EMERGENCY RESTORATION OF BROADBAND CARRIER SYSTEMS

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1. GENERAL

1.01 This section covers methods and procedures to be followed in establishing emergency restoration of circuit groups of broadband carrier systems following a facility failure. This section deals with the establishment of predetermined restoration plans, control responsibilities, and the activation of such plans under emergency conditions.

1.02 This issue replaces Section 002-503-900 LL, Issue D and its addendum. Since this reissue represents a general revision and rearrangement of material, arrows ordinarily used to indicate changes have been omitted.

1.03 This section does not deal with the physical restoration of a broadband facility, such as a radio system, cable pairs, or coaxial tubes. These procedures are covered in other practices.

1.04 The number assignments to be used for associated sections are as follows:

002-503-900 LL Emergency Restoration of Broadband Carrier Systems.
002-503-920 LL General Section — For Long Lines use in Northeastern Area.
002-503-921 LL to 929 LL For Northeastern Area miscellaneous use.
002-503-930 LL General Section — For Long Lines use in Central Area.
002-503-931 LL to 939 LL For Central Area miscellaneous use.
002-503-940 LL General Section — For Long Lines use in Western Area.
002-503-941 LL to 949 LL For Western Area miscellaneous use.
002-503-950 LL General Section — For Long Lines use in Southern Area.
002-503-951 LL to 959 LL For Southern Area miscellaneous use.
002-503-960 LL General Section — For Long Lines use in Eastern Area.
002-503-961 LL to 969 LL — For Eastern Area miscellaneous use.

2. DEFINITIONS

2.01 *Restoration Control Office (RCO)* — An organization which directs an overall broadband restoration plan. An RCO is generally a testroom which controls the restoration plans for predetermined sections of specific routes within a geographical territory.

2.02 *Junction Office* — is any location which performs planned functions initiated by the RCO. A junction office can be any radio point, coaxial office, RCO, C1 alarm office or any other location involved in establishing planned reroutes.

The function at the junction office may consist of the terminating or patching through of high-frequency lines, manual or remote operation of switches, setting up of communication facilities, etc.

2.03 ***Restoration Plan*** — is a planned facility layout, identified by a number, used to restore a designated broadband message facility lost by a failure. Circumstances present at the time of failure may alter any predetermined restoration plan. However, such changes will be made as necessary only on a verbal basis and under the direction of the RCO.

2.04 ***Office Plan*** — is a detailed patching, switching, or other instruction used by a junction office in establishing a restoration plan.

2.05 ***Notification Flow Chart*** — is a prescribed sequence of notification to insure that all junction offices involved in establishing or disconnecting a restoration plan are notified.

2.06 ***Multipurpose Channel (MPC)*** — is a broadband channel that may be used to provide TV service, to provide for circuit augmentation, to aid in routine maintenance, or to provide all or part of a broadband facility reroute.

3. RESTORATION CONSIDERATIONS

3.01 When facility failures occur, the control office of circuits and services which are affected are seldom coterminous with the facility section where the failure occurs. If each circuit control office attempts to discharge restoration responsibilities, efforts will overlap, confusion results, and restoration is delayed. The purpose of restoration plans and an RCO is to avoid such a condition and to execute and supervise restoration plans in an orderly manner for failures which occur. No attempt shall be made by any office to reroute a failed facility without authorization from the responsible RCO, unless it is impossible to contact the RCO.

3.02 Restoration should be completed on a single facility failure in 10 minutes or less. Facility restoration should be completed on a multi-facility or total route failure at 10-minute intervals or less. These are the ***maximum*** allowable time intervals and every effort must be made to reduce the time to an absolute minimum.

3.03 When it becomes necessary to establish a restoration plan or plans, the following terminology should be used when notifying other offices listed on the notification flow chart, ESTABLISH RESTORATION PLANS, followed by the number of the restoration plan or plans to be established. The office and the persons receiving and transmitting the message shall be identified and logged.

3.04 Radio message units (MUR) shall be restored on a 1-way basis. When restoring the failed MUR, the RCO will pass only the single plan number associated with the particular MUR in trouble as shown on the restoration plan sheet, i.e. NO 1001 would restore MUR 5 Norway-Chicago 3.

3.05 In the event of a radio failure where both directions of transmission are affected, both plan numbers as shown on the restoration plan sheet must be passed.

3.06 Coaxial cable failures shall ***always*** be restored on a ***2-way*** basis. When restoring a failed L unit ***both*** plan numbers as shown on the restoration plan sheet shall be passed by the RCO.

3.07 The written restoration plans are based on utilization of protection channels, multipurpose channels (MPC), or other available idle facilities. The use of TV lines should be considered for additional make-goods. Often idle TV channels are available or TV service may be rerouted to make a facility available for restoration purposes. On attempting a reroute over considerable distance, the use of a released TV facility may provide the quickest continuity between two points.

3.08 When a complete restoration of a failed section is not possible, such as a multiline failure, the most advantageous assignment of L units or MURs must be made. A plan selection and priority chart should be compiled in accordance with Part 5 of this section.

3.09 When making good an L1 system over an L3 mastergroup, certain supergroups will be lost due to frequency considerations. The restoration plans covering such a make-good should consider means to restore the lost supergroups on other facilities.

3.10 In cases of an L3 coaxial or TH radio failure, it may be desirable to restore all master groups over a TD-2 radio channel when transmission conditions permit. The amount of rolloff on a TD-2 channel, which increases with length, will limit the number of master groups that can be worked on one channel without severely degrading all circuits.

Using the levels shown in Fig. 10B, 10C, and 10E (sketches 106, 108, and 111) reroutes up to 400 miles should be satisfactory. However, if it is necessary to exceed this mileage, it should be recognized that some circuit groups may have to be turned down.

3.11 A TH radio channel can be used to restore an L3 system with no limitation on the length of the radio channel. If TD-2 and L3 or TH channels are connected in tandem, the TD-2 mileage limitations of 3.10 apply to the TD-2 portion of the reroute.

3.12 Before establishing restoration plans for any reroute where the operation is questionable, an actual test (double-feed) should be made to determine the mastergroup (MG) capability of the reroute facility.

3.13 When checking the continuity of a reroute, the transmitting terminal of the reroute should send a test tone of 560-kc over the reroute, unless otherwise specified on the restoration plan sheet. The receiving terminal office of the reroute will measure this tone to determine whether transmission will be satisfactory for service ***before*** switching service to the reroute.

3.14 While it is important to establish restoration plans as quickly as possible, it is equally important that facilities utilized for such restoration be released promptly when they are no longer required. Restoration procedures, therefore, should include both the establishment and the release of all facilities.

3.15 All personnel, regardless of departmental jurisdiction, should be efficiently used where necessary to establish the desired reroute. Office supervision must be promptly notified if not already aware of a restoration requirement. Progress of restoration reroutes should be closely supervised. An RCO should not hesitate to call for an additional or alternate plan if, in its opinion, restoration is not progressing as expected. All points in the notification chain must remain on the restoration communications network until released by the RCO.

3.16 When making restoration for a total route failure, it must be remembered that in some cases the facilities (VF lines, order wires, CI alarm lines, etc.) used in the plan traverse the same route as the failed facilities. The broadband facility carrying the control lines should be the first order of restoration so that subsequent reroutes can be established.

3.17 The planned restoration procedures can be used for any unusual condition that may arise requiring the release of a facility.

3.18 Figure 9 of this section is labeled emergency restoration of L1 or L3 Pilots. A step-by-step procedure is outlined on the drawing.

4. RESTORATION PLAN SHEET (P-2073)

NUMBERING

4.01 Four-digit plan numbers 1001-9999 will be used by all companies and all Long Lines areas. (See Fig. 3A through 3C.)

4.02 An alphabetical prefix must be used with the number assignments to identify the RCO originating the plan. This will permit the same numbers to be used at all locations. For example: NO1001, MV1001, etc.

4.03 The alphabetical prefixes used by the RCOs are listed in Fig. 1 of this section. Prefixes are assigned as required by the Plant Operating Engineer.

4.04 No change in the numbering plan, such as the use of suffix letters or numbers to identify priorities, routes, etc., shall be made.

4.05 Odd and even numbered plans shall be assigned to odd and even numbered facilities, e.g. MV1001 for L301 and MV1002 for L302.

4.06 A 2-way message system shall be assigned adjacent numbers, i.e. NO1001 and NO1002 might be the two single direction plans for MUR 5 Norway-Chicago and MUR 6 Chicago-Norway re-

spectively. Both MURs and associated plan numbers shall be shown on the same sheet.

PREPARATION

4.07 All restoration plans (P-2073) covering radio message units (MUR) shall be prepared on a terminal-to-terminal basis, *except* where IF reentry is necessary. In general coaxial failure plans shall be prepared on a single L unit basis, except where a multiunit reroute is a more practical plan. Fig. 3A through 3B are typical samples of restoration plans. (See them as examples.)

4.08 Restoration plans shall be developed for each broadband facility, using protection, MPC, or any other available facility to restore up to a complete route failure. Generally the restoration should be accomplished by making good a failed facility on an alternate compatible facility.

4.09 A restoration plan shall be developed to restore service on any broadband facility regardless of the length or complexity of the restoration layout.

4.10 Show the complete route of the L section including junction offices. *Below* the line denoting the regular layout of the L section, show REG. Refer to Sections E12.545 and 358-010-300 for L section definition.

4.11 Show the reroute layout between the patching terminals.

4.12 The following nomenclature and symbols shall be used:

(a) *IF* — denotes the manual connection of two protection channels at a radio relay junction office and includes the necessary protection operations at that office.

(b) *TD-L* — denotes connecting of a TD radio relay channel and L1 coaxial facility, or one mastergroup of L3 to a TD radio relay channel.

(c) *TD-L3* — denotes connecting of a TD radio relay channel and L3 coaxial facility.

(d) *TH-L3* — denotes connecting of a TH radio relay channel and L3 coaxial facility (3 mastergroups).

(e) *TD-TH* — denotes connecting of a TD and a TH radio relay channel at baseband frequencies by the use of FM terminal equipment on both channels.

(f) *HF* — denotes coaxial facilities connected in tandem or connected to high-frequency terminal equipment. Also denotes patches at MUR terminals at L carrier frequencies. This should also include the necessary protection lockout operations at that office.

(g) *(Office)* — An office name in parentheses beside any of the above nomenclature indicates that the normally manual function is done remotely by the office shown.

(h) *IF Switch (Office)* — denotes that two radio relay protection channels can be interconnected remotely by the office shown in parentheses and includes the necessary protection lockout operations at the office. At some locations this may mean only a protection lockout.

(i) *Prot LO # (Office)* — denotes lockout of protection channels in a particular direction when required to release the protection channel for patching at an intermediate auxiliary microwave station. A note shall be placed on the plan indicating direction by the use of the symbol #. This will be required when patching is performed in the middle of a switching section.

(j) *Asterisk** — shown beside the office name indicates the office is not normally manned, and the particular restoration function required at that point will necessitate dispatching a qualified man.

(k) *Square Box with Inscribed Circle* — denotes the patching terminal.

(l) *3/4-inch Diameter Circle* — denotes the junction office.

(m) *An "X"* — associated with a facility failure indicates the point or points of failure. If a MUR or coaxial cable L section transverse more than one switching section, and a failure in any of the switching sections for which the RCO is responsible can be restored by using the same numbered plan, each switching section

shall be shown and marked with an *X*. Only one plan need be prepared for such a reroute layout.

(n) ***REG.*** — denotes each L and/or R switching section of the regular layout in the overall L section.

(o) The legend at the bottom of the form shall denote the type of broadband facility involved or action required. The following will denote the specific protection channels used on the reroute:

TD-2 Regular	— 2
TD-2 Interstitial	— I
TD-2 (With 100A Switching)	— 2X or 2Y
TD-3	— 3X or 3Y
TH	— THX or THY

4.13 The title block on the form shall be completed as follows:

(a) ***Odd Direction Block*** — Always show the odd numbered plan and odd numbered MUR or L unit.

(b) ***Even Direction Block*** — Always show the even numbered plan and even numbered MUR or L unit.

(c) Where only one MG of an L3 or TH facility is rerouted by a plan, that MG number shall be shown in parentheses besides the MUR or L unit number as shown in (a) and (b), i.e. L303 (MG2).

(d) ***Local Plan No.*** — Each junction office on receiving the plan shall enter the number of his local plan to be established. This may permit the junction office to use the same local plan for several restoration plans.

(e) ***Facilities*** — The RCO may indicate supergroups or mastergroups assigned to the failed facility.

(f) ***Issue*** — The RCO shall enter the latest issue number. ***Do not*** use a letter as a designation.

4.14 The name of the RCO shall be shown at the center top of the form directly below the title.

4.15 The notification chart on the plan should be used to inform all points to establish or retire a plan. In order to expedite a restoration plan that involves a number of junction offices, it is necessary to delegate evenly the responsibility of notification among a limited number of offices involved. Communication capabilities should be considered before assigning a calling list to a junction office.

4.16 The notification flow chart should start with the office designated as the RCO. The two junction offices at the terminals of the reroute should be notified directly by the RCO, whenever possible, to permit the rapid exchange of information regarding continuity, levels, etc. Junction offices not in the territory of the RCO may be notified via their own RCO.

4.17 The individual restoration plan must be considered in the light of several other plans that must be activated at the time of a route failure. The adjacent RCO to the route failure may be involved in at least one of the several plans and therefore his assistance should be used for notification of all points within his territory.

4.18 ***If desired*** an RCO may prepare and distribute a total 2-way route failure notification flow chart for each switch section for which it is responsible (see Fig. 3C). The flow chart shall be assigned a plan number not associated with any broadband restoration plan. ***Only this plan number should be passed when using this method of notification.*** The notification chain shall list all offices required to be called and the plan(s) that each office must establish.

4.19 Maps of radio relay and coaxial cable routes are published by Headquarters Engineering on a recurring basis as changes occur in the facility layouts. Direct distribution of these maps will be made to all RCOs to assist them in keeping current records of broadband facilities. The maps are entitled:

(a) Assignment of Coaxials — Long Lines and Associated Companies.

(b) Radio Relay Channels — TD — Main Routes.

(c) Radio Relay Channels — TH — Main Routes.

5. PLAN SELECTION AND PRIORITY CHART (P-2074)

5.01 A plan selection and priority chart, one for each switching section in the RCO territory, shall be prepared, maintained, and filed at each RCO. These charts shall list each MUR or L unit in the switching section involved and its related restoration plan number. (See Fig. 4.)

5.02 Where TD-2, TD-I, and TH transverse the same route and their switching sections are not coterminous, all MURs shall be listed for the shortest switch section and a separate P-2074 must be prepared for each switch section.

5.03 A separate P-2074 shall be prepared for each type of facility on a route and combination of such facilities which might be susceptible to a common failure. For example:

(a) Radio relay route carrying TD-2, TD-I, and TH channels would require five charts.

(1) A fully prepared chart covering the regular TD-2 channels.

(2) A fully prepared chart covering the interstitial TD-2 channels.

(3) A fully prepared chart covering the TH channels.

(4) A combination chart covering both TD-2 and TD-I channels ***listing only the total failure plans and alternate total failure plans*** which can be established in the event of a total TD-2 and TD-I failure.

(5) A chart similar to (4), covering all types of facilities on the routes TD-2, TD-1 and TH.

5.04 In addition to the charts outlined in 5.03 a total station failure plan selection and priority chart shall be prepared covering the loss of any station having more than one route operating through it. This chart shall cover only the through channels. Where more than one RCO is responsible for routes working through an office, one RCO must assume responsibility. This will require coordination between the involved RCOs and their administrative offices.

5.05 Single failure plan choices shall be limited to three, one of which should be a plan listed under the total failure plan column, when possible, and must carry the same plan number. The total failure and alternate total failure columns shall be completed as far as possible.

5.06 Priorities will normally be governed by (1) the number of select military circuits on the facility and (2) traffic requirements.

5.07 As an aid in setting up facility priority, the Plant Operating Engineer will distribute semiannually, January and July, a printout listing the number of select military circuits on each facility. In the event of a substantial change in the printout, further issues will be distributed. Due to the contents of the printout, no further distribution by the RCO shall be attempted.

6. RESTORATION PLAN SHEET CHECK LIST (P-2075)

6.01 Each RCO shall prepare and distribute, on a quarterly basis, to each office concerned a check list of all the restoration plans involving that office. (See Fig. 5.)

6.02 The list should be used as follows:

(a) The RCO shall maintain a file with a separate broadband restoration plan sheet check list for each office concerned. Each time an office is involved in a plan the RCO should add or delete that plan number on the appropriate sheet.

(b) The office name and mailing address shall be put on the form when initially prepared for that office.

(c) The list shall be mailed out quarterly or sooner, if necessary, depending upon the addition or rearrangement of plans concerning a particular office.

7. OFFICE PLAN PREPARATION

7.01 The office plan may be a sketch and/or a written instruction. It must be in such detail that it will permit ***anyone*** to establish the plan.

7.02 Each junction office shall establish local plans for the various combinations of connections which he can establish through his office.

Each office plan is assigned a local number to associate it with a restoration plan. Since there is a limited number of outlets through an office, one local-numbered plan may be used on several restoration plans. On receiving an order to establish a plan, the junction office will check the restoration plan sheet for his local plan number.

7.03 All local plans shall be written to allow either direction of transmission to be established independently. (See Fig. 7A and 7B.)

7.04 In order to establish an office plan, adequate interconnecting equipment and trunking arrangements are required. For this information, junction offices that have a centralized restoration bay can refer to Section 356-009-905 LL. Other junction offices may refer to Fig. 2 of this section which lists the required interconnecting equipment, and Fig. 10A through 10 which are sketches showing the most common trunking arrangements used for the various plans. While slight deviation from these sketches may be necessary in a particular office, the level data shown must be adhered to for proper system operation. All offices should refer to these sketches when preparing plans.

8. DISTRIBUTION OF FORMS P-2073, P-2074, AND P-2075

8.01 Each RCO shall prepare and distribute one copy of form P-2073 and P-2075 to Long Lines offices as follows:

(a) Each junction office involved in the restoration.

(b) The New York, Mt. Kisco, and Ft. Carson status centers.

(c) Its own district, division and area offices.

(d) The district, division and area offices in which the failed section is located, if different from (c).

8.02 Each RCO shall prepare and distribute one copy of form P-2074 to Long Lines offices as follows:

(a) Each junction office involved in the plan.

(b) The New York, Mt. Kisco, and Ft. Carson status center.

(c) Its own district, division and area offices.

(d) The district, division and area offices in which the failed section is located, if different from (b).

8.03 Distribution of Forms P-2073, P-2074, P-2075 to other than Long Lines offices shall be determined locally.

8.04 The RCO may request a restoration plan receipt (P-2093), signed by the supervisor in charge of restoration functions, for any plans distributed. The return address of the form shall be filled in by the RCO. (See Fig. 6.)

9. RESPONSIBILITIES

RESTORATION CONTROL OFFICE (RCO)

9.01 The RCO is responsible for the overall coordination of setting up, changing, and restoring restoration plan reroutes for broadband message facilities on sections of specific routes located within his general territory.

9.02 Prior to failure, the RCO will be responsible for the following items:

(a) Prepare and distribute restoration plan sheet (P-2073), plan selection and priority chart (P-2074), and broadband restoration plan check list (P-2075) per other parts of this BSP section.

(b) Maintain an orderly, accessible, up-to-date storage file of all plans, charts, and lists involving his RCO.

(c) Be responsible for working with other RCOs and junction offices to coordinate the establishment, by the effective date, of all new or revised plans. Dry-runs on all new or revised plans must be held prior to the effective date.

(d) The RCO ***will not*** delegate the responsibility for the overall restoration of a failed facility.

(e) Prepare instructions for setting up the restoration communications network to all points involved in the restoration plans. A suffi-

cient number of telephones must be installed in each RCO to preclude a busy condition. Multiple phones must be on a rotary arrangement.

(f) If sufficient facilities are not available to completely restore a total route, it is the responsibility of the RCO to so advise higher management through normal lines of organization.

(g) Schedule periodic exercises as called for in Part 10 of this section to test the efficiency of restoration plans for which an RCO is responsible.

(h) Each RCO must coordinate with other RCOs and administrative offices to determine the sections of new routes for which he shall be responsible.

9.03 *During restoration* the RCO will be responsible for the following items:

(a) Start immediately the planned restoration procedures, when it is known that trouble is in the RCO territory by the report of the loss of one or more L unit or MUR on a particular route.

(b) Determine and verify locations and extent of facility failures based on information received from other points.

(c) Decide whether or not to place a restoration plan or plans into effect.

(d) Decide which restoration plans to put into effect in accordance with priority instructions concerning the failed facilities.

(e) When requiring the release of television facilities for additional restoration makegoods, requests shall be directed to the appropriate TV control office per standing instructions.

(f) Place necessary restoration plans into effect by initiating calls to offices per the notification chain.

(g) Coordinate setting up the overall restoration facility.

(h) Coordinate other matters as specific cases may require.

(i) Sectionalize and clear troubles on reroutes when necessary with the aid of junction offices.

(j) Maintain contact with the terminal offices of the restoration facility reroutes and determine when the overall continuity of the make good facilities is satisfactory.

(k) Coordinate with terminal offices of restoration reroutes, the make good of services on the restoration facilities.

(l) Maintain a running record of time and step by step progress of each restoration plan put into effect. A sample chart is shown in Figure 8.

(m) Maintain periodic contact with the office controlling the facility break.

9.04 ***After trouble clearance on the regular facility is completed,*** the RCO will be responsible for the following items:

(a) Notify and direct all offices involved to restore service to the normal layout. This should be accomplished by requesting the transmitting terminal to double-feed the normal facility in addition to the restoration reroute facility. The receiving terminal should then verify continuity and levels of the normal facility layout before restoring service on the normal layout. This procedure should be repeated until all services are restored to their normal layouts in both directions of transmission.

(b) Be responsible for seeing that all facilities used for restoration reroutes are returned promptly to their normal layouts and the facility control offices notified.

JUNCTION OFFICE

9.05 *The junction office* is responsible for rapidly performing any type of planned function initiated by an RCO. ***A junction office shall report promptly any threatening condition line facility failure causing loss of service to the responsible RCO.***

9.06 *Prior to failure,* the junction office will be responsible for the following items:

(a) Prepare an office plan per Part 7 of this section.

(b) Maintain an orderly, accessible, and up-to-date storage file of all restoration plan sheets (P-2073, P-2074) and office plans involving his office.

(c) Initiate recommendations, via lines of organization, for restoration equipment required such as trunks, pads, pilot filters, and adequate communications to the RCO. Communication facilities should include unlisted telephones equipped with distinctive bells or horns and loudspeakers. Form P-2074 allows each office to determine his total requirements under a total failure condition.

(d) Conduct on-the-job training and office rehearsals to insure that all personnel are qualified and are familiar with restoration procedures.

(e) Notify the responsible RCO of any change or additions to facility or office layouts which will effect restoration plans.

(f) Acknowledge receipt of all forms received, as requested by the RCO.

9.07 *During restoration* the junction office will be responsible for the following items:

(a) Promptly and efficiently perform all restoration functions required by a restoration plan or plans pertaining to the office when so requested.

(b) Maintain contact at all times with the RCO and other offices as requested during restoration activities and report promptly when the necessary functions have been completed or difficulty is being encountered.

(c) Keep intact the ordered restoration plan in that no change shall be made or no part of the plan shall be taken to make good another plan or service without first obtaining authority from the originating RCO. Conspicuous designations on patches and switches should be used to identify the resoration plan that is in effect.

(d) Be ready to perform any additional functions requested by the RCO.

(e) Maintain a running record of time and step-by-step progress of restoration plan functions put into effect for the particular office.

9.08 *After trouble clearance on the regular facility is completed,* the junction office will restore restoration facilities to their normal conditions promptly when requested to do so by the responsible RCO.

10. TEST OF PLANS

10.01 Each RCO must schedule periodic exercises (dry runs) to test the efficiency of the plans for which the office is responsible. Such dry runs should encompass a check of circuit continuity by measurement of a tone on the restoration layout.

10.02 The RCO should schedule dry runs so that each testroom coverage period will be able to participate. When the establishment of a make-good is not completed within a reasonable time period, the plan should be again exercised after steps have been taken to eliminate the cause of the delay.

10.03 When a dry run is called by the RCO, the following terminology should be used when notifying other offices in the notification flow chart "ESTABLISH RESTORATION PLAN (NUMBER OR NUMBERS) THIS IS A DRY RUN — REPEAT, THIS IS A DRY RUN." Log entries should be made similar to that required for an actual restoration.

10.04 In addition to the RCO, various staff organizations such as District, Division, Area, Plant Operating Engineer or the New York Status Center, may request a dry run at any time.

10.05 When a dry run is called by an administrative office or the New York Status Center, the request may be made to the responsible RCO or to any office who might normally have knowledge of an actual failure on the facilities. The person originating the request to an office shall do the following:

(1) Identify himself and his organizational unit.

(2) State that this is a dry run.

(3) Name the switch section of the route assumed to have failed and the failed facility. In the case of a total route failure only the switch section need be named.

(4) State that start time is now.

(5) Request notification when continuity has been checked on the restoration.

The office accepting this request shall repeat that this is a dry run and name the facility and route assumed to have failed. Notification to establish the restoration requested shall then be carried out in the normal manner.

10.06 When a total route failure (dry run) is called by the New York or Associated Company Status Center, the RCO will make every effort to provide reroutes for ***all*** channels. This means callouts to unattended offices where required; the release, by maintenance forces, of protection channels being used for routines; the use of spare TV channels where available; etc. No part of these dry runs shall be cancelled due to a temporary condition, such as protection channels unavailable, hazardous conditions, etc. In such instances, the incompleted plan or plans shall be held open by the RCO until the temporary condition has been rectified. These plans shall then be recalled, making sure no conflict exists between them and the already completed plans. Completion times along with restoration plan numbers used and reasons for delays, if any, shall be reported to the Status Center originating the plan. On total failure dry runs the Status Center will specifically state, "MAKE CALLOUTS WHERE REQUIRED." The RCO and other offices involved in the calling sequence will also repeat this phrase when passing plan numbers or other information.

10.07 Each junction office must schedule periodic exercises (dry runs) of their local plans to test their correctness and efficiency and to train their personnel. Such exercises may be actual or simulated depending upon service and office arrangements.

OFFICE	PREFIX	ULTIMATE LOCATION
*Denver, Colo.	DR	Prospect Valley, Colo.
*Dallas, Tex.	DL	Ennis, Tex.
*Kansas City, Mo.	KC	Fairview, Kan.
Monrovia, Md.	MV	
Norway, Ill.	NO	
*Wayne, Pa.	WY	Pottstown, Pa.
Rockdale, Ga.	RK	
Dayton, Ohio	DY	Williamstown, Ky.
*White Plains 2, N. Y.	WP	Airmont, N. Y.
ASSOCIATED CO. OFFICE		
Los Angeles, Cal.	LA	
Oakland, Cal.	OA	
Portland, Ore.	PO	
Sacramento, Cal.	SA	
San Bernardino, Cal.	SB	
Seattle, Wash.	SE	
TRANS-CANADA		
Calgary, Alberta	CA	
Montreal, Que.	MO	
St. John, N. B.	SJ	
Toronto, Ont.	TO	

*Interim location

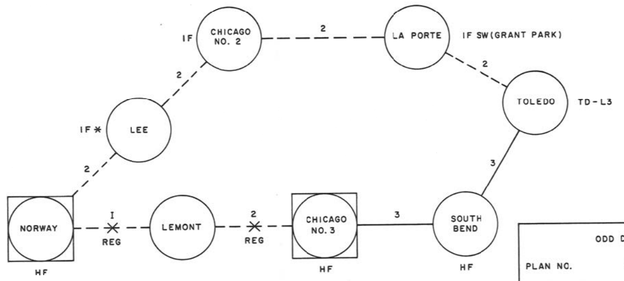
Fig. 1 — Restoration Control Offices

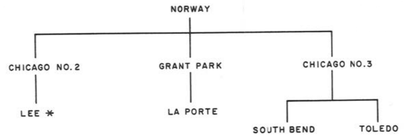
INTERCONNECTED FACILITIES	EQUIPMENT REQUIRED
L1 terminal or through (coax)to L1 coax (SK 101)	None
L1 terminal or through (coax) from L1 coax (SK 101)	None
L1 terminal (coax) to TD-2 (SK 102)	WLEL + FMT + PEF (if required)
L1 terminal (coax) from TD-2 (SK 102)	WLEL + FMR
L1 through (coax) to TD-2 (SK 103)	WLEL + FMT + PEF (if required)
L1 through (coax) from TD-2 (SK 103)	WLEL + FMR + PEF (if required)
L1 terminal or through (TD-2) to TD-2 (SK 104)	WLEL + FMT
L1 terminal or through (TD-2) from TD-2 (SK 104)	WLEL + FMR
L3 terminal or through (coax) to L3 coax (SK 105)	None
L3 terminal or through (coax) from L3 coax (SK 105)	None
L3 terminal coax (up to three MG) to TD-2 (SK 106)	L3 FG Amp + Atten + WLEL + FMT
L3 terminal coax (up to three MG) from TD-2 (SK 106)	L3 FG Amp + Atten + WLEL + FMR
L3 terminal (TH) to L3 coax (SK 107)	Atten + Hybrid
L3 terminal (TH) from L3 coax (SK 107)	Atten
L3 terminal (TH) to TD-2 (SK 108)	Atten + Coil – FMT
L3 terminal (TH) from TD-2 (SK 108)	Atten + Coil + FMR
L1 terminal to L3 MG (SK 109)	L1 FG Amp + 7.7 db + PEF (if required)
L1 terminal from L3 MG (SK 109)	L1 FG Amp + 36 db or 4 db
L1 through or branching (coax) to L3 MG (SK 110)	L1 FG Amp + 7.7 db + PEF (if required)
L1 through or branching (coax) from L3 MG (SK 110)	L1 FG Amp + 36 db + PEF (if required)
TD-2 channel to TH channel (SK 111)	TD-2 FMR + TH FMT + Atten
TD-2 channel from TH channel (SK 111)	TH FMR + TD-2 FMT + Atten
L1 terminal or through (TD-2) to TD-2 channel (SK 112)	Mtce Spr WLEL & FMT
L1 terminal or through (TD-2) from TD-2 channel (SK 112)	Mtce Spr WLEL & FMR
L1 terminal to TD-2 channel via TV trunks (SK 113)	L1 FG Amp + 12 db
L1 terminal from TD-2 channel via TV trunks (SK 113)	L1 FG Amp + 28 db
L3 terminal (one MG) to TD-2 channel (SK 114)	WLEL + FMT + 29 db
L3 terminal (one MG) from TD-2 channel (SK 114)	WLEL + FMR + 4 db
L3 terminal (one MG) to L1 coax (SK 115)	29 db + Hyb
L3 terminal (one MG) from L1 coax (SK 115)	4 db
L1 terminal on TH (SK 116)	WLEL + TH FMT
L1 terminal from TH (SK 116)	WLEL + TH FMR + FG Amp + Atten
L1 terminal to L3 coax (SK 117)	FG Amp + Atten + PEF (if required)
L1 terminal from L3 coax (SK 117)	FG Amp + Atten
L3 terminal (TH) to TH (SK 118)	Atten + TH MSG Conn Link + FMT
L3 terminal (TH) from TH (SK 118)	Atten + TH MSG Conn Link + FMR
L3 terminal (coax) on TH (SK 119)	Atten + FG Amp + MSG Conn Link + TH FMT
L3 terminal (coax) from TH (SK 119)	Atten + FG Amp + MSG Conn Link + TH FMR

Fig. 2—Required Equipment for Various Broadband Facility Interconnections

BROADBAND RESTORATION PLAN
NORWAY, ILL

FORM P-2073
2-65





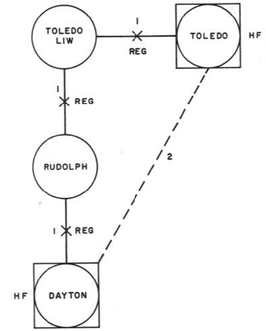
ODD DIRECTION	
PLAN NO.	NO. 1001
REROUTE OF:	MUR 5 NORWAY-CHICAGO 3
LOCAL PLAN NO.	7
EVEN DIRECTION	
PLAN NO.	NO.1002
REROUTE OF:	MUR 6 CHICAGO 3-NORWAY
LOCAL PLAN NO.	8
FAILED SECTION:	CHICAGO 3 — NORWAY
L SECTION:	CHICAGO 3 NORWAY
FACILITIES:	SG 1-10
ISSUE:	1
IN EFFECT:	4-1-64

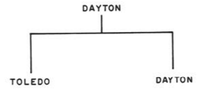
1 / L1	2 / TD2	THX OR THY TH		REG	REGULAR LAYOUT OF "L" SECTION.
3 / L3	I / TD1	J	TJ		
4 / L4	2X OR 2Y	TD2(100A SW)	C	COLLINS	* COVERAGE REQUIRED
A2 / A2	3X OR 3Y	TD3	M OR T	MPC (M) OR TVS (T)	

Fig. 3A — Form P-2073, Example A

BROADBAND RESTORATION PLAN
DAYTON, OHIO

FORM P-2073
2-65





1 / L1	2 / TD2	THX OR THY TH		REG	REGULAR LAYOUT OF "L" SECTION.
3 / L3	I / TD1	J	TJ		
4 / L4	2X OR 2Y	TD2(100A SW)	C	COLLINS	* COVERAGE REQUIRED.
A2 / A2	3X OR 3Y	TD3	M OR T	MPC (M) OR TVS (T)	

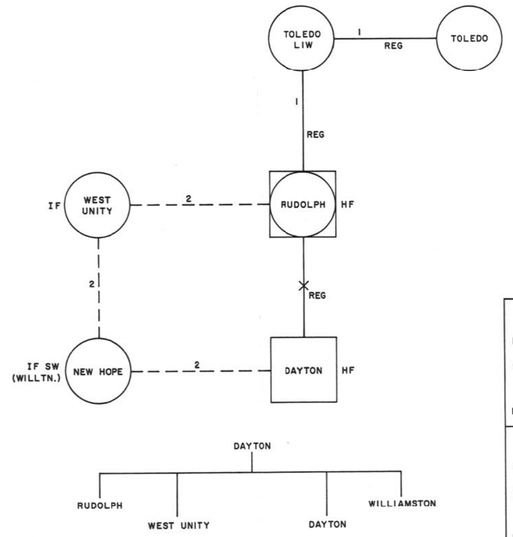
ODD DIRECTION	
PLAN NO.	DY 1027
REROUTE OF:	L 205 DAYTON - TOLEDO
LOCAL PLAN NO.	10
EVEN DIRECTION	
PLAN NO.	DY 1028
REROUTE OF:	L 206 TOLEDO - DAYTON
LOCAL PLAN NO.	11
FAILED SECTION:	DAYTON — TOLEDO
L SECTION:	DAYTON - TOLEDO
FACILITIES	SG 1-10
ISSUE:	1
IN EFFECT:	JULY 20 1964

Fig. 3B — Form P-2073, Example B

Fig. 3A and 3B

BROADBAND RESTORATION PLAN
DAYTON, OHIO

FORM P-2073
2-65



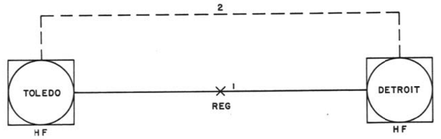
1 L1	2 TD-2	THX OR THY TH		REG	REGULAR LAYOUT OF L SECTION
3 L3	I TD-I	J TJ			
4 L4	2X OR 2Y TD-2 (100 A SW)	C COLLINS	*	COVERAGE REQUIRED	
A2 A2	3X OR 3Y TD-3	M OR T MPC (M) OR TVS (T)			

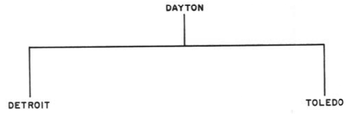
ODD DIRECTION	
PLAN NO.	DY1025
REROUTE OF:	L201 DAYTON–RUDOLPH
LOCAL PLAN NO.	
EVEN DIRECTION	
PLAN NO.	DY1026
REROUTE OF:	L202 RUDOLPH–DAYTON
LOCAL PLAN NO.	
FAILED SECTION:	DAYTON–RUDOLPH
L SECTION:	DAYTON–TOLEDO
FACILITIES:	SG 1–10
ISSUE:	1
IN EFFECT:	JULY 20, 1964

Fig. 3C — Form P-2073, Example C

BROADBAND RESTORATION PLAN
DAYTON, OHIO

FORM P-2073
2-65





1 L1	2 TD-2	THX OR THY TH		REG	REGULAR LAYOUT OF L SECTION
3 L3	I TD-I	J TJ			
4 L4	2X OR 2Y TD-2 (100 A SW)	C COLLINS	*	COVERAGE REQUIRED	
A2 A2	3X OR 3Y TD-3	M OR T MPC (M) OR TVS (T)			

ODD DIRECTION	
PLAN NO.	DY1003
REROUTE OF:	L201 TOLEDO–DETROIT
LOCAL PLAN NO.	
EVEN DIRECTION	
PLAN NO.	DY1004
REROUTE OF:	L202 DETROIT–TOLEDO
LOCAL PLAN NO.	
FAILED SECTION:	DETROIT–TOLEDO
L SECTION:	DETROIT–TOLEDO
FACILITIES:	SG 1–6 AND 8–10
ISSUE:	1
IN EFFECT:	JULY 6, 1964

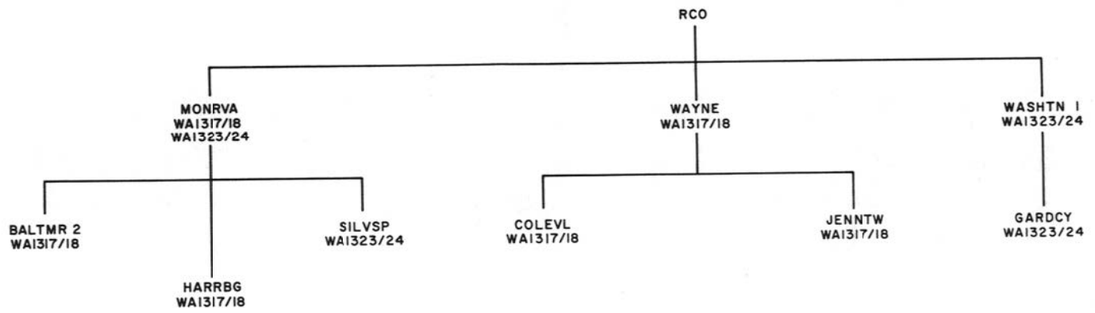
Fig. 3D — Form P-2073, Example D

Fig. 3C and 3D

BROADBAND RESTORATION PLAN

NOTIFICATION FLOW CHART FOR THE TOTAL ROUTE FAILURE
OF THE MONRVA–RANDTW TD–2 SWITCH SECTION

FORM P–2073
2–65



ODD DIRECTION	
PLAN NO.	WA4010
REROUTE OF:	TOTAL FAILURE
LOCAL PLAN NO.	
EVEN DIRECTION	
PLAN NO.	WA4010
REROUTE OF:	TOTAL FAILURE
LOCAL PLAN NO.	
FAILED SECTION:	MONRVA–RANDTW
L SECTION:	
FACILITIES	ALL
ISSUE:	1
IN EFFECT:	1–1–65

1 — L1
2 — TD2
THX OR THY TH
3 — L3
1 — TD1
J — TJ
REG REGULAR LAYOUT OF "L" SECTION.
4 — L4
2X OR 2Y — TD2(100A SW)
C — COLLINS
* COVERAGE REQUIRED.
A2 — A2
3X OR 3Y — TD3
M OR T — MPC (M) OR TVS(T)

Fig. 3E — Form P-2073, Example E

A.T.&T. Co.
L.L. Dept.
BSP-002-503-900LL

FORM P2074
5-64

BROADBAND RESTORATION
PLAN SELECTION AND PRIORITY CHART

DATE OF ISSUE - 7-1-64 PAGE 1 OF 1 PAGES

SWITCH SECTION Amarillo Jct.-Albuquerque Jct. TYPE OF FACILITY TD-2 R.C.O. Albuquerque, N.M.

FACILITIES (LISTED IN ORDER OF RESTORATION PRIORITY)	TOTAL FAILURE PLANS	ALTERNATE TOTAL FAILURE PLANS	SINGLE FAILURE PLAN CHOICES		
			1	2	3
MUR 1 Los Angeles — Dodge City	AQ1001	AQ1013	AQ1001	AQ1007	AQ1013
MUR 2 Dodge City — Los Angeles	AQ1002	AQ1014	AQ1002	AQ1008	AQ1014
MUR 3 Los Angeles — Dodge City	AQ1009	—	AQ1003	AQ1009	AQ1015
MUR 4 Dodge City — Los Angeles	AQ1010	—	AQ1004	AQ1010	AQ1016
MUR 3 Los Angeles — Amar. Jct.	AQ1005	AQ1017	AQ1005	AQ1011	AQ1017
MUR 4 Amar. Jct. — Los Angeles	AQ1006	AQ1018	AQ1006	AQ1012	AQ1018
MUR 1 Los Angeles — Amar. Jct.	—	—	AQ1019	AQ1021	AQ1023
MUR 2 Amar. Jct. — Los Angeles	—	—	AQ1020	AQ1022	AQ1024
MUR 1 San Bernardino — D.C.J.	—	—	AQ1025	AQ1027	AQ1029
MUR 2 San Bernardino — D.C.J.	—	—	AQ1026	AQ1028	AQ1030
REMARKS					

Fig. 4 — Form P-2074

A.T.&T. Co.
L.L. Dept.
BSP 002-503-900

Form P2075
11/64

BROADBAND RESTORATION PLAN CHECK LIST

Period Ending _____ RCO _____

MAILING ADDRESS _____ OFFICE _____

PLAN #	ISSUE	PLAN #	ISSUE	PLAN #	ISSUE	PLAN #	ISSUE	PLAN #	ISSUE	PLAN #	ISSUE
MD-1001-2	1										
MD-1003-4	3										
MD-1005-6	2										

Fig. 5 — Form P-2075

A.T.&T. Co.
L.L. Dept.
BSP-002-503-900

FORM P2093
11/64

RESTORATION PLAN RECEIPT

MEMORANDUM

The following new or revised Broadband Restoration plans affect your office:

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

Please check plans carefully to determine the extent to which your office is affected. The above plans will be placed in effect _____. The in effect date will be confirmed by the Restoration Control Office by telegram after completing a successful dry run.

Central Office Chief

Mail to:

This is to acknowledge receipt of the following Restoration Plan/s.

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

_____ _____ _____ _____

Office _____ Signed _____

Fig. 6 — Form P-2093

Fig. 4, 5, and 6

OFFICE PLAN 7 L-3 CARRIER

REROUTE OF 1 L 3 CLEVELAND — PHILA. (MG 1, 2, 3)

DIRECTION PHILA. TO WAYNE

CAUTION: DRY RUN ONLY. OMIT STEPS 1(a) and 1(b). START AT STEP 2.

ACTUAL RESTORATION ONLY. (OMIT FOR DRY RUNS)

1. In BAY 525.8 .
   a. Remove AMP. T can cover for L304 PHILA-WAYNE
      Remove both patch plugs from AMP OUT to LINE IN jacks.
   b. Patch from AMP OUT to TRS TRK TO TD-L LINK # 1 in BAY 525.11

DRY RUNS ONLY. (OMIT FOR ACTUAL RESTORATION).

2. In Bay 525.11. . Send 1MC (at —21 dbm) into TRS TRK TO TD-L LINK # 1

ACTUAL RESTORATION AND DRY RUNS.

3. In BAY 523.18 . Remove patch plug from AMP OUT to PAD IN of TRSG TD-L LINK # 1 .
4. In BAY 523.18 .
   a. Patch TRS TRK FROM BAY 525.11 to 11 db PAD IN.
   b. Patch 11 db PAD OUT to PAD IN of TRSG TD-L LINK # 1 .
5. In BAY 523.17 .
   a. Remove can cover from LINK 1 & LINK 2 NET.
   b. Remove 2 coaxial cords from PRE LINK 1 IN & OUT.
   c. Patch these two cords together.
   d. DO NOT REPLACE CAN COVER.

OFFICE PLAN — 8 L-3 CARRIER

REROUTE OF 1 L 3 CLEVELAND — PHILA. (MG 1, 2, 3)

DIRECTION WAYNE TO PHILA.

CAUTION: DRY RUN ONLY. OMIT STEPS 4 and 5. ADD STEP 3.

1. In BAY 523.17 .
   a. Remove 2 coaxial cords from RES. LINK 1 IN & OUT.
   b. Patch these two cords together.
2. In BAY 523.18 .
   a. Remove patch plug from PAD OUT to AMP IN of REC TD-L LINK # 1 .
   b. Patch this PAD OUT to 4 db PAD IN.
   c. Patch from 4 db PAD OUT to REC TRK TO BAY 525.8 .

DRY RUNS ONLY. (OMIT FOR ACTUAL RESTORATION.)

3. In BAY 525.8 Measure 1MC at REC TRK TO TD-L LINK # 1 . (Approx. —55dbm)

ACTUAL RESTORATION ONLY. (OMIT FOR DRY RUNS)

4. In BAY 525.7 .
   a. Remove AMP D can cover for L 303 WAYNE — PHILA.
   b. Remove all patch plugs from AMP OUT to LINE IN and LINE OUT to AMP IN.
5. In BAY 525.8 .
   a. Patch from REC TRK to TD-L LINK # 1 to AMP D AMP IN in BAY 525.7 .
   b. Patch from AMP OUT to SW TRK IN of L 303 WAYNE-PHILA. Remove patch plug from PIL HYB OUT A to SW TRK IN.

Fig. 7A — Office Plan Format, Example A

THRU MW PATCH — PROT. TO PROT.

COLESVILLE, N. J. OFFICE PLAN

LOCAL PLAN 5 MAKING GOOD PGH — JENNERSTOWN MUR 1

PROTECTION CHANNEL R107 NY and R107 JNRTN

TO ESTABLISH

1. IF SW BAYS 123.8
   Observe Opr off/or Man lamps
   a. Lamps lighted — Plan cannot be set up until condition is cleared.
   b. Lamps dark — Lock out Prot Chan by simultaneously depressing PROT LO and MSTR buttons located in center left side of bay. 123.8
      Lamps LO COM should light.
2. Observe that RED SW OPR lamp lights on XMTG switch panel in bay 123.8 before proceeding to patch. Contact the distant TDAS office to check operation.
3. PROG SW BAY 123.4
   a. Remove 75-ohm TERM from PROT CHAN R107 JNRTN CHAN OUT jack.
   b. Insert one end of a coax patch cord in this CHAN OUT jack.
   c. Remove 75-ohm TERM from PROT CHAN R107 NY CHAN IN jack.
   d. Insert other end of the coax patch cord in this CHAN IN jack.

TO RESTORE REGULAR

1. IF SW BAY 123.8
   Simultaneously depress MSTR and RST buttons located in center left side of bays. The LO lamp will be extinguished.
2. PROG. SW BAY 123.4
   Remove patch cord from CHAN OUT to CHAN IN jack on R107 NY and R107 JNRTN. Replace 75-ohm TERM in both these jacks.

Fig. 7B — Office Plan Format, Example B

Fig. 7A and 7B

RESTORATION PROGRESS CHART

Location of Break	Time of Failure	Date of Failure	Facilities Affected	Time Break Repaired

Time Restoration Communications Established	Time Flash Report Sent	TVSs Release
______	______ Time P-1029 Report Sent	For Plan______ TVS______ For Plan______ TVS______ For Plan______ TVS______ For Plan______ TVS______

Plan #______ Asngd to______ Time______	Terminal Patch Time Estab______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	Overall Continuity OK Time______ Tested by______
Plan #______ Asngd to______ Time______	Terminal Patch Time Estab______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	Overall Continuity OK Time______ Tested by______
Plan #______ Asngd to______ Time______	Terminal Patch Time Estab______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	Overall Continuity OK Time______ Tested by______
Plan #______ Asngd to______ Time______	Terminal Patch Time Estab______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	Overall Continuity OK Time______ Tested by______
Plan #______ Asngd to______ Time______	Terminal Patch Time Estab______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	City______ Time Notified______ Follow-Up______ Reported OK______	Overall Continuity OK Time______ Tested by______

Fig. 8 — Restoration Progress Chart

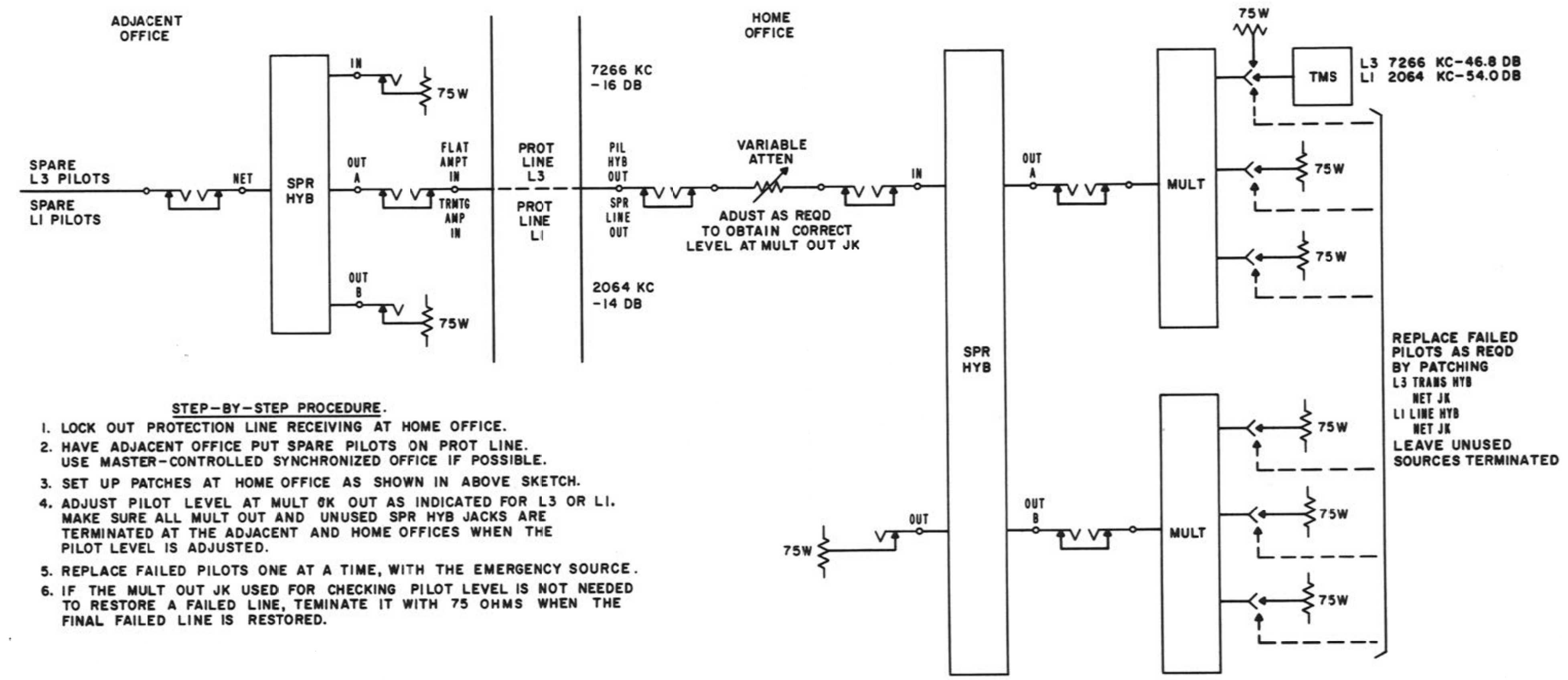
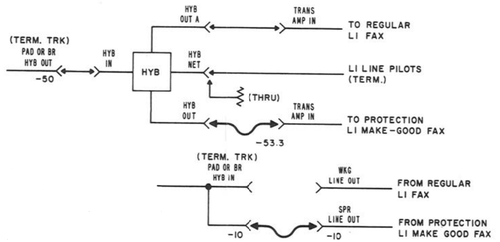
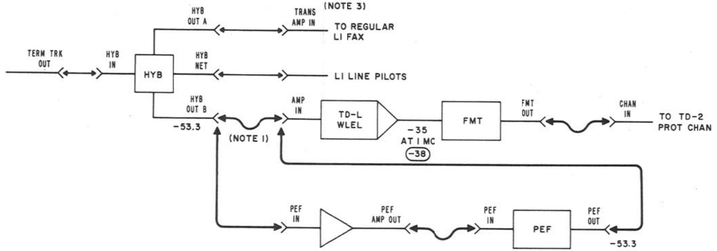


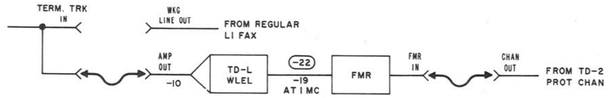
Fig. 9 — Emergency Restoration of L3 or L1 Pilots

PATCHES TO MAKE GOOD LI TERM. OR THROUGH (COAX) ON LI COAXIALS
SKETCH 101

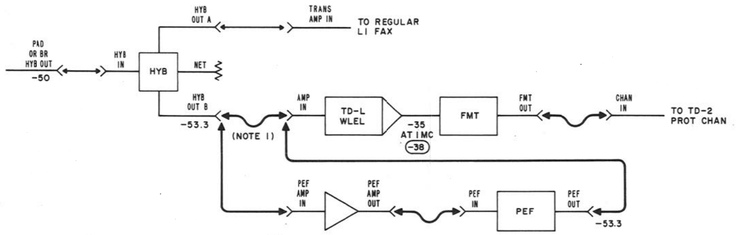


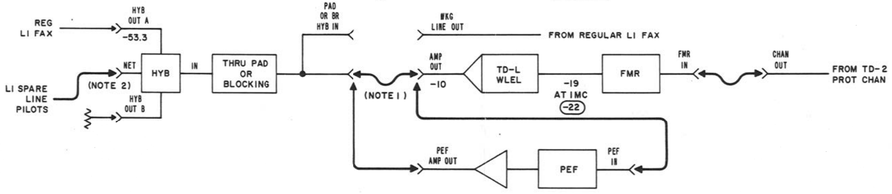
PATCHES TO MAKE GOOD LI TERM. (COAX) ON TD-2 CHANNEL
SKETCH 102
(NOTE 3)



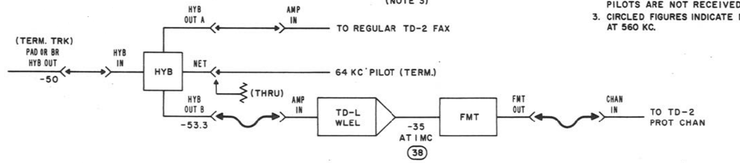


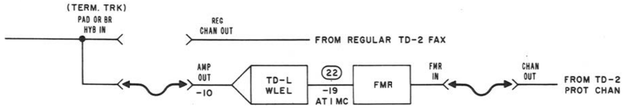
PATCHES TO MAKE GOOD LI THROUGH (COAX) ON TD-2 CHANNEL
SKETCH 103
(NOTE 3)





PATCHES TO MAKE GOOD LI TERM. OR THROUGH (TD-2) ON TD-2 CHANNEL
SKETCH 104
(NOTE 3)



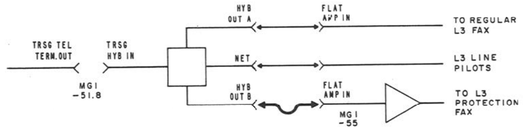


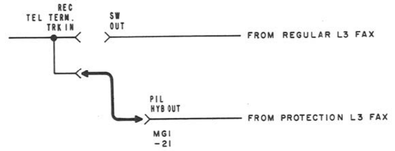
NOTES:
1. USE PEF EQUIPMENT IF PILOT ELIMINATION IS REQUIRED.
2. PATCH HYB NET TO SPARE LI PILOTS IF PILOT ELIMINATION FILTERS ARE USED OR IF LI LINE PILOTS ARE NOT RECEIVED OVER MAKE-GOOD.
3. CIRCLED FIGURES INDICATE NOMINAL LOSS AT 560 KC.

Fig. 10A — Patches to Make Good Terminals, Sketches 101 to 104

PATCHES TO MAKE GOOD L3 TERMINAL
OR THROUGH (COAX) ON L3 COAXIALS

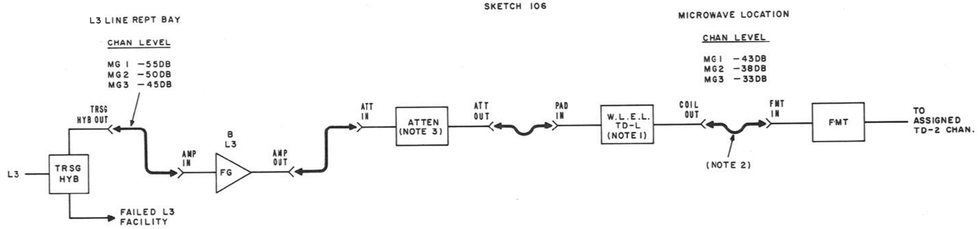
SKETCH 105

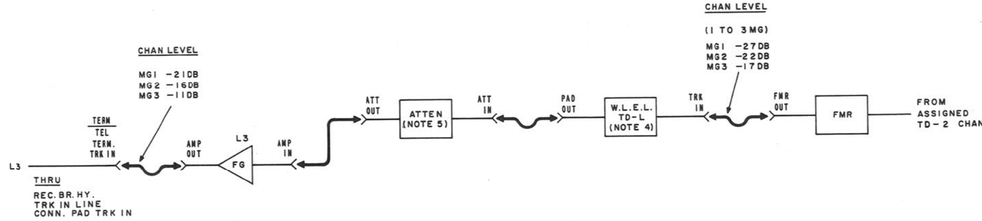




PATCHES TO MAKE GOOD L3 TERMINAL (COAX)
(UP TO THREE MG) ON TD-2 CHANNEL

SKETCH 106



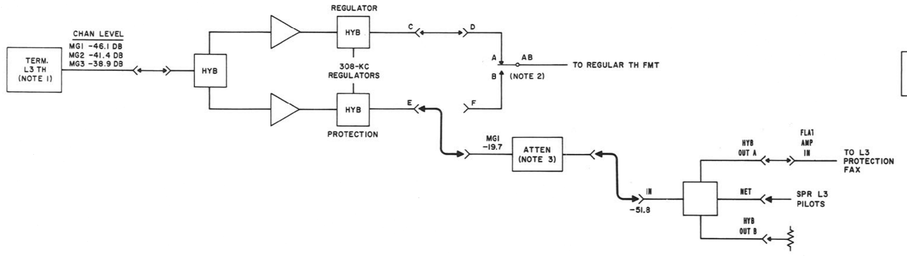


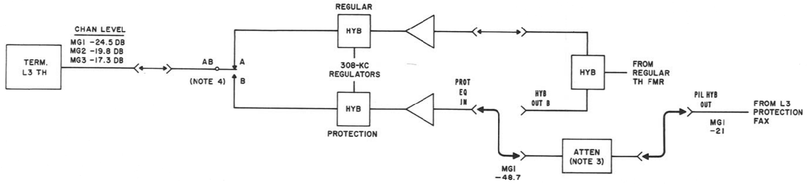
NOTES:
1. BYPASS 457A NET (PRE-EMPHASIS) AND L1 FG AMPLIFIER.
2. BYPASS NOISE FILTER (525R).
3. ADJUST ATTENUATOR TO OBTAIN CHAN LEVEL MG1 AT FMT.
4. BYPASS 457B NET (RESTORER) AND L1 FG AMPLIFIER.
5. ADJUST ATTENUATOR TO OBTAIN CHAN LEVEL MG1 AT AMP OUT.

Fig. 10B — Patches to Make Good Terminals, Sketches 105 to 106

PATCHES TO MAKE GOOD L3 TERM. (TH) ON L3 COAXIALS

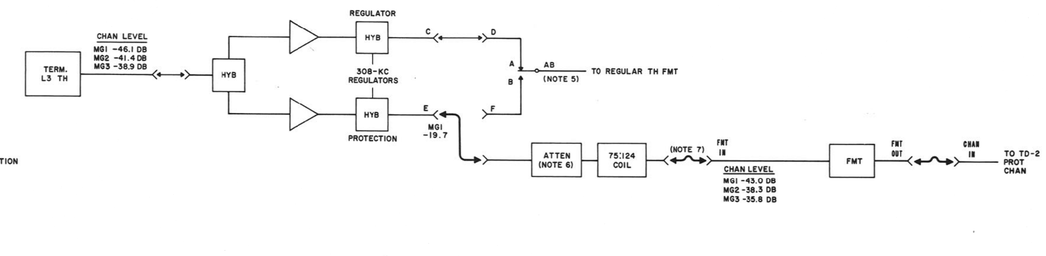
SKETCH 107

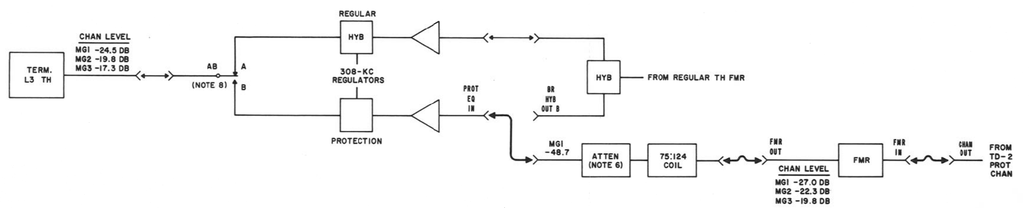




PATCHES TO MAKE GOOD L3 TERM. (TH) ON TD-2 CHANNEL

SKETCH 108



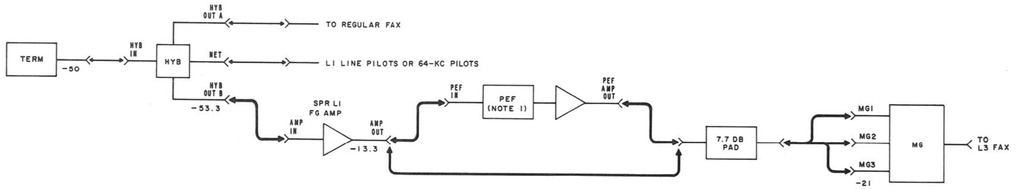


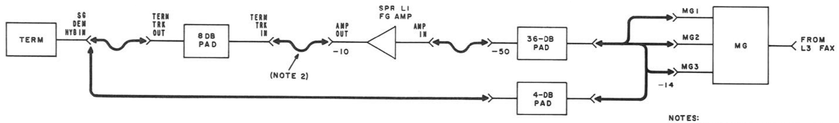
NOTES:

1. REMOVE 308-AND 830-KC PILOTS FROM TRANSMITTING TERMINAL.
2. LOCK SWITCH NORMAL.
3. ADJUST ATTENUATORS FOR PROPER LEVELS.
4. OPERATE SWITCH TO PROTECTION TO SWITCH SERVICE TO MAKE GOOD FACILITY.
5. LOCK SWITCH NORMAL.
6. ADJUST ATTENUATORS FOR PROPER LEVELS.
7. BYPASS NOISE FILTER (525R).
8. OPERATE SWITCH TO PROTECTION TO SWITCH SERVICE TO MAKE GOOD FAX.

Fig. 10C — Patches to Make Good Terminals, Sketches 107 to 108

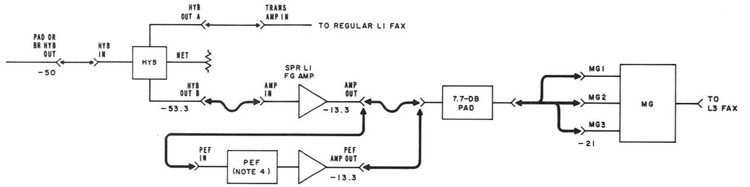
PATCHES TO MAKE GOOD LI TERMINAL
(COAX OR TD-2) ON L3 MASTERGROUPS
(NOTE 3)
SKETCH 109





NOTES:
1. USE PEF WHEN PATCHING TO MG1 OR 3 FROM COAX. TERMINAL.
2. USE 4-DB PAD TO SG DEM HYB IN IF SPARE FG AMP NOT AVAILABLE.
3. PATCH TO MG1 KILLS SG1. PATCH TO MG2 OR 3 KILLS SG1 AND 2.
4. USE PEF WHEN PATCHING TO MG1 OR 3.
5. PATCH HYB NET TO SPARE LI LINE PILOTS.
6. PATCH TO MG1 KILLS SG1. PATCH TO MG2 OR 3 KILLS SG1 AND 2.

PATCHES TO MAKE GOOD LI THROUGH OR BRANCHING
(COAX) ON L3 MASTERGROUPS
(NOTE 6)
SKETCH 110



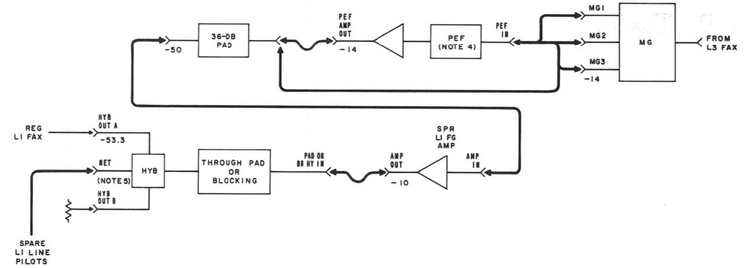
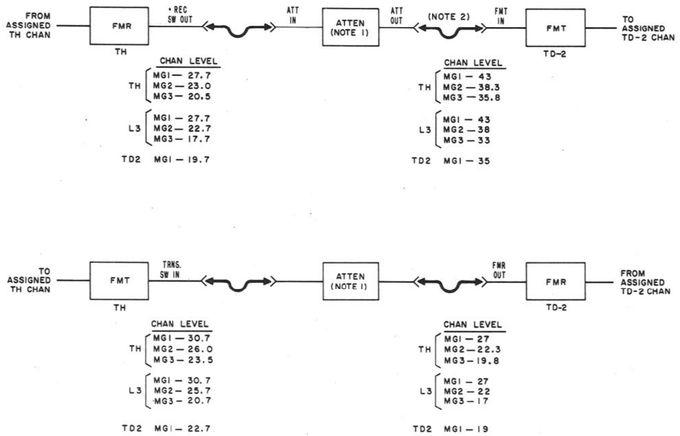


Fig. 10D — Patches to Make Good Terminals, Sketches 109 to 110

PATCHES AND REQUIRED LEVELS WHEN INTERCONNECTING A TD-2 CHANNEL AND AND A TH CHANNEL

SK 111

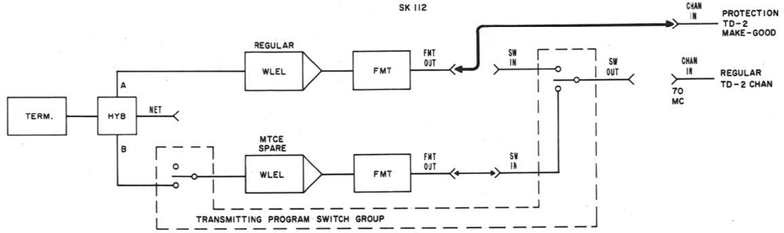


NOTES:

1. ADJUST ATTENUATOR TO OBTAIN REQUIRED CHAN LEVEL AT FMT'S.
2. BYPASS NOISE FILTER (525R).

PATCHES TO MAKE GOOD LI TERM. OR THROUGH (TD-2) ON TD-2 USING IF PATCHING

SK 112

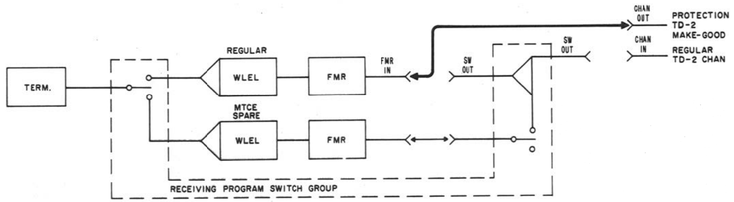


ESTABLISH

1. IF SERVICE STILL GOOD ON REGULAR FAX, SWITCH TO MTCE SPR WLEL & FMT.
2. PATCH REGULAR FMT OUT TO CHAN IN OF MAKE-GOOD.
3. VERIFY CONTINUITY AND HAVE RECEIVING TERMINAL TAKE SERVICE FROM MAKE-GOOD.
4. PATCH TO MC SIGNAL TO CHAN IN OF REGULAR CHANNEL.
5. RESTORE MTCE SPR WLEL & FMT SWITCH.

GO REGULAR

1. SWITCH TO MTCE SPR WLEL & FMT.
2. REMOVE TO MC AND RESTORE PATCH PLUG SW OUT - CHAN IN ON REGULAR CHAN.
3. VERIFY CONTINUITY AND HAVE RECEIVING TERMINAL TAKE SERVICE FROM REGULAR.
4. REMOVE PATCH REGULAR FMT OUT - MAKE CHAN. IN. RESTORE PATCH PLUG REGULAR FMT OUT - SW IN.
5. RESTORE MTC SPR WLEL & FMT SWITCH.



ESTABLISH

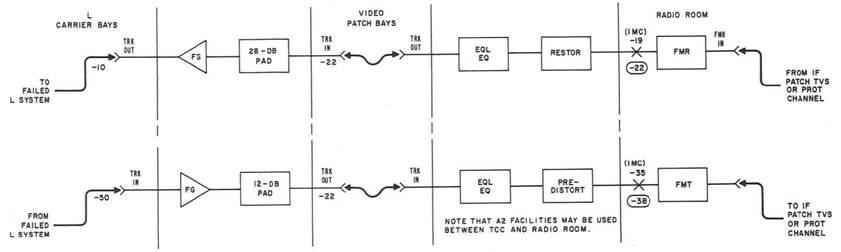
1. IF SERVICE STILL GOOD ON REGULAR, SWITCH TO MTCE SPR FMR & WLEL.
2. PATCH REGULAR FMR IN TO CHAN OUT OF MAKE-GOOD.
3. VERIFY CONTINUITY AND RESTORE MTCE SPR FMR & WLEL SWITCH.

GO REGULAR

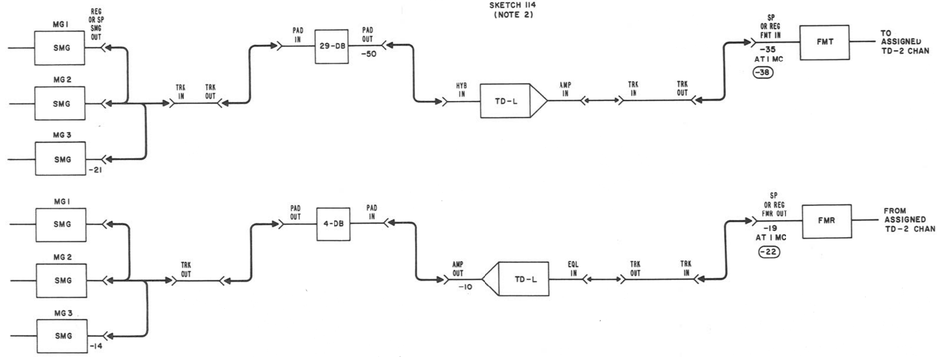
1. VERIFY REGULAR CHAN. CONTINUITY.
2. SWITCH TO MTCE SPARE FMR & WLEL.
3. REMOVE PATCH MAKE-GOOD CHAN OUT - REGULAR FMR IN. RESTORE PATCH PLUG SW OUT - FMR IN.
4. RESTORE MTC SPR FMR & WLEL SWITCH.

Fig. 10E — Patches to Make Good Terminals, Sketches 111 to 112

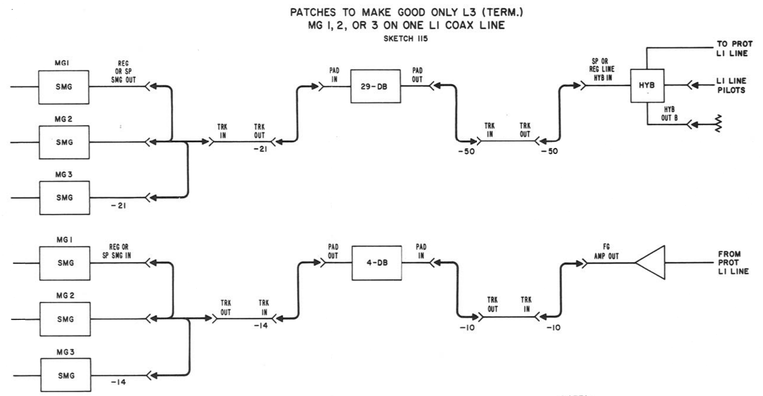
BROADBAND L CARRIER RESTORATION METHOD USING
TV TRUNKS TOC TO RADIO ROOM AS WLEL'S
SKETCH 113
(NOTE 2)



PATCHES TO MAKE GOOD ONLY ONE L3 (TERM)
MG 1, 2, OR 3 ON ONE TD-2 CHANNEL
SKETCH 114
(NOTE 2)



PATCHES TO MAKE GOOD ONLY L3 (TERM.)
MG 1, 2, OR 3 ON ONE LI COAX LINE
SKETCH 115



NOTES:
1. ADJUST ATTEN FOR -10 DBM AT TERM TRK IN.
2. CIRCLED FIGURES INDICATE NOMINAL LOSS AT 560 KC.
3. ADJUST ATTEN TO OBTAIN REQUIRED LEVEL AT FMT.

PATCHES TO MAKE GOOD LI (TERM.)
ON TH RADIO (WITHOUT MG EQUIPMENT)
SKETCH 116
(NOTE 2)

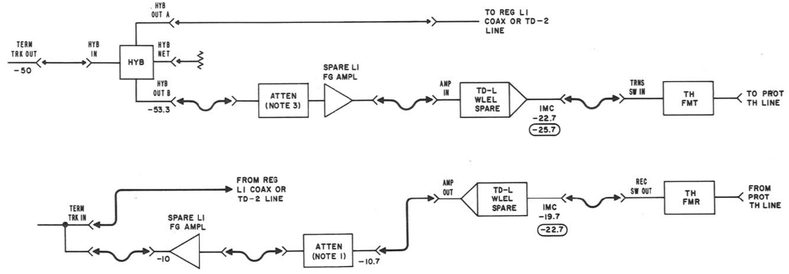
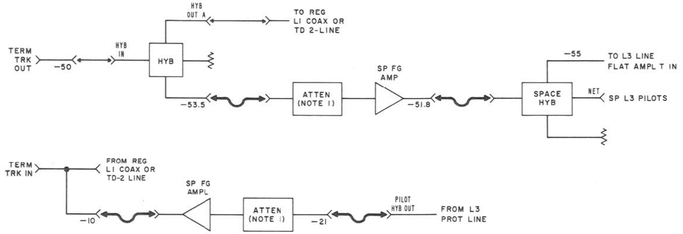
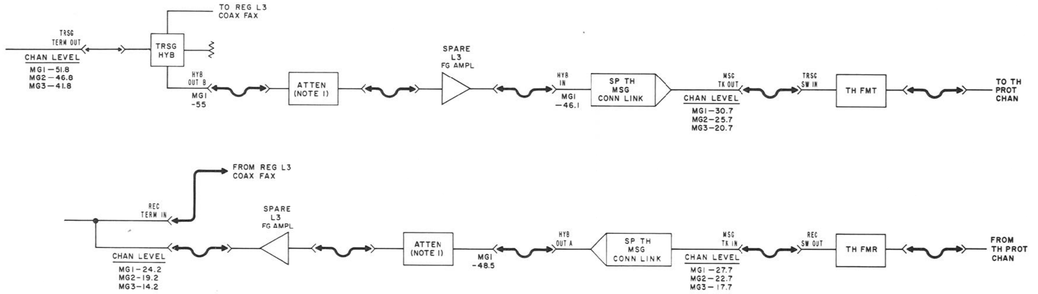


Fig. 10F — Patches to Make Good Terminals, Sketches 113 to 116

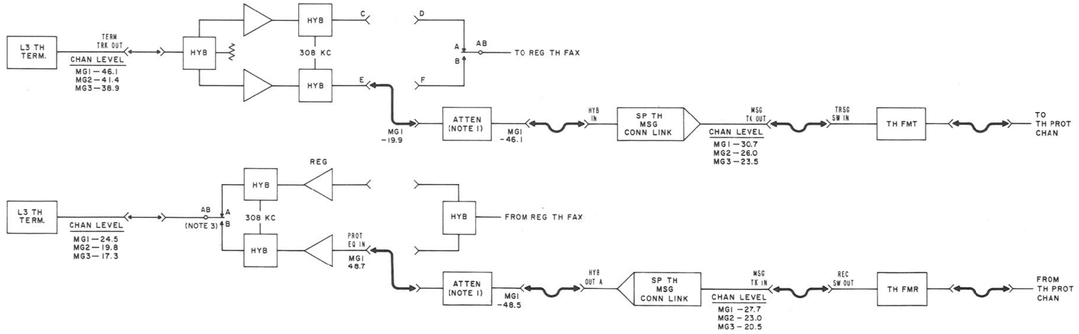
PATCHES TO MAKE GOOD LI TERM.
ON L3 COAX (WITHOUT MG EQUIPMENT)
SKETCH 117 (NOTE 2)



PATCHES TO MAKE GOOD L3 TERM.
COAX ON TH RADIO
SKETCH 119



PATCHES TO MAKE GOOD L3 TERM.
(TH) ON TH RADIO
SKETCH 118



NOTES:
1. ADJUST ATTENUATORS FOR PROPER CHANNEL LEVELS.
2. COAXIAL CABLE LOW-FREQUENCY ROLL-OFF KILLS PART 5G1.
3. OPERATE SWITCH TO PROTECTION TO SWITCH SERVICE TO PROTECTION CHANNEL.

Fig. 10G — Patches to Make Good Terminals, Sketches 117 to 119