CUSTOMER SERVICES

INWARD WIDE AREA TELECOMMUNICATIONS SERVICE

CONTENTS PAGE

1. INTRODUCTION

This section of the Dial Facilities Management Practices will cover the major aspects of the Inward Wide Area Telecommunications Service (Inward WATS) service offering. The dial administration and the line assignments will be covered in this section only to the extent that they relate to the Inward WATS offering. A more detailed discussion on these subjects will be included in the sections covering the particular type of serving central office which serves Inward WATS.

2. GENERAL DESCRIPTION OF INTERSTATE INWARD WATS

(a) Interstate Inward WATS is a form of long distance service which allows a subscriber to

receive telephone calls from within specified areas which have been placed without charge to the originating party.

(b) Interstate Inward WATS is offered under two basic arrangements. These are as follows:

(1) *Full Time Service*

Full time Inward WATS lines may receive unlimited calls from within the subscribed to service area (band) for a flat monthly charge.

(2) *Measured Time Service*

Measured time Inward WATS lines may receive up to a specific number of hours of calls from points within the subscribed to service area (band) for a minimum monthly charge. An hour or fraction of an hour above the specific number of hours is billed as an overtime charge.

(c) Interstate Inward WATS is provided on one or more "terminating only" access lines. These lines can receive calls as follows:

(1) Dial Station-to-Station calls from points within the selected "Service Area" or "Band".

(2) Calls placed through the long distance operator who will establish connections on calls within the "Service Area" that cannot be dialed direct from the originating station or on which assistance is needed.

(d) Inward WATS lines may be connected to telephone sets, jacks in a PBX switchboard, a telephone keyset, a Call Director, an automatic call distributing system, data sets and data access arrangements.

3. SERVICE AREAS OR BANDS FOR INTERSTATE INWARD WATS

(a) Interstate Inward WATS customers subscribe to certain "Service Areas" or "Bands" of service. These bands are arranged roughly in concentric circles around the home area. The exact Service Area for each band in each state is found in the "Wide Area Telecommunications Service Complete Service Area Atlas". This publication is available from the rate and tariff office. The following is quoted from the "Atlas":

> "Interstate or nationwide service starts with WATS Area One containing the states contiguous to your home state, but not including it, and sometimes one or two nearby states.
>
> Service Area Two includes Service Area One plus certain other states and so on through Service Area Three, Four, Five and Six. Each successive Service Area includes the previous Service Area plus its own states up to Service Area Six.
>
> Service Area Six, the largest Service Area, includes the entire United States except Alaska, Hawaii, and your home state".

4. INTRASTATE INWARD WATS SERVICE

Intrastate Inward WATS is also available and offers both full and measured time services. Inward WATS is not offered in Rhode Island and the District of Columbia. No Inward WATS service exists in Alaska or Hawaii. The serving arrangements for intrastate Inward WATS may vary according to the State and Company. Some of the arrangements existing today for intrastate Inward WATS service are:

- Total state coverage
- Home NPA only in a multiple NPA state
- Home and adjacent NPA's in a multiple NPA state
- Coverage by "WATS STATE" divisions within a divided State

5. INWARD WATS NUMBERING PLAN

(a) Inward WATS is handled by means of special code assignments. These consist of a Special Area Code (SAC), specifically "800", followed by a specific NNX code (or codes) for each telephone NPA. Of the 640 NNX codes available, all "NN2" codes are reserved for intrastate. leaving the others available for interstate usage. The code(s) assigned to each NPA are used for *all* interstate Inward WATS bands terminated in that NPA.

(b) An Inward WATS customer's telephone number is always 10 digits and has the following format — 800 + NNX + XXXX. The information contained in this format is shown graphically in Exhibit 2 and 8. A detailed description also follows —

800 — Special Area Code (SAC)

NNX — Interstate

This is a central office type code which represents the terminating NPA for an Inward WATS call and the specific principal city switching machine in that NPA arranged to handle this traffic. All interstate Inward WATS bands in an NPA are served by the same NNX code(s).

NN2 — Intrastate

This central office type code identifies the Inward WATS number as intrastate service. A total of 64 NN2 codes are available for assignment in each State. These codes can be used to —

a) represent the total state.

b) represent an NPA in a multiple NPA State.

c) represent a particular city within a State.

d) represent a particular terminating serving central office within the State.

XXXX — These digits represent the Inward WATS customers station digits. The first three digits of the XXX are known as the "tens block" specifies the following:

(a) the number is an Inward WATS number series;

(b) indicates the "service area" or "band" subscribed to;

(c) designates the local serving central office for this Inward WATS line;

(d) and shows the outpulsing requirements for this serving central office.

(c) The last digit of the XXXX is used to designate the particular Inward WATS customer and start of hunting series when more than one line is provided.

(d) Inward WATS number series should be blocked to prevent call completion from normal local and toll telephone service.

(e) Exhibit 9 shows the Inward WATS NNX Code assignments as they stand today. The NN0 and NN9 codes are reserved for special requirements. The NN2's are all assigned to intrastate. The 7NX's and the 9NX's have also been reserved for special requirements. The codes from N7X to N9X are reserved for future growth although there is an abundant supply of codes in the series already in use to serve the needs of Inward WATS for quite awhile.

6. INWARD WATS ROUTING

6.01 Interstate

When a customer dials an Inward WATS number — 800 + NNX + XXXX, the call will preferably be routed to an office within his home "WATS State" which is capable of six-digit (6D) translation. This originating screening office (OSO) will, by 6D translation of the SAC and the NNX code route the call to or toward the telephone NPA where the Inward WATS subscriber is located. As the call is forwarded toward the terminating NPA, it must retain its identity of "Inward WATS" and must also indicate the WATS band relationship of the originating WATS state to the terminating NPA where the Inward WATS customer is located.

This Inward WATS call must be directed to the principal city office for the NPA in which the customer is located. This principal city office, the terminating Inward WATS screening office (TSO) for the NPA, must also be capable of 6D translation. The TSO must determine:

(a) The called number is in the Inward WATS number series assignments.

(b) Whether or not the call is from an allowable rate band location.

(c) The routing to the office serving the called customer if the call is from an in-band point.

This general description of Inward WATS call routing will be expanded in the following sections.

6.02 Originating Screening Office (OSO)

(a) Originating Screening Office (OSO) must be a common control office with six-digit (6D) translation capabilities. The OSO can be a Crossbar Tandem, No. 4 Crossbar, No. 5 Crossbar or No. 1 ESS office.

(b) There is at least one OSO serving each telephone NPA for originating 800 + calls. The OSO will, by 6-D translation of the SAC and NNX, route the call to or toward the principal city office of the terminating telephone NPA where the Inward WATS subscriber is located.

(c) Included in the information sent to or toward the terminating NPA is:

(1) an indication that the call is "Inward WATS".

(2) the rate band indication of the originating WATS State with respect to the WATS State for the terminating NPA.

(d) This is how a direct routed call is handled:

(1) The OSO will 6-D translate the 800 + NNX to select the direct trunk group to the distant principal city office.

(2) The 800 + NNX is code converted to a 1YZ format. Where the 1Y represents the 800 + NNX code and identifies the call as Inward WATS; the Z is the rate band indication described above.

(3) A seven digit number, 1YZ + XXXX (the converted NNX code, the rate band indication and the four digits of the Inward WATS subscriber's number), is now sent forward.

(e) The following details describe the handling of a tandem routed call:

(1) If the tandem office is in the same WATS State as the original OSO and handles other originating Inward WATS traffic, the Inward WATS call may be forwarded as received without code conversion — 800 + NNX + XXXX.

(2) If the tandem office is in a different WATS State, the 800 SAC will be code converted to 08Z and the 08Z + NNX + XXXX sent forward. The "08" identifies the call as Inward WATS with the Z digit representing the rate band indication of the originating WATS State.

(f) There are times when an OSO serves more than a single WATS State. In this situation, any adjacent WATS State must convert the originating 800 + calls to an 00X + NNX + XXXX format before it is forwarded to the OSO. The "X" digit in the 00X code will identify the originating WATS State and permit the OSO to prefix the proper rate band indications on all Inward WATS traffic from that State.

6.03 Terminating Screening Office (TSO)

The terminating Screening Office (TSO) for Inward WATS calls in the terminating telephone NPA is the principal city office for that NPA. This office must have the ability to do six-digit translation, and can serve as the TSO for a maximum of five Inward WATS number series of 10,000 numbers each. It must be able to determine:

(a) the incoming call is Inward WATS

(b) the Inward WATS call has an allowable rate band indication

(c) the routing of the call to the local serving central office if it is in-band.

This is how these requirements are met.

The TSO receives a seven digit number — 1YZ+XXXX on all terminating interstate Inward WATS calls. Six-digit translation is made on the 1YZ+XXX digits. The "1Y" designates the particular 10,000 number series to be checked. The "XXX", the 1st three digits of the called subscriber's number known as the "tens block", will be assigned in the translation if this tens block is a working Inward WATS number series. The tens block also indicates the rate band assigned to the called subscriber which is matched against the "Z" digit for allowable completion of the call. If the call is in-band and completion is allowed, the route to the local serving central office where the customer's line is located and outpulsing requirements are obtained from the tens block assignment. Outpulsing then occurs with the particular customer's line or hunt series selected by the last digit of the customer's number at the local office.

6.04 Tandem Screening Offices

As indicated in the section covering the originating Screening Office, some Inward WATS calls are routed via a tandem office in another WATS State. These calls are received at the tandem office as 08Z + NNX + XXXX where the "Z" is the rate band indication of the originating WATS State.

The tandem office 6-D translates the 08Z + NNX and selects a route to the principal city office in the terminating NPA. The call is then handled as if the tandem office were an OSO, with this exception — This rate band indication included in the 1YZ-XXXX forwarded must reflect the same rate band indication it received — the "Z" digit of the 08Z code of the incoming call, not the rate band indication of the tandem office's own home WATS State.

6.05 Routing from the Terminating Screening Office

As has been mentioned earlier, the terminating screening office (TSO) will receive 1YZ-XXXX for calls routed to it. The 1YZ-XXX is 6 digit translated and the following information is determined:

(1) Band Check

(2) Local serving central office

(3) Code conversion digits, if required

(4) Type pulsing required to forward call

(5) Whether or not tandem routing is required

Direct Routing from TSO

The TSO has a direct trunk group to the serving central office. The 1YZ is code converted to whatever digit the local office requires to identify the terminating NNX. This digit and the 4 digit line number are then forwarded to the local serving central office.

Tandem Routing from TSO

When the TSO does not have a direct trunk group to the serving central office, tandem routing is used. The 1YZ is code converted to an 0XX type code. The 0XX and the four digit line number are sent to the tandem office. The tandem office will code convert the 0XX to whatever digit the local office requires to identify NNX and sends it and the four digit line number to the local serving central office.

6.06 Intrastate

Intrastate Inward WATS routing differs from Interstate routing. When the Intrastate call arrives at the OSO, it is in the same format as an Interstate Inward WATS call. The call cannot be routed from the first three digits so six digit translation is required. The two in the sixth digit slot indicates that the call is an Intrastate call.

There are two ways of assigning NN2 codes for Intrastate Inward WATS. In one case each serving central office is provided with its own NN2 code. In the other instance an NN2 is assigned for several central offices. The routing that is necessary depends upon this assignment. Some Areas use a combination of the two assignment methods.

6.07 Routing with NN2 per Local Serving Central Office

(a) The call arrives at the OSO with the ten digit number as dialed by originating party. The six digit translation indicates an Intrastate Inward WATS call.

(b) The OSO does 6 digit translation and code converts the 800-NN2 to an identifying digit which the local serving central office receives. The local central office uses the central office code digit and the Hundreds Block to determine whether to allow or deny completion of the call (see exhibit 6).

(c) In the event that tandem routing is required, the OSO code converts the 800-NN2 to an OXX code and forwards to the tandem office. The tandem office code converts the OXX to the identifying digit for the serving central office and outpulses this digit and the four digit line number. The check is made as described in the previous paragraph. (See exhibit 6).

6.08 Routing with NN2 for multiple Local Serving Central Offices

(a) The call arrives at the OSO with the ten digit number as dialed by the originating party. The six digit translation indicates an Intrastate Inward WATS call.

(b) The six digit translation of the 800-NN2 does not provide enough information to properly route the call since this NN2 is shared by several local serving central offices. Since the switching machines that are used as OSO's cannot translate more than six digits; the digits

needed to route the call cannot be translated. To overcome this obstacle, a group of "loop back" or "loop around" trunks are used. The 800-NN2 are code converted to a 1XX code and this code and the station digits are outpulsed to reenter the OSO. The OSO then six digit translates the 1XX and the first three digits of the four digit line number. When this translation is made the OSO performs the function of the TSO and makes the validity check. The serving central office is also identified with the translation of the 1XX and 3 digits. The route to the local serving central office is selected and the 1XX is code converted to the central office code digit and is outpulsed along with the line number. (See exhibit 7).

(c) In the event that tandem routing is required, the call is handled the same as direct routing until the call reenters the OSO. The 1XX is code converted to an OXX and is forwarded to the tandem office along with the four digit line number. At the tandem office the OXX is code converted to the central office code digit and forwarded to the local central office along with the four digit line number. (See exhibit 7).

6.09 Trunk Group Access Limitation

In the previous paragraphs, mention was made of the routing from the Originating Screening Office to the Terminating Screening Office. In this regard, direct and tandem trunking was described. Various kinds of central offices are used as either an OSO or TSO. The kind of central office used can determine the number of trunks that can be accessed on a particular call. A discussion of some of these offices and their limitations are shown in the succeeding paragraphs.

6.09.1 Crossbar Tandem

(1) *Route Relay markers – without Group Busy (GB) Relays:* A crossbar tandem office equipped with route relay markers and not having GB relays has a limitation of 240 trunks that a call can be routed to. This includes any route advance that may occur from the primary route.

(2) *Route Relay markers – Busy Group Relays provided.*
A Crossbar Tandem office equipped with route relay markers and GB relays has no serious trunk group access limitation. Up to 100 GB relays can be provided and any number of the 360 route relays can be assigned to one route. (Further information on this limitation can be found in TFP Division D, Section 6-f-(1) and Division K, Section 1-c.)

(3) *Ring Markers*
A Crossbar Tandem office equipped with ring markers with or without GB relays has no trunk group access limitation.

6.09.2 No. 4A Crossbar

(1) *With Card Translation*
A 4-A office with card translation can look at a maximum of 4 cards when handling a code conversion Inward WATS call. Up to 40 trunks can accessed by each card. This places an absolute maximum of *160* trunks that can be accessed. When alternate routing is used this number may not be able to be accessed.

(2) *With Electronic Translator System (ETS)*
A 4-A office equipped with an ETS has no trunk access limitation.

6.09.3 No. 1 Crossbar

The number of trunks that can be accessed without limitation is 200 trunks.

6.09.4 No. 5 Crossbar (Used as an OSO only)

A number five crossbar office can have twenty trunks per trunk line frame in the same group. Thus a fully equipped office with 30 trunk link frames would have a limitation of 600 trunks without route advance.

As can be seen from the above, the most seriously limited office is the 4-A equipped with card translators. These offices must be regularly examined to be sure that the best access is being provided to the Inward WATS calls being screened by them.

7. AUXILIARY EQUIPMENT REQUIRED IN CENTRAL OFFICE

(a) Inward WATS can be served from any type of Central office equipment used by the associated companies. It is not recommended to assign Inward WATS subscribers in panel offices, however, and therefore no mention of

Panel offices is made in the succeeding information.

(b) There is certain auxiliary equipment needed for each Inward WATS line, and other equipment for each Inward WATS line group. Listed below is the recommended equipment to serve Inward WATS by Central Office Type.

7.01 No. 5 Crossbar

A — one auxiliary line circuit (SD-99439-01) per line.

B — one elapsed timer (running meter) — KS-19201, LI per line.

C — one 5 digit magnetic counter, K5-16493, per line.

D — one overflow relay (POF or OF) and associated register per line or per group of lines.

E — one SC relay for each hunting group of two to ten lines.

F — A relay or TBA as required for line groups of larger sizes than 10.

7.02 Step-by-Step

A — one auxiliary line circuit (SD-99439-01) per line.

B — one elapsed timer (running meter) KS-19201, LI per line.

C — one 5 digit magnetic counter, KS-16493 per line.

D — one subscribers line overflow circuit per line or hunting group.

7.03 No. 1 Crossbar

A — one auxiliary line circuit (SD-99439-01) per line.

B — one elapsed timer (running meter) — KS-19201, LI per line.

C — one 5 digit magnetic counter, KS-16493 per line.

D — one subscriber line overflow circuit per line or line group.

E — assignment must be to a four or five wire type link frame.

7.04 No. 1 ESS

A — line translations are required to provide the appropriate line class code and subscribers line overflow.

B — one remote master scanner applique per line.

C — one auxiliary line circuit (SD-99439-01) per line.

D — one elapsed timer (running meter) — KS-19201, LI per line.

8. DIRECT CONNECTION TO TOLL SWITCHING MACHINE

(a) There are instances where it will be advantageous to provide direct connection to the customer location from a toll switching office rather than double switch this traffic through a local serving office. Considerable savings in toll completing trunks and central office equipment may be realized with direct termination to the customer's location in the following cases.

(1) The busy hour CCS load is excessively high; and/or

(2) a high volume of busy hour very short holding time messages are being handled.

(b) Direct completion from the toll machine to the customer's location may be considered when:

(1) the busy hour CCS load is approximately 1400-1600 CCS or more (Local office frame load); and/or

(2) approximately 2000-2500 busy hour attempts occur with a very short holding time.

(c) When direct completion is used, each Inward WATS band subscribed to by the customer must be treated as a separate trunk group. When all circuits in a band trunk group are busy, the Inward WATS calls to that group are "route advanced" to a group of Circuit Busy Announcement (CBA) trunks. These announcement trunks can be used in common for all direct completion Inward WATS band trunk groups in the office. These trunks must be

arranged to return station busy (60 IPM) tone instead of the normal 120 IPM. This is done by recording the 60 IPM tone on one channel of the announcement system and patching the special CBA trunks to that channel. A separate announcement system may be required for high volume systems.

(d) The following 2-wire loop and 4-wire E&M trunks may be used for direct connection to a 4A crossbar office:

(1) 2-wire loop — SD68962 (TC)
(2) 4-wire E&M— SD68582 (IT)
(3) 4-wire E&M— SD68595 (TC)
(4) 4-wire E&M— SD68514 (TC)

(e) The standard Inward WATS registers will also be provided. These registers are described in detail later on in this section.

9. LINE AND NUMBER ASSIGNMENTS

In this part of the practice we will look at the individual type offices and discuss the assignment of Inward WATS lines as they are made in various types of serving central offices.

9.01 Step-by-Step

(a) Inward WATS lines assigned in Step-by-Step equipment will require a number assignment in a rotary or level hunting connector group. The connector group selected must not be accessed by the local switch train or local calls can be misdirected to these lines.

(b) No line equipment on the originating side of the office is required, but a terminating only auxiliary line circuit is required.

(c) The number of switches provided in the connector group should always exceed the number of Inward WATS lines working. This is necessary so that when all the Inward WATS lines are busy, 60 IPM tone is returned to the customer rather than a 120 IPM tone (which would be returned when all the connector switches are busy). Network completion results can become distorted if "overflow" signals are returned when "line busy" signals should have been returned.

(d) Inward WATS line groups exceeding 10 lines should always be assigned in level hunting type connector hundreds.

(e) Sufficient subscriber line overflow equipment must be provided to assign one overflow register to each Inward WATS line group.

(f) The switch train and the trunks from the TSO to the connector group must be adequately provided so that calls destined for Inward WATS lines are not blocked before reaching the called line.

9.02 Panel

It is recommended that Inward WATS lines not be served from Panel type offices.

9.03 No. 1 Crossbar

(a) In No. 1 Crossbar the line assignment must be to a 4 or 5 wire type line link frame with the line arranged for terminating service only.

(b) The lines should be spread over as many of the 4 & 5 wire frames as possible so that cross office overloading does not occur.

(c) Other equipment should be provided as shown in paragraph 7.03.

(d) Local access to the Inward WATS number should be blocked.

9.04 No. 5 Crossbar

(a) In number five crossbar, the line assignment can be on any Line Link Frame. The line should be arranged for terminating service only and the lines should be spread throughout the line link frames rather than be concentrated on certain frames.

(b) Auxiliary equipment is required as shown in paragraph 7.01.

(c) Access by local lines must not be allowed. In this case hundreds blocks of numbers must be "Dedicated" to Inward WATS to block local access. The number of hundreds blocks assigned depends on the number of Inward WATS lines and the number of bands served.

9.05 No. 1 ESS

(a) The Inward WATS lines should be spread over the Line Link Networks so that no

concentration of heavy usage on these lines occur.

(b) Auxiliary equipment is required as shown in paragraph 7.04.

(c) As additional features are added in the Generic programs for gathering of billing information, some of the "hardware" described in paragraph 7.04 will be discontinued. Each ESS office will need to be confirmed as to the particular issue of its Generic Program and the features available.

9.06 Direct Connection

(a) Direct connection lines do not have a physical line or number assignment. The actual equipment looks like a trunk to the switching equipment. The registers required for billing and administrative purposes must be located so that the readings can be forwarded to comptrollers people each month. If possible, the registers should be located in the central office.

(b) Arrangements must be made for the 60 IPM tone to be given back to the calling customer when all lines in a particular group are busy.

(c) The switching machine must be equipped with sufficient equipments to allow additional Inward WATS lines to be placed in service during the life of the machine engineering period.

10. INTERCEPT FOR INWARD WATS

(a) If a subscriber dials an Inward WATS line and the number is out-of-band or non-working, the call will be routed to normal vacant code announcement in most cases. If, however, the call is a legitimate combination for the first nine digits, and an incorrect tenth digit is dialed, it is possible to reach a vacant, disconnected, or changed number within the Inward WATS tens block. With the assignment of an Inward WATS subscriber to a tens block of numbers, any numbers remaining within that tens block become unusable except for other identical service area Inward WATS lines.

(b) Since these numbers are in actual local central offices, in some cases it may be possible for them to be reached by a local or toll calling party using normal telephone codes. Intercept operators must be furnished information with which to respond to these cases. Whenever possible, Inward WATS tens blocks should be denied to local traffic. For those offices serving directly connected Inward WATS lines, a special group of trunks to the Intercept equipment is required.

11. REGISTERS FOR INTERSTATE INWARD WATS LINES

(a) Each Interstate Inward WATS line must be equipped with a message count register and elapsed time register. Each Inward WATS line group must be provided with an overflow register.

(b) These registers operate as follows:

(1) *Message Register*

This register will operate when both the calling and called party are off hook. The register scores only on completed messages to the Inward WATS line. One register is required for each line.

(2) *Elapsed Time Register*

This register is also known as a "running time" register. This register scores the off hook time for the Inward WATS line and scores each time one tenth of an hour of usage occurs. One register for each line is required.

(3) *Overflow Register*

This register is associated with the last line in the Inward WATS group. This register scores when an attempt is made to complete a call and all the lines in the group are busy. One register per group of Inward WATS lines is required.

(c) There is a possibility that some or all of these registers may be used in the future for billing purposes. In addition, these registers represent the best possible tool to determine the adequacy of the lines serving each customer group. In some cases the Dial Administrator will be responsible for providing the register readings to the facilities engineers upon request.

(d) In some cases, the actual assignment of the

specific registers to specific Inward WATS lines will be the responsibility of the Dial Administrator. In any case, it would appear prudent for the Dial Administrator to have a record of the registers assigned for Inward WATS lines.

12. EQUIPMENT ARRANGEMENTS AT TERMINATING END

(a) Inward WATS lines can be served from a variety of types of central offices. The most desirable arrangement is for the Inward WATS customer to be served from the same office as he receives his local service. This is not always possible, consequently, in some cases these lines are served from a nearby office.

(b) Some of the considerations that need to be explored in Inward WATS serving offices (other than the considerations mentioned in previous paragraphs) are as follows:

(1) Inward WATS lines require overflow registrations. These lines must be assigned into equipment which is arranged for this feature.

(2) Some Inward WATS lines have an extremely long holding time per call. The effect of the long holding time on load balance and on the terminating central office needs to be determined.

(3) Other Inward WATS lines have a high volume of calls and an extremely short holding time. In these cases, the effects of the high call volume on common control equipment and on the incoming trunk groups must be evaluated.

(4) The Dial Administrator should be assured that the trunk group from the switching machine to the local office is designed to carry the Inward WATS load before assigning the local office equipment.

(5) In some cases, the Inward WATS line group is served directly from the switching machine by-passing the local central office equipment. With this arrangement, the register readings discussed in paragraph 1.08 are still necessary. The Dial Administrator must know where these registers are located.

(6) Some businesses that subscribe to Inward WATS service have an extremely peaked busy season. In these cases, additional lines are installed for the busy season each year and disconnected after the season. Knowledge that these customers have these requirements allows the Dial Administrator to reserve these central office facilities from busy season to busy season.

(7) Many Inward WATS line groups begin with one line. After the service has been in for awhile the need for an additional line or lines occur. Dial Administrators need to make plans for the expansion of one line group as growth occurs. The added lines need to be rotary with the existing line in order to avoid a number change.

(8) Some Inward WATS lines connect directly to Automatic Call Distributing Systems. In these cases the Dial Administrator needs to coordinate the study activities with Business Services so that the results can be analyzed and used for any needed sales activity.

13. CUSTOMER LOCATION CONSIDERATIONS

(a) In most instances, the Dial Administrator is not going to be aware of the type of equipment being used at the customers location. We do not want to indicate that this should be changed. The Dial Administrator should have enough awareness of handling of Inward WATS service orders that coordination between the Dial and Business Services Traffic organizations is accomplished.

(b) It is of very little practical use to the telephone company to have all the central office equipment described earlier, all the registers and arrangements necessary and then find out that there is no termination at the customers location for the additional Inward WATS line.

Each service order for Inward WATS must be given special handling to see that such events do not occur and that the awareness and the co-ordination are an every day way of doing business.

14. ADMINISTRATIVE CONSIDERATIONS

14.01 Routing

As was pointed out earlier in this practice, there is nothing simple about the routing of Inward WATS calls. Although the Dial Administrator is not the person primarily responsible for the routing arrangements, questions can be raised that will assure that the very best routing arrangement is being used.

14.02 Trunking

The Dial Administrator's role in providing adequate trunking is well known. Here we want to emphasize the necessity of being sure that the group serving Inward WATS is adequately provided. The nature of Inward WATS and the potential back-up on the message network of calls and attempts directed to the trunk group is enormous. Constant surveillance of the trunk groups serving Inward WATS is required. The Dial Administrator must be the catalyst for action in this area.

14.03 Central Office

(a) In the area of central office administration, we have already touched on the load-balance considerations.

(b) In most cases, the Dial Administrator is the only person who knows the exact status of all the central office pieces required to serve Inward WATS. The records maintained by the Dial Administrator indicate when shortages are likely to occur. This information must be passed on to the facilities organization so that additional items can be ordered before the supply runs out.

(c) The Dial Administrator needs to survey the orders adding new or additional Inward WATS equipment to confirm that adequate amounts are being provided. Those instances where it appears that the provision is not adequate should be questioned.

14.04 Toll Machines

(a) The effect that the toll machine has on the Inward WATS service being given is evident. In this area, the Dial Administrator is a co-ordinator. The ability of the switcher and local office to supplement trunk groups which carry Inward WATS traffic is enhanced when each makes an effort to coordinate their activities with the other.

(b) The Dial Administrator should not hesitate to initiate any action required to improve the service between the switching machine and the local serving central office.

14.05 Tools Available

(a) The Dial Administrator has various tools to accomplish the administrative job. The Inward WATS registers represent one of the best tools to determine the line groups causing the highest numbers and percentage of overflow in the serving central offices.

(b) Peg count and overflow data from the switching machine can be obtained for the trunk group from the switching office into the local serving central offices.

(c) Load Balance TUR data is available to show the effects of Inward WATS assignment to the load and balance relationship of the office.

(d) TUR data of various kinds are available to determine the effects on the common control equipment. Very short holding time, high volume lines may cause shortages of common control equipment.

15. PLANNING CONSIDERATIONS

15.01 Growth

(a) In order for the growth of Inward WATS to continue on an orderly basis, some advanced planning by the Dial Administrator is required.

(b) Tens block assignments must be reviewed periodically so that new ones can be opened as the various bands grow. Since tens blocks are assigned by the Area WATS coordinator and cannot be duplicated within a state, some prior considerations are necessary so that vacant blocks are available as they are required.

(c) Inward WATS lines cause the use of many of the auxiliary number group relays. The Dial Administrator must plan the use of these relays as the tens blocks are used so that relays are always available as lines are added. Advice to the facilities provision group on the status of

auxiliary relays must be given.

(d) The recent addition of registers to all Interstate Inward WATS lines makes it imperative that the Dial Administrator plan the use of them wisely.

15.02 Terminating Considerations

(a) Advanced planning by the Dial Administrator allows judicious use of additions to the serving central offices as they occur. This includes arranging for the new tens blocks for the added number series in order to keep the CCS load evenly spread and to make the best possible use of the auxiliary relays required in some dial systems.

(b) Advanced planning by the Dial Administrator includes close review of the equipment additions at the time that the order is received; not at the time it is being installed. By doing this, any potential shortage can be referred to the facilities people at a point in time when something can be done to change the order.

(c) There is seldom a more overused word than coordination. Yet, the Dial Administrator finds that this is the major part of the job. Coordination with the planning group who designs the future additions of the serving central office can ward off a lot of headaches that do occur. This coordination includes close contact with the central office personnel in the Inward WATS serving offices.

Exhibit 1

TEL. NPA	INWARD WATS STATE	800-NNX INWARD WATS NPA
201	N.J.	631
202	D.C.	424
203	Conn.	243
205	Ala.	633
206	Wash.	426
207	Me.	341
208	Ida.	635
209	Calif.-N.	344
212	N.Y.-S.E.	221,223
213	Calif.-S.	421,423
214	Tex.-E.	527
215	Pa.-E.	523
216	Ohio-N.	321
217	Ill.-S.	637
218	Minn.	346
219	Ind.	348
301	Md	638
302	Del.	441
303	Colo.	525
304	W.Va.	624
305	Fla.	327
307	Wyo.	443
308	Neb.	445
309	Ill.-N.	447
312	Ill.-N.	323,621
313	Mich.-S.	521
314	Mo.	325
315	N.Y.-N.E.	448
316	Kan.	835
317	Ind.	428
318	La.	551
319	Ia.	553
401	R.I.	556
402	Neb.	228
404	Ga.	241
405	Okla.	654
406	Mont.	548
408	Calif.-N.	538
412	Pa.-W	245
413	Mass.	628
414	Wis.	558
415	Calif.-N.	227
417	Mo.	641
419	Ohio-N.	537
501	Ark.	643
502	Ky.	626
503	Ore.	547
504	La.	535
505	N.M.	545
507	Minn.	533
509	Wash.	541
512	Tex.-S.	531
513	Ohio-S.	543
515	Ia.	247
516	N.Y.-S.E.	645
517	Mich.-S.	248
518	N.Y.-N.E.	833
601	Miss.	647
602	Ariz.	528
603	N.H.	258
605	S.D.	843
606	Ky.	354
607	N.Y.-N.E.	847
608	Wis.	356
609	N.J.	257
612	Minn.	328
614	Ohio-S.	848
615	Tenn.	251
616	Mich.-S.	253
617	Mass.	225
618	Ill.-S.	851
701	N.D.	437
702	Nev.	634,648
703	Va.	336
704	N.C.	438
707	Calif.-N.	358
712	Ia.	831
713	Tex.-E.	231
714	Calif.-S.	854
715	Wis.	826
716	N.Y.-W.	828
717	Pa.-E.	233
801	Utah	453
802	Vt.	451
803	S.C.	845
804	Va.	446
805	Calif.-S.	235
806	Tex.-W.	858
812	Ind.	457
813	Fla.	237
814	Pa.-W.	458
815	Ill.-N.	435
816	Mo.	821
817	Tex.-E.	433
901	Tenn.	238
904	Fla.	874
906	Mich.-N.	338
912	Ga.	841
913	Kan.	255
914	N.Y.-S.E.	431
915	Tex.-W.	351
916	Calif.-N.	824
918	Okla.	331
919	N.C.	334

Exhibit 2

Inward WATS Address Dialed . . .

800

Special Area Code

NNX

Central Office Type Code
- Represents the terminating NPA for INWATS Call
- Represents the INWATS principal City Office in Terminating NPA where Band Check of INWATS Line is made.
- All Interstate Bands served in same NNX code
- NN2's used for intrastate service only

XXXX

INWATS Customer's Station Digits
- Designates the particular customer
- Start of hunting series if more than one line is provided in Band subgroup.

INWATS Tens Block
- Number series is INWATS
- Designates INWATS Band
- Designates Local Serving Co. for INWATS Lines
- Designates out-plusing req'ts for Serving Co.
- Protected from normal POTS Service

Exhibit 3

Inward WATS Address - Terminating Screening Office . . .

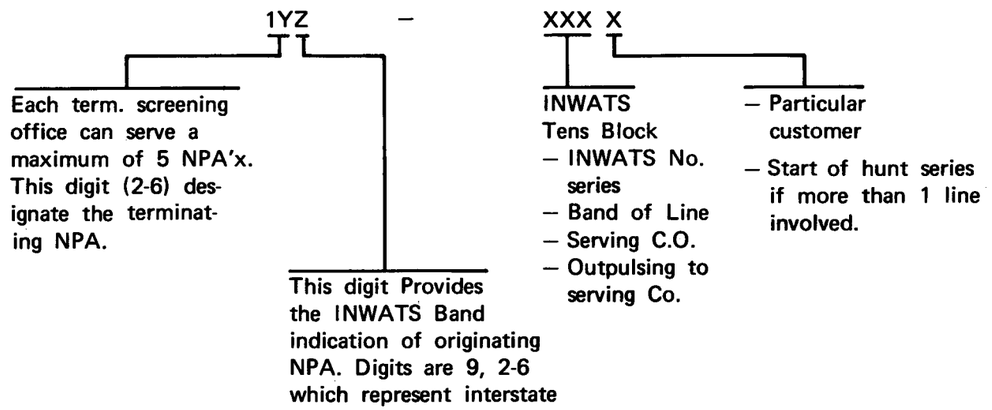


Exhibit 4

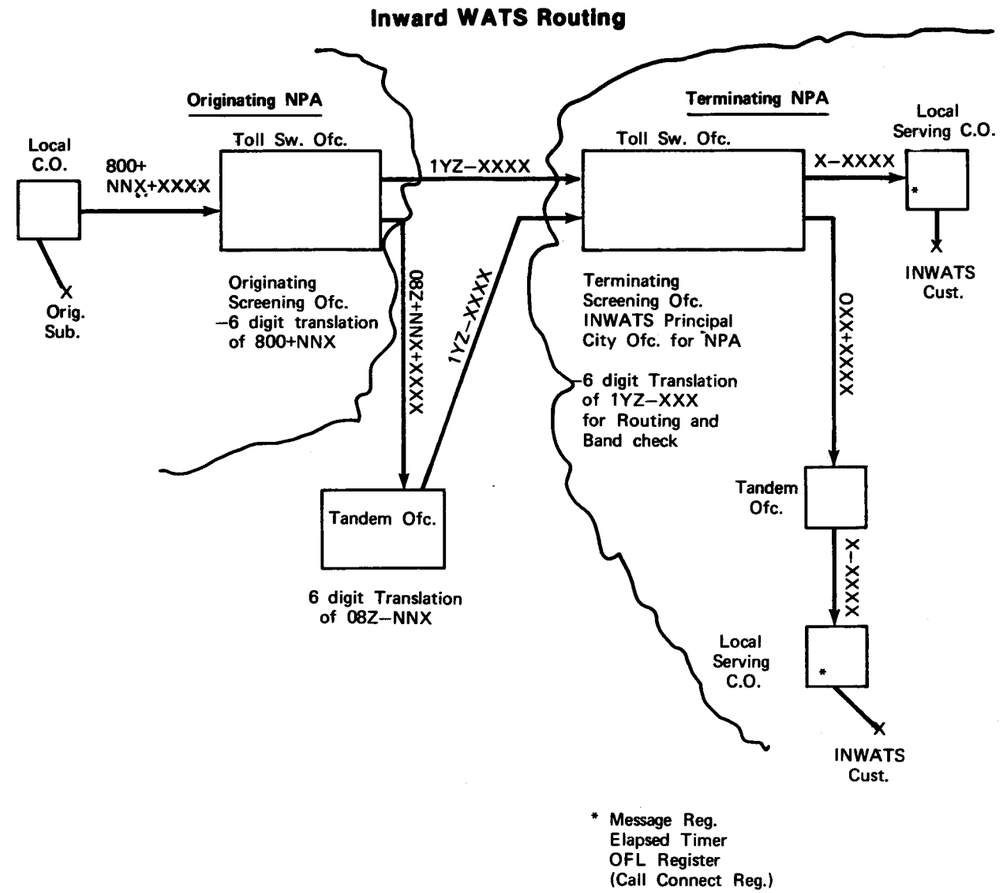
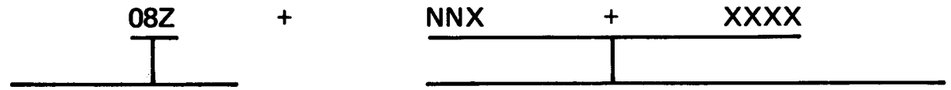

Inward WATS Routing
Originating NPA
Terminating NPA
Local C.O.
800+ NNX+XXXX
Toll Sw. Ofc.
1YZ–XXXX
Toll Sw. Ofc.
X–XXXX
Local Serving C.O.
Orig. Sub.
Originating Screening Ofc. –6 digit translation of 800+NNX
08Z+NNX+XXXX
1YZ–XXXX
Terminating Screening Ofc. INWATS Principal City Ofc. for NPA
6 digit Translation of 1YZ–XXX for Routing and Band check
0XXX+XXXX
INWATS Cust.
Tandem Ofc.
Tandem Ofc.
6 digit Translation of 08Z–NNX
0XXX+XXXX
Local Serving C.O.
INWATS Cust.
* Message Reg.
Elapsed Timer
OFL Register
(Call Connect Reg.)

Exhibit 5

Inward WATS Address - Tandem Routing . . .



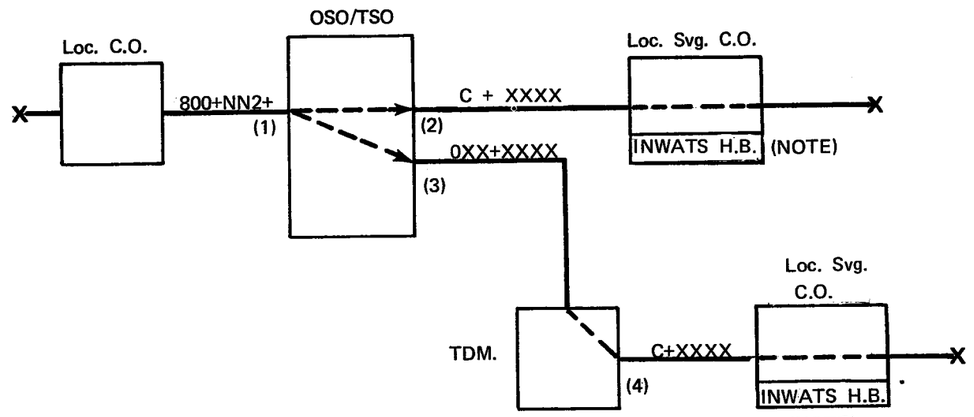
- Identifies Call as "INWATS"
- "Z" is Band of Orginating NPA with Respect to terminating NPA

Same as described in "800 +" illustration

Exhibit 6

Inward WATS Routing — Intrastate

800 — NN2 per Local Serving Central Office . . .
— INWATS Validity Check Made at Serving Central



Call Setup . .

(1) 6 digit translate on 800-NN2

(2) Select direct route to serving C.O. and code convert to INWATS "Central Office Code". -Outpulse to C.O.— INWATS "C.O. Code" and "Hundreds Block" match made at local C.O. to allow or deny completion.

(3) Tandem route selected. Codes convert to 0XX type code representing serving central office and outpulse.

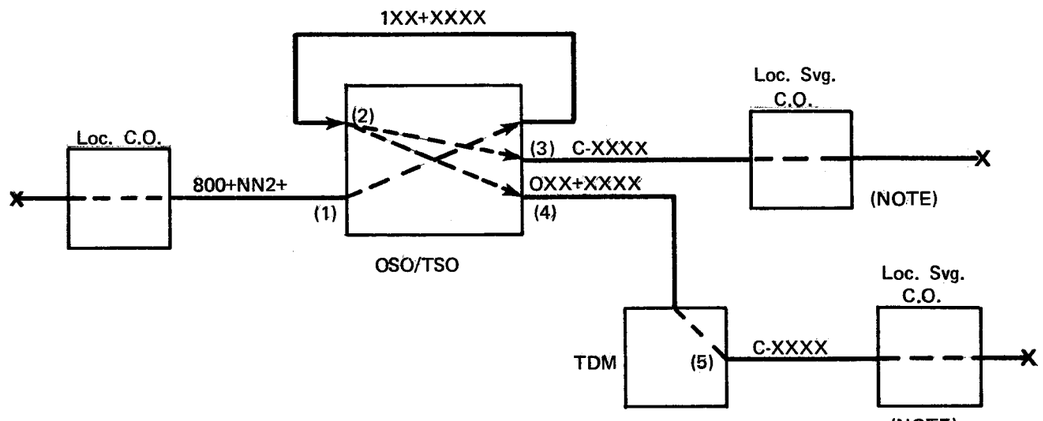
(4) Tandem office code converts 0XX code to INWATS "C.O. Code" and outpulses to central office. INWATS "C.O. Code" and "Hundreds Block" match made at local C.O. to allow or deny completion.

NOTE: A specific "Hundreds Block" number series is marked INWATS only and must match INWATS "C.O. Code" for validity check.

Exhibit 7

Inward WATS Routing — Intrastate

800 — NN2 for Multiple Local Serving Central Offices . . .
INWATS Validity Check Made at Terminating Screening Office



Call Setup . . . . . .

(1) 6 digit translate on 800-NN2
Convert to 1XX and outpulse with station digits.

(2) 6 digit translate on 1XX+XXX.
"Tens Block" check is made for INWATS service and serving central office.

(3) Select route to serving central office, code convert 1XX to INWATS "C.O. Code" and outpulse to C.O.

(4) Select route to tandem office. Code convert 1XX to 0XX type code representing the serving C.O., outpulse to tandem office.

(5) At tandem office, selects serving C.O. route, code convert OXX to INWATS "C.O. Code" and outpulses to C.O.

NOTE: Four digits may be outpulsed to some serving central offices if "Hundreds Block" match is not possible. However, INWATS numbers should not be accessible by normal POTS traffic.

Exhibit 8

Intrastate Inward WATS Address Dialed . . .

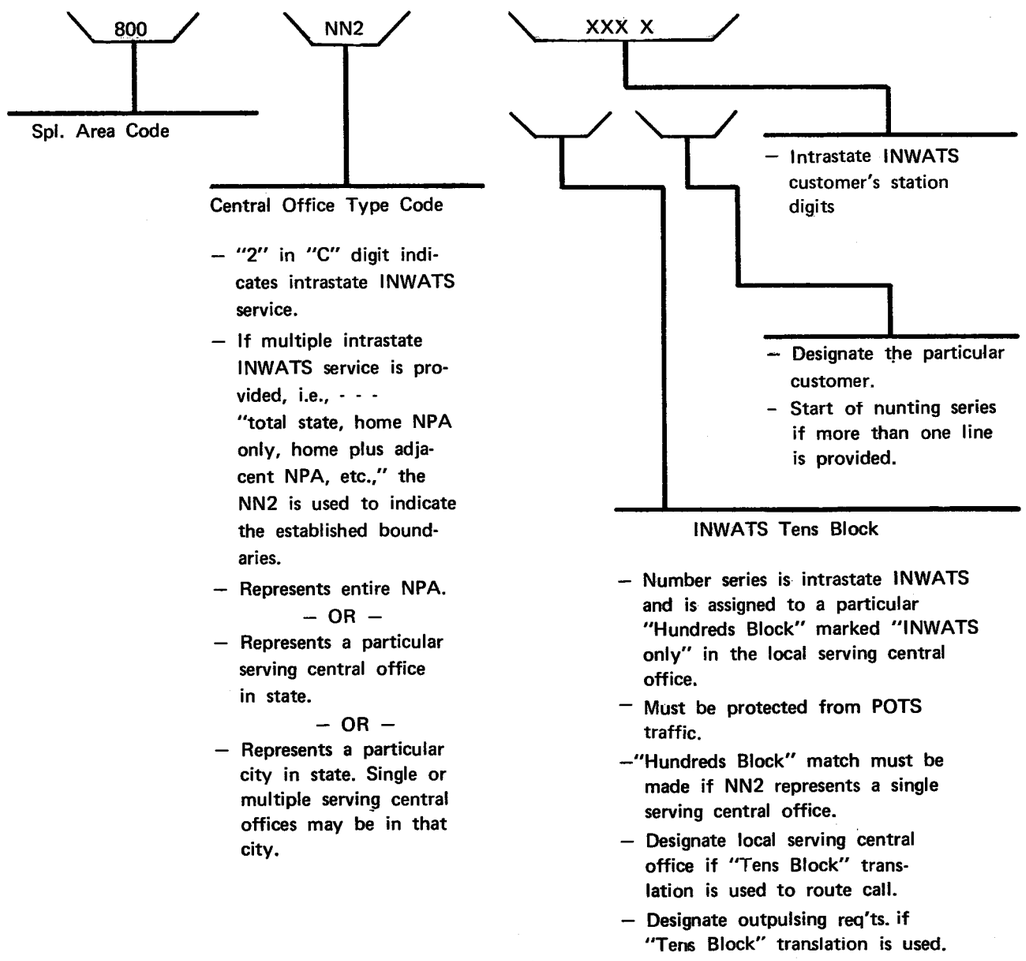


Exhibit 9

800 SPECIAL AREA CODE ASSIGNMENTS

800+ NN	X									
	0	1	2	3	4	5	6	7	8	9
20										
21										
22		X		X		X		X	X	
23		X		X		X		X	X	
24		X		X		X		X	X	
25		X		X		X		X	X	
26		⊗		⊗		⊗		⊗		
27										
28										
29										
30										
31										
32		X		X		X		X	X	
33		X			X		X		X	
34		X			X		X		X	
35		X			X		X			
36		⊗		⊗						
37										
38										
39										
40										
41										
42		X		X	X		X		X	
43		X		X		X		X	X	
44		X		X		X	X	X	X	
45		X		X		X		X	X	
46		⊗		⊗		⊗				
47										
48										
49										
50										
51										
52		X		X		X		X	X	
53		X		X		X		X	X	
54		X		X		X		X	X	
55	S	X		X		X	X		X	
56		⊗		⊗		⊗		⊗		
57										
58										
59										

800+ NN	X									
	0	1	2	3	4	5	6	7	8	9
60										
61										
62		X			X		X		X	
63		X		X	X	X		X	X	
64		X		X		X		X	X	
65					X					
66		⊗		⊗		⊗		⊗		
67										
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79										
80										
81										
82		X			X		X		X	
83		X		X			X			
84		X		X		X		X	X	
85		X			X					
86										
87					X					
88	S									
89										
90										
91										
92										
93										
94										
95										
96										
97										
98										
99										

GROWTH AS REQUIRED

NPA TYPE-RESV. FOR SPL REQTS.

RESERVED FOR SPC REQTS.

AVAILABLE FOR ASSIGNMENT

X USA WORKING – INTERSTATE

⊗ CANADA WORKING

S SPECIAL