

## **TRANSMISSION ZONING OF STATION APPARATUS**

### **1. GENERAL**

1.01 This section provides information regarding the transmission zones set up in each central office area, and it details the type of station equipment required to furnish efficient transmission in each zone. It is reissued to provide for an additional zone and to place restrictions on the use of 4- and 5-type dials.

1.02 Due to extensive changes, marginal arrows have been omitted.

1.03 Technical developments have constantly improved the customer equipment in use. It would be uneconomical to discard usable equipment as improvements are made. In order to use the less efficient equipment it must be placed where it will provide satisfactory telephone service. To accomplish this, all station equipment currently in use is divided into groups according to transmission efficiency.

1.04 A transmission zone is based upon the cable distance from a central office to a subscriber's station. It indicates the minimum degree of transmission efficiency required of the equipment at that station to furnish satisfactory telephone service. As the distance from the office increases, equipment of greater efficiency is required. Transmission zones for each central office area are established by the plant engineering forces.

1.05 A code is assigned to each of the transmission zones. These codes are shown in the appropriate space on all service orders and subscriber line cards, and indicate the group of station equipment required to most economically meet the needs of a transmission zone.

### **2. ZONE CODES**

2.01 Zone codes for common battery offices, magneto offices, and the associated equipment groups are given in Table A.

2.02 Application of zone codes to PBX stations is shown in Table B.

### **3. APPLICATION OF ZONE CODES**

#### **Service Orders**

3.01 Zone codes are shown as part of the assignment information on service orders requiring a station visit. This information will guide the installer, and others concerned in completing the orders, in determining the type of equipment required.

3.02 If supply conditions prevent use of a set of required efficiency, a set of greater efficiency may be used. However, if this is done extensively, shortages of the more efficient sets may be caused in zones where their improved characteristics are needed. To use sets of lesser efficiency would invite transmission complaints.

3.03 Both the local battery and common battery sets should not be used on the same line.

3.04 In some cases the zone entry on the service order will include supplementary instructions, i.e., three dry cells, high-impedance ringer, U1 receiver, etc.

3.05 Each order for special service, such as off-premise extensions, private lines, etc., will be handled individually in determining the transmission requirements. Generally, equipment types, rather than zone codes, will be entered on these service orders.

#### **Maintenance Activities**

3.06 Zone codes are shown on subscriber line cards for use in determining the correct type of station equipment for maintenance replacement and for the study of poor transmission complaints.

3.07 Replacement of existing equipment, to make it conform to zone requirements at the time of maintenance visits to stations, will be governed by supply conditions. Unless otherwise specified by local instructions, the following rules apply:

(a) When the subset or complete set is being moved or replaced, make the equipment conform with the zone requirements.

(b) When the work being done does not require the replacement of the subset apply the following rules:

(1) When it is of the antisidetone type, replace handsets, transmitters, receivers, and dials to the extent permitted by the supply of equipment carried by the repairman;

(2) When it is of the sidetone type, use an antisidetone conversion unit, or change the subset to AST and make the necessary changes to the handset, transmitter, receiver, and dial.

(c) Report to the deskman, the type of equipment in place for correction of the subscriber line card, or, where temporary replacements have been made to restore service, arrangements can be made to place proper equipment at an appropriate time.

### **4. SPECIAL CONSIDERATION**

4.01 The following sets may be used in Zones 1 and 2 when supply conditions make it necessary, but are not required for transmission reasons:

500-type telephone sets with equalizing network, i.e., 500A, B, C, D, 501A, B, C, D, etc.

200-type hand telephone sets and coin collectors when equipped with F4-, F5-, or G1-type handsets and connected to 685-type subsets.

4.02 The following sets should not be used in Zones 1 and 2, or at on-premise PBX stations because their uncontrolled gain may produce undesirable crosstalk and sidetone effects when used on short loops:

500-type telephone sets without equalizing network, i.e., 500J, 500K, 501J, and 501K.

200-type hand telephone sets and coin collectors equipped with F4-, F5-, and G1-type handsets when connected to other than 687-type subsets.

300-, 400-, 5300-, and 5400-type telephone sets, equipped with F4-, F5-, and G1-type handsets.

4.03 To obtain the transmission equivalent of a 500-type telephone set and the necessary equalization on short loops, coin collectors and 200-type hand telephone sets may be equipped with G1-type handsets and connected to 685-type subsets.

4.04 The 4- and 5-type dials should be used only in Zones 1 and 2 because the percentage of break time of the pulsing contacts may cause dialing failures. Therefore, sets equipped with 4- or 5-type dials should not be equipped with F4-, F5-, or G1-type handsets.

4.05 In Zone 5, when an amplifier is indicated, use only sets equipped with transistorized amplifiers, i.e., 532-, 533-, 535-, and 536-type telephone sets.

4.06 In Zone 5, if transmission complaints due to high sidetone are received when F4- or F5-type handsets are used, they should be replaced with 500-type telephone sets.

4.07 Local battery sets normally require two dry cells of battery. If additional transmitting gain is needed, three dry cells may be used with F1 transmitter units, but not with the T1 unit.

4.08 In local battery talking and magneto sets, when an H-type receiver unit is used, the receiver circuit must be dry.

4.09 Local battery talking sets are provided with four network connections, A to D, at the transformer so the best compromise on sidetone balance may be obtained for different loop make-ups. These sets may be ordered with any network connection. Unless specified, the A network connection will be furnished. Information on use and connections of these networks is covered in Section C63.289, LBT, CBS Antisidetone Stations. Balancing Network and Battery Supply Filter Connections. Where the network connection is shown as a suffix to the zone code, it is used only as a guide and the final connection is determined by tests with the local test desk.

TABLE A  
TRANSMISSION ZONE CODES AND CORRESPONDING STATION APPARATUS

Office	Zone Code	Class of Service	First Choice Equipment						Alternate Equipment						See Paragraph		
			Handset Station			Nonhandset Station			Type Dial	Handset Station			Nonhandset Station			Type Dial	
			Type Handle	Trans Unit	Rec Unit	Trans Unit*	Rec Unit*	Type Handle		Trans Unit	Rec Unit	Trans Unit*	Rec Unit*				
Common Battery	1	Res	E1	F1	557	635/F1	706/HA1	4 or 5	F1 or G1	F1 or T1	HA1 or U1	635/F1	144	6 or 7	4.01, 4.02, 4.03		
		Bus.	F1	F1	HA1	635/F1	706 or 716/HA1	4 or 5	G1	T1	U1	None	None	6 or 7			
		Coin	F1 or F2	F1	HA1	635/F1	706/HA1	4 or 5	G1	T1	U1	None	None	6			
	2	All	F1 or F2	F1	HA1	635/F1	706/HA1	4 or 5	G1	T1	U1	None	None	6 or 7	4.01, 4.02, 4.03, 4.06		
	5, 2	All	G1	T1	U1	None	None	6 or 7	F1 or F2	F1	HA1	None	None	None			
	5	All	G1	T1	U1	None	None	6 or 7	F4 or F5	T1	U1	None	None	None			
	L	All	F4 or F5	T1	U1	635/F1	706/HC5	6	F1 or F2	F1	HC5	None	None	None			
Magneto	M1	Res	E1	F1	557	635/F1	144		F1 or F4	F1 or T1	HA1 or U1	635/F1	706/HA1		4.07, 4.08, 4.09		
		Bus. and Coin	F1	F1	HA1	635/F1	706/HA1		F4 or F5	T1	U1	None	None				
	M2	All	F1	F1	HA1	635/F1	706/HA1		F4 or F5	T1	U1	None	None				

\* The diagonal line (/) indicates "equipped with."

TABLE B  
PBX STATIONS

Office	Station	Equipment	Zone	See Note
Common Battery	On-premise	With or Without Long Trunk or Long Line Equipment in Station Line Circuit	Same as zone in which PBX is located	1, 2, 5
	Off-premise	With or Without Long Line Equipment in Station Line Circuit	5	3
Magneto	On-premise	Magneto PBX	M2	5
	Off-premise			4
	On-premise	Common Battery PBX	2	5
	Off-premise		5	3

#### Notes

1. All 500-type sets used at on-premise stations must be equipped with equalizers.
2. In Zone 5 where transmission appears inadequate due to equalizer action of 500 sets, F4 handsets having U1 receivers and T1 transmitters may be considered.
3. In general, off-premise stations require Zone 5 apparatus; however, each station requires individual study for transmission requirements.
4. Usually, Zone M2 apparatus is required; however, each station requires individual study.
5. Attendant's handset should be the type required for a station located in the same zone as the PBX. Attendant's headset should be of the 52 or 53 type.