OPERATION AND MAINTENANCE
1×N FREQUENCY DIVERSITY
DR 6/11-135A AND 135EC
RECEIVER SUBROUTINES

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Flowcharts

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1. GENERAL

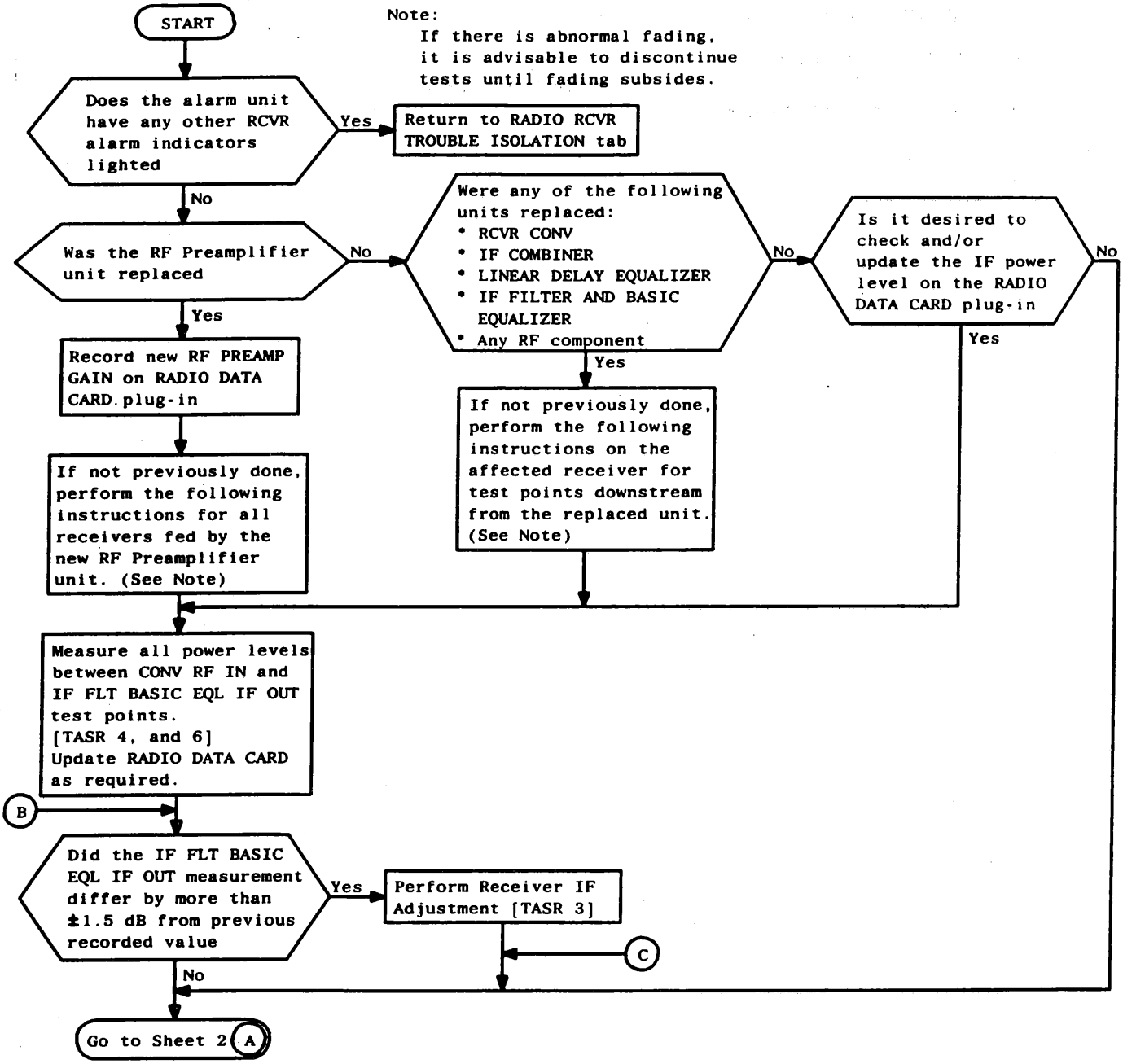
This practice contains the subroutines (SR) referenced from the receiver trouble-clearing main routines (MR), main subroutines (MSR), and transmitter test and adjustment subroutines (TASR).

1.1 UPDATE INFORMATION

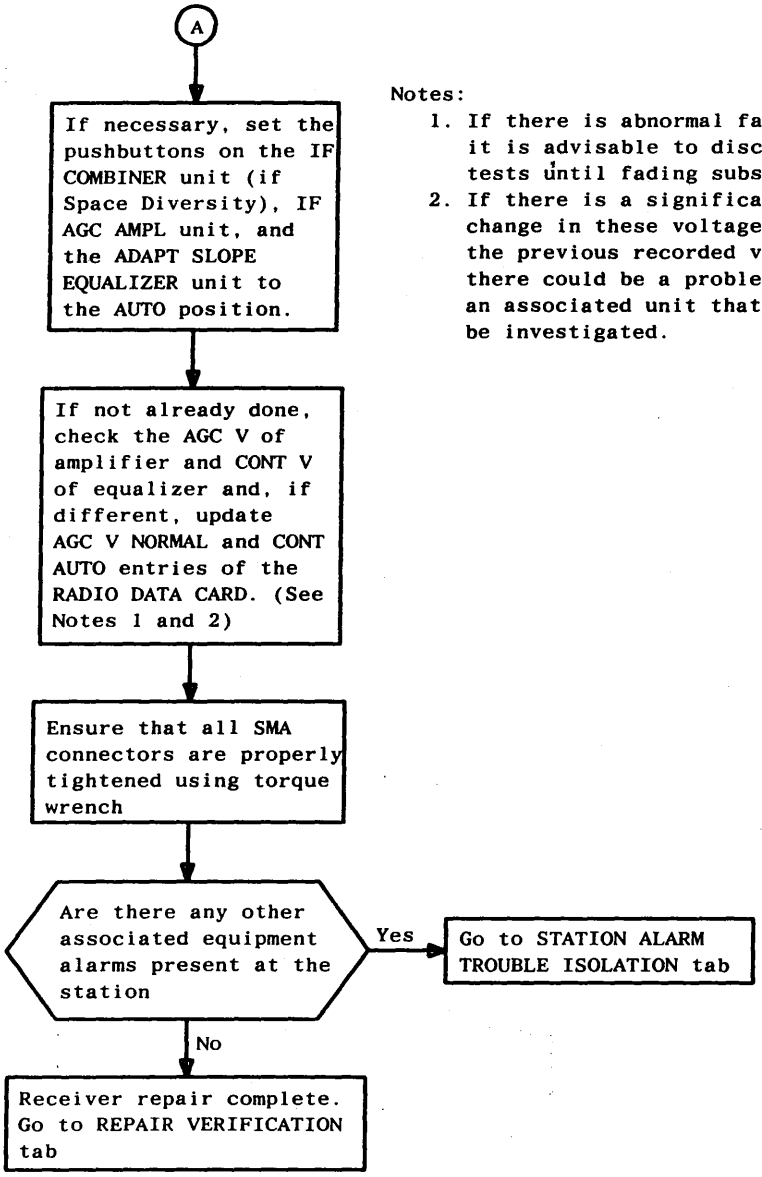
This practice is reissued to include reference to the new 4400 Series Receiver Down-Converter and Microwave Generator unit. This practice is used in all frequency diversity terminal and regenerator binders.

Caution: THIS PROCEDURE IS SERVICE-AFFECTING UNLESS THE PROPER MANUAL PROTECTION SWITCHING OPERATION HAS BEEN PERFORMED.

PREREQUISITE: A radio receiver alarm condition was just cleared.



SR 1—Condition Receiver/Update RADIO DATA CARD Prior to Repair Verification (Sheet 1 of 2)



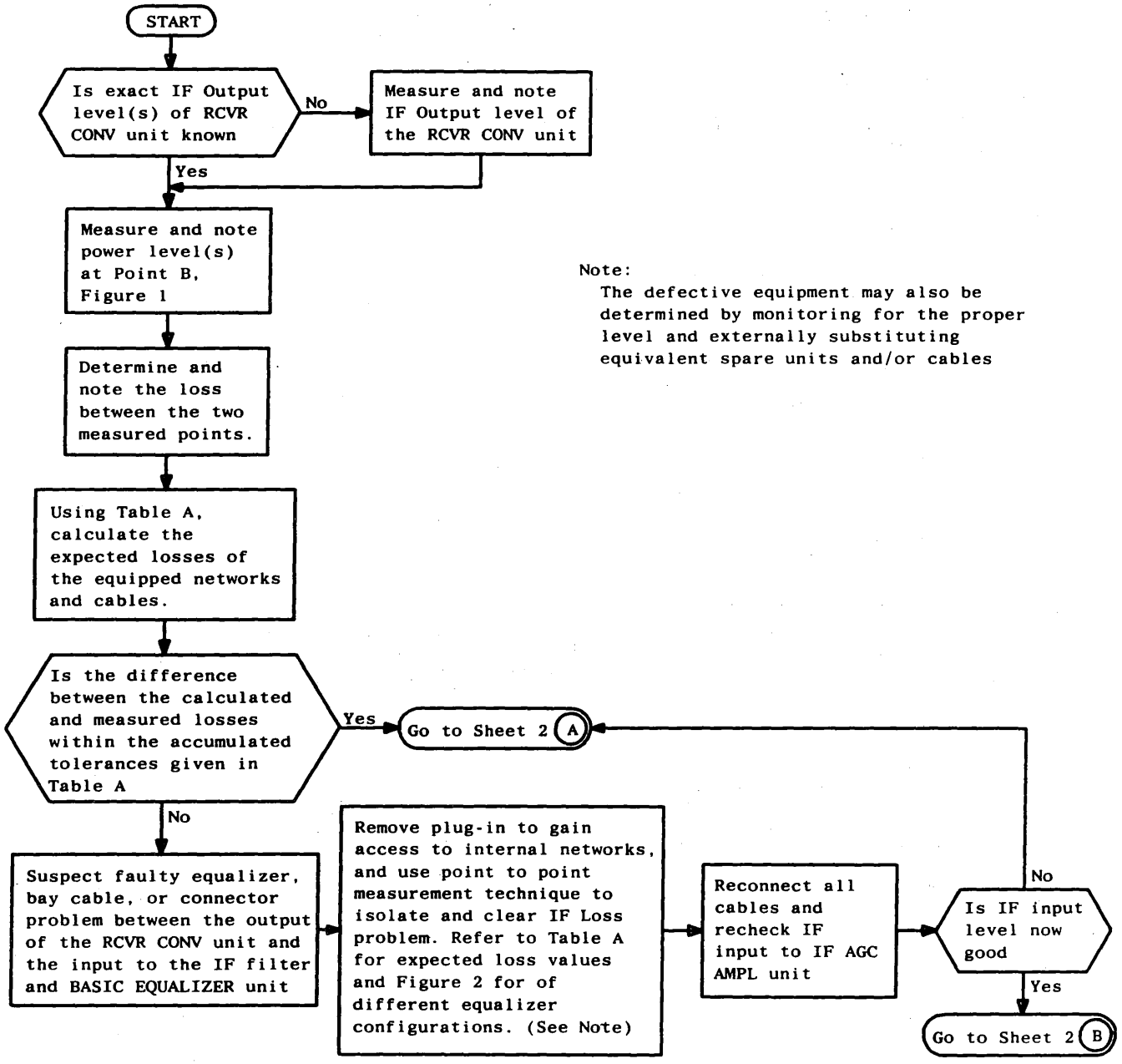
Notes:

1. If there is abnormal fading, it is advisable to discontinue tests until fading subsides.
2. If there is a significant change in these voltages from the previous recorded value, there could be a problem in an associated unit that should be investigated.

SR 1—Condition Receiver/Update RADIO DATA CARD Prior to Repair Verification (Sheet 2 of 2)

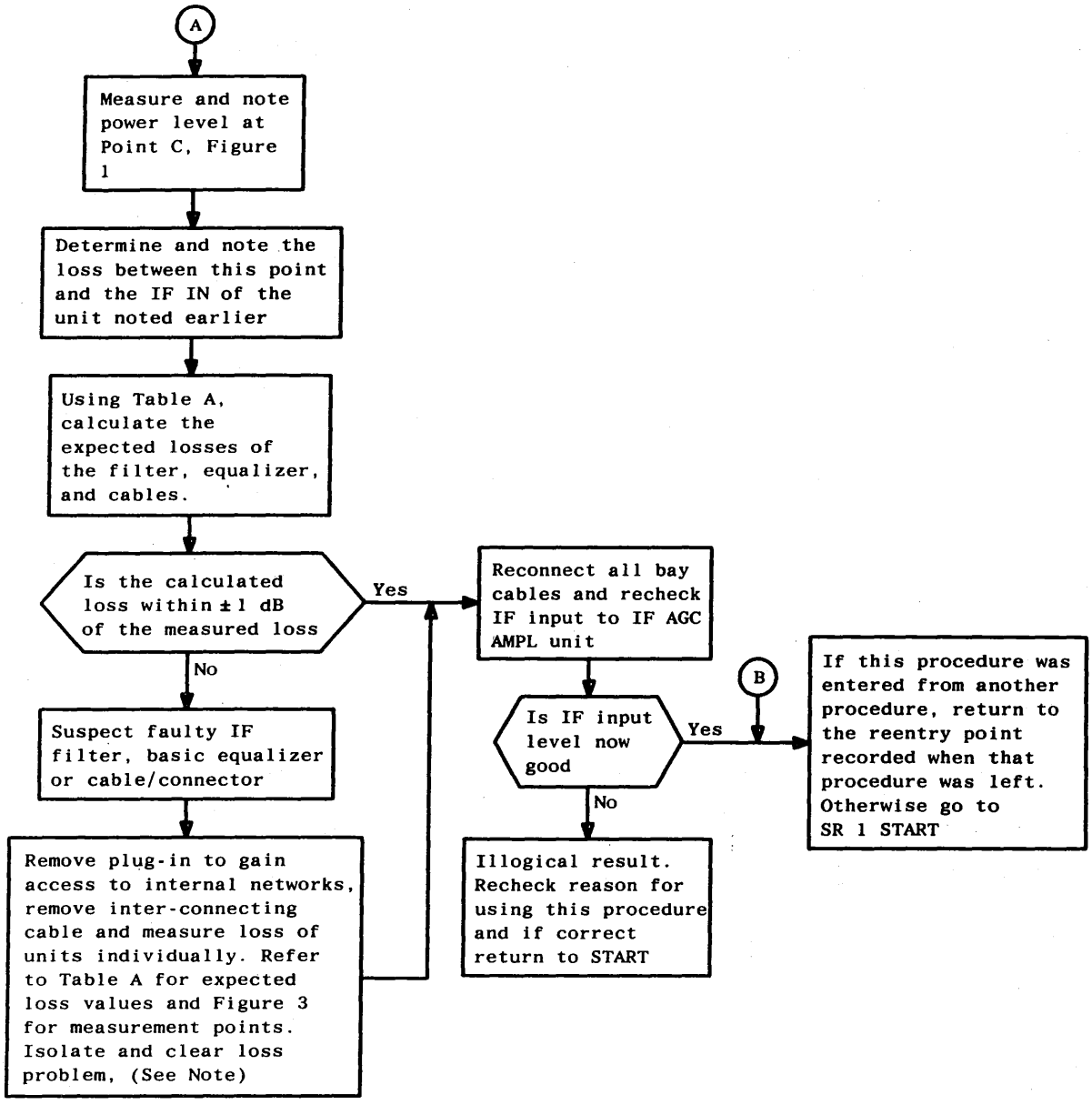
Caution: This procedure is service-affecting unless the proper manual switching operation has been performed.

Prerequisite: RCVR CONV IF Output is within ± 3 dB of RADIO DATA CARD value.
IF AGC AMPL IF input is bad.



Note:
The defective equipment may also be determined by monitoring for the proper level and externally substituting equivalent spare units and/or cables

SR 2—Resolving Receiver IF Loss Problem (Sheet 1 of 2)



Note:
The defective equipment may also be determined by monitoring for the proper level and externally substituting equivalent spare units and/or cables

SR 2—Resolving Receiver IF Loss Problem (Sheet 2 of 2)

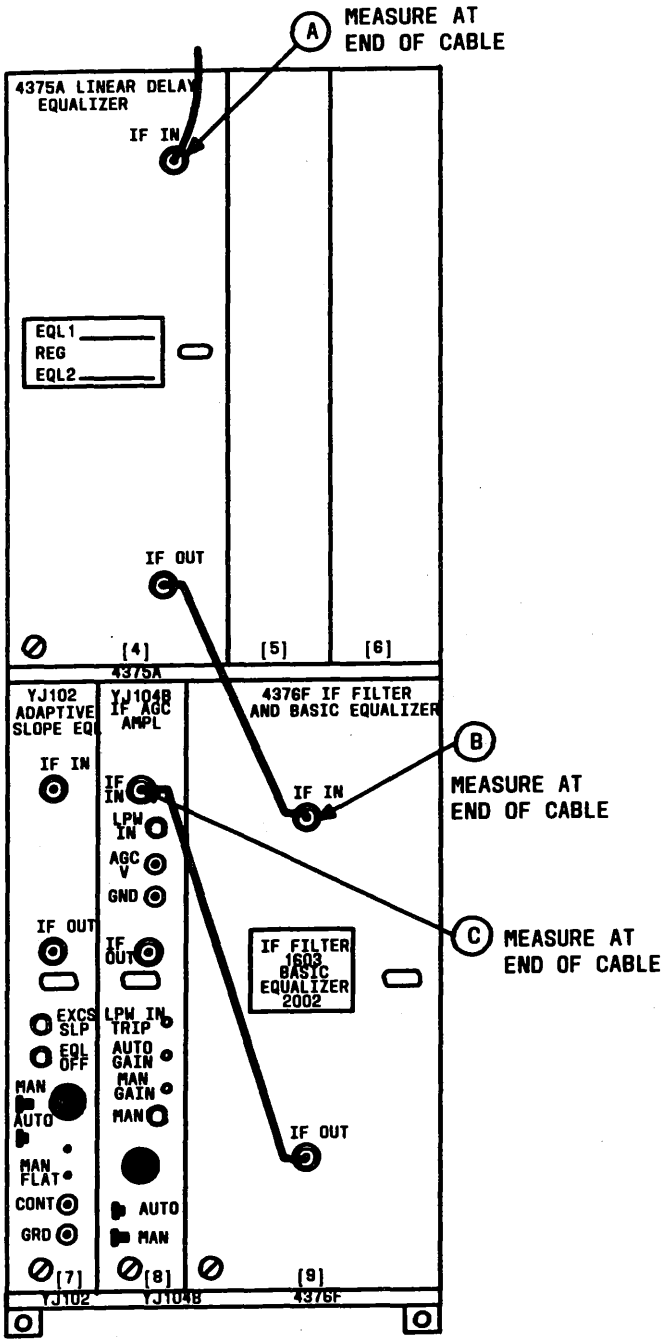
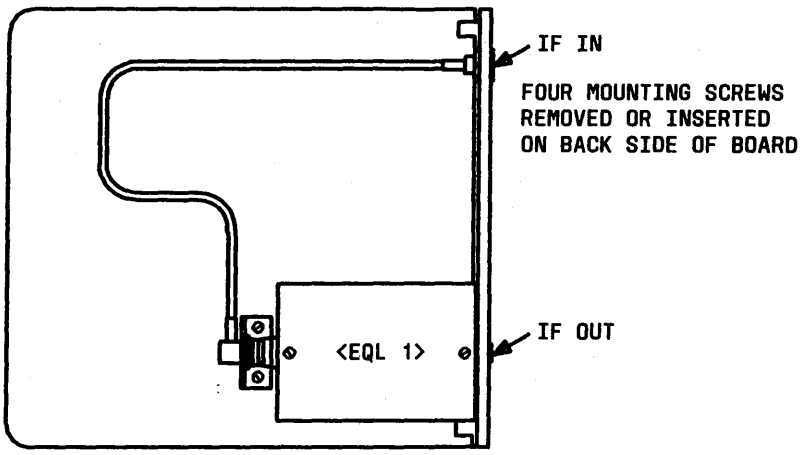


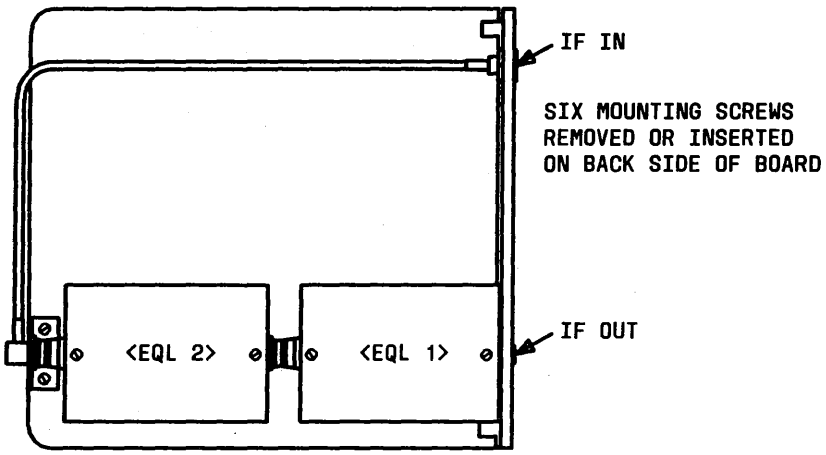
Figure 1-Receiver Shelf

TABLE A TYPICAL IF UNIT LOSSES	
CODE	INSERTION LOSS (dB) at 70 MHz (± 0.5 dB)
LINEAR DELAY EQUALIZER (± 0.5 dB)	
2001A	1.1
2001B	1.1
2001C	1.7
2001D	1.2
2001E	1.7
2001F	1.4
2001G	1.4
2001H	0.38
2001J	1.5
2001K	0.43
2001L	1.5
2001M	0.57
2001N	3.2
2001P	0.7
BASIC EQUALIZER (± 0.5 dB)	
2002C	4.4
2002D	4.1
2002G	5.6
IF FILTER (± 0.5 dB)	
1603B	7.0
CABLES	(dB per 100 ft)
KS-19224,L2	6.0 ± .6
731B	3.0 ± .3
728B	2.2 ± .22



A. ONE EQUALIZER EQUIPPED

OR



B. TWO EQUALIZERS EQUIPPED

Figure 2–Frequency Diversity Receiver Linear Delay Equalizer, Side View

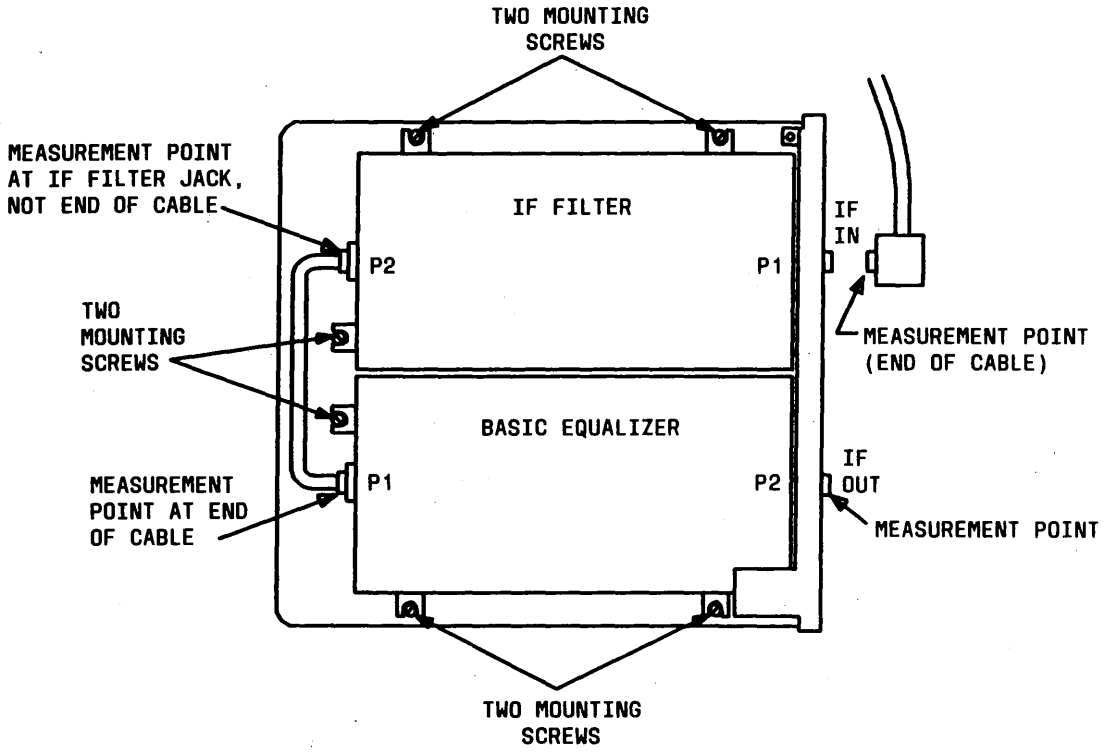


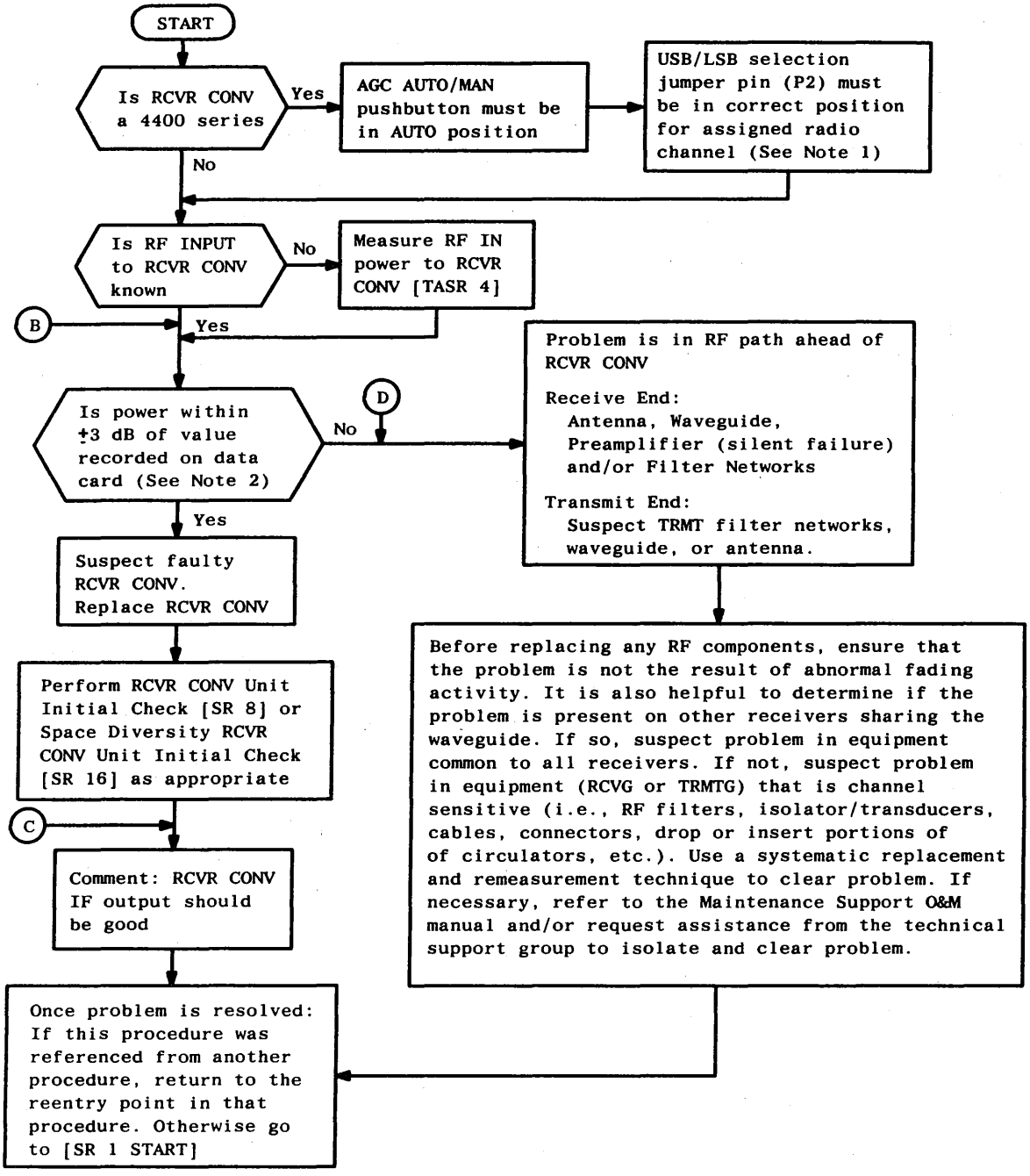
Figure 3- IF Filter and Basic Equalizer, Side View

Caution: This procedure is service-affecting unless the proper switching operation has been performed.

PREREQUISITE: IF Output level of RCVR CONV unit is bad.

Note 1: It is necessary to unplug the RCVR CONV unit to observe jumper pin P2.

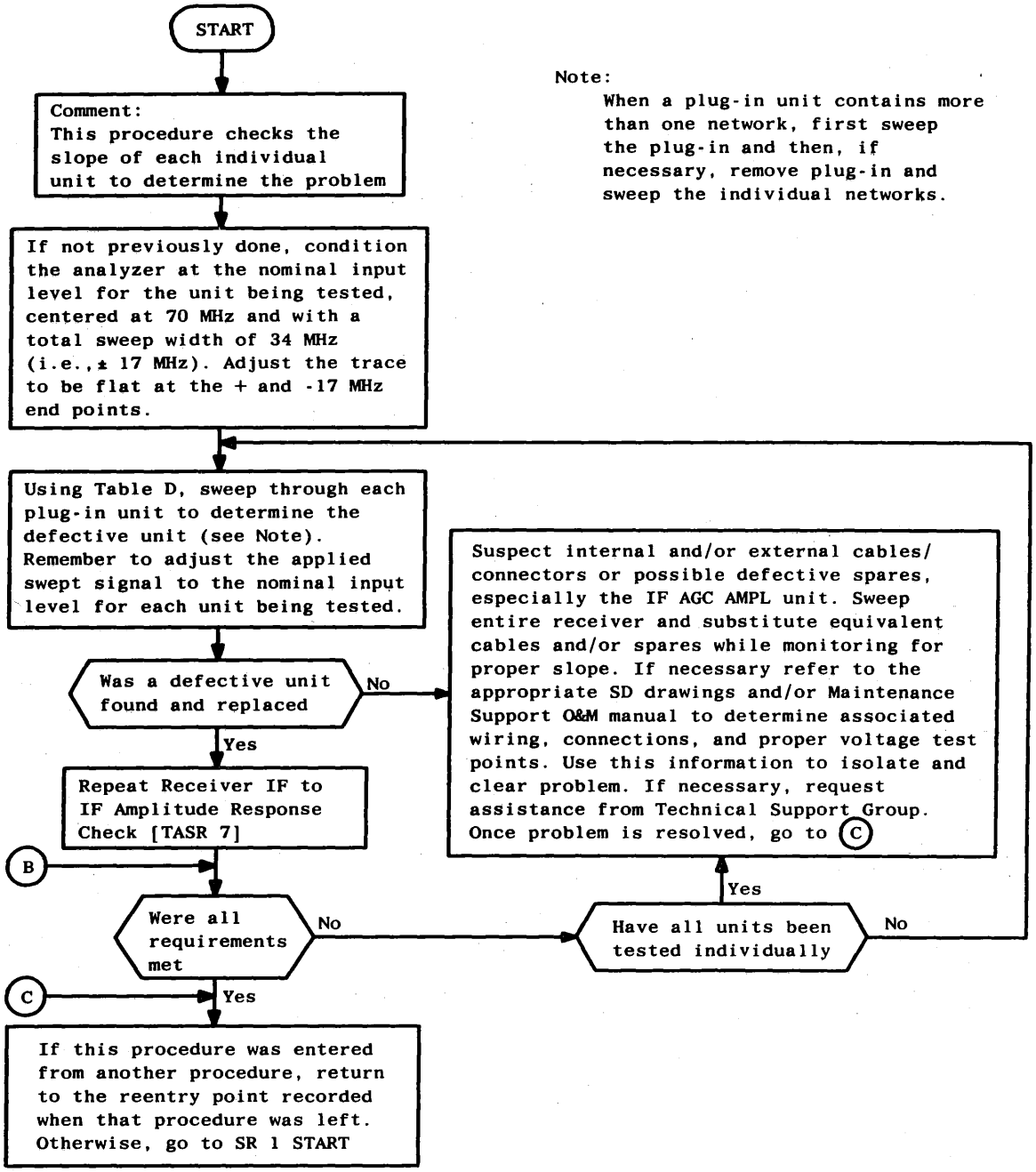
Note 2: If there is abnormal fading, it is advisable to discontinue tests until fading subsides.



SR 3—Resolving RF-to-IF Loss Problem

Caution: This procedure is service-affecting unless the proper switching operation has been performed.

PREREQUISITE: Received IF-to-IF Slope measurement did not meet requirement



SR 4—Resolving Receiver IF Slope Problem (Sheet 1 of 2)

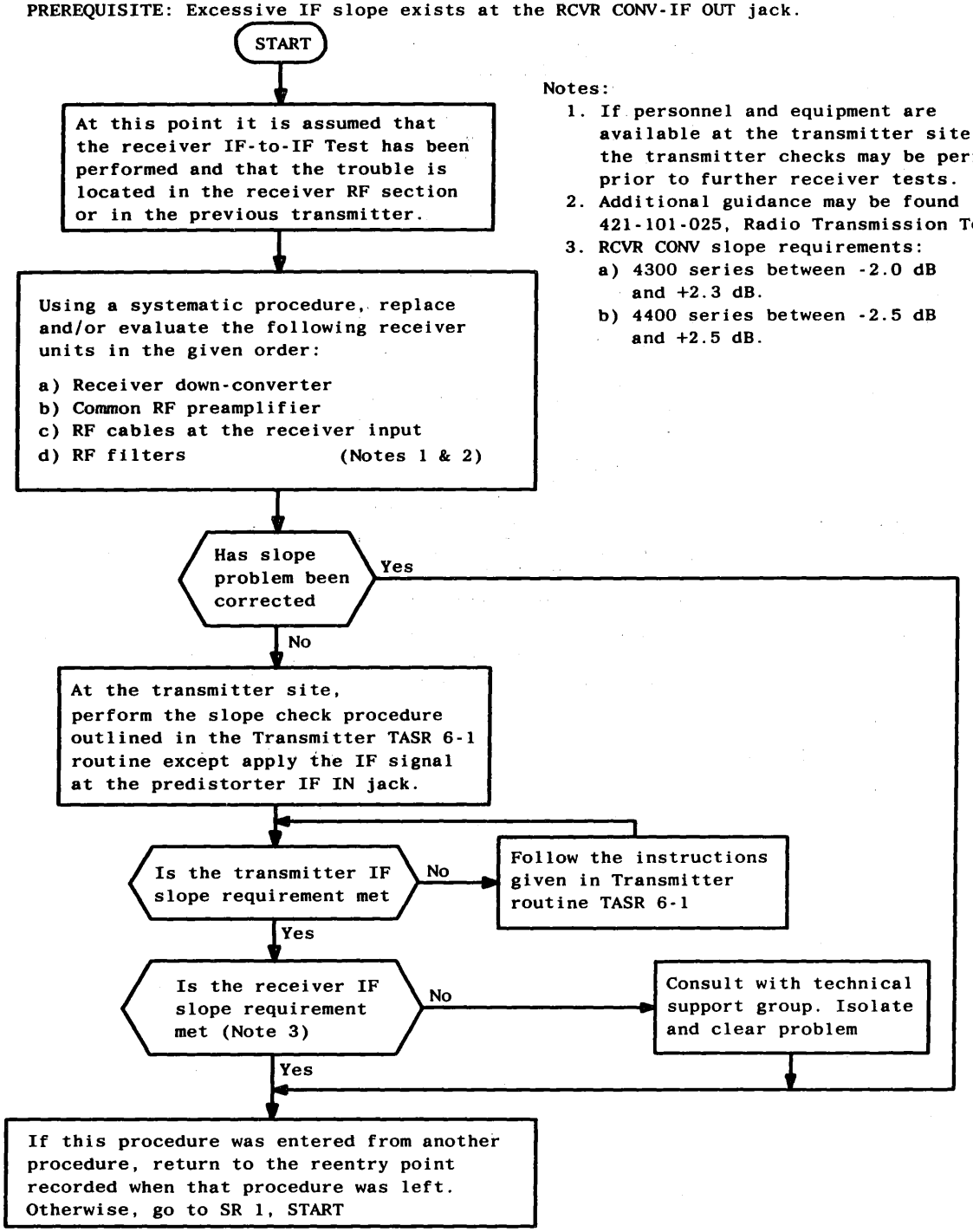
TABLE B TYPICAL IF UNIT SLOPE	
CODE	SLOPE (dB) at 70 12 MHz
LINEAR DELAY EQUALIZER	
2001A	<0.1
2001B	<0.1
2001C	<0.1
2001D	<0.1
2001E	<0.1
2001F	<0.1
2001G	<0.1
2001H	<0.1
2001J	<0.1
2001K	<0.1
2001L	<0.1
2001M	<0.1
2001N	<0.2
2001P	<0.1
BASIC EQUALIZER	
2002C	<0.2
2002D	<0.2
2002G	<0.2
IF FILTER	
1603B	<0.2
IF AGC AMPL *	
YJ104B	<0.2

* Operate the AUTO/MAN pushbutton to MAN when testing unit.

SR 4—Resolving Receiver IF Slope Problem (Sheet 2 of 2)

Caution: This procedure is service-affecting unless the proper manual switching operation has been performed.

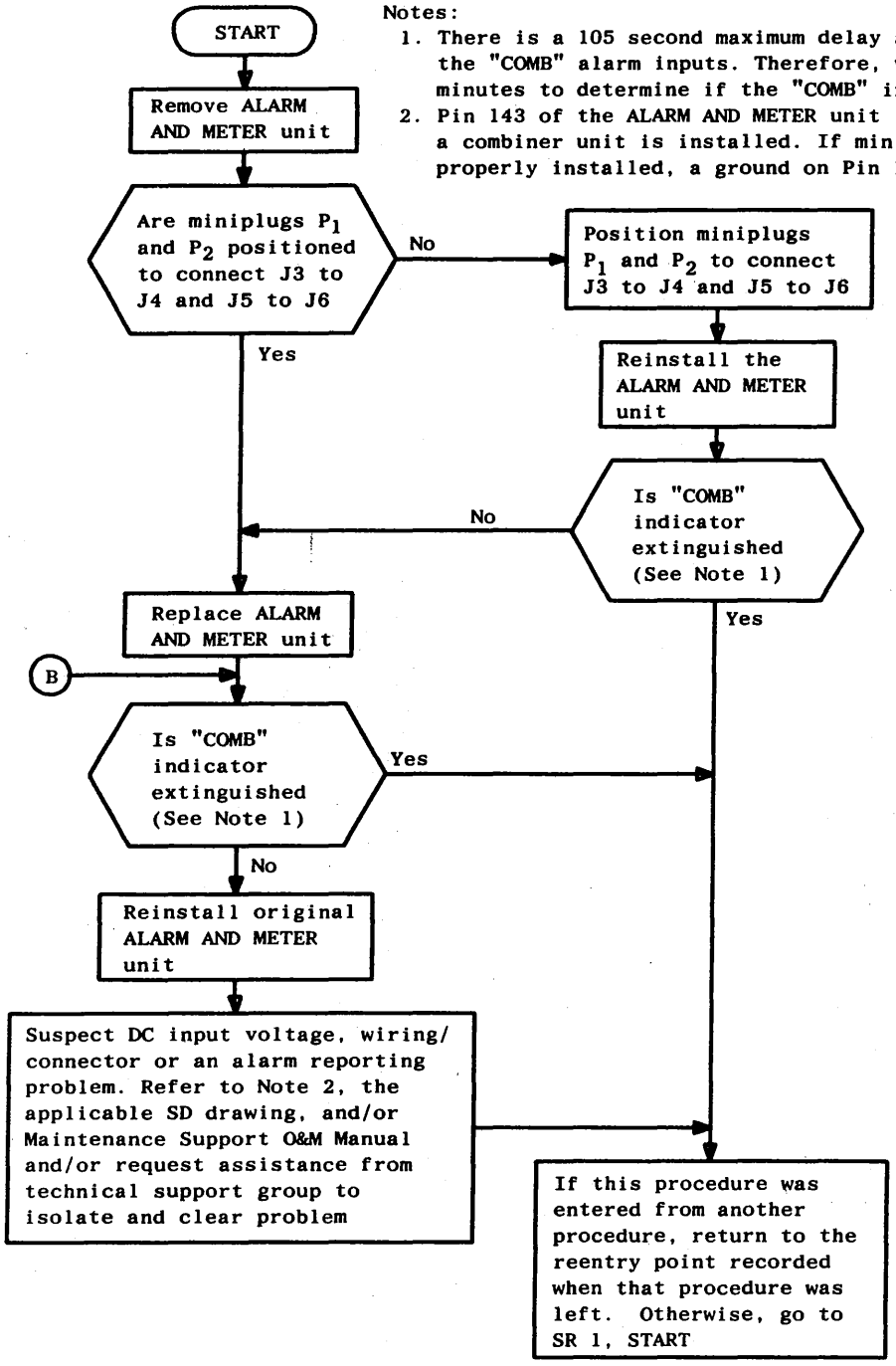
PREREQUISITE: Excessive IF slope exists at the RCVR CONV-IF OUT jack.



Notes:
1. If personnel and equipment are available at the transmitter site, the transmitter checks may be performed prior to further receiver tests.
2. Additional guidance may be found in AT&T 421-101-025, Radio Transmission Tests.
3. RCVR CONV slope requirements:
   a) 4300 series between -2.0 dB and +2.3 dB.
   b) 4400 series between -2.5 dB and +2.5 dB.

SR 5—Resolving RF Slope Problem

PREREQUISITE: COMB indicator lighted on ALARM/ALARM AND METER unit when IF COMBINER Unit is not equipped in receiver.



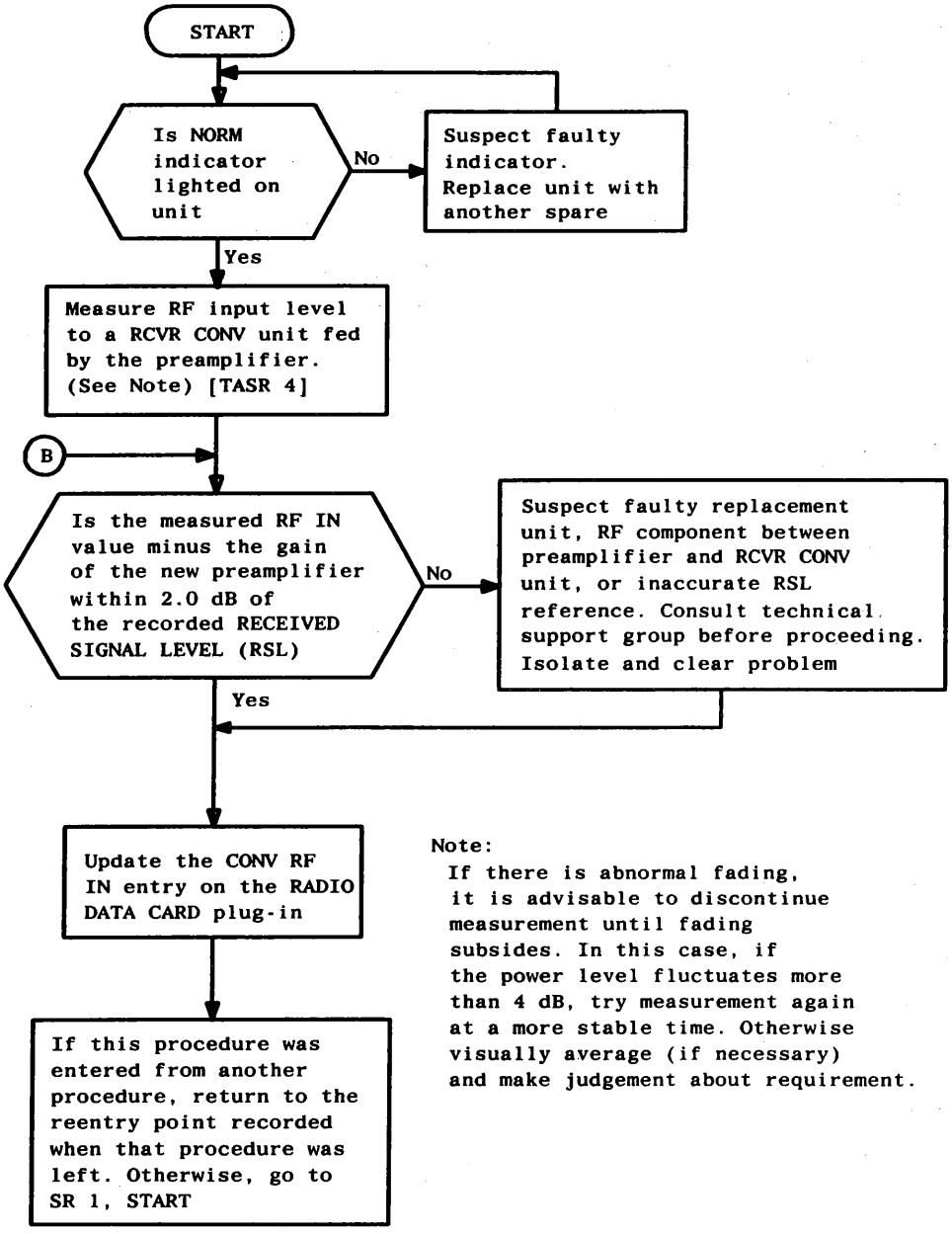
Notes:

1. There is a 105 second maximum delay associated with one of the "COMB" alarm inputs. Therefore, wait a minimum of two minutes to determine if the "COMB" indicator will extinguish.
2. Pin 143 of the ALARM AND METER unit is used to sense if a combiner unit is installed. If miniplugs P1 and P2 are properly installed, a ground on Pin 143 will cause an alarm.

SR 6—Resolving Combiner Indicator Problem

Caution: This procedure is service-affecting unless the proper manual protection switching operation has been performed.

PREREQUISITES: 1. New RF Preamplifier just installed.
2. The DC input voltages to RF Preamplifier are good (+15 V and -15 V 0.4 V)

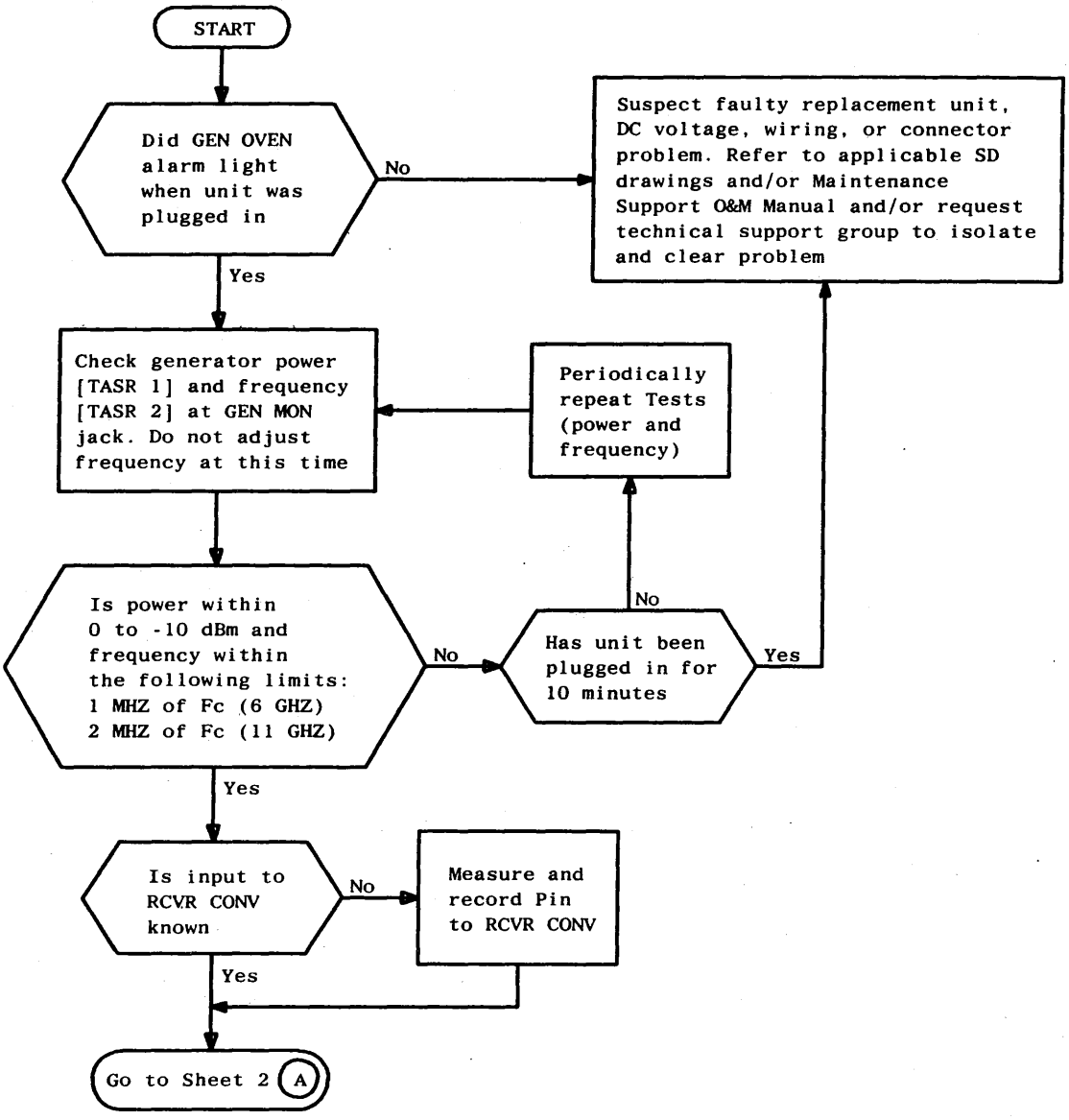


Note:
If there is abnormal fading, it is advisable to discontinue measurement until fading subsides. In this case, if the power level fluctuates more than 4 dB, try measurement again at a more stable time. Otherwise visually average (if necessary) and make judgement about requirement.

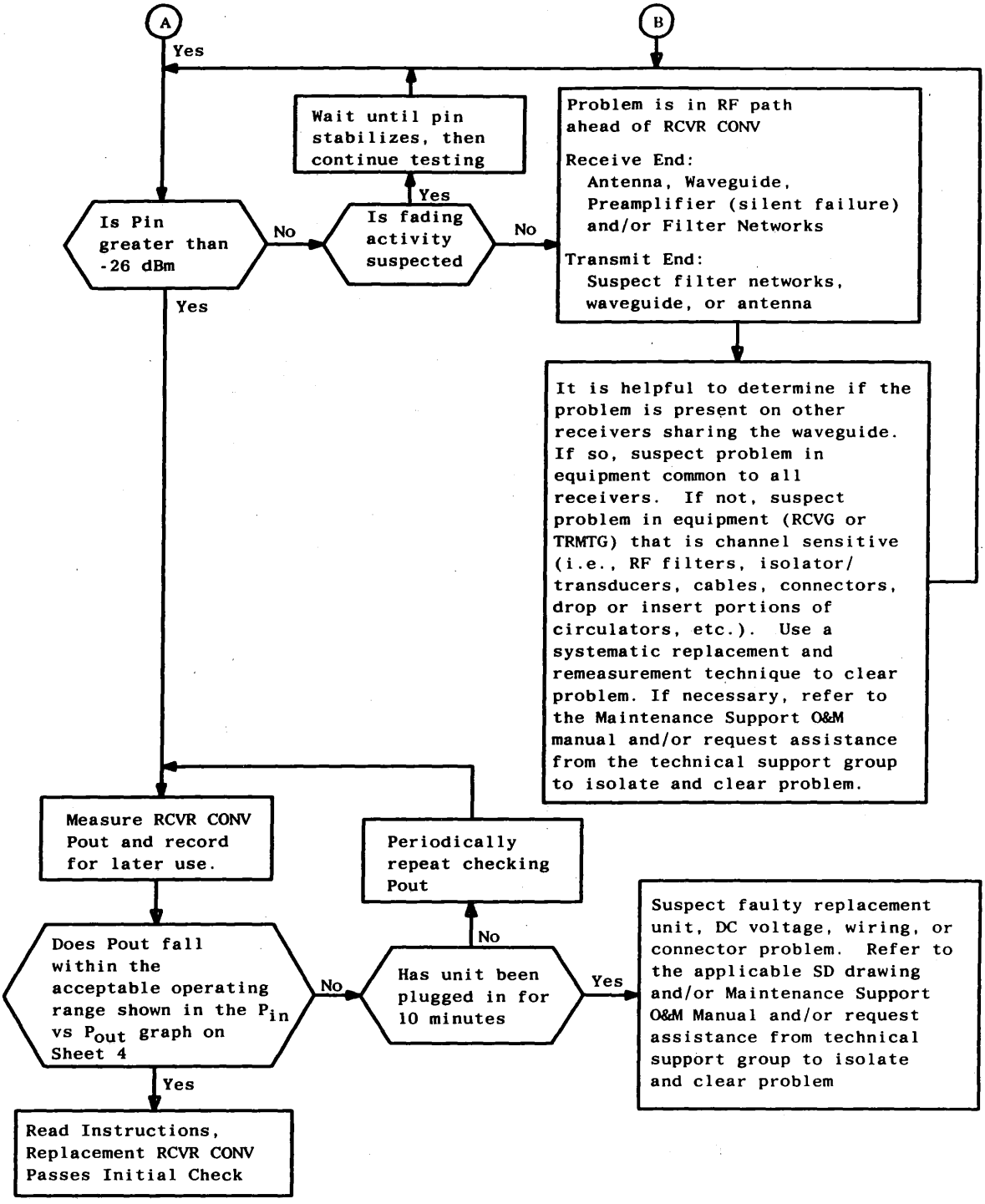
SR 7—RF Preamp Unit Initial Check

Caution: THIS PROCEDURE IS SERVICE-AFFECTING UNLESS THE PROPER MANUAL PROTECTION SWITCHING OPERATION HAS BEEN PERFORMED.

PREREQUISITE: RCVR CONV unit just installed.



SR 8-A—4300 Series RCVR CONV Unit Initial Check (Sheet 1 of 4)



SR 8-A—4300 Series RCVR CONV Unit Initial Check (Sheet 2 of 4)

INSTRUCTIONS

REPLACEMENT RCVR CONV UNIT PASSES INITIAL CHECK REQUIREMENTS

Procedure Was Referenced From Another Trouble Procedure

The status of the replaced unit at this point is usually adequate to continue most receiver troubleshooting routines. This is especially true for those routines involving receiver IF level or gain problems. Routines requiring temperature stabilization of the microwave generator oven of the down-converter unit (when the GEN OVEN indicator is still lighted) should be delayed until the GEN OVEN indicator goes off (see Final Generator Check). If this unit was replaced because of directions in another procedure, return to the instruction that called for the replacement (see ***Note 1***). Generally, this will help to speed up troubleshooting receiver alarms involving suspected down-converter problems (see Final Generator Check).

Note 1: Before returning to the referencing procedure, note the time that the down-converter unit was replaced and then periodically check the GEN OVEN alarm indicator to ensure that it goes off within the normal time period (see ***Note 2***). If the alarm indicator does not go off, DC voltage and/or wiring problems related to the down-converter unit may exist or the replacement unit is defective. Isolate and clear this problem before proceeding further with receiver tests. Follow the instructions given in the GEN OVEN ALARM tab.

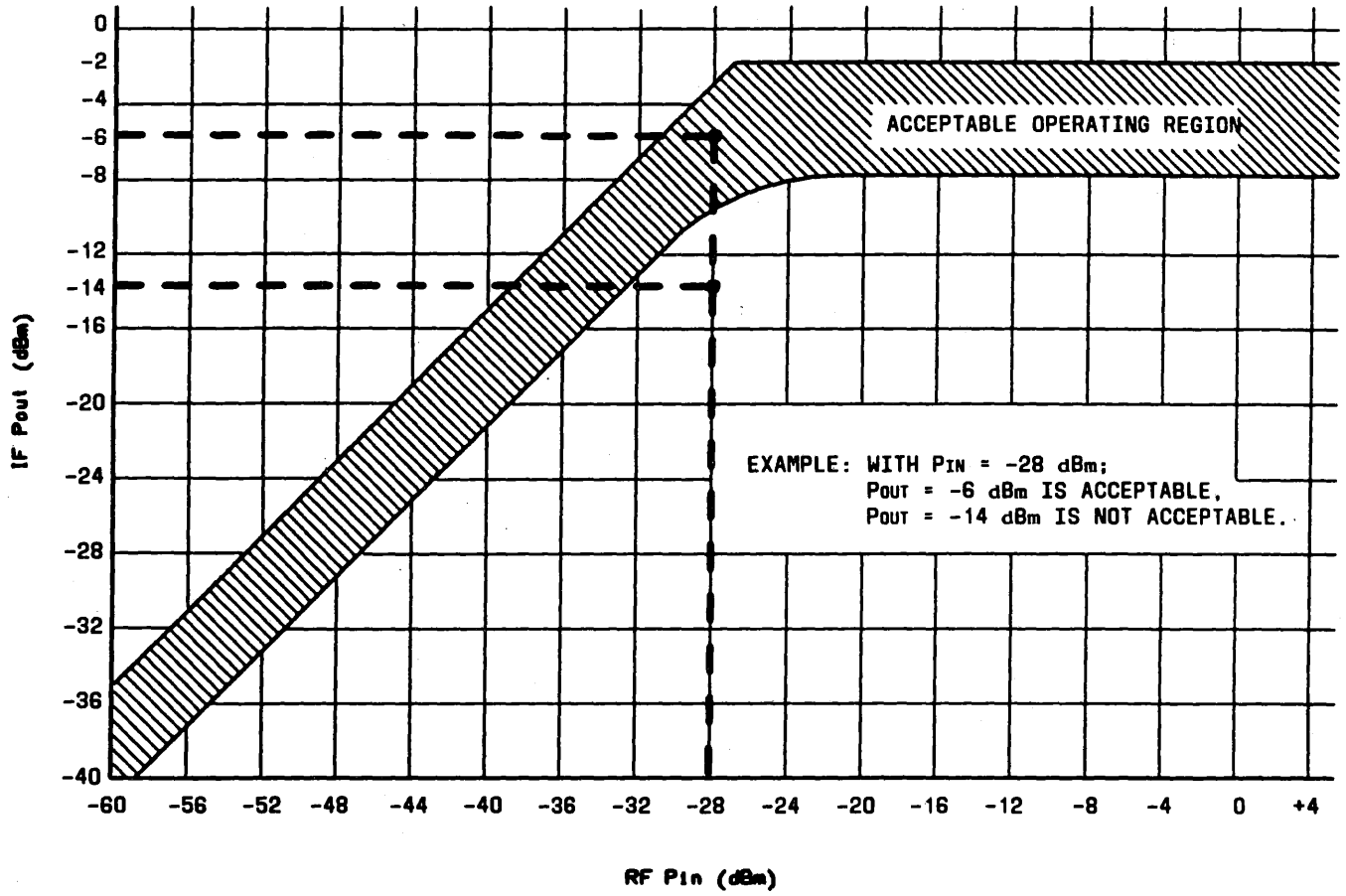
Note 2: Normally, if the spare down-converter unit and microwave generator module were stored at room temperature, the GEN OVEN indicator should go off within about 20 minutes. If the replacement units were stored in a cold environment, the time for the indicator to go off could be as long as 45 minutes.

Procedure Is Used Without Reference From Another Trouble Procedure

Wait for the GEN OVEN alarm to clear before proceeding further (see ***Notes 1 and 2***). At that point, or any time after, when the generator frequency is within ±350 kHz of the center frequency for 6-GHz systems or ±700 kHz for 11-GHz systems, troubleshooting receiver IF level related problems may normally continue. IF amplifier adjustments may also be made when these conditions are satisfied. Other tests, such as adaptive slope equalizer adjustments and checks, should generally be deferred until after the final microwave generator frequency check and adjustments.

Final Generator Check

For either of the above cases, the frequency and power of the microwave generator in the down-converter should be checked and, if necessary, adjusted about 1 hour after the GEN OVEN alarm indicator goes off. Do not try this sooner than 1 hour since, in general, the oscillator should stabilize at its proper frequency with little or no adjustment. It is best to follow the After Replacement instructions given in the GEN OVEN ALARM tab when this procedure is used without being directed from another routine.

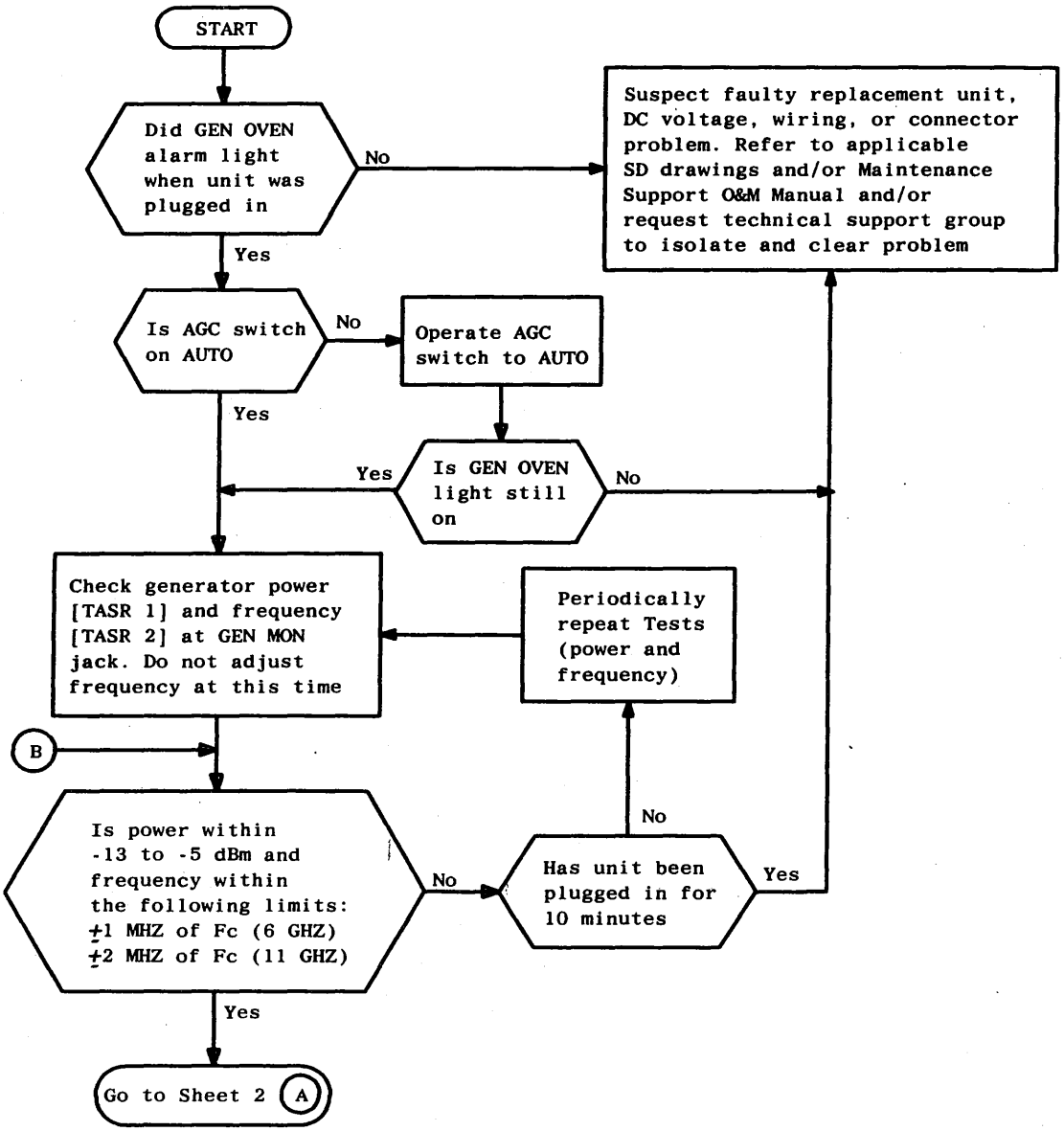


P_{out} vs P_{in} Requirements for DR 6/11 4300 Series Nonspace Diversity Receiver Down Converters

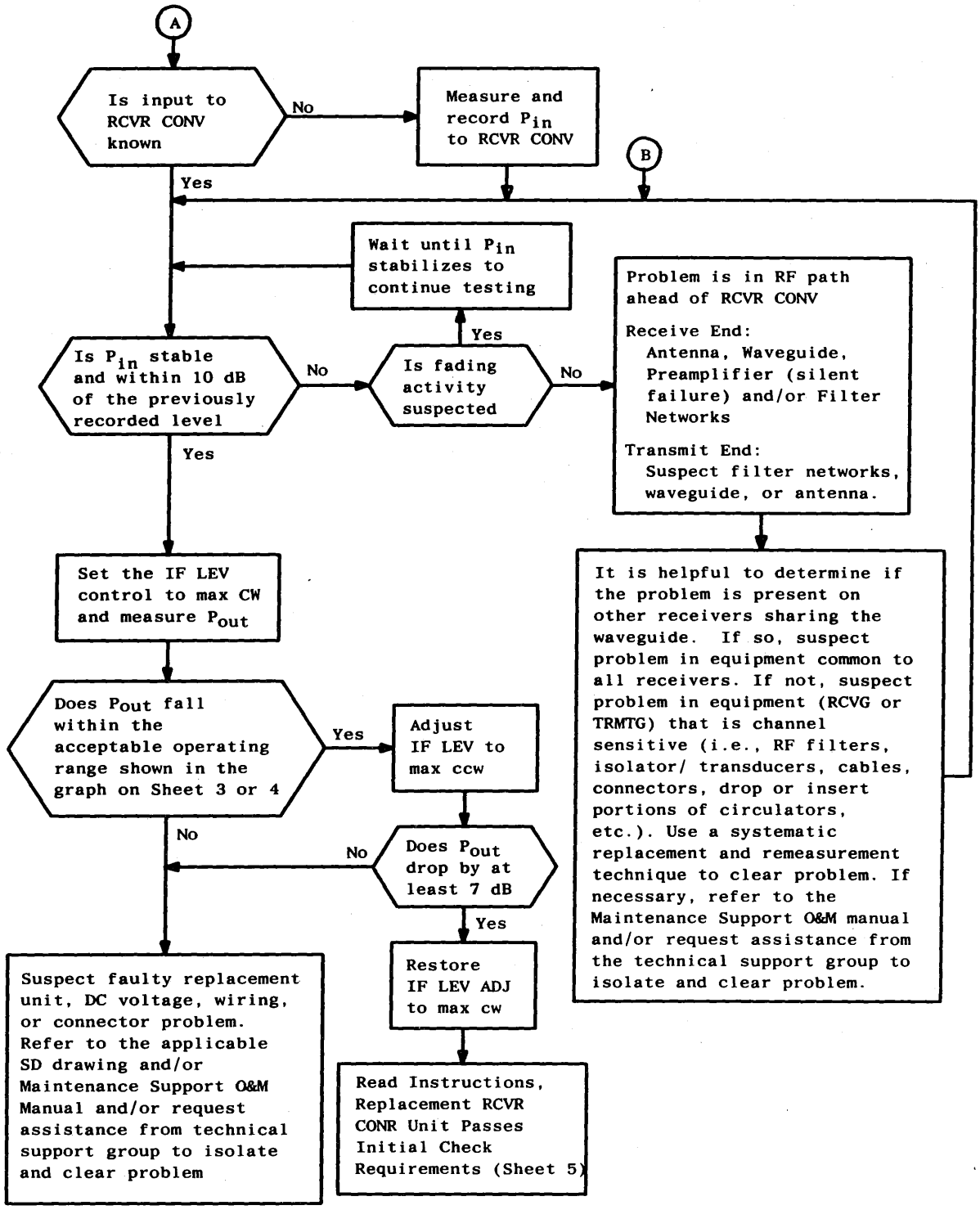
SR 8-A—4300 Series RCVR CONV Unit Initial Check (Sheet 4 of 4)

Caution: ***THIS PROCEDURE IS SERVICE-AFFECTING UNLESS THE PROPER MANUAL PROTECTION SWITCHING OPERATION HAS BEEN PERFORMED.***

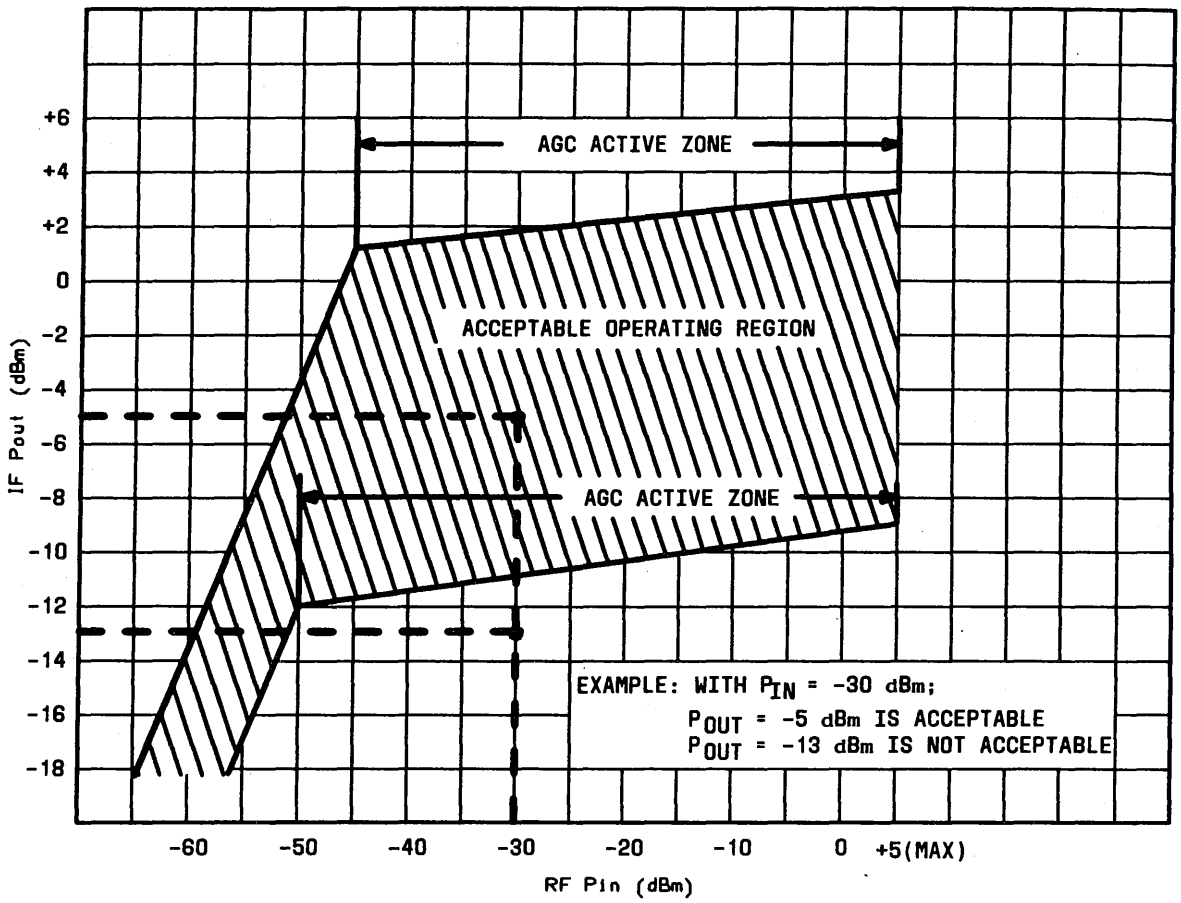
PREREQUISITE: RCVR CONV unit has just been installed and the sideband selector pin (P2) is in correct position in accordance with assigned radio channel.



SR 8-B—4400 Series RCVR CONV Unit Initial Check (Sheet 1 of 5)

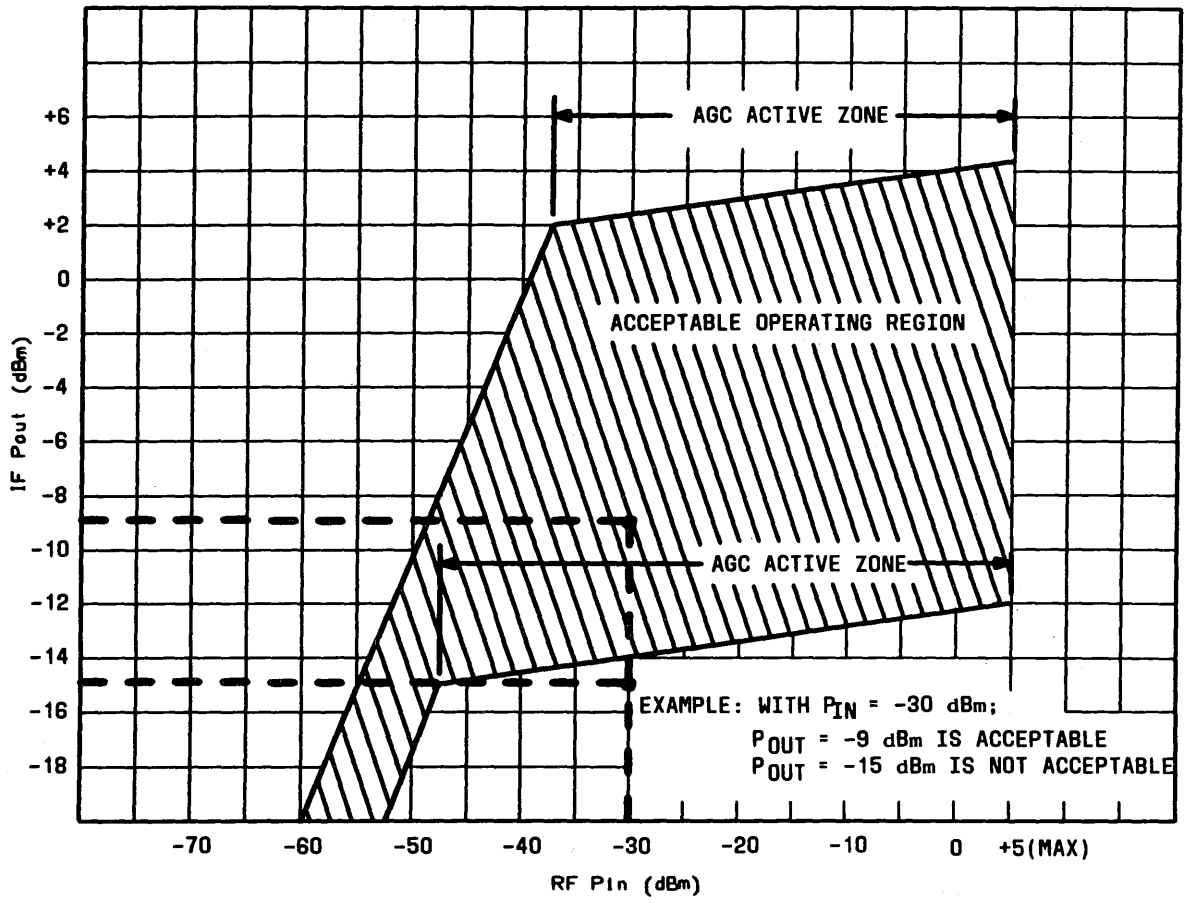


SR 8-B—4400 Series RCVR CONV Unit Initial Check (Sheet 2 of 5)



Maximum IF P_{out} vs RF P_{in} for 4470( ) and 4471( ) Down-Converters

SR 8-B—4400 Series RCVR CONV Unit Initial Check (Sheet 3 of 5)



Maximum IF P_{out} vs RF P_{in} for 4472( ) and 4473( ) Down-Converters

SR 8-B—4400 Series RCVR CONV Unit Initial Check (Sheet 4 of 5)

INSTRUCTIONS

REPLACEMENT RCVR CONV UNIT PASSES INITIAL CHECK REQUIREMENTS

Procedure Was Referenced From Another Trouble Procedure

The status of the replaced unit at this point is usually adequate to continue most receiver troubleshooting routines. This is especially true for those routines involving receiver IF level or gain problems. Routines requiring temperature stabilization of the microwave generator oven of the down-converter unit (when the GEN OVEN indicator is still lighted) should be delayed until the GEN OVEN indicator goes off (see Final Generator Check). If this unit was replaced because of directions in another procedure, return to the instruction that called for the replacement (see ***Note 1***). Generally, this will help to speed up troubleshooting receiver alarms involving suspected down-converter problems (see Final Generator Check).

Note 1: Before returning to the referencing procedure, note the time that the down-converter unit was replaced and then periodically check the GEN OVEN alarm indicator to ensure that it goes off within the normal time period (see ***Note 2***). If the alarm indicator does not go off, DC voltage and/or wiring problems related to the down-converter unit may exist or the replacement unit is defective. Isolate and clear this problem before proceeding further with receiver tests. Follow the instructions given in the GEN OVEN ALARM tab.

Note 2: Normally, if the spare down-converter unit and microwave generator module were stored at room temperature, the GEN OVEN indicator should go off within about 20 minutes. If the replacement units were stored in a cold environment, the time for the indicator to go off could be as long as 45 minutes.

Procedure Is Used Without Reference From Another Trouble Procedure

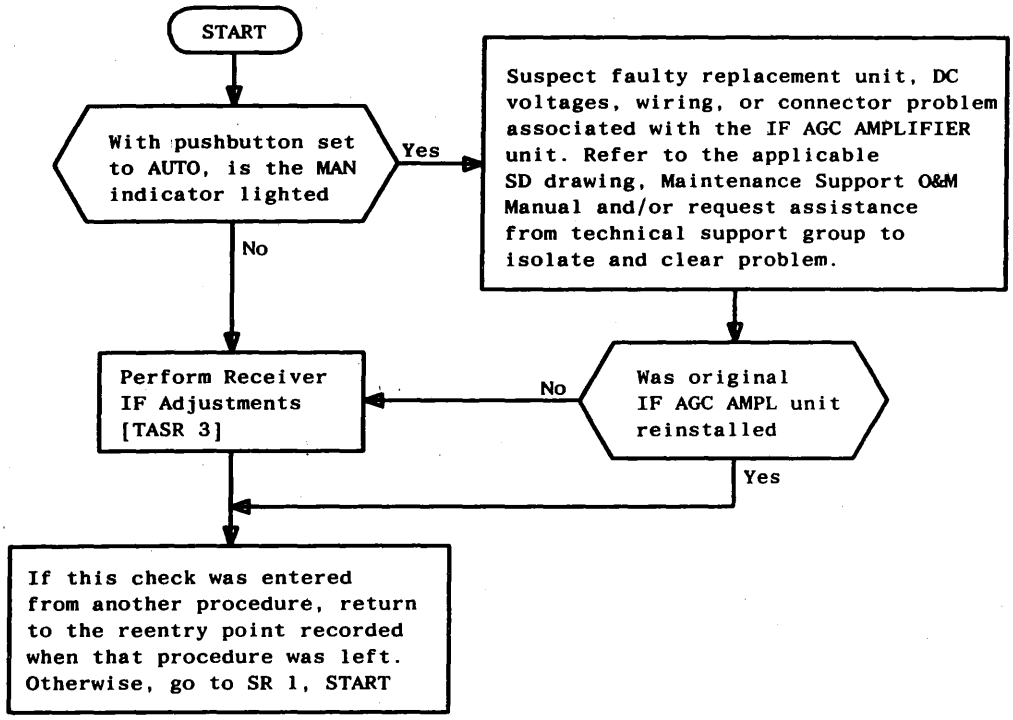
Wait for the GEN OVEN alarm to clear before proceeding further (see ***Notes 1 and 2***). At that point, or any time after, when the generator frequency is within ±350 kHz of the center frequency for 6-GHz systems or ±700 kHz for 11-GHz systems, troubleshooting receiver IF level related problems may normally continue. IF amplifier adjustments may also be made when these conditions are satisfied. Other tests, such as adaptive slope equalizer adjustments and checks, should generally be deferred until after the final microwave generator frequency check and adjust.

Final Generator Check

For either of the above cases, the frequency and power of the microwave generator in the down-converter should be checked and, if necessary, adjusted about 1 hour after the GEN OVEN alarm indicator goes off. Do not try this sooner than 1 hour since, in general, the oscillator should stabilize at its proper frequency with little or no adjustment. It is best to follow the After Replacement instructions given in the GEN OVEN ALARM tab when this procedure is used without being directed from another routine.

Caution: THIS PROCEDURE IS SERVICE-AFFECTING UNLESS THE PROPER MANUAL PROTECTION SWITCHING OPERATION HAS BEEN PERFORMED.

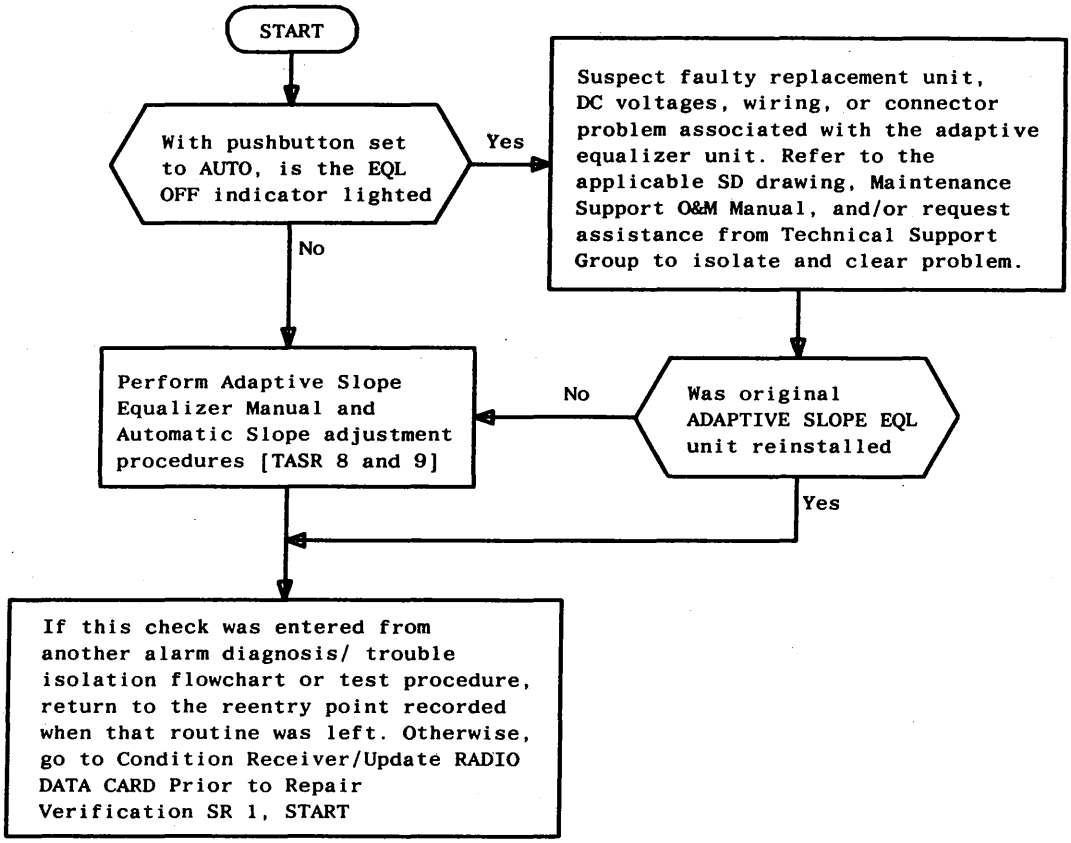
PREREQUISITE: IF AGC AMPL unit just installed.



SR 9—IF AGC AMPL Unit Initial Check

Caution: THIS PROCEDURE IS SERVICE-AFFECTING UNLESS THE PROPER MANUAL PROTECTION SWITCHING OPERATION HAS BEEN PERFORMED.

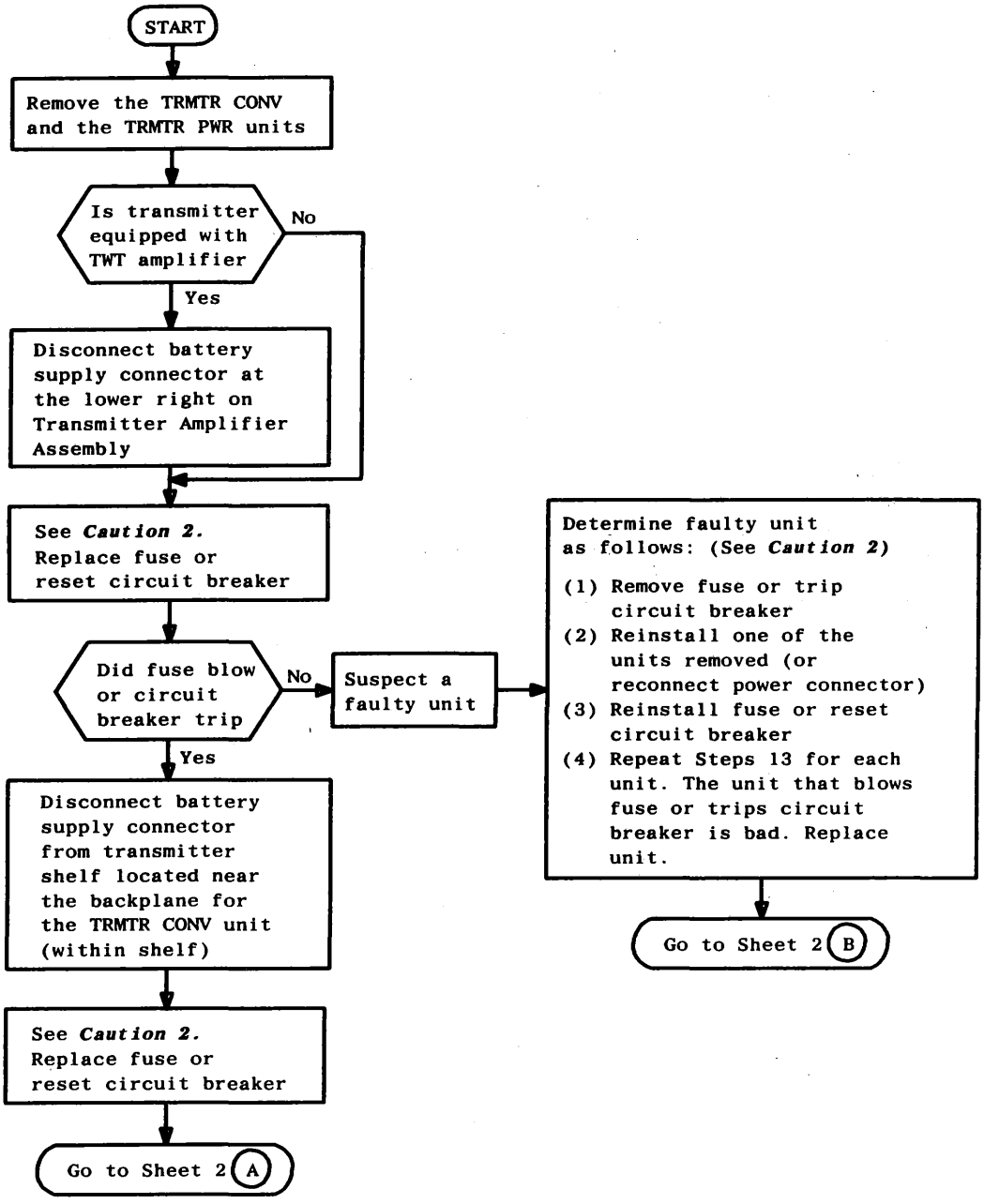
PREREQUISITE: IF ADAPTIVE SLOPE EQL unit just installed.



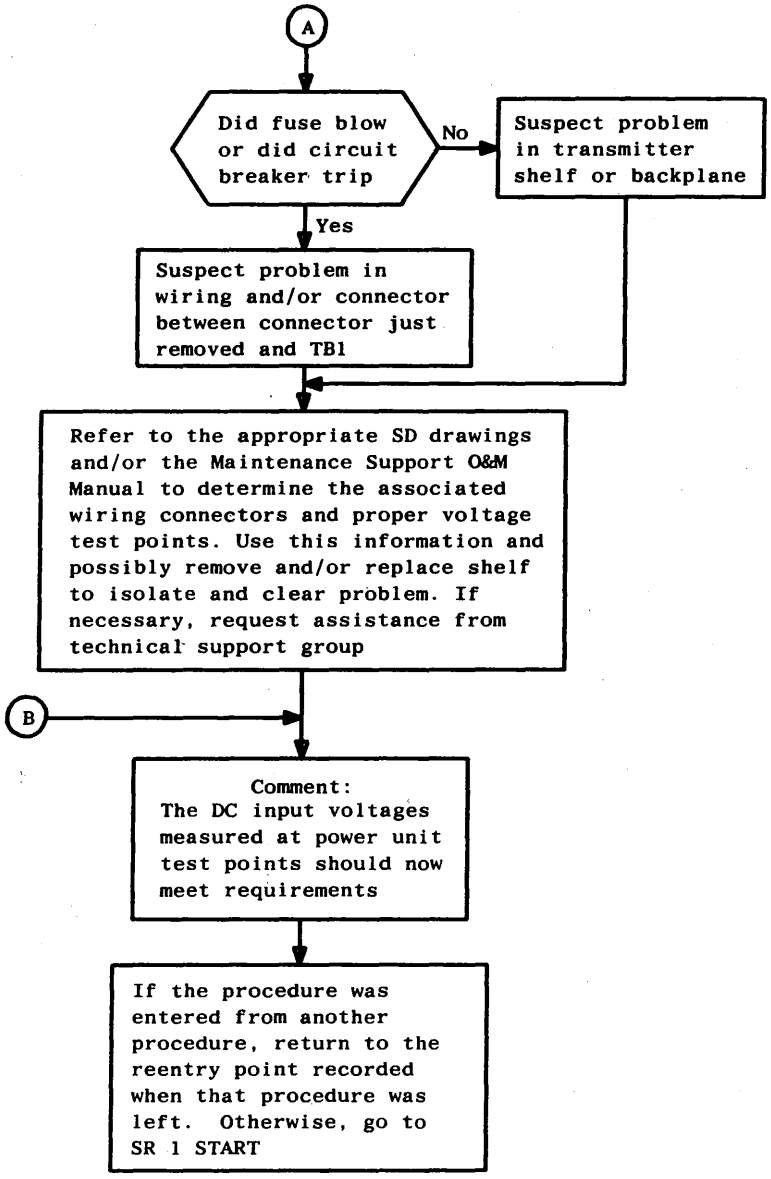
SR 10—Adaptive Slope Equalizer Unit Initial Check

Cautions: ***1. THIS PROCEDURE IS SERVICE-AFFECTING UNLESS THE PROPER MANUAL PROTECTION SWITCHING OPERATION HAS BEEN PERFORMED.***
2. DO NOT REPLACE ANY UNIT SUSPECTED OF SHORTING OUT THE BATTERY SUPPLY VOLTAGE WHILE THE VOLTAGE IS APPLIED TO THE TRANSMITTER/RECEIVER. THE CONNECTOR COULD BE DAMAGED

PREREQUISITES: 1. -24 V or -48 V input voltage does not meet requirements.
2. The circuit breaker tripped/fuse blown at battery distribution fuse bay.



SR 11—Resolving Transmitter Shelf DC Input Problems (Sheet 1 of 2)

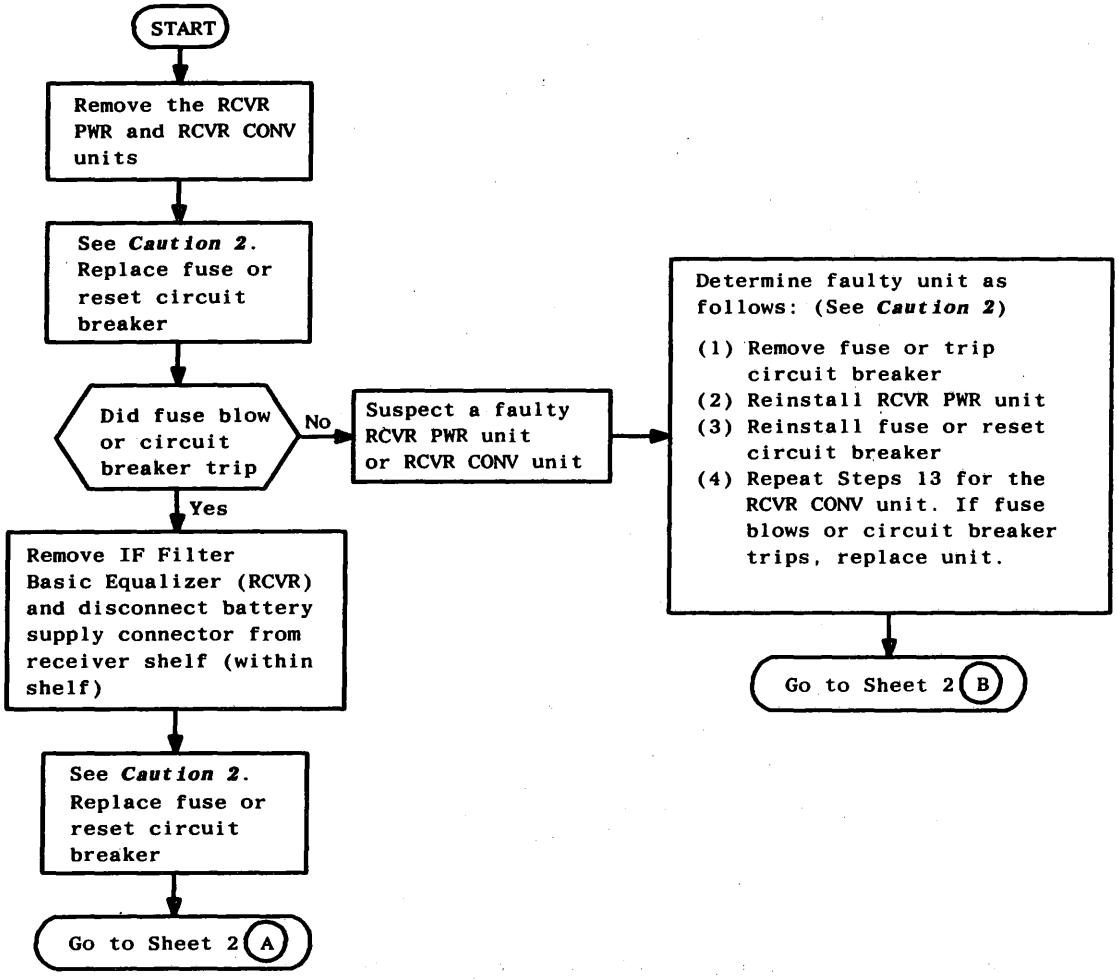


SR 11—Resolving Transmitter Shelf DC Input Problems (Sheet 2 of 2)

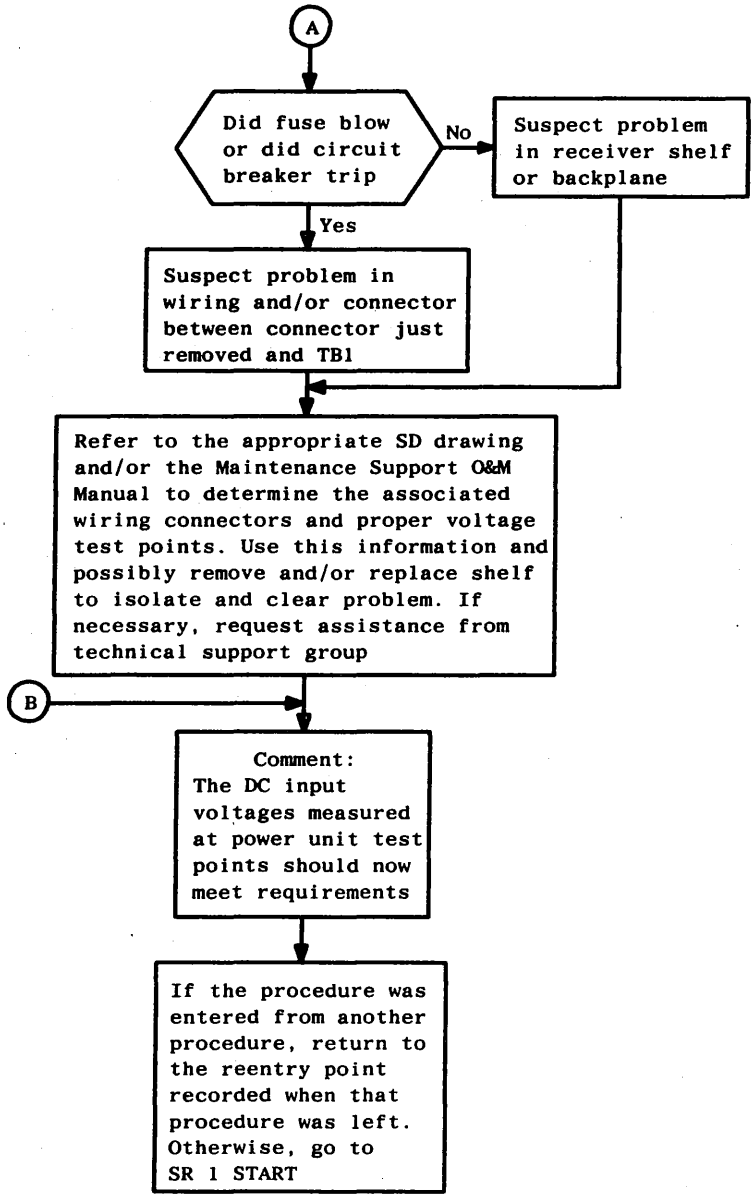
Cautions: ***1. THIS PROCEDURE IS SERVICE-AFFECTING UNLESS THE PROPER MANUAL PROTECTION SWITCHING OPERATION HAS BEEN PERFORMED.***

2. DO NOT REPLACE ANY UNIT SUSPECTED OF SHORTING OUT THE BATTERY SUPPLY VOLTAGE WHILE THE VOLTAGE IS APPLIED TO THE TRANSMITTER/RECEIVER. THE CONNECTOR COULD BE DAMAGED.

PREREQUISITES: 1. -24 V or -48 V input voltage does not meet requirements.
2. The circuit breaker tripped/fuse blown at battery distribution fuse bay.



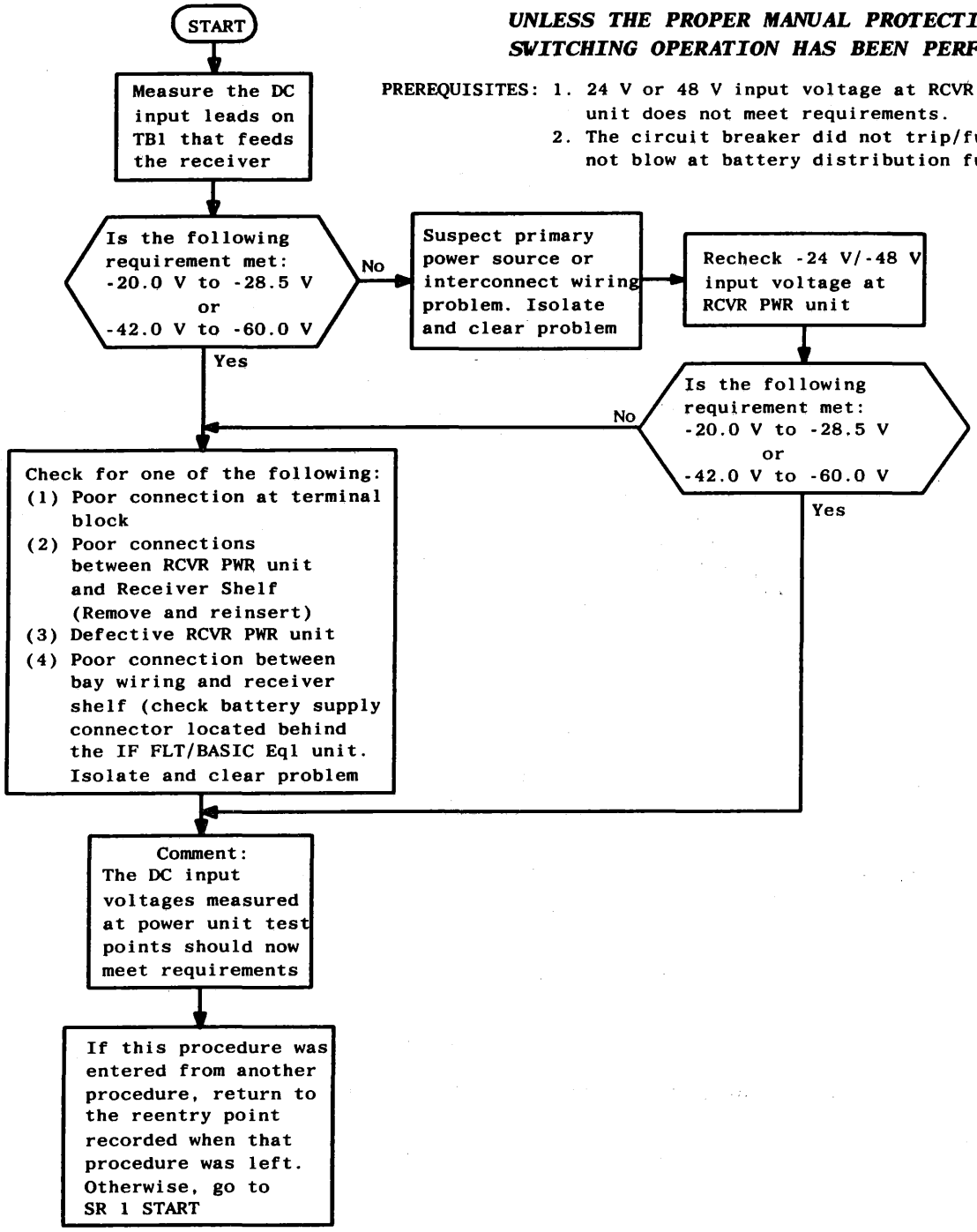
SR 12—Resolving Receiver Shelf DC Input Problems (Sheet 1 of 2)



SR 12—Resolving Receiver Shelf DC Input Problems (Sheet 2 of 2)

Caution: THIS PROCEDURE IS SERVICE-AFFECTING UNLESS THE PROPER MANUAL PROTECTION SWITCHING OPERATION HAS BEEN PERFORMED.

PREREQUISITES:
1. 24 V or 48 V input voltage at RCVR PWR unit does not meet requirements.
2. The circuit breaker did not trip/fuse did not blow at battery distribution fuse bay.



SR 13—Resolving DC Input Problems When Circuit Breaker and Fuse Did Not Blow/Trip

SR 14—Alarm-Reporting Problem Diagnosis

Whenever an alarm is lighted on the centralized radio ALARM/ALARM AND METER unit, one or more indicators on the circuit reporting the alarm should also be lighted. (See alarm-reporting information under the STATION ALARM TROUBLE ISOLATION tab in this manual). When an alarm exists and the associated indicators are not lighted on the reporting unit, a failure in the alarm-reporting circuits within the reporting unit or the ALARM/ALARM AND METER unit is most likely the cause. A DC voltage or an interconnecting circuit path problem may also result in such a situation.

The best way to isolate the problem is to check the alarm status signals coming to the radio T/R centralized ALARM/ALARM AND METER unit from the various alarm-reporting units mentioned above. This can be done by putting the radio alarm unit into an extender plug-in unit. While in an extender, the access necessary to determine the state of the associated alarm input signals is possible.

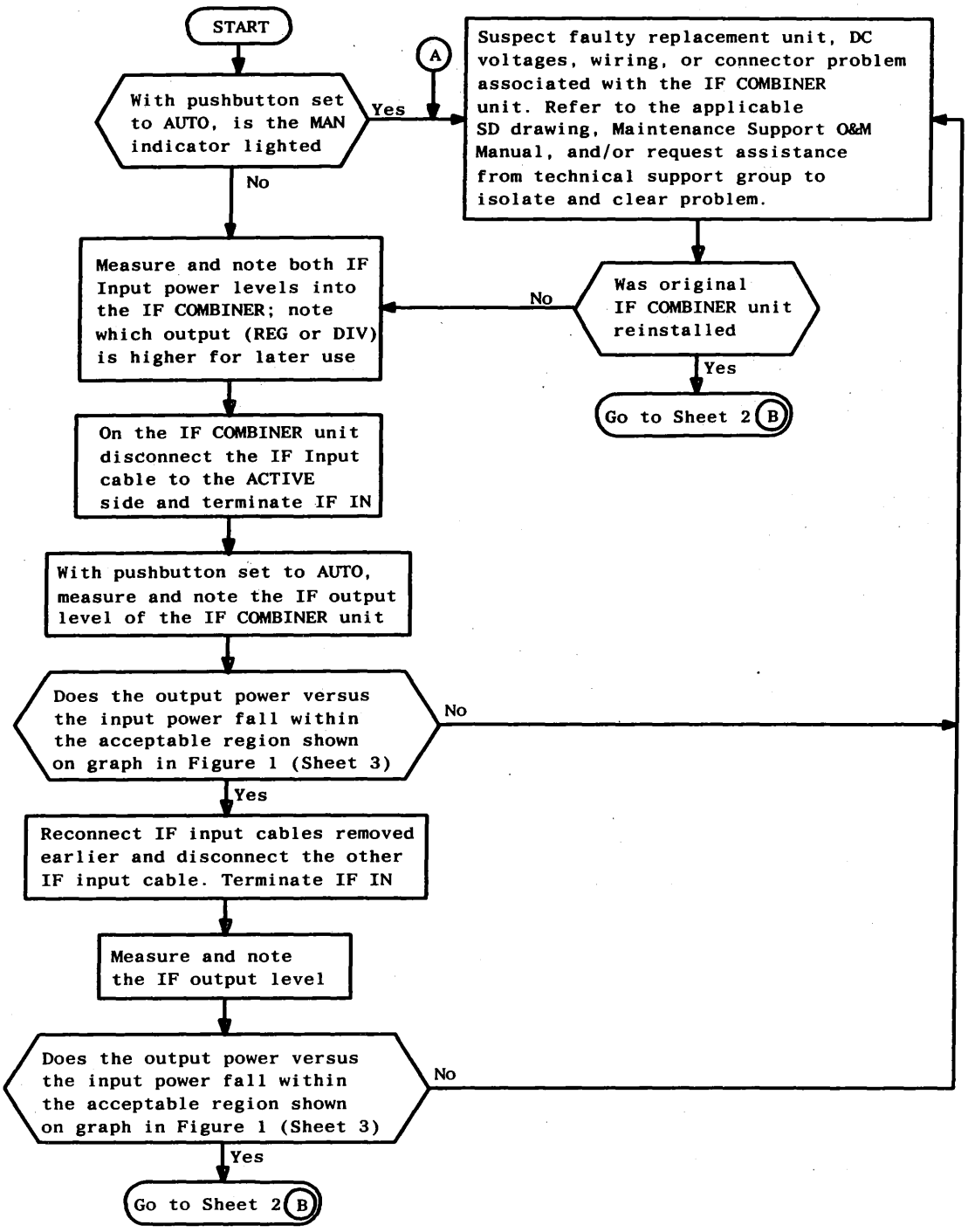
If the alarm status voltage at the ALARM/ALARM AND METER unit agrees with the faceplate alarm indicator on that unit, the alarm unit is most likely operating properly. The discrepancy is probably in the circuit reporting the false state or in the wiring path between it and the alarm unit. If the status voltage at the input to the alarm unit does not agree with the reporting unit indicator, the alarm-reporting discrepancy is probably due to a failure within the alarm unit.

The Maintenance Support O&M manual and the applicable SDs provide the connection and input pin status information necessary for this evaluation.

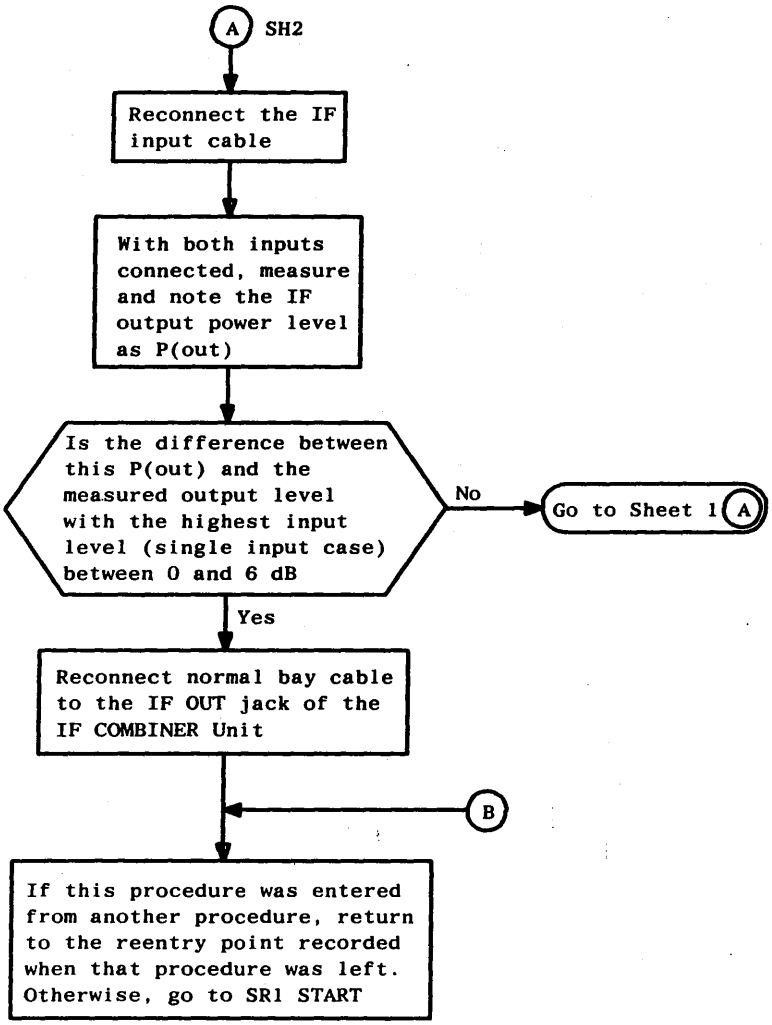
Once the alarm reporting discrepancy is resolved, return to the logic diagram that referenced this procedure.

Caution: THIS PROCEDURE IS SERVICE-AFFECTING UNLESS THE PROPER MANUAL PROTECTION SWITCHING OPERATION HAS BEEN PERFORMED.

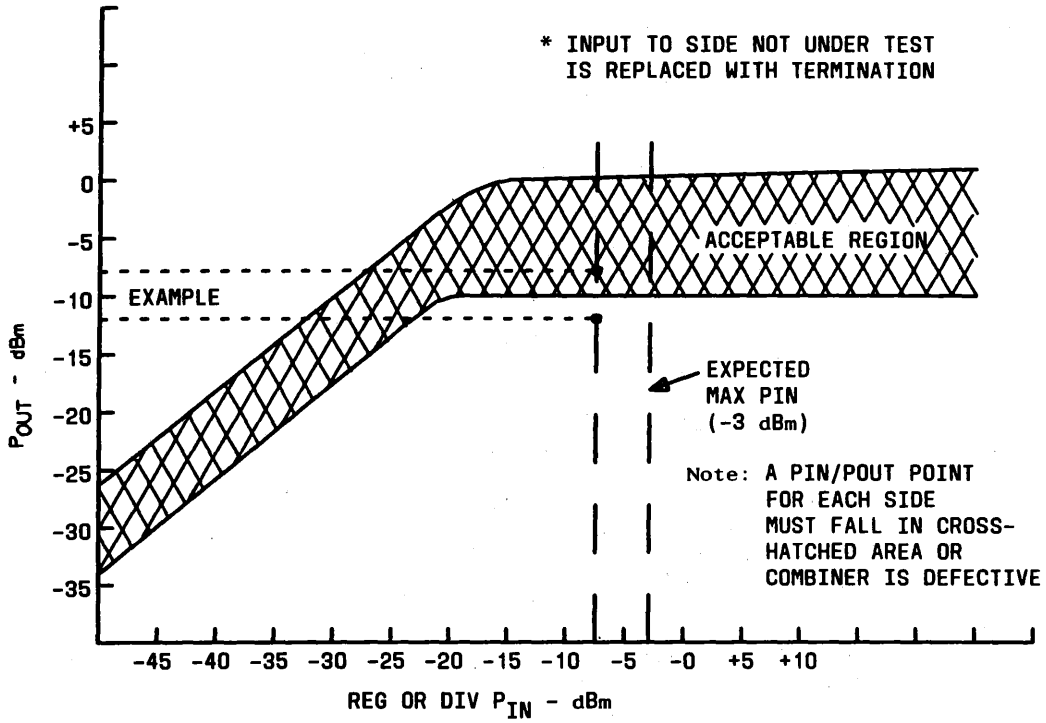
PREREQUISITE: IF COMBINER unit just installed.



SR 15—IF COMBINER Unit Initial Check (Sheet 1 of 3)



SR 15—IF COMBINER Unit Initial Check (Sheet 2 of 3)



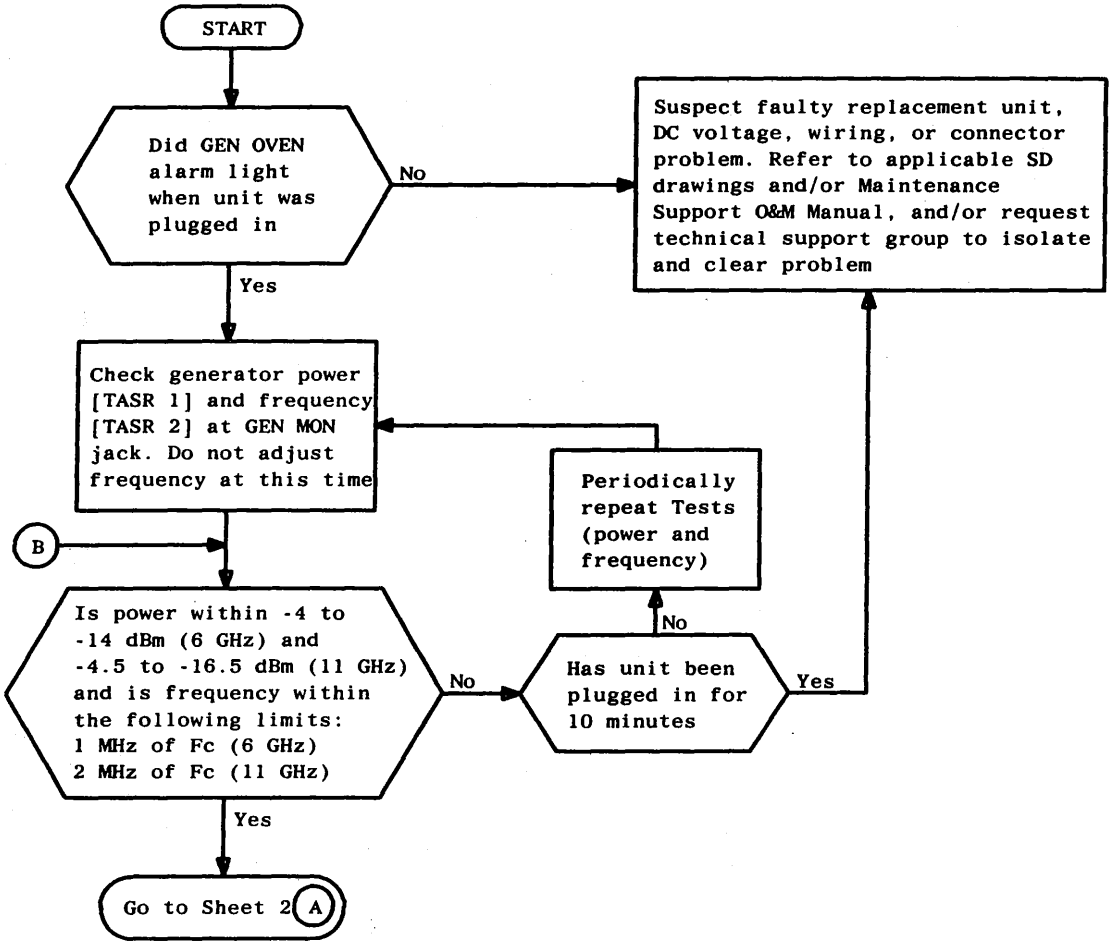
EXAMPLE WITH PIN IF -7 dBm:
- POUT OF -12 dBm IS NOT ACCEPTABLE
- POUT OF -8 dBm IS ACCEPTABLE

* WYII P_{OUT} VS P_{IN} CHARACTERISTICS IN AUTOMATIC MODE WITH INPUT TO REG OR DIV SIDE ONLY

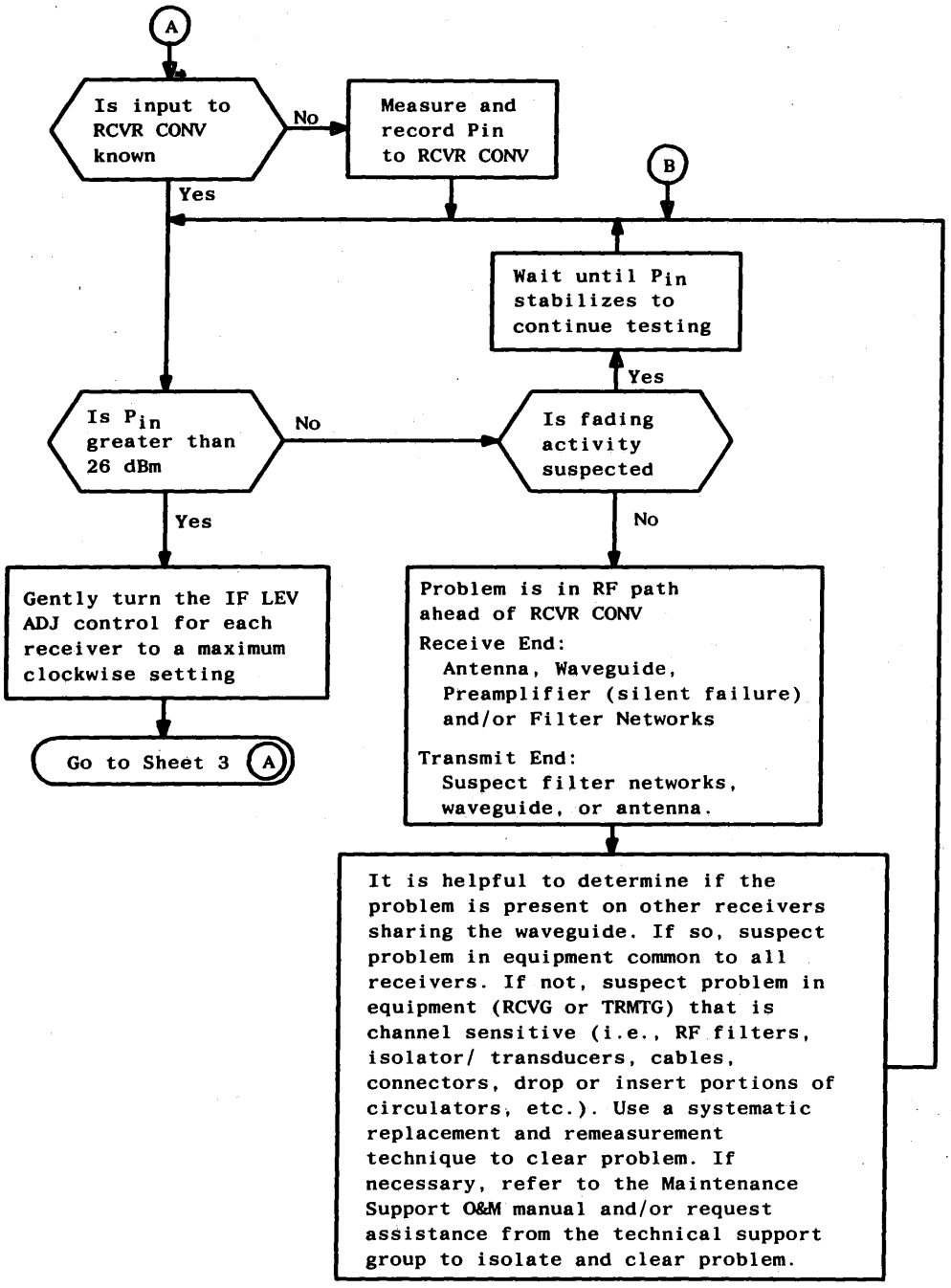
SR 15—IF COMBINER Unit Initial Check (Note) (Sheet 3 of 3)

Caution: ***THIS PROCEDURE IS SERVICE-AFFECTING UNLESS THE PROPER MANUAL PROTECTION SWITCHING OPERATION HAS BEEN PERFORMED.***

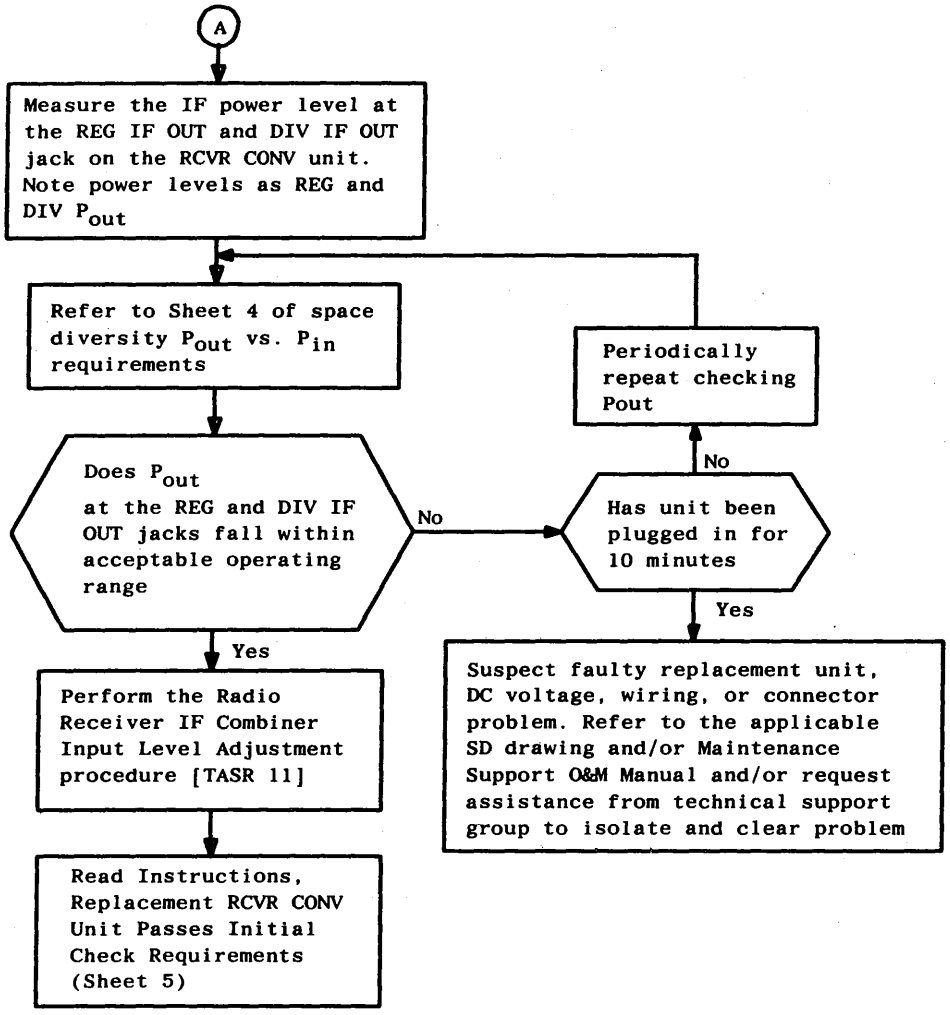
PREREQUISITE: RCVR CONV unit just installed



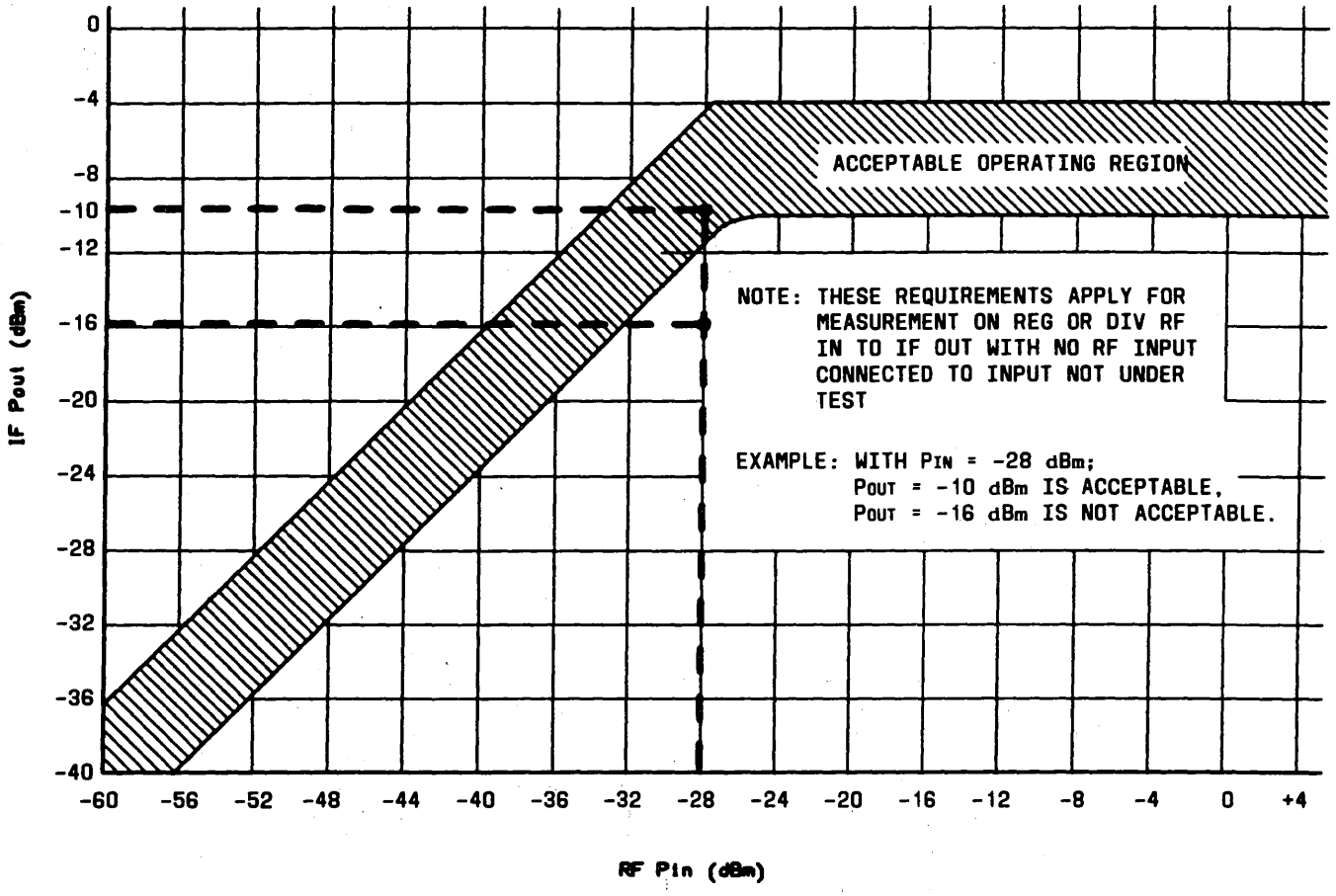
SR 16-A—4300 Series Space Diversity RCVR CONV Unit Initial Check (Sheet 1 of 5)



SR 16-A—4300 Series Space Diversity RCVR CONV Unit Initial Check (Sheet 2 of 5)



SR 16-A—4300 Series Space Diversity RCVR CONV Unit Initial Check (Sheet 3 of 5)



P_{out} vs P_{in} Requirements for DR 6/11 4300 Series Space Diversity Receiver Down-Converters

SR 16-A—4300 Series Space Diversity RCVR CONV Unit Initial Check (Sheet 4 of 5)

INSTRUCTIONS

REPLACEMENT RCVR CONV UNIT PASSES INITIAL CHECK REQUIREMENTS

Procedure Was Referenced From Another Trouble Procedure

The status of the replaced unit at this point is usually adequate to continue most receiver troubleshooting routines. This is especially true for those routines involving receiver IF level or gain problems. Routines requiring temperature stabilization of the microwave generator oven of the down-converter unit (when the GEN OVEN indicator is still lighted) should be delayed until the GEN OVEN indicator goes off (see Final Generator Check). If this unit was replaced because of directions in another procedure, return to the instruction that called for the replacement (see ***Note 1***). Generally, this will help to speed up troubleshooting receiver alarms involving suspected down-converter problems (see Final Generator Check).

Note 1: Before returning to the referencing procedure, note the time that the down-converter unit was replaced and then periodically check the GEN OVEN alarm indicator to ensure that it goes off within the normal time period (see ***Note 2***). If the alarm indicator does not go off, DC voltage and/or wiring problems related to the down-converter unit may exist or the replacement unit is defective. Isolate and clear this problem before proceeding further with receiver tests. Follow the instructions given in the GEN OVEN ALARM tab.

Note 2: Normally, if the spare down-converter unit and microwave generator module were stored at room temperature, the GEN OVEN indicator should go off within about 20 minutes. If the replacement units were stored in a cold environment, the time for the indicator to go off could be as long as 45 minutes.

Procedure Is Used Without Reference From Another Trouble Procedure

Wait for the GEN OVEN alarm to clear before proceeding further (see ***Notes 1 and 2***). At that point, or any time after, when the generator frequency is within ±350 kHz of the center frequency for 6-GHz systems or ±700 kHz for 11-GHz systems, troubleshooting receiver IF level related problems may normally continue. IF amplifier adjustments may also be made when these conditions are satisfied. Other tests, such as adaptive slope equalizer adjustments and checks, should generally be deferred until after the final microwave generator frequency check and adjustments.

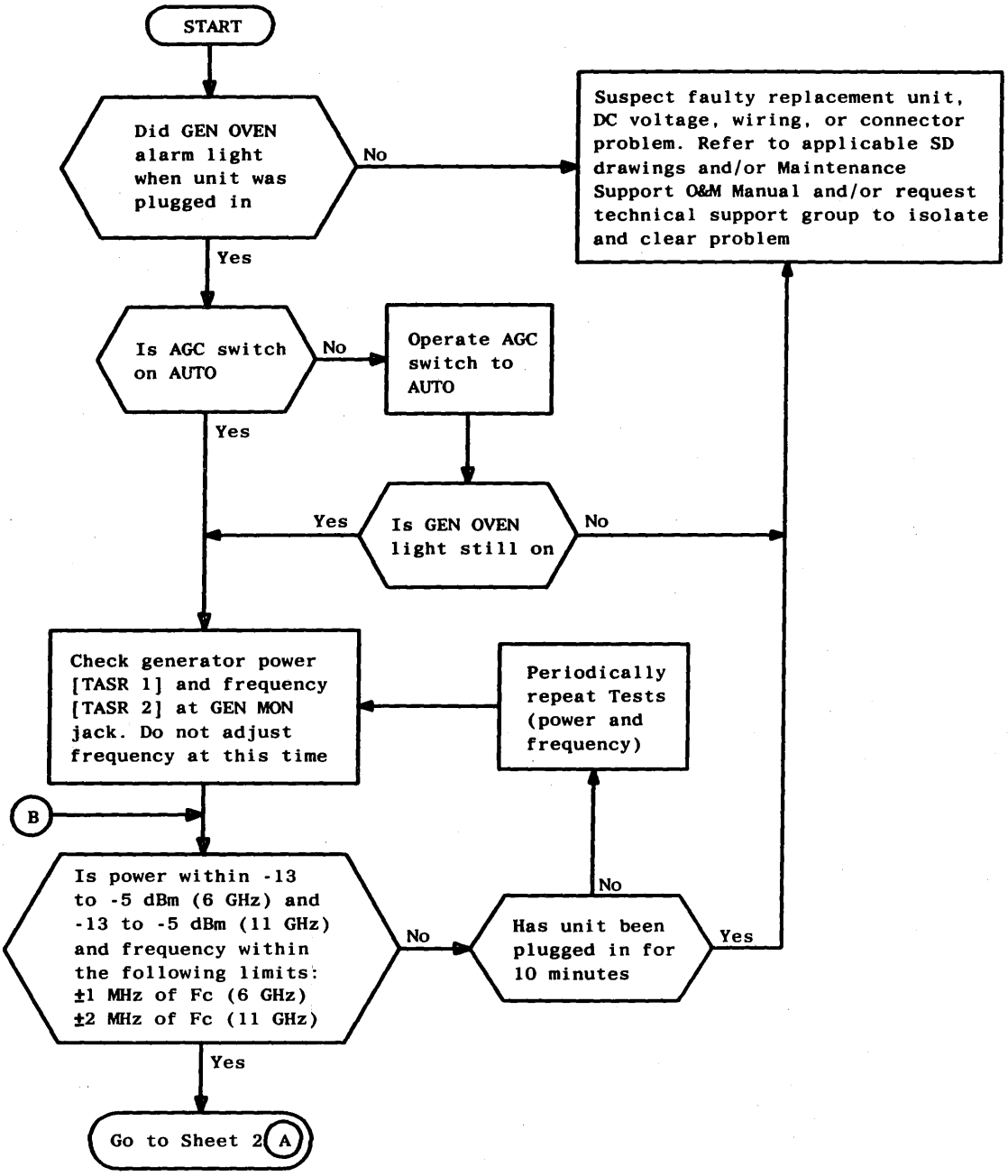
Final Generator Check

For either of the above cases, the frequency and power of the microwave generator in the down-converter should be checked and, if necessary, adjusted about 1 hour after the GEN OVEN alarm indicator goes off. Do not try this sooner than 1 hour since, in general, the oscillator should stabilize at its proper frequency with little or no adjustment. It is best to follow the After Replacement instructions given in the GEN OVEN ALARM tab when this procedure is used without being directed from another routine.

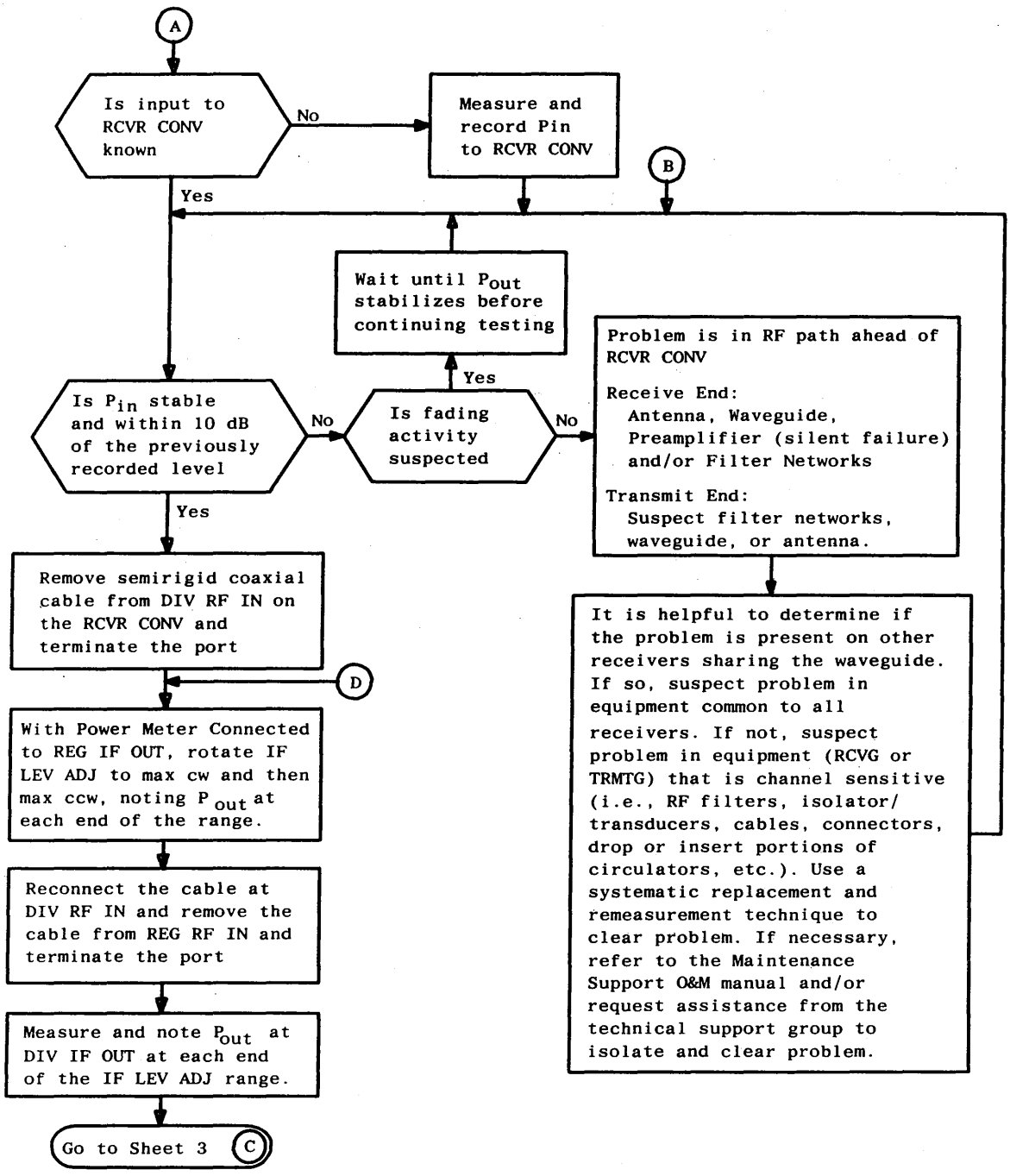
SR 16-A —4300 Series Space Diversity RCVR CONV Unit Initial Check (Sheet 5 of 5)

Caution: THIS PROCEDURE IS SERVICE-AFFECTING UNLESS THE PROPER MANUAL PROTECTION SWITCHING OPERATION HAS BEEN PERFORMED.

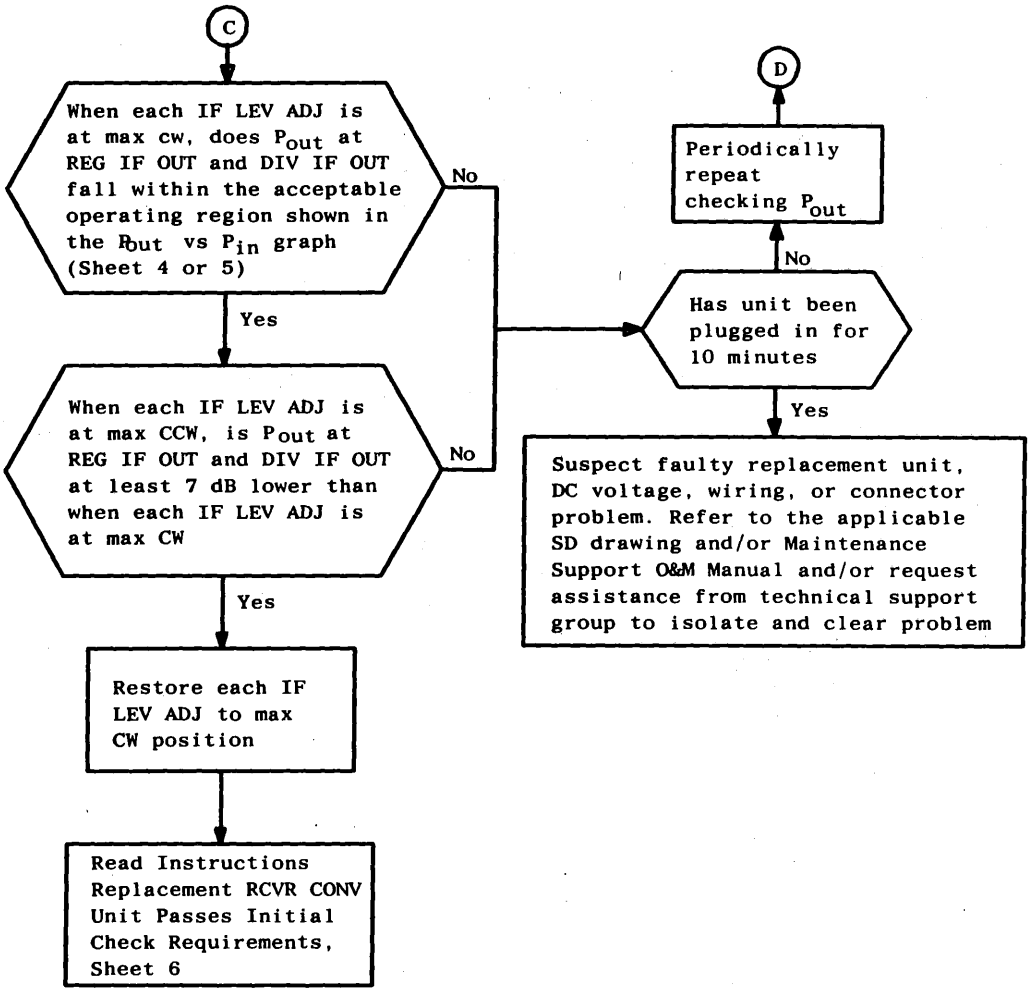
PREREQUISITE: RCVR CONV unit just installed



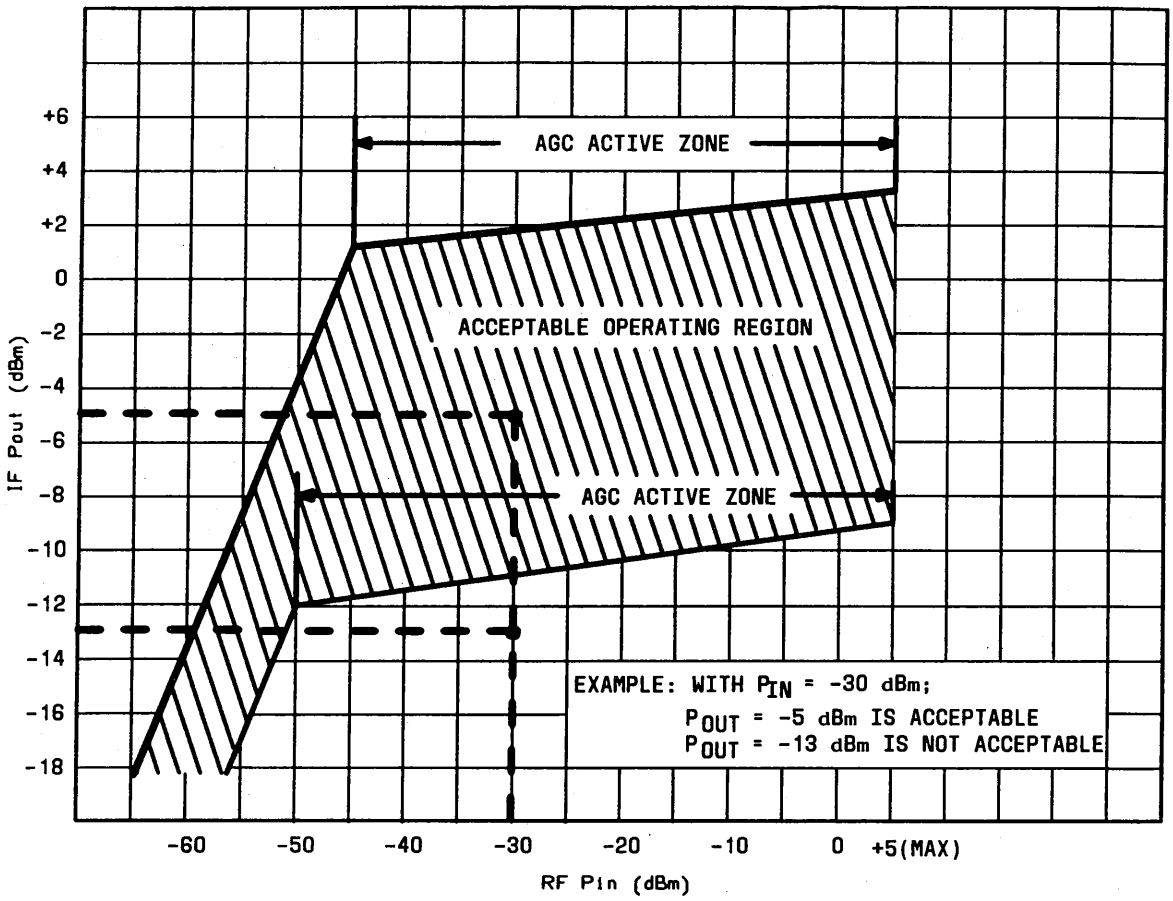
SR 16-B—4400 Series Space Diversity RCVR CONV Unit Initial Check (Sheet 1 of 6)



SR 16-B—4400 Series Space Diversity RCVR CONV Unit Initial Check (Sheet 2 of 6)

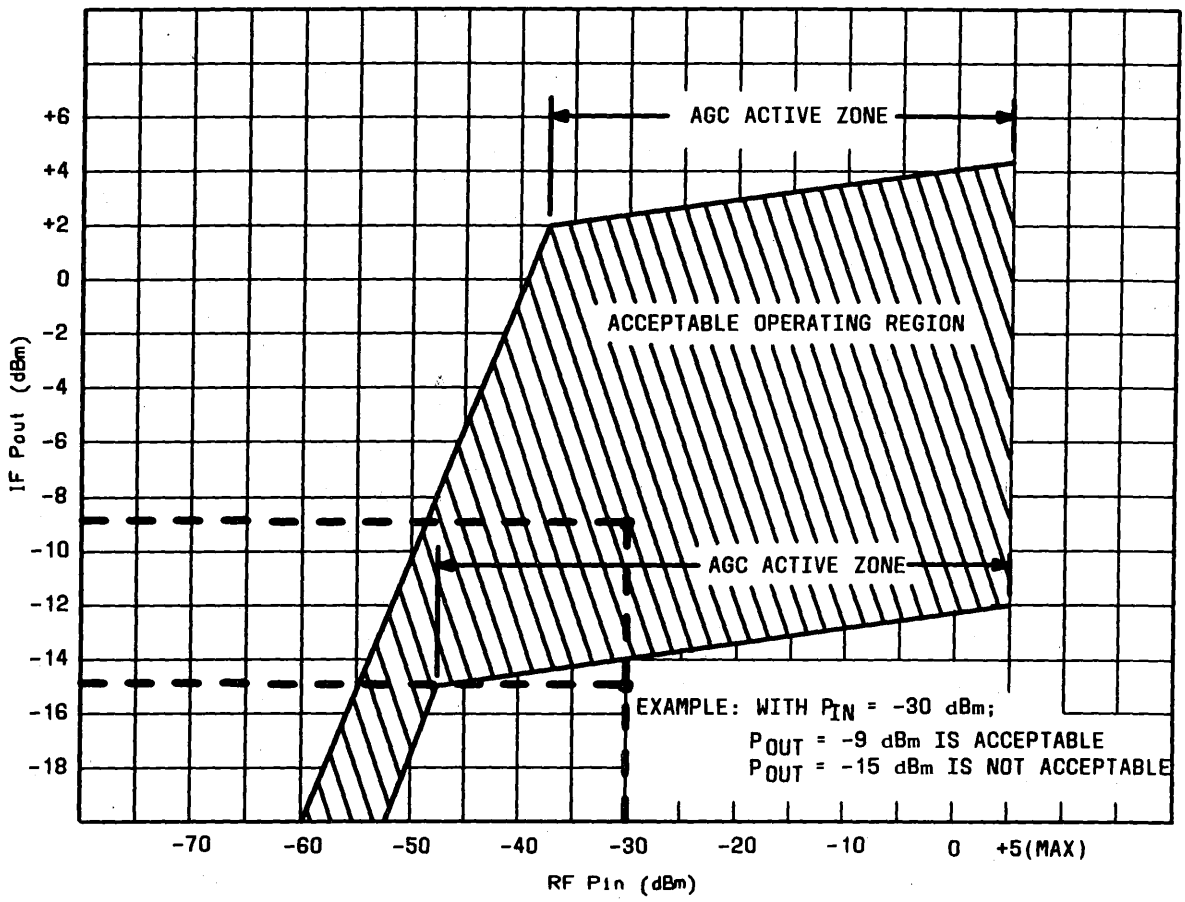


SR 16-B—4400 Series Space Diversity RCVR CONV Unit Initial Check (Sheet 3 of 6)



Maximum IF P_{out} vs RF P_{in} for 4470() and 4471() Down Converters

SR 16-B—4400 Series Space Diversity RCVR CONV Unit Initial Check (Sheet 4 of 6)



Maximum IF P_{out} vs RF P_{in} for 4472() and 4473 Down Converters

SR 16-B—4400 Series Space Diversity RCVR CONV Unit Initial Check (Sheet 5 of 6)

INSTRUCTIONS

REPLACEMENT RCVR CONV UNIT PASSES INITIAL CHECK REQUIREMENTS

Procedure Was Referenced From Another Trouble Procedure

The status of the replaced unit at this point is usually adequate to continue most receiver troubleshooting routines. This is especially true for those routines involving receiver IF level or gain problems. Routines requiring temperature stabilization of the microwave generator oven of the down-converter unit (when the GEN OVEN indicator is still lighted) should be delayed until the GEN OVEN indicator goes off (see Final Generator Check). If this unit was replaced because of directions in another procedure, return to the instruction that called for the replacement (see ***Note 1***). Generally, this will help to speed up troubleshooting receiver alarms involving suspected down-converter problems (see Final Generator Check).

Note 1: Before returning to the referencing procedure, note the time that the down-converter unit was replaced and then periodically check the GEN OVEN alarm indicator to ensure that it goes off within the normal time period (see ***Note 2***). If the alarm indicator does not go off, DC voltage and/or wiring problems related to the down-converter unit may exist or the replacement unit is defective. Isolate and clear this problem before proceeding further with receiver tests. Follow the instructions given in the GEN OVEN ALARM tab.

Note 2: Normally, if the spare down-converter unit and microwave generator module were stored at room temperature, the GEN OVEN indicator should go off within about 20 minutes. If the replacement units were stored in a cold environment, the time for the indicator to go off could be as long as 45 minutes.

Procedure Is Used Without Reference From Another Trouble Procedure

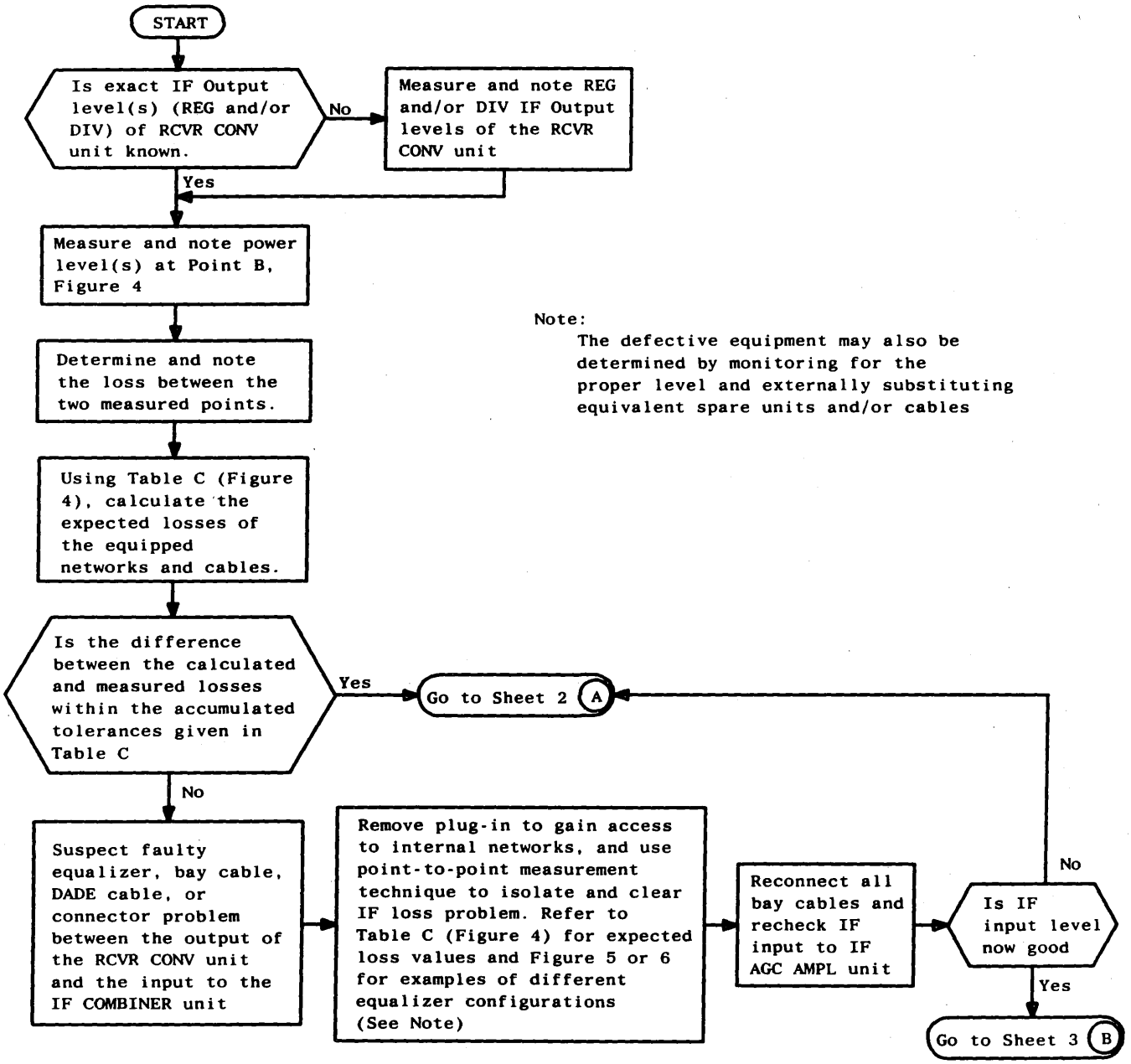
Wait for the GEN OVEN alarm to clear before proceeding further (see ***Notes 1 and 2)***. At that point, or any time after, when the generator frequency is within ± 350 kHz of the center frequency for 6-GHz systems or ± 700 kHz for 11-GHz systems, troubleshooting receiver IF level related problems may normally continue. IF amplifier adjustments may also be made when these conditions are satisfied. Other tests, such as adaptive slope equalizer adjustments and checks, should generally be deferred until after the final microwave generator frequency check and adjustments.

Final Generator Check

For either of the above cases, the frequency and power of the microwave generator in the down-converter should be checked and, if necessary, adjusted about 1 hour after the GEN OVEN alarm indicator goes off. Do not try this sooner than 1 hour since, in general, the oscillator should stabilize at its proper frequency with little or no adjustment. It is best to follow the After Replacement instructions given in the GEN OVEN ALARM tab when this procedure is used without being directed from another routine.

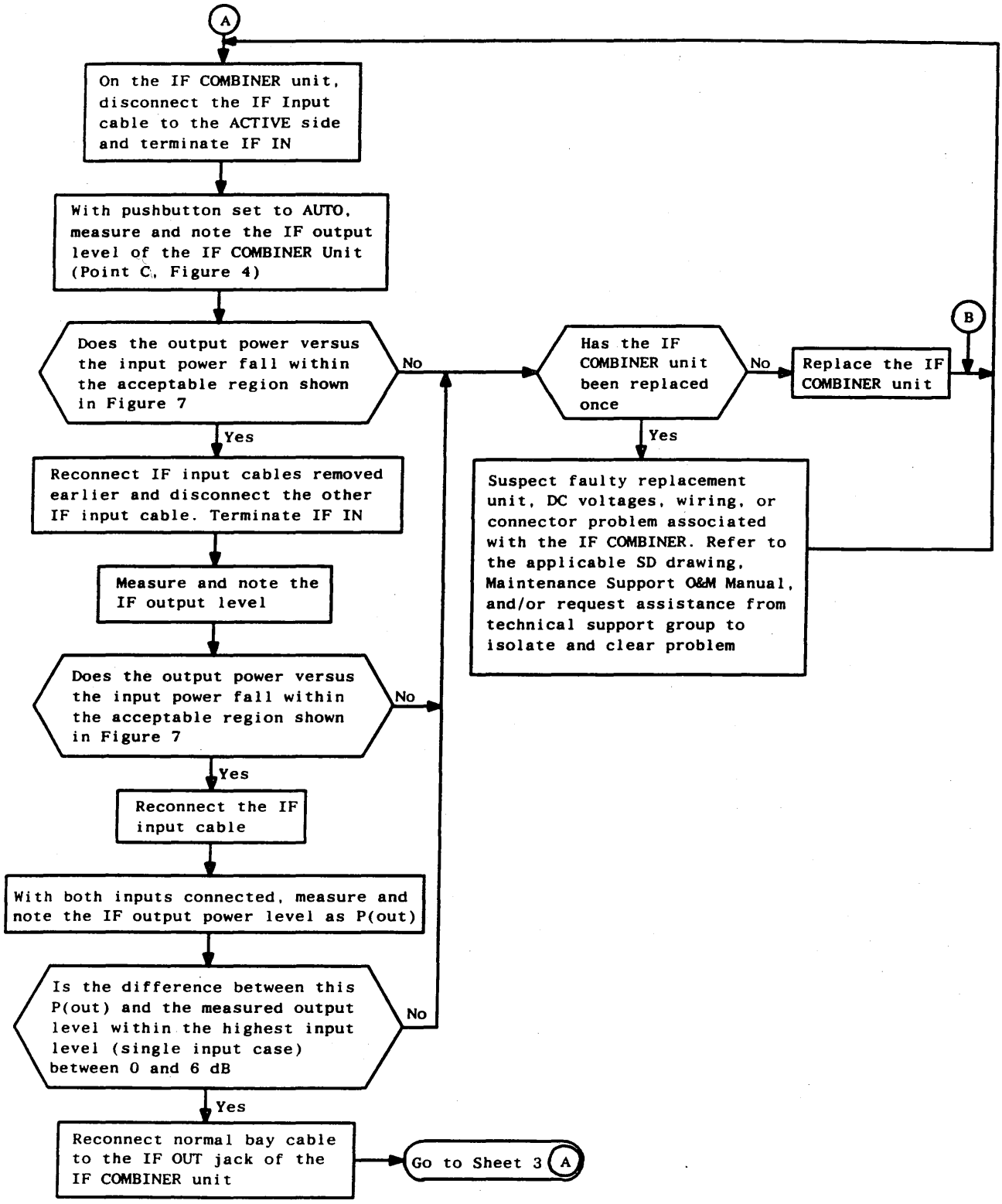
Caution: This procedure is service-affecting unless the proper manual switching operation has been performed.

PREREQUISITE: RCVR CONV IF Output is within ± 3 dB of RADIO DATA CARD value.
IF AGC AMPL IF input is bad.

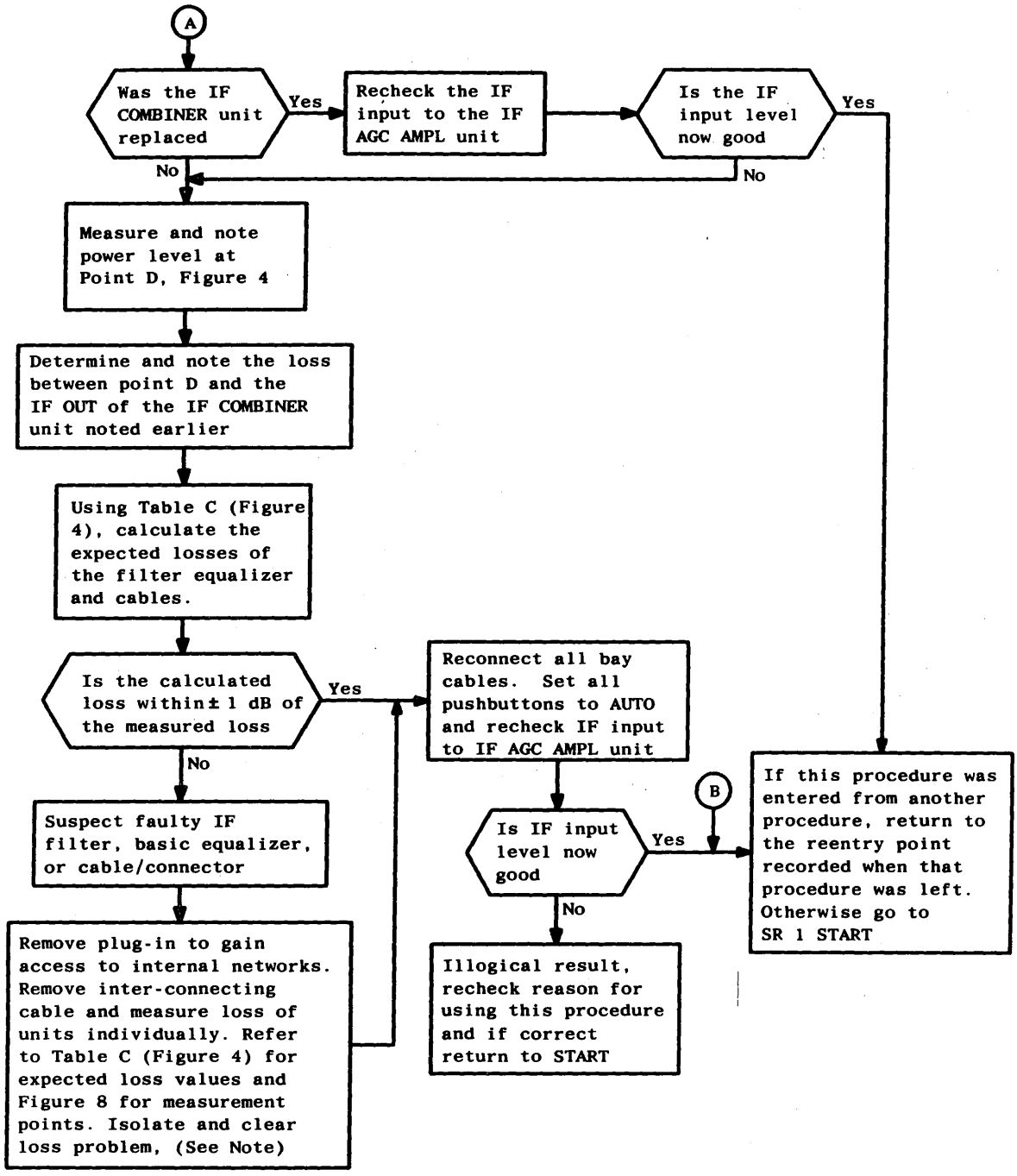


Note:
The defective equipment may also be determined by monitoring for the proper level and externally substituting equivalent spare units and/or cables

SR 17—Resolving Space Diversity Receiver IF Loss Problem (Sheet 1 of 3)



SR 17—Resolving Space Diversity Receiver IF Loss Problem (Sheet 2 of 3)



Note:

The defective equipment may also be determined by monitoring for the proper level and externally substituting equivalent spare units and/or cables

SR 17—Resolving Space Diversity Receiver IF Loss Problem (Sheet 3 of 3)

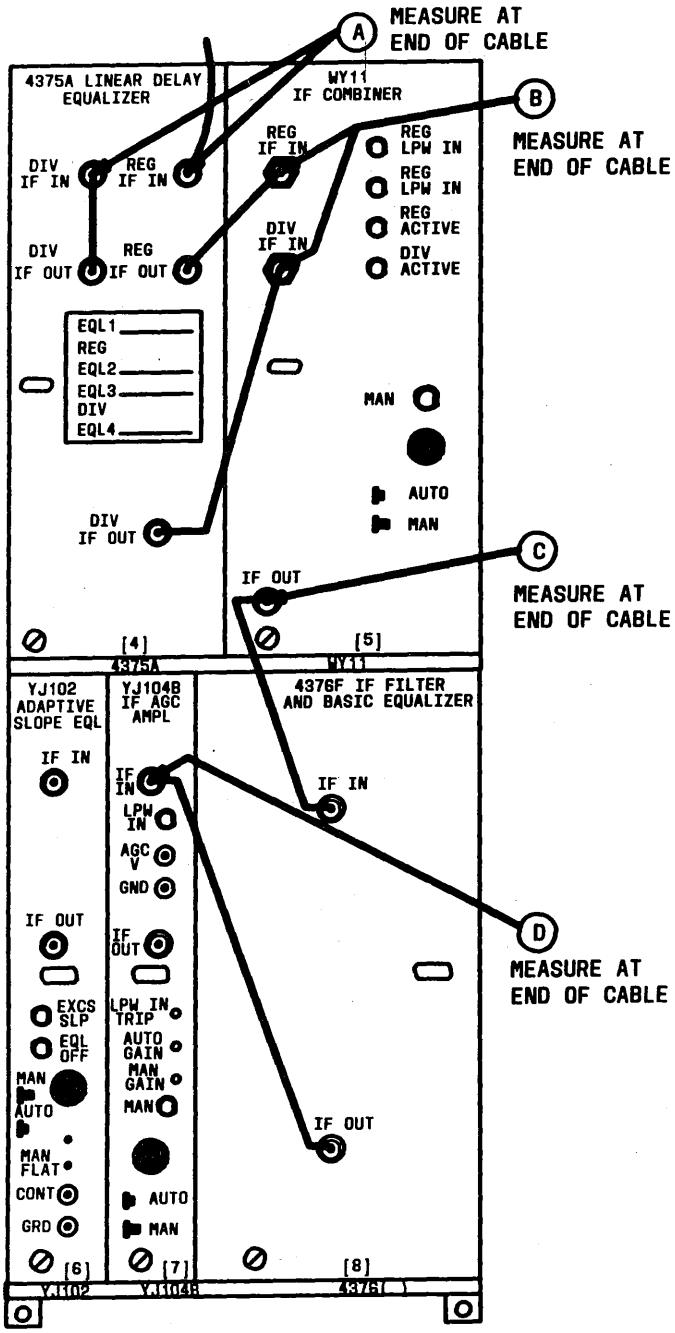
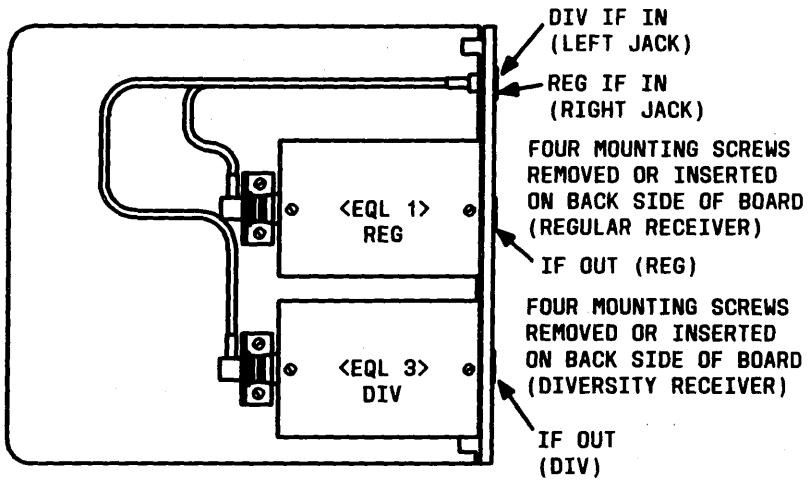


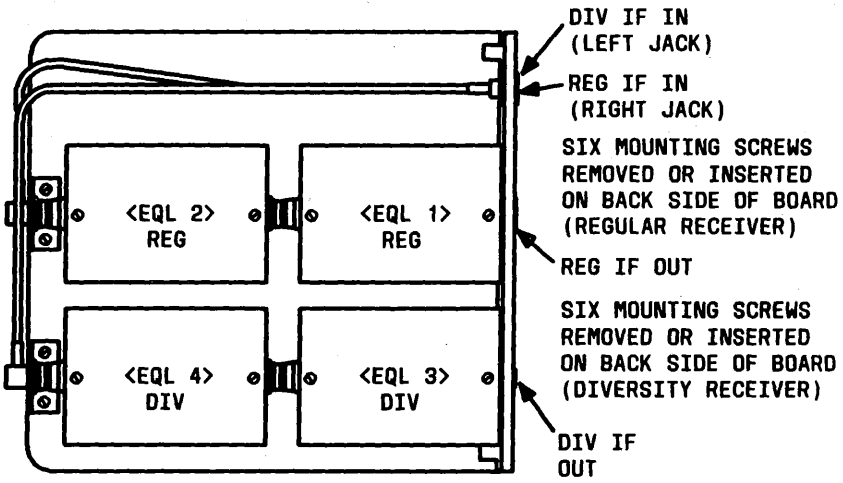
TABLE C TYPICAL IF UNIT LOSSES	
CODE	INSERTION LOSS (dB) at 70 MHz
LINEAR DELAY EQUALIZER (0.5 dB)	
2001A	1.1
2001B	1.1
2001C	1.7
2001D	1.2
2001E	1.7
2001F	1.4
2001G	1.4
2001H	0.38
2001J	1.5
2001K	0.43
2001L	1.5
2001M	0.57
2001N	3.2
2001P	0.7
BASIC EQUALIZER (0.5 dB)	
2002C	4.4
2002D	4.1
2002G	5.6
IF FILTER (0.5 dB)	
1603B	7.0
CABLES	(dB per 100 ft)
KS-19224,L2	6.0 .6
731B	3.0 .3
728B	2.2 .22

Figure 4–Receiver Shelf With Space Diversity



A. ONE EQUALIZER EQUIPPED
PER RECEIVER

OR



B. TWO EQUALIZERS EQUIPPED
PER RECEIVER

Figure 5–Space Diversity Receiver Linear Delay Equalizer, Side View

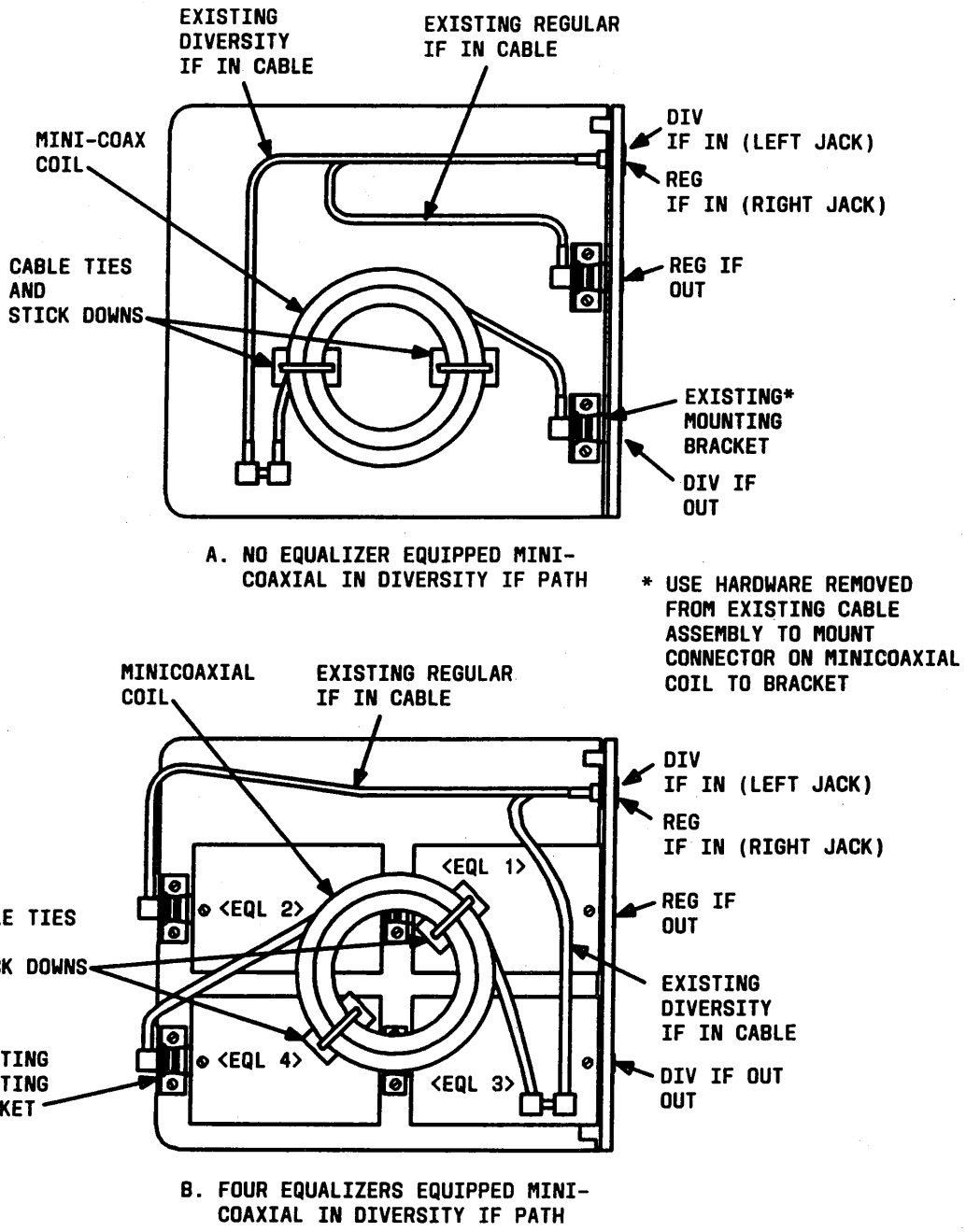
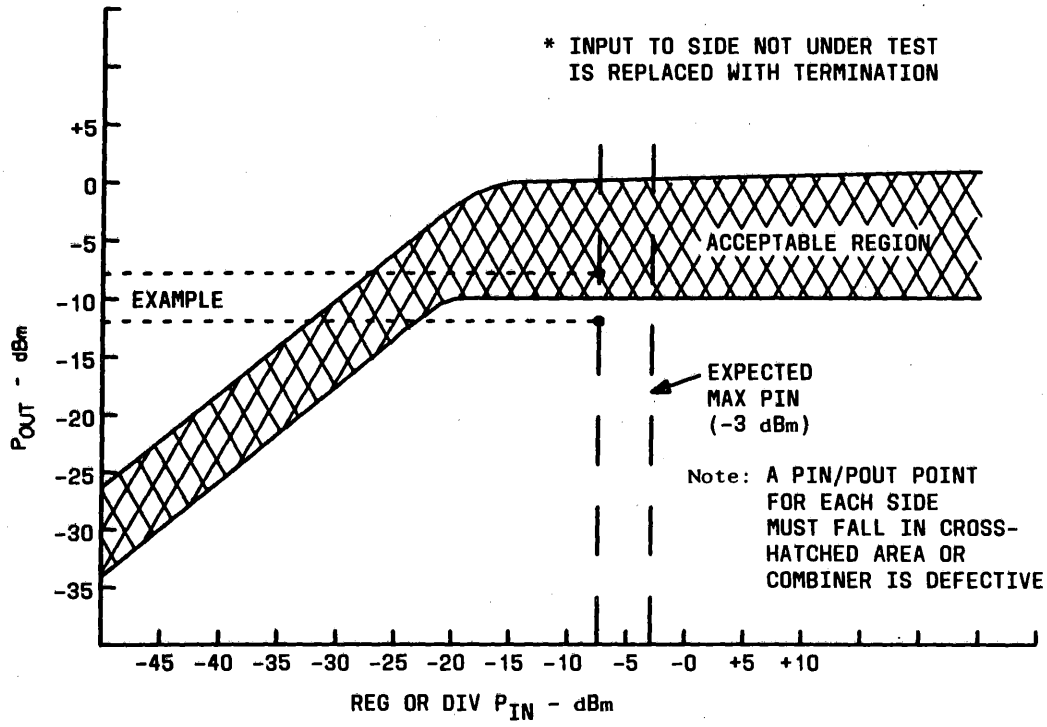


Figure 6–Space Diversity Receiver Linear Delay Equalizer Equipped With Minicoaxial DADE Cable



EXAMPLE WITH PIN IF -7 dBm:
- POUT OF -12 dBm IS NOT ACCEPTABLE
- POUT OF -8 dBm IS ACCEPTABLE

* WYII P_{OUT} VS P_{IN} CHARACTERISTICS IN AUTOMATIC MODE WITH INPUT TO REG OR DIV SIDE ONLY

Figure 7-IF Combiner P_{out} Versus P_{in} (Note)

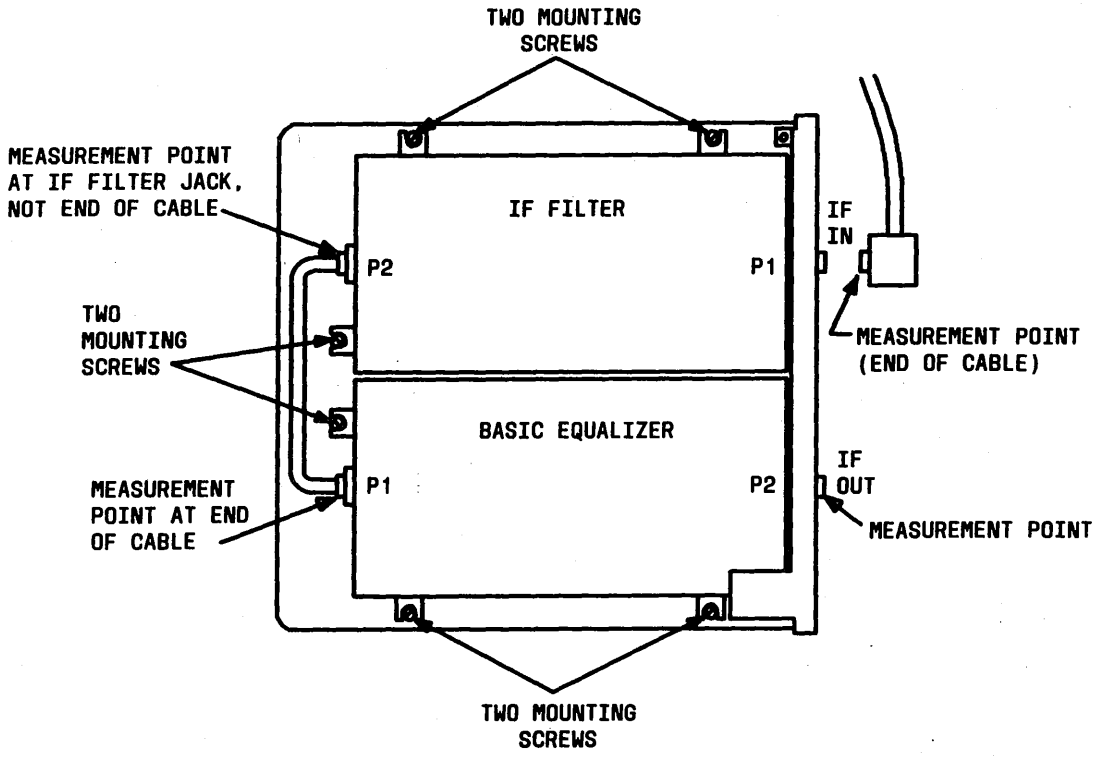
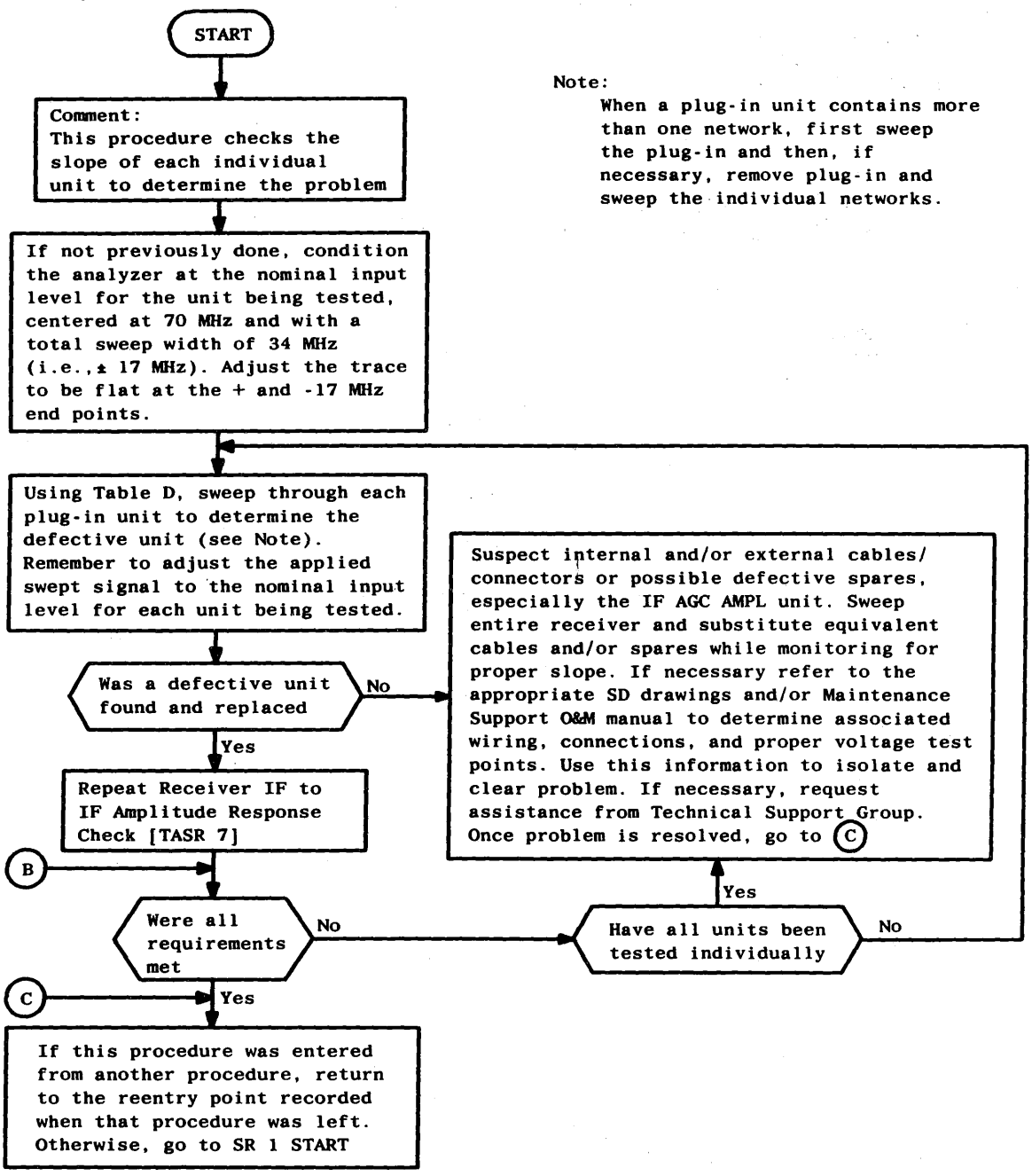


Figure 8–IF Filter and Basic Equalizer, Side View

Caution: This procedure is service-affecting unless the proper switching operation has been performed.

PREREQUISITE: Received IF-to-IF Slope measurement did not meet requirement



SR 18—Resolving Space Diversity IF Slope Problem (Sheet 1 of 2)

TABLE D TYPICAL IF UNIT SLOPE	
CODE	SLOPE (dB) at 70 ± 12 MHz
LINEAR DELAY EQUALIZER	
2001A	<0.1
2001B	<0.1
2001C	<0.1
2001D	<0.1
2001E	<0.1
2001F	<0.1
2001G	<0.1
2001H	<0.1
2001J	<0.1
2001K	<0.1
2001L	<0.1
2001M	<0.1
2001N	<0.2
2001P	<0.1
BASIC EQUALIZER	
2002C	<0.2
2002D	<0.2
2002G	<0.2
IF COMBINER *, †	
WY11	<0.2
IF FILTER	
1603B	<0.2
IF AGC AMPL *	
YJ104B	<0.2

* Operate the AUTO/MAN pushbutton to MAN when testing unit.

† Sweep through the active input and disconnect the nonactive input when testing unit.

SR 18—Resolving Space Diversity IF Slope Problem (Sheet 2 of 2)