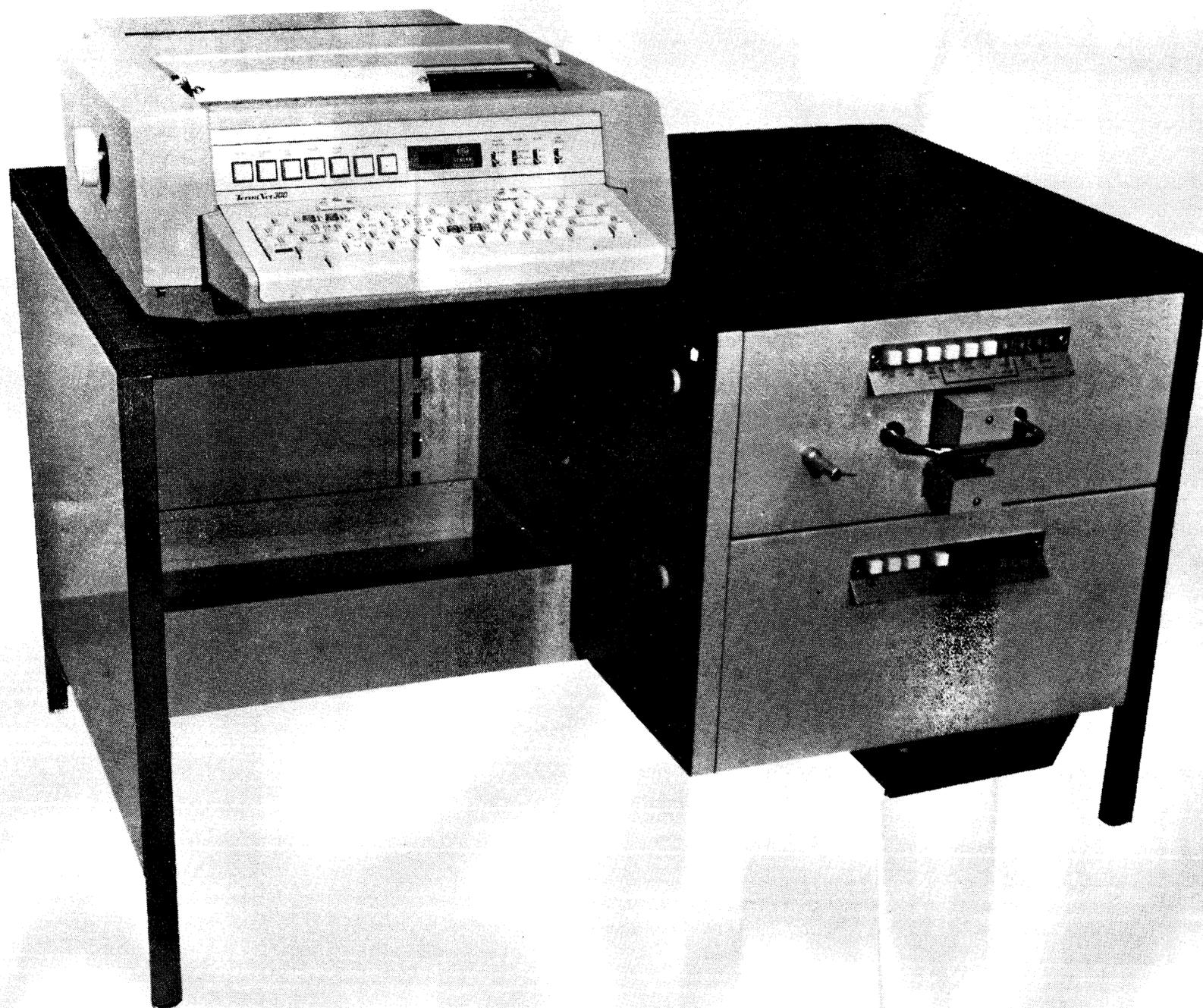


Terminet^{*} 300 DATA COMMUNICATION PRINTER

(C MODEL)
BEGINNER'S GUIDE

This Beginner's Guide introduces you to the Terminet 300 Printer and tells you the following:

- General information about the Terminet 300 Printer such as what it is, how to turn it on, how you know the Printer is working, etc.
- How to call a computer.
- A description of the controls and indicators.



Registered trademark of General Electric Company, U.S.A.

GENERAL  **ELECTRIC**

CONTENTS

	<u>Page</u>
INTRODUCTION TO THE TermiNet 300 PRINTER	3
What It Is	3
It's Easy To Use	3
There Are Three Printer Configurations	3
How To Turn On Your Printer	4
How You Know The Printer Is Working	5
What To Do If Your Printer Is Not Working	5
HOW TO CALL A TIME SHARING COMPUTER	6
Information Needed Before Calling Computer	6
Position of Printer Switches	7
Calling Procedure	7
Sign On Procedure For G. E. Mark II Computer	8
Sample Sign On	8
TermiNet 300 PRINTER CONTROLS	9
Keys	9
Printer Switches	11
TALKING TO ANOTHER PRINTER	11
OPERATION OF THE PAPER TAPE PUNCH	12
OPERATION OF THE TAPE READER	15
Reader Controls	15
Reading Tape	15

The information contained herein does not purport to cover all details or variations in equipment nor to provide for every possible contingency to be met in connection with installation, operation, or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchasers purposes, the matter should be referred to the General Electric Company.

INTRODUCTION TO THE Terminet 300 PRINTER

WHAT IT IS

The Terminet 300 Printer is a remote teleprinter; this means it may be used to type messages that will be sent to another location. These messages are usually sent over telephone lines. For instance, you might type a letter here that simultaneously would appear on another Terminet 300 Printer in some distant place like Chicago or New York.

A Terminet 300 Printer may be thought of as an electric typewriter with an ability to be connected to other remotely located electric typewriters.

A common error is to think of the Terminet 300 Printer as a computer; it is not in any way a computer, although it is often used to connect to a computer.

One example of the versatility of the Terminet 300 Printer is demonstrated on this page. The printer was used. The main body of the document in this publication was prepared using a Terminet 300 Printer with a computer. The printer was used to justify the right hand margin as well as to perform some editing functions. For convenience, the original copy was typed, and transferred to long-run printing plates.

IT'S EASY TO USE

The Terminet 300 Printer is easy to use because it is like an electric typewriter. Look at Figure 1 which shows the keyboard. I think you will agree that the keyboard looks much like those you have seen on electric typewriters.

Some keys, such as CTL, ESC, FF, and VT, may be unfamiliar to you; these keys are control keys; and you will learn how to use them later.

NOTE

One hint about touch typing--since there are more keys to the left of the normal letter keys than there are on a standard typewriter, it seems to be a common mistake, for beginners, to want to hold their hands one space too far to the left. Don't worry, you will get over this in the first few minutes.

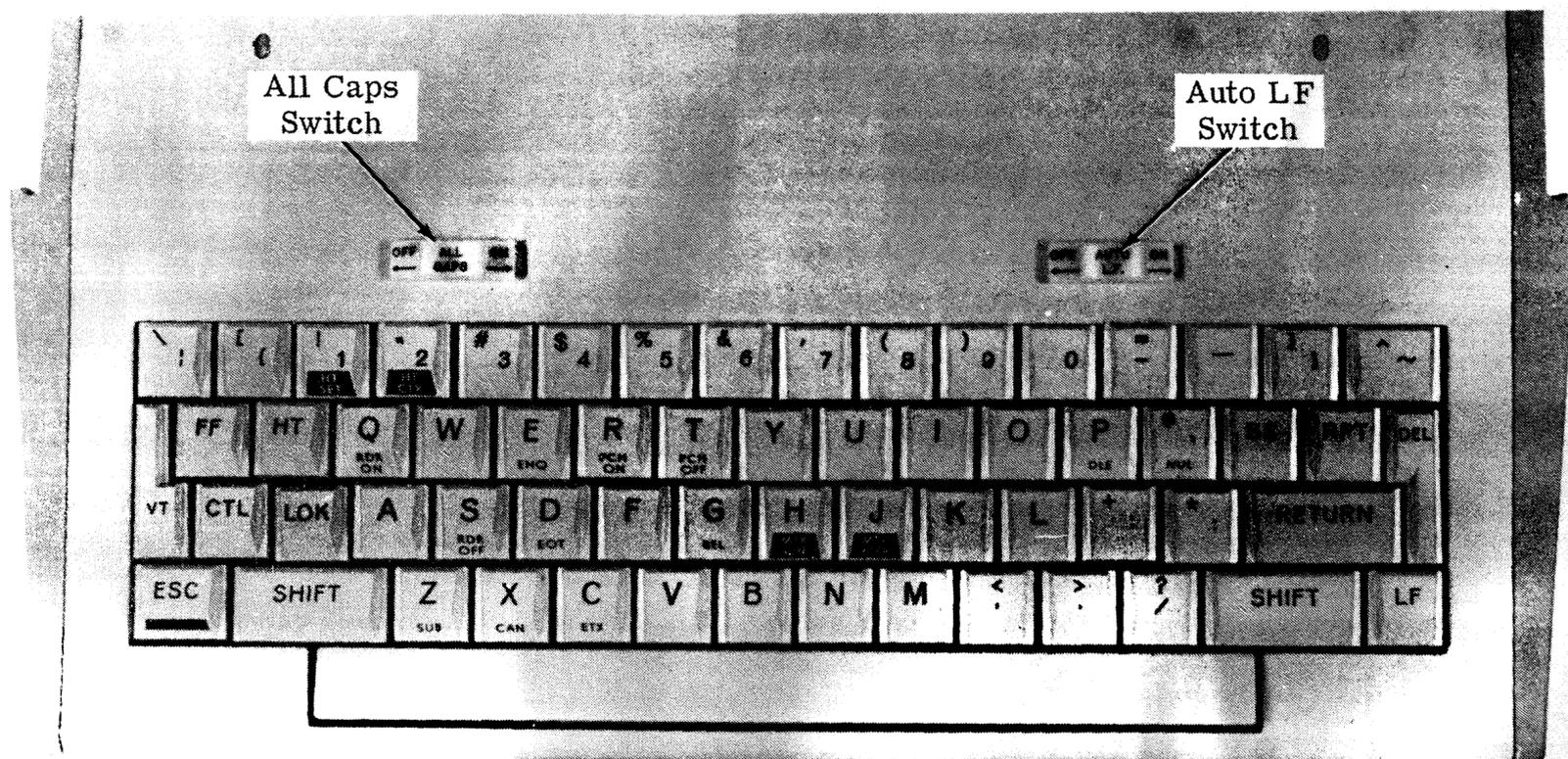
Up to this time I have been referring to the Terminet 300 Printer by its full name; however, for the rest of this publication, I will, in most cases, call it by the easier name "Printer".

THERE ARE THREE PRINTER CONFIGURATIONS

The three Printer configurations are:

1. Receive Only
2. Keyboard Send-Receive
3. Automatic Send-Receive

The Receive Only (RO) unit has no keyboard; after installation it is normally controlled only from the remote (sending) location. Therefore it does not need an "operator" as such; consequently, this type of Printer will not be mentioned in detail in this publication.



Keyboard
Figure 1

The Keyboard Send-Receive (KSR) unit is a Printer used by itself. It can be used as an electric typewriter, or it can transmit to or receive messages from a remote unit.

The Automatic Send-Receive unit (ASR) is a KSR unit connected to a desk having Paper Tape Punch and Reader units.

HOW TO TURN ON YOUR PRINTER

Since the KSR and ASR units are turned on differently, instructions for both are listed below.

To turn on a KSR unit you should go through the following steps:

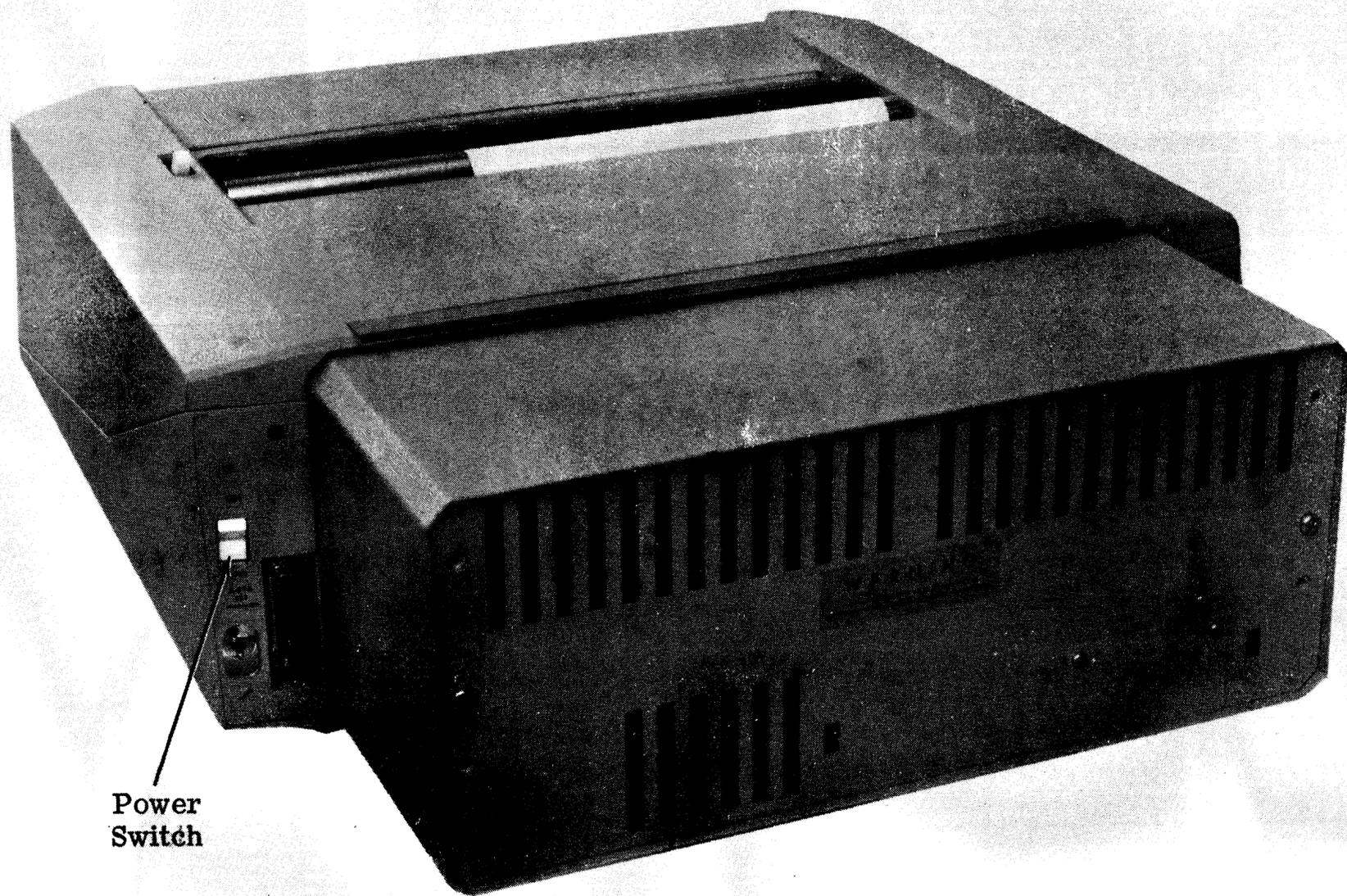
1. Make sure the Printer is plugged into a standard wall outlet.
2. Press the Printer's Power Switch to the ON position. (This switch is on the right rear of the unit. See Figure 2).

When the switch is turned on there should be an audible high pitched beep and the STANDBY pushbutton on the control panel should light.

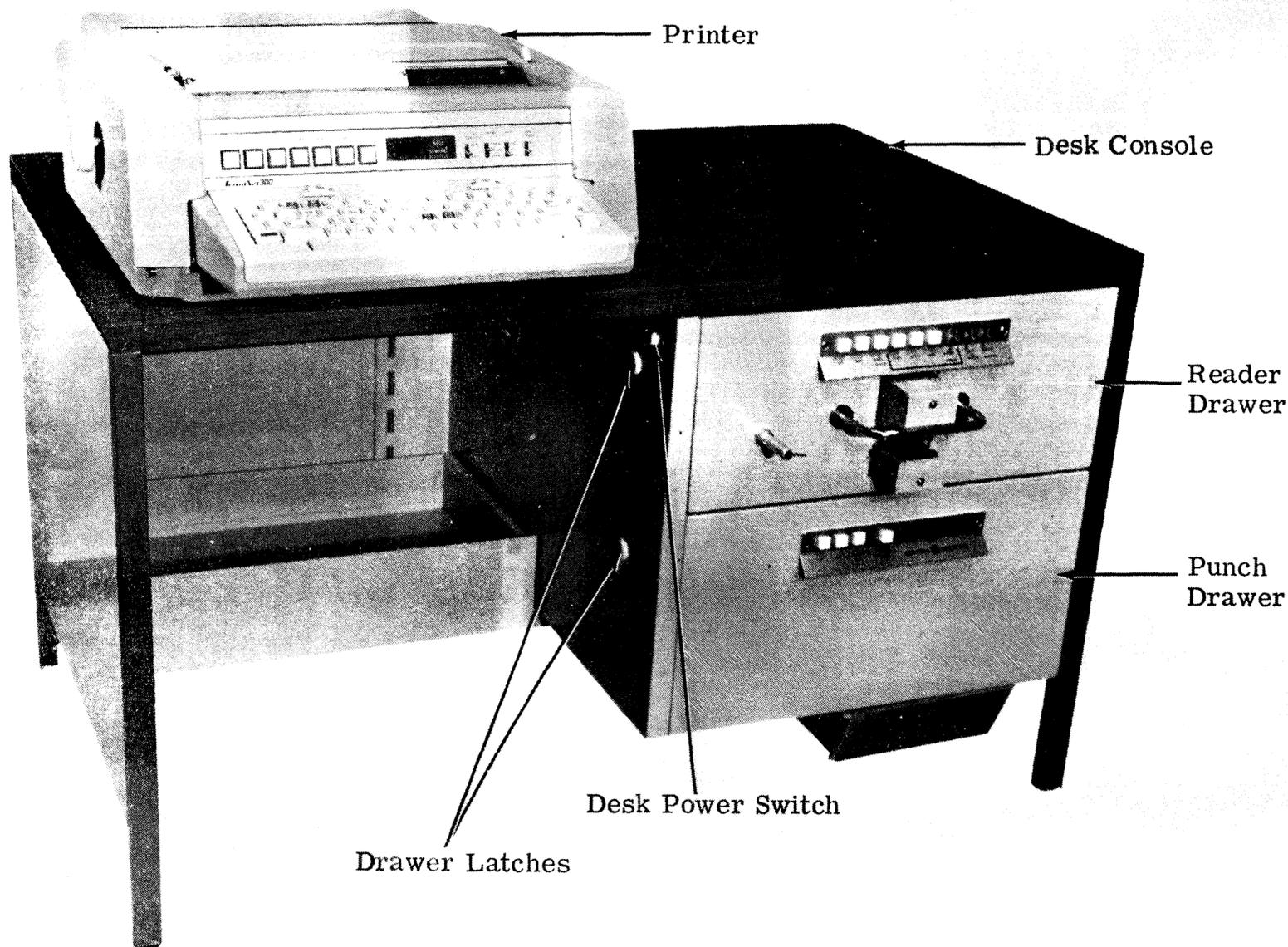
3. Then you should press either the LOCAL or ON LINE pushbutton on the control panel to turn on the motor. When either pushbutton is pressed, it should light and the STANDBY pushbutton should go out.

To turn on the ASR unit you should go through the following steps:

1. Make sure the Desk power cord is plugged into a standard wall outlet.
2. Press the Desk Power Switch to the ON position. This switch is at the top right front of the Desk kneehole. (See Figure 3).
3. When the switch is turned on, there should be an audible high pitched beep and the STANDBY light on the control panel should light. If it does not light, check the Printer's Power Switch located at the right rear of the Printer. Ordinarily the Printer's Power Switch should be left in the ON position because the Desk Power Switch controls the Printer power as well as the Punch and Reader.



Rear of Printer(KSR)
Figure 2



ASR Unit
Figure 3

4. Turn on the motor by pressing either the LOCAL or ON LINE pushbutton on the control panel (See Figure 4). When either pushbutton is pressed, it should light and the STANDBY light should go out.

HOW YOU KNOW THE PRINTER IS WORKING

The Printer is working properly if the following things occur:

1. The ON LINE or LOCAL pushbutton lights when pressed.
2. The Print Position Indicator (PPI) lights when the ON LINE or LOCAL pushbutton lights. (The PPI is near the center of the control panel and indicates the column where the next character typed will be printed).
3. You should be able to type with the keys and have the typed characters appear on the paper.

WHAT TO DO IF YOUR PRINTER IS NOT WORKING

If the Printer is not working, there are several things you can do to restore normal operation.

1. If no control panel pushbuttons will light, check to make sure the power cord is plugged in. Check power plugs at both the wall and at the Printer. As a last resort, plug in another device to see if it will work in the same outlet. If another device works in the same outlet, call your Printer repairman; otherwise get power restored to the outlet.
2. If the LOCAL pushbutton will light but the ON LINE pushbutton will not, check the ALARM pushbutton. If the ALARM pushbutton is lit, it probably means the plastic paper shield is up or that you are out of paper. This problem will have to be corrected before continuing.

POSITION OF PRINTER SWITCHES

It is absolutely essential that the Printer switches be in the correct position for conversation with the computer! (If any of the following switches is not installed on your Printer, ignore the instructions for it). Place the switches in the position shown below.

SWITCH	POSITION
TRANSPARENCY	OFF
INHIBIT	NORM
RATE	10
LINESPACE	1
AUTO LF	OFF

In addition to the above switches, there is an ALL CAPS switch on the top left of the keyboard. (See Figure 1). If this switch is ON, letters printed from keyboard action will be capitalized; if the switch is OFF, printing will be the same as from an ordinary electric typewriter.

TURNING ON THE PRINTER.

To turn on the Printer follow the instructions that were given in the section on "HOW TO TURN ON YOUR PRINTER." Note that the ON LINE pushbutton must be pressed before calling any remote station.

CALLING PROCEDURE

You are now ready to call the computer. It may seem like a big step, but it's really easy. You might be a little nervous about it, but so was everyone else when he (or she) called the computer the first time.

Remember, there is no human on the other end looking at what you type!

The type of telephone interfacing (connection) equipment you have makes a slight difference in the calling procedure; therefore, each of the three common types of interfacing equipment is discussed separately. You should go to the section which discusses the type of equipment installed in your office.

How do you know what type of equipment is installed in your office? One way is to ask someone who is already familiar with your equipment. Another way is to read the descriptions which follow.

The three types of interfacing equipments are:

1. Acoustic coupler--this type of equipment is probably the most common. It consists of a box which has a cable which plugs into the DATA socket in the rear (righthand side) of your Printer. It also has a place

where an ordinary telephone handset can be cradled. The advantage of the Acoustic Coupler is that it uses an ordinary telephone.

2. Data Set--this equipment uses a special telephone. The distinguishing characteristic of this type telephone is that it has several pushbuttons on it. These are marked "DATA", "TALK", etc.
3. Direct Access Arrangement (DAA) with integral modem-- this equipment uses a special telephone, although it does not look special, and a box which connects you to the telephone line.

CALLING PROCEDURE USING ACOUSTIC COUPLER.

1. If your Acoustic Coupler has an ORIGINATE/ANSWER switch, put it in the ORIGINATE position.
2. Dial the computer's number like you would any ordinary call. The computer will respond with a continuous high pitched tone.
3. Set the telephone handset in the cradle and push it firmly in place. If the Acoustic Coupler has an arm, it should be hooked over the telephone handset.

At this point the READY light (on the Printer control panel) should come ON. Within 5 seconds the computer should start typing the SIGN ON questions on your Printer.

CALLING PROCEDURE USING DATA SET.

1. Press the TALK pushbutton.
2. Dial the computer's number like you would any ordinary call. The computer will respond with a continuous high pitched tone.
3. Press the DATA pushbutton first and then hang up the telephone handset.

At this point the READY light (on the Printer control panel) should come ON. Within 5 seconds the computer should start typing the SIGN ON questions on your Printer.

CALLING PROCEDURE USING DAA WITH INTEGRAL MODEM.

1. Pick up the telephone handset and dial the computer's number like you would any ordinary call. The computer will respond with a continuous high pitched tone.
2. Pull up the DATA button. (The telephone handset normally rests on this when it's hung up). Place the

telephone handset on the desk. Do not hang up the telephone because this will break your connection.

When you pull up the DATA button, the READY light (on the Printer control panel) should come on. Within 5 seconds the computer should start typing the SIGN ON questions on your Printer.

**SIGN ON PROCEDURE FOR
G. E. MARK II COMPUTER**

The sign on procedure is easy. All you have to do is answer just those questions the computer asks you. Some computer accounts do not require all the following information which further simplifies the SIGN ON procedure.

Please notice that this procedure is for gaining access to the G.E. Mark II system. If you use another system, some details of your sign on procedure might be slightly different. Since it would be impractical to cover all the slight differences, we suggest you contact your computer representative and discuss the differences, if any, with him.

USER NUMBER.

The first computer question will be for the User Number. As stated before, your manager will have to supply this number.

The User Number will consist of 3 letters followed by 5 digits. QST73884 would be an example of a User Number.

It makes no difference if the letters are upper or lower case; however, there must be no spaces within the number; hence QST 73884 would not be permitted.

If you enter an invalid User Number, the computer will say, "VALIDATION FAULT, RETYPE IT--" You will have 3 chances to get it right before the computer disconnects you.

PROJECT IDENTIFICATION.

The second question for many users will be for PROJECT ID. If your computer account does not use the Project ID, the computer will merely skip this question and immediately ask for SYSTEM. Your manager will tell you how he wants the ID question answered. Again, remember that no spaces are to be inserted into the number.

SYSTEM.

Usually the computer will then ask for SYSTEM. This should be answered with the name of the computer language you intend to use. The languages currently available on Mark II are shown below.

ALGOL
BASIC
FORTRAN
REMAPT

NEW OR OLD.

Then the computer will ask whether you are going to enter a NEW program or retrieve an OLD one.

ENTER FILE NAME.

The last computer question is for the program name. Enter the name precisely, with no extra spaces, characters, or punctuation.

PROGRAM RUN.

After you finish the SIGN ON procedure, depending on your computer account, the program may automatically run, otherwise the computer will respond with READY. Then you type the command RUN. When the program run is finished, the computer will report how many units of computing time were used.

SIGN OFF.

When the program has finished running, depending on your computer account, SIGN OFF may be automatic; otherwise you should give the command BYE.

SAMPLE SIGN ON

A sample sign on is shown below. In the first line the computer sent the U#= ; in the second, it sent the ID: ; in lines 3, 4, and 5, the computer sent through the two hyphens. The remainder of each line was my response to the computer's question.

The READY was typed by the computer, and in the next line the RUN was typed by me.

Even though it doesn't show, remember that each line needing an operator response must be ended with a RETURN.

```
U#=QST73884
ID:ENG4203111
SYSTEM--BASIC
NEW OR OLD--OLD
ENTER FILE NAME--IN300*
READY
RUN
```

NOTE.

Do not use the above USER NUMBER or PROJECT ID when you call the computer. Instead, use numbers supplied by your manager.

POSSIBLE TROUBLES.

If the Printer comes on and runs, and you set the Printer switches in the positions specified earlier and follow the instructions exactly, there will seldom be any difficulty in calling the computer; however, you should be acquainted with some of the infrequent problems that can occur.

COMPUTER RECEIVES INCORRECT DATA.

If you type an incorrect character, or if a transmission error causes the computer to receive a wrong character, the computer may not know what you want. At certain times the computer expects a specific response, for instance, the User Number is always first in the sign on procedure. If it doesn't get a valid User Number at this point, the computer will point out your error in direct language.

At other times when the computer doesn't know what to expect, it may respond with its favorite question, namely, "WHAT?". This question means the computer wants you to correct the previous line or command. Of course the error may not be yours (transmission error, for instance) in which case you would repeat the previous line or command.

ELECTRICAL DISTURBANCES ON TELEPHONE LINES.

Occasionally there is an electrical disturbance on the telephone line. This is most apt to happen on hot summer afternoons when lightning storms are fairly common. When a bad disturbance occurs, the Printer INTERRUPT pushbutton lights. When this happens, several different things could occur:

1. One or more characters will be incorrect, but the Printer will keep printing.

If this happens, the keyboard will become inoperative; otherwise Printer operation is normal. To restore keyboard operation, you will have to press the INTERRUPT pushbutton.

2. In addition to characters being wrong, the Printer may return to STANDBY (STANDBY pushbutton lights, ON LINE pushbutton goes out).

If this occurs, you will have to press the ON LINE and the INTERRUPT pushbuttons to restore normal operation (It makes no difference in which order they are pressed, or, for that matter, they can be pressed simultaneously).

3. In addition to the previous symptoms, the Printer may rapidly print meaningless strings of characters; this is caused by loss of the telephone line.

If this occurs, you will have to start your computer calling sequence all over again. Remember to restore keyboard operation by pressing the INTERRUPT pushbutton.

SYSTEM FAULTS.

It doesn't happen very often, but once in a while, the system malfunctions in such a way that it will no longer respond to your commands. After a few seconds of this you should disconnect.

Terminet 300 PRINTER CONTROLS

Now that you are able to call the computer, let's increase your knowledge of some of the other Printer controls.

KEYS

Most of the keys are already familiar to you; therefore, there should be no need to discuss the white keys. These are just like the keys on an electric typewriter. The one possible exception to this is the underline key. (Refer to Figure 1).

UNDERLINE.

Pressing this key will print an underline character regardless of whether or not the SHIFT key is held down. When you are talking to another Terminet 300 Printer the underline character will print out; however, if you are talking to a computer, the computer will consider the underline character to be an erase signal for the previous character. We will consider this later when we discuss talking to the Mark II computer.

Now let's look at the control keys.

RIGHT SIDE KEYS.

BACKSPACE.

The BS key is the Backspace key. This key performs exactly the same as the backspace key on an electric typewriter. Any time you press this key, the Printer backspaces one character space unless the PPI says 1. If the PPI says 1, the backspace command is ignored.

REPEAT.

The RPT key is the REPEAT key. If this key is held down, the action required by any other single key being held down will be performed 5 times per second. For example, if both the A and RPT keys are held down, 5 A's would be printed each second. Likewise, if both the Space Bar and RPT keys were held down, the Printer would space across the line at 5 spaces per second.

DELETE.

Another key is the DEL key. DEL is an abbreviation of Delete. We will discuss this key again when we talk about preparing paper tapes. For now you can consider this a "do nothing" key since it neither causes printing nor spacing.

RETURN.

The RETURN key returns the Printer to the lefthand margin like the return key on an electric typewriter.

LINEFEED.

The LF key is the Linefeed key. Pressing this key will advance the paper one or two lines depending on where the LINESPACE switch is set. (The LINESPACE switch will be discussed later).

SHIFT.

The last remaining righthand control key is the SHIFT key that performs just like the shift key on most typewriters.

LEFT SIDE KEYS.

VERTICAL TAB.

The keys marked VT and FF are for the Vertical Tab and Form Feed. When the VT key is pressed, a VT character is generated. This character will not cause your Printer to do anything unless it has the Vertical Tab, Form Feed option installed. Regardless of whether or not this option is installed, the VT signal is generated and will be sent to any remote printer to which your Printer may be connected.

If the VTFF option is installed in your Printer, pressing the VT key will advance the paper to the next vertical tab. The vertical tabs are programmed into your Printer by punching holes into a disk. This disk fits into the VTFF device which is (if installed) inside the Printer case.

FORM FEED.

The FF key also generates the FF character regardless of whether or not the VTFF option is installed in your Printer. The FF key will have no effect on your Printer if the option is not installed.

If the VTFF option is installed, pressing the FF key will automatically advance your paper to the beginning of the next form (page).

HORIZONTAL TAB.

The HT key is the Horizontal Tab key. Pressing this key advances your Printer to the next horizontal tab. If your Printer is connected to a remote teleprinter having an HT option, pressing the HT key will advance both printers to the next horizontal tab.

CONTROL.

The CTL key is the Control key. The operation of this key is similar to that of a SHIFT key since it modifies characters sent by pressing other keys. The CTL key is always used with another key. For instance, hold down the CTL key and then press the G key. You should get a high pitched beep lasting about one half second. You might notice that the front of the G key is marked BEL (BELL). The Control keys are marked with brown letters on a white background.

If you desire more knowledge of the Control codes, please refer to PROGRAMMER'S MANUAL GEK-15002A.

ESCAPE.

The ESC key is the escape key. This key is also used in conjunction with other keys. If you desire to generate an ESCAPE code, you press and release the ESC key and then press another key. The keys used most often with the ESC key are also marked on the front. The ESC key markings are in white letters on a brown background. (Notice the front of the ESC key is marked with a brown band).

HORIZONTAL TAB CLEAR.

One function of the ESCAPE key is to set and clear horizontal tabs. If you press and release the ESC key and then press the 2 key, all the horizontal tabs in your Printer will be cleared.

Not only will your own horizontal tabs be cleared, but if your Printer is remotely connected to another printer having the horizontal tab option, the remote printer's horizontal tabs will also be cleared.

HORIZONTAL TAB SET.

Setting the horizontal tabs involves two things:

1. The Tab Set signal which is obtained by pressing and releasing the ESC key and then pressing the 1 (one) key.
2. The present print position (column) of the Printer.

Whenever an ESC 1 signal is recognized, a horizontal tab is set at the then existing print position; for example, if the PPI says 35 when an ESC 1 is recognized, a horizontal tab will be set at print position 35.

Note that if any horizontal tabs are set, the lowest tab set becomes the left margin.

There are other uses for ESCAPE codes, but these will be discussed later.

SHIFT LOCK.

The key marked **LOCK** is the Shift Lock key. This key locks the keyboard into the shifted position whenever it is pressed. To release the lock, press and release the lefthand **SHIFT** key.

PRINTER SWITCHES

You are already familiar with some of the Printer switches. For instance, you have already used the power switch; also, you probably had to change at least one control panel switch when you talked to the computer. Some switches are optional; therefore, your Printer may not have all of the switches mentioned below. (See Figure 4 showing the control panel and keyboard).

TRANSPARENCY SWITCH.

The **TRANSPARENCY** switch is normally left in the **OFF** position (down). The uses of this switch will be discussed in a later section.

INHIBIT SWITCH.

Normally this switch should be left in the **NORM** (center) position. If you don't want your Keyboard or Reader material to print out at your Printer, put the **INHIBIT** switch in the **PRINT** position. This switch cannot keep incoming information (from a remote source) from being printed.

Occasionally you might want to remain connected to a remote printer while typing something that you don't want to print at the remote printer; to do this, put the **INHIBIT** switch in the **TRANS** (inhibit transmit) position.

RATE SWITCH.

The **RATE** switch sets the maximum number of characters that can be transmitted or received in a second. Earlier when you talked to the Mark II computer, you set this switch at 10 (10 characters per second). It would obviously be to your advantage to go at a faster rate, since this results in receiving more information from the computer in a given time. (The Mark II computer will run at 30 characters per second; call your account representative for instructions for sign on at 30 characters per second).

For now let us remember that this switch must be in the same position at the transmitting and receiving printer.

LINESPACE SWITCH

If the **LINESPACE** switch is in the 1 position, your Printer will give you single spacing (vertically). If it is in the 2 position, your Printer will give you double spacing. Note that the position of this switch does not affect the signals sent to a remote printer. Regardless of the position of this switch, pressing the **LF** key will send only one Linefeed character to the remote printer.

AUTO L.F. SWITCH.

The **AUTO L.F.** switch determines whether or not your Printer supplies an automatic linefeed after you type a **RETURN**. This switch is on the top right of the keyboard. (See Figure 1). If it is in the **ON** position, a linefeed is supplied immediately after each **RETURN**. If it is in the **OFF** position, the automatic linefeed will not occur after a **RETURN**.

If the **AUTO L.F.** Switch is on, not only is the linefeed signal supplied to your own Printer, it is also sent to any printer that might be connected to your Printer.

NOTE.

Regardless of which position the **AUTO L.F.** Switch is in, your Printer will not supply a linefeed character when a **RETURN** is received from your Tape Reader or from a remote printer.

ALL CAPS SWITCH

The **ALL CAPS** switch is located on the top left of the keyboard. (See Figure 1). With this switch in the **ON** position, all letters caused by keyboard action will print out in upper case, and the keys marked **! () ~** and **`** will print out as **\ [] ^** and **@** respectively. This feature causes your Printer's output to resemble that of some other teleprinters. With the **ALL CAPS** switch in the **OFF** position, the keyboard will cause printing like a standard typewriter.

TALKING TO ANOTHER PRINTER

Calling another printer is similar to calling a time sharing computer, however, the following points should be noted.

1. Check the positions of the **TRANSPARENCY** and **INHIBIT** switches on your Printer. They should be as shown below. (If your Printer is not equipped with either of these switches, ignore the instructions for it).
 - a. **TRANSPARENCY** switch must be in the **OFF** position.
 - b. **INHIBIT** switch must be in the **NORM** position.
2. Before calling another printer, your Printer must be running in the **ON LINE** mode.
3. Various types of interfacing equipment may be used between your Printer and the remote printer. This equipment is described below. It is important to remember that regardless of the equipment used, one printer must be in the originate mode while the other one is in the answer mode.

- a. Acoustic Coupler. This is an interfacing device which has a place on top for cradling the telephone handset. If your coupler has an ORIGINATE/ANSWER switch, the position of this switch will depend on the mode of the remote printer. For example, if the remote printer is in the originate mode, the ORIGINATE/ANSWER switch on your coupler must be in the ANSWER position.

After dialing the telephone number of the remote printer, a steady high pitched tone should be heard when the connection has been made at the other end. When this occurs, cradle your telephone handset on the acoustic coupler securing the handset with the hold down device on the coupler.

- b. Data Set. When using a Data Set the TALK pushbutton must be pressed, and a dial tone heard before dialing the remote printer. Once connection has been made at the other end, a steady high pitched tone will be heard in your telephone receiver. When this happens, press the DATA pushbutton and hang up the handset.
- c. DAA with internal modem. If your Printer has this equipment, your telephone will look like an ordinary telephone except one of the plungers in the handset cradle will be a DATA button. Since this type of interfacing equipment is primarily for use in talking to a computer, your Printer is permanently connected in the originate mode. Therefore, before communication can be accomplished with a remote printer, it must have interfacing equipment which is connected in the answer mode.

The calling procedure is to dial the remote printer, pull up the DATA button when the high pitched tone is heard, and then lay down the telephone handset on the desk top until you have finished talking to the remote printer. Do not hang up the handset before communications are complete since this disconnects the telephone line.

Regardless of which type of interfacing equipment you may have, you will know you are connected to the other printer when the READY indicator light on your Printer is on. When the READY light goes out, you have been disconnected from the remote printer.

4. Both your Printer and the remote printer must be set at the same printing speed. If your Printer garbles or the interrupt light constantly comes on when the remote printer is sending, try selecting another speed by changing the RATE switch. A prior agreement with the remote party will help avoid this problem.
5. After communication has been established with a remote printer, you should then set the left hand margin on both your Printer and on the remote printer. To do this follow the steps listed below.
 - a. Press and release the ESC key.
 - b. Press and release the 2 key.
 - c. Press and release the RETURN key.

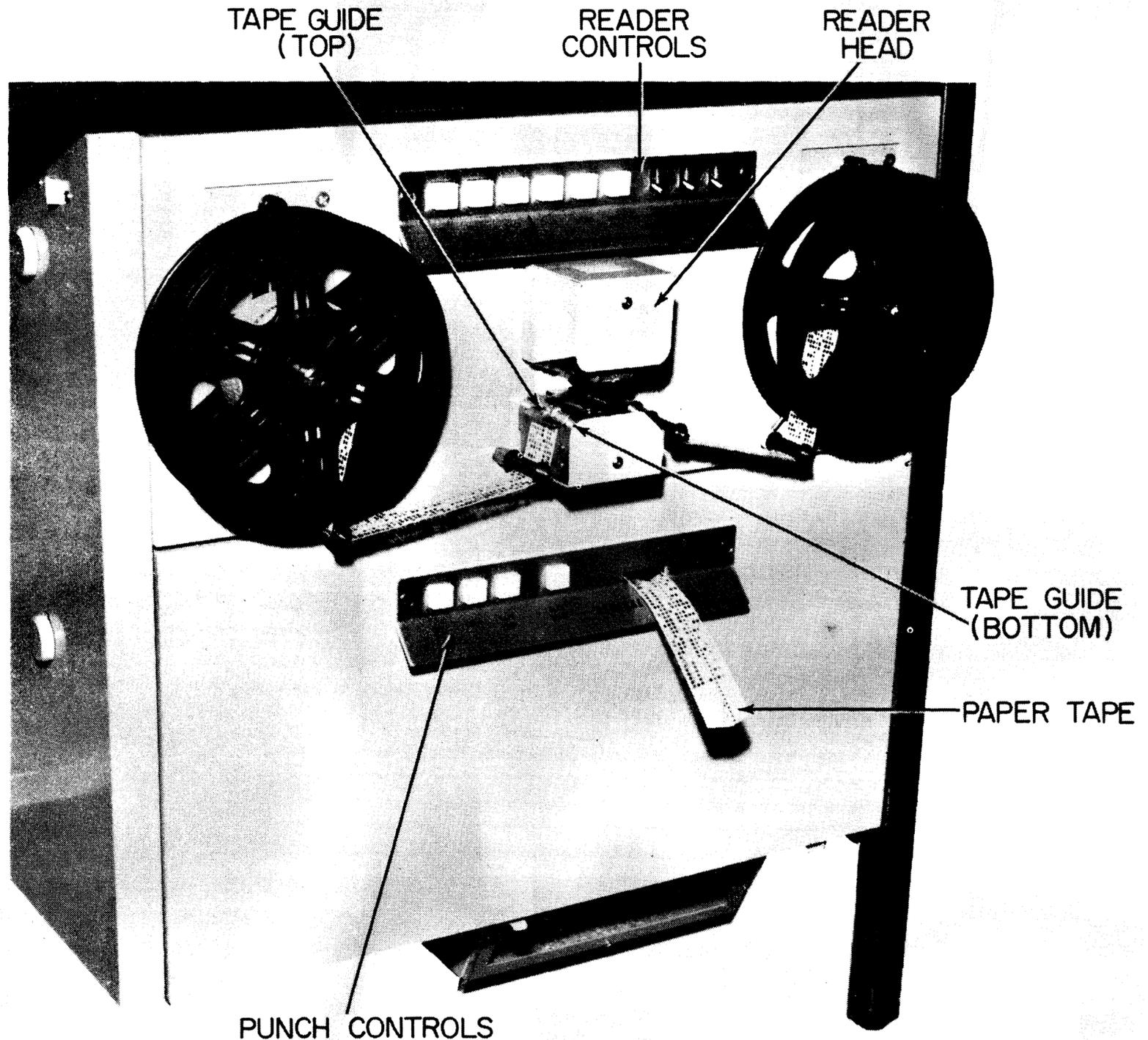
The above sequence will clear all horizontal tabs and set the left hand margin at position 1 on both printers.

If you want to set tabs, or if you want the left hand margin at some other position, follow the procedure outlined in the section entitled "Terminet 300 PRINTER CONTROLS."

OPERATION OF THE PAPER TAPE PUNCH

The bottom drawer in the desk, which is a part of the Automatic Send Receive (ASR) model, contains the paper Punch unit. To prepare a paper tape, proceed as follows.

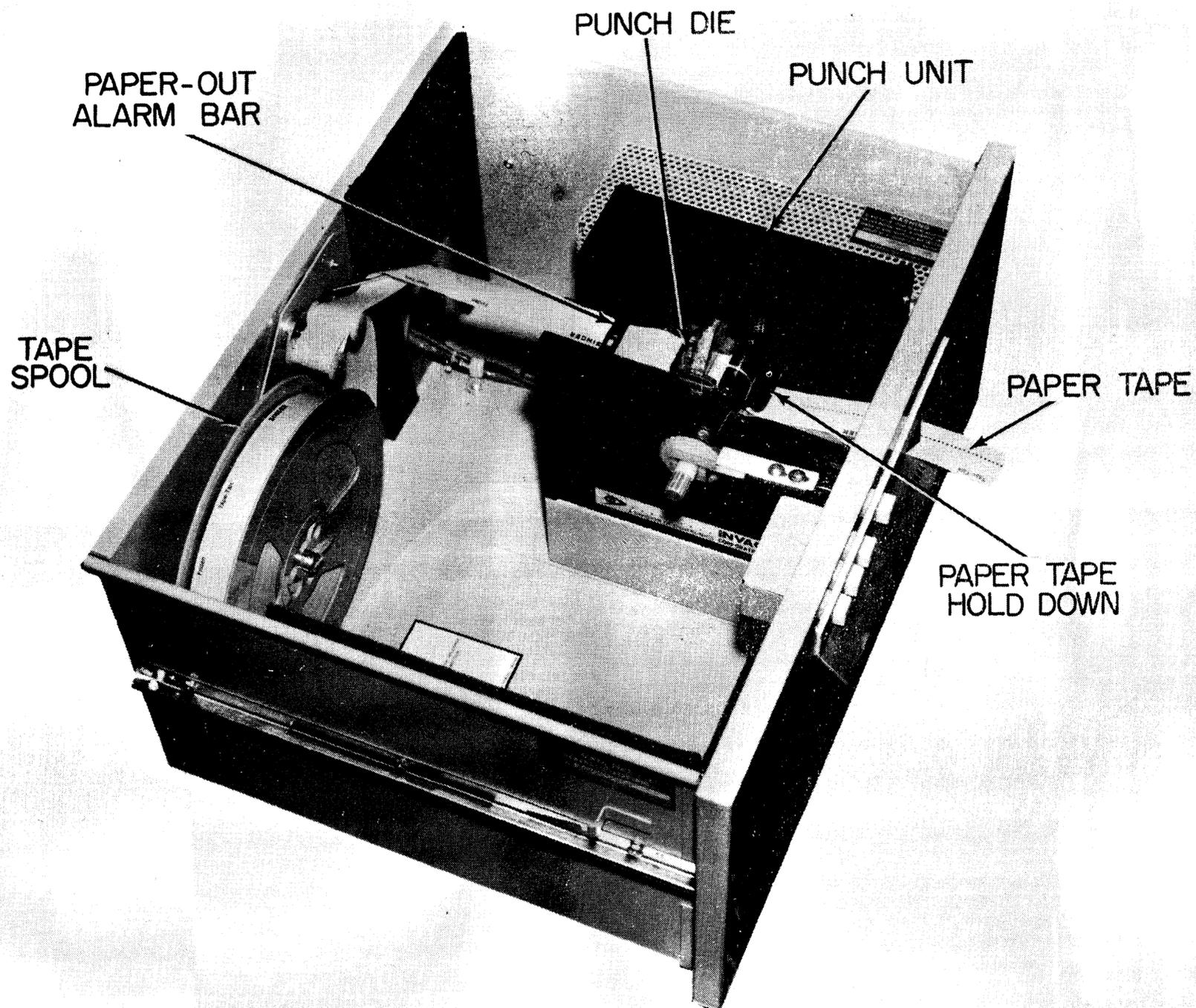
1. Turn on power. Use the power switch located on the upper right side of the desk knee hole. If power doesn't come on, check to see if the power switch on the right rear of the Printer is on. Also make certain the desk power cord is plugged into a wall outlet.
2. After power is on, press the ON pushbutton on the face of the punch drawer. (See Figure 5). The pushbutton should light indicating the Punch is ready to use.
3. Press and hold the TAPE FEED pushbutton. A "clicking" noise will be heard, and paper tape should start feeding out of the front of the Punch drawer. Allow the tape to feed until several inches of leader (tape with only a row of sprocket holes) is observed. This will clear any old data that may have been left from a previous user. Tear off the tape by pulling straight up. If tape doesn't feed out when the TAPE FEED pushbutton is pressed, turn power off, and pull out the Punch drawer by releasing the latch on the right side of the desk knee hole. Check to see if paper tape is properly installed



Punch and Reader with Reeler Option
Figure 5

in the drawer. If paper tape is needed, install as follows. (See Figure 6).

- a. Remove plastic tape spool from drawer.
- b. Take apart spool by twisting the two halves in opposite directions. The direction to twist is shown on the tape spool.
- c. Place a new roll of paper tape on the spool and secure by twisting the two spool halves back together.
- d. Install the tape and spool in punch drawer so that the tape feeds from the bottom right of the spool.
- e. Thread the paper tape through the Punch Drawer as shown in Figure 6. Note the Decal on the inside bottom of the drawer to illustrate correct threading.
- f. Pull the tape forward toward the front of the drawer, and feed several inches of tape through the tape chute in the front of the punch drawer.



Punch Drawer
Figure 6

- g. Release the paper tape hold down on top of the Punch deck. This automatically raises the tape-out alarm bar.
 - h. Slide the paper tape under the tape-out alarm bar, punch die, and the paper tape hold down.
 - i. Push down on the paper tape hold down so that it holds the tape against the sprocket wheel.
 - j. Close the Punch drawer and restore power. Press and hold the TAPE FEED pushbutton and allow several inches of tape to feed out of the Punch drawer.
4. With several inches of tape extending through the Punch drawer, check operation of the BACKSPACE pushbutton. Pressing firmly on this pushbutton will back up the tape one character space each time the pushbutton is pressed.
5. The tape Punch will punch tape at the speed set on the Printer RATE switch up to a maximum of 30 characters per second.
6. With Punch power on, tape will be punched under the following conditions.
- a. Typing on your Printer keyboard with the Printer in STANDBY, LOCAL, or ON LINE modes. Usually a tape is made in the LOCAL mode so that the operator can check accuracy of typing.
 - b. Receiving data from a remote

source. This can be done with your Printer in either the ON LINE or STANDBY mode. The ON LINE condition will allow incoming data to print. The STANDBY mode will not permit the incoming data to be printed although the data will be punched on the paper tape.

- c. Reading tape on your tape Reader. This will cause the Punch to copy the tape being read.

7. When you finish preparing a paper tape, press and hold the TAPE FEED pushbutton until leader appears before tearing off the tape; this will prevent losing information at the end of the tape.

8. To turn on a remote punch send the PUNCH ON signal which is a CTL R; to turn off a remote punch send the PUNCH OFF signal which is a CTL S.

OPERATION OF THE TAPE READER

The top drawer in the desk console, which is part of the Automatic Send-Receive (ASR) model, contains the tape Reader unit. The tape Reader is operated by means of six pushbuttons and three toggle switches. (See Figure 5). Their operation is explained below.

READER CONTROLS

RUN. This pushbutton applies power to the motor when a tape is in place. Pressing this pushbutton will cause the tape to move through the Reader head so that the Reader can read tape information into the Printer. There is a slight delay after the RUN pushbutton is pressed before the tape starts to run. This is to allow the Reader lamp in the Reader head to come up to full brilliance. If your Printer is in the ON LINE mode, but not connected (READY light not on), the tape will not run when the RUN pushbutton is pressed.

OFF. Turns off power to the Reader and causes it to stop reading while in any of the operating modes.

BACKSPACE. Backs up the tape one character each time this pushbutton is pressed. This action will not cause the data to be read into the Printer, but will cause the Reader lamp to come on, if it is not already on, and remain on after the backspacing has been accomplished.

CHARACTER. This pushbutton will advance the tape forward one character each time it is pressed. The Reader lamp will come on, if it is not already on, and will remain on after the character advance has been accomplished.

WORD. This pushbutton will advance the tape forward one word each time it is pressed. The tape will stop on the character following a RETURN, HT (Horizontal Tab), or SP (Space). The Reader lamp will come on, if it is not already on, and remain on after the word has been read.

LINE. This pushbutton will advance the tape forward one line each time it is pressed. The tape will stop on the character after the first RETURN has been recognized. The Reader lamp will turn on, if it is not already on, and will remain on after the line has been read.

OMIT/READ. This switch controls the CHARACTER, WORD, and LINE pushbuttons. When this switch is in the OMIT position, the tape will rapidly advance when one of the above three pushbuttons is pressed. With this switch in the OMIT position, the Printer will not accept data from the Reader. This switch must be in the READ position for normal Reader operation.

DEL. SKIP/READ. With this switch in the SKIP position, the tape rapidly advances when a delete is read; and the delete signal will not be punched or sent to a remote printer. This switch must be in the READ position for normal Reader operation.

LOCK/NORM. If this switch is in the LOCK position, it prevents the Reader from being turned on either locally or from a remote location.

READING TAPE

Lift the upper tape guide (over the sprocket wheel) on the front of the Reader drawer. Insert the beginning of the tape in the bottom tape guide so that the teeth in the sprocket wheel mesh with tape sprocket holes. The tape will run through the Reader head from left to right. With the tape correctly aligned with the sprocket wheel, close the upper tape guide to hold the tape firmly in place.

Check out all functions of the tape Reader with your Printer in the LOCAL mode.

The tape Reader will read and transmit data at the speed set on the Printer RATE switch.

To start a remote reader, send a READER ON signal (CTL Q). To turn off a remote reader, press the INTERRUPT pushbutton.

With your Printer in the LOCAL mode, your tape Reader may be started with the RUN pushbutton and stopped with the OFF pushbutton.

If your Printer is in the STAND BY or ON LINE mode, the RUN pushbutton will not cause the tape to advance unless you are connected to a computer or another printer.

Data Communication Products Department • General Electric Company

Waynesboro, Virginia 22980

GENERAL  ELECTRIC