

7.01 Restriction capability is dependent upon how the translations were originally set up by the operating company.

8. COST DATA

8.01 Software requirements for this feature include approximately 50 main store words in the PWSC program. The PWSC program is used to monitor all office alarm loops and controls the operation of audible alarms and alarm indicator and printing office alarm TTY messages. Some main store words are required for TTY control in printing the alarm messages.

8.02 One word of translation store is required for each scan point assigned to carrier group alarms. This is a miscellaneous subtranslator word

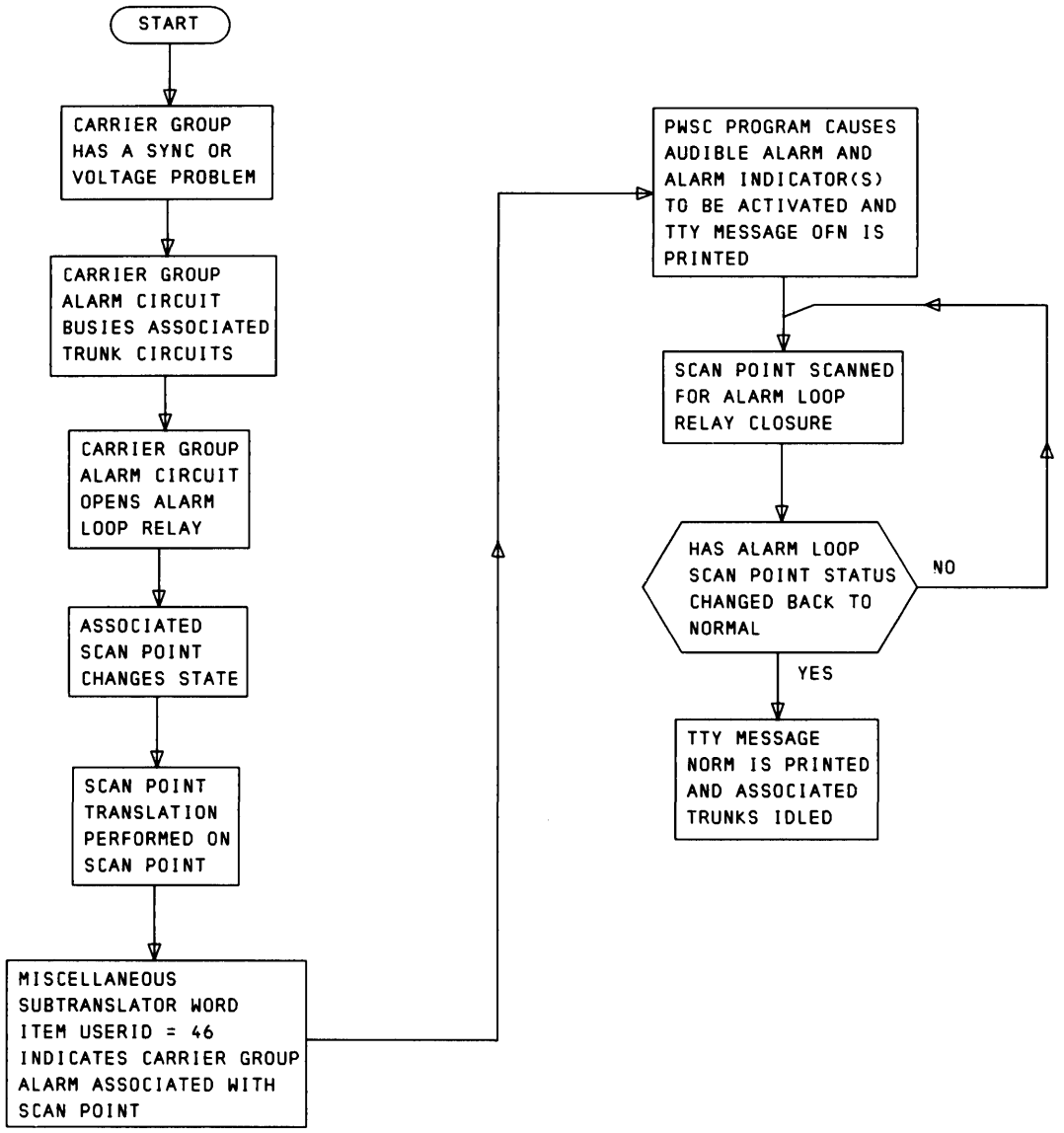


Fig. 2—Carrier Group Alarm Feature Flow Diagram

which is used to identify the scan point with the carrier group alarm (Figure 1).

8.03 Hardware requirements will be those for the remote master scanner applique circuit (SD-1A210-01) required per eight alarm loop connections to the master scanner.

INCORPORATION INTO SYSTEM

9. PLANNING

9.01 Assignment of miscellaneous scan points in the master scanner for carrier group alarms should be made with regard to the available number of assignable scan points and the number of channel banks. If possible, only one alarm loop should be assigned per scan point.

10. HARDWARE ENGINEERING

10.01 A remote master scanner applique circuit (SD-1A210-01) must be installed per eight carrier group alarm loops in order to provide a master scanner scan point connection.

11. SOFTWARE ENGINEERING

11.01 One translation store word must be engineered for each master scanner scan point that is assigned to a carrier group alarm. This word will be located in a miscellaneous subtranslator and will be used to identify the scan point with a carrier group alarm. Refer to Figure 1 for word layout.

12. COMPATIBILITY

12.01 There are no compatibility problems with this feature.

13. OFFICE DATA

13.01 The opening of a carrier group alarm loop activates its associated scan point. A standard scan point translation indexes into a miscellaneous subtranslator. The word which is indexed in the subtranslator provides data for use by the PWSC program in activating the proper alarms and having the proper TTY message printed. Refer to Figure 1 for the translation layout.

13.02 The following Translation Input Form must be completed and submitted to the WECo Regional Center using normal schedule procedures.

- Form ESS 3506-2—CGA/SLM Alarm Monitor Table is used in assigning miscellaneous scan point numbers to carrier group alarms and to define the alarm type, circuit condition, if a TTY report is to be made, user group number, and whether the point is active.

Recent Change (RC) Messages

13.03 The RC message RC:SP/ is used to define, change, or delete a miscellaneous scan point in the master scanner. This message, and its associated keywords, are used to assign a miscellaneous scan point to a carrier group alarm. Refer to the Input Recent Change Manual for details of this message.

14. GROWTH/RETROFIT PROCEDURES

14.01 This feature is available with all versions of the No. 3 ESS program.

14.02 If expansion of the carrier system becomes necessary, additional miscellaneous scan points (if available) can be assigned to carrier group alarms by using the RC message described in 13.03.

15. TESTING

15.01 This feature can be tested by RC verification of the scan point assignments and by toggling each scan point assigned to carrier group alarms to verify that the proper alarm(s), alarm indicator(s), and TTY message are activated.

ADMINISTRATION

16. MEASUREMENTS

16.01 A total alarm peg count is made of all office alarms. Trunk measurements are also affected because all trunks associated with the channel bank having the alarm condition are busied out until the alarm condition is cleared.

17. RECORD KEEPING

17.01 The form ESS 3506-2, as referenced in 13.02, should be maintained and updated as required.

18. CHARGING

18.01 Charging is not applicable to this feature.

AVAILABILITY

19. NEW INSTALLATIONS

19.01 This feature is included in all versions of the No. 3 ESS program.

20. GROWTH/RETROFIT

20.01 This feature is available with all versions of the No. 3 ESS program.

SUPPLEMENTARY INFORMATION

21. GLOSSARY

21.01 The following list identifies terms used in this document.

- Carrier Group Alarm (CGA)
- Power and Alarm Scan (PWSC) Program—The No. 3 ESS program that monitors alarm

scan points and activates the proper alarm(s) when one or more alarm scan points are activated

- Subscriber Loop Multiplexer Alarms (SLM)
- Teletypewriter (TTY)

22. REASONS FOR REISSUE

22.01 This is the initial issue of this document.

23. REFERENCES

23.01 The following documents may be referred to for supplementary information concerning the Carrier Group Alarm feature.

- No. 3 ESS Input/Output Message Manual
- L-370394—No. 3 ESS Layout Specification
- PR-3H255-01—Power and Alarm Scan (PWSC) Program
- SD-1A210-01—Remote Master Scanner Applique Circuit
- CD-1A210-01—Remote Master Scanner Applique Circuit