* * *   T E L E S T A R   * * *

TELESTAR   is an 8080 assembly language program for
transferring named disk files thru the telephone, via a modem,
between two 8080 or Z-80 computers that utilize the North Star
disk system; communicating with any remote timesharing system
and storing all received/transmitted data to   disk;   and
retrieving   that   data   from   disk to display on a terminal or a
printer on a separate port. This program was written for a
North Star HORIZON computer but has a self-patch routine for
customizing to other types of I/O.

TELESTAR has four operating modes and one supplemental
program.   In the TRANSFER mode, two TELESTAR users may converse
with each other thru their respective terminals, send a disk
file to the other party or receive a disk file that will be
saved on disk.

In the modem-to-disk WRITE mode, the computer acts as a
terminal allowing the user to access any remote system (
timeshare, CBBS, or another TELESTAR) in either full or
half-duplex transmission, and all ASCII data exchanged will be
stored to memory and saved to a disk file either automatically
when the memory is full or when commanded to do so by the user.

In   the disk-to-terminal mode, ASCII data previously
received and saved to disk will be loaded to memory and sent to
a terminal or separate port printer one 23 line page at a time.
Output to the printer may be toggled on or off per page and the
user may return to the first page to re-start the display or
abort it.

In the CUSTOMIZING mode, the program will display the port
assignments, status bits, highest memory setting, number of
lines for paging, printer device select #, etc. After the
program has been customized to your system, it will run without
any further alteration there after.

1

MI DWEST
DIGITAL

* * *   T E L S H A R E   * * *

The TELSHARE program included in the disk is a separate
program   that   allows   a   remote   user   to   access and share any
program running under North Star DOS. This gives a user the
facility to demonstrate the running of a program to the other
user via telephone, or a required sequence of commands for an
assembler or the playing of games that require more than one
player.

When executed in the local system, the program will locate
the addresses of the user's I/O routines, patch them into it's
own, re-route the DOS character-in and character-out routines
and return to the DOS. The program can then scan and accept
inputs from either the local terminal or the modem and will
output all data to both users. Once the TELSHARE program is
operationalit will essentially simulate the extension port of a
standard terminal.

The disk contains six versions of the program assembled
for various memory locations, and the user should run the one
that matches the highest memory in his system. For example, if
36k of memory starting at 2000h are in the system, the user
should run "TELSH36K". TELSHARE should reside in the highest
possible memory so as to allow any program to be loaded and run
in the area between it and the North Star DOS.

DOCUMENTATION   include   customizing   and   operating
instructions, system memory map, an alternate BASIC program to
read ASCII data files larger than memory, a LIST OF 13 HOBBY
TIMESHARING SYSTEMS that can be called using the write mode
along with the phone numbers and passwords. Also included is a
sample data file containig text received from a timesharing
system.

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TELESTAR and TELSHARE features:

1. A list of 13 hobby timeshare systems with instructions
   on how to use them.
2. This program will work with most any standard modem such
   as a Radio Shack accoustic modem.
3. Will run on single or double density systems.
4. These programs will communicate with most other modems and
   there driver programs.
5. Clear and understandble documentation.
6. Error checking.

===

TELESTAR and TELSHARE requirements:

1. 8080 or Z-80 computer system.
2. North Star System (Single or Double density)
3. 16K minimum RAM starting at 2000H.
4. Standard terminal or keyboard/video monitor combination.
5. Answer/Originate or Originate only modem.

===

All of the formentioned programs are supplied on disk and
shipped with documentation by first class mail.

   MC   and   VISA   Welcome   .   .

TELESTAR and TELSHARE ------------- $ 30

copyright 1979 Leonard E. Garcia

Documentation alone ---------------- $ 5
(Refundable with order)

M E S S A G E S

TELESTAR encloses it's messages in plus "+", to distinguish it from messages typed in by a remote system.

+++ ON LINE +++   + FILE NAME? +

+ STANDBY FOR FILENAME +   + NAME TOO LONG +

+ FILE NOT FOUND +   + ARG ERROR +

+ FILE TRANSF ABORTED +   + TRANSFER COMPLETE +

+ STANDBY, WRITING +   + HALF (H) OR FULL (F) +

+ DATA TO PRINTER? +   + RETURNING TO DOS +

===

C O M M A N D S

"C"   "T"   "W"   "R"

CTL-Q   CTL-S   CTL-C   CTL-B

CTL-P

===

U S E R   R O U T I N E S

TELESTAR has an area that may be used by the user to place initialization routines for serial boards, screen clearing etc. This area is only called once on start up.

telestar

A   North Star Disk - to - modem   program

telestar

The special version of TELESTAR included on your disk is assembled at 2DØØH to enable double density users to load and execute this program. Please note the following points when using the program on double density systems:

1. While this copy of TELESTAR is assembled higher in memory it is NOT formatted to double density, nor will it read or write in double density format.

2. When communicating with another TELESTAR user, using the disk file TRANSFER mode, the files must be in single density format since all data is tranferred in 256 byte blocks, so the byte/block ratio must be the same in both users.

3. Note that all the addresses in the manual must be +3ØØH since everything has moved up in memory. The area in RAM for the file is now 34ØØH, instead of 31ØØH and this must be taken into account when allocating datafiles sizes on the disk.

telestar

Special version assembled at 2D∅∅H for double density users.

    The special version of TELESTAR included on your disk is assembled at 2D∅∅H
to enable double density users to load and execute this program. Please note
the following points when using the program on double density systems:

1. While this copy of TELESTAR is assembled higher in memory it is NOT formatted
to double density, nor will it read or write in double density format.

2. When communicating with another TELESTAR user, using the disk file TRANSFER
mode, the files must be in single density format since all data is tranferred
in 256 byte blocks, so the byte/block ratio must be the same in both users.

3. Note that all the addresses in the manual must be +3∅∅H since everything has
moved up in memory. The area in RAM for the file is now 34∅∅H, instead of 31∅∅H
and this must be taken into account when allocating datafiles sizes on the disk.

customizing

TELESTAR has been written in 8080 assembly language for a North Star HORIZON computer and uses the left serial port (port 2 data, port 3 status) for the terminal and the right serial port (port 4 data, port 5 status) for the modem I/O. If TELESTAR is to be used in a HORIZON then there are no I/O changes required if this port configuration is used. Only the jumper header for the right port on the motherboard must be in accordance with the North Star HORIZON manual's "HORIZON AS TERMINAL" configuration. (Pge 69 of the Manual). Note that this port's baud rate must match that of the remote system (300 baud is standard).

To customize TELESTAR to other types of I/O, the user should execute the program with "GO TELESTAR" and then use the "C" command to jump to the self-patching routine of the program.

The customizing routine may be jumped to ONLY when TELESTAR is executed directly from disk. This routine resides from 31ØØH to 35Ø7H and is overlaid whenever a file is loaded to memory or is recieved from the modem. The routine will display the port assignments in the present version and wait for any substitutions. If no changes are required the user should just hit a carriage return. If any changes are to be made then the user should enter the two hex characters required.

After all (if any) changes are made TELESTAR will re-write itself to disk over the old TELESTAR file and jump to the beginning of the program. The following are the items displayed:

• MODEM DATA PORT	Port number to which the modem is attached.
• MODEM STATUS PORT	Port number to check status of the modem.
• MODEM DATA AVAILABLE (NOT bit number)	Value that indicates to the pgm that the modem port has data.
• MODEM XMITTER BUFFER EMPTY (NOT bit number)	Value that indicates to the pgm that modem port is free to accept data
• TERMINAL STATUS PORT	Port number to check status of the terminal.
• TERMINAL DATA AVAILABLE (NOT bit number)	Value that indicates to the pgm that the terminal port has data.
• MOST SIGNIF BYTE HIGH MEM	This is the high order byte of the users highest memory location.
• BACKSPACE CHAR TO ECHO	When "RUB" is hit during a file name entry, this character will be echoed back to the terminal. (Ø8H will move cursor left on most video terminals).
• PRINTER DEVICE SELECT NO.	Device number sent to the DOS I/O routines to route the print-out.
• NUMBER OF LINES PAGING	Max. number of lines for the READ routine to stop screen scrolling.

configuration

Serial Port A   Serial Port B

| Modem | Computer | Terminal |
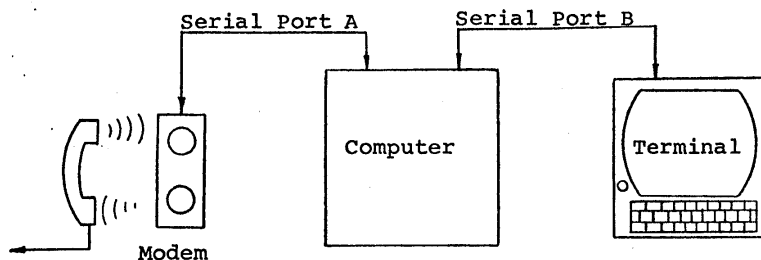
Typical System Configuration.

SERIAL PORT A: (Configured to play the role of a terminal)
    Port connecting the computer to the modem must be a full
RS-232 serial interface and the cable to the modem must have
all the connections to send the modem control signals (Pins
1-8 and 20). This port should be set to the speed to be tran-
smitted (110 or 300 baud, the 300 baud speed being preferred).
Data from the disk file is not truncated to 7-bit ASCII so
this interface must be configured to send/recieve words of 8
bits in length, no parity. (If used in a HORIZON computer, the
DOS system initialization routines will set it to this mode
upon initial boot-up). The interface must also be set for full
duplex operation.

SERIAL PORT B:
    The port connecting the computer to the terminal should not
require any modifications from it's existing configuration, as
long as the speed of the interface and terminal is not less than
that of the other port. Operation of this interface should also
be set for full duplex.

MODEM:
    At least one party must be able to "answer" the connection by
sending the answer tone. The parties must agree beforehand on the
type of mode to set each of the modems. Modem should be set to
either answer or originate, full duplex operation and, if selectable,
acoustic mode.

-3-

start-up

1. Start the system by loading up the North Star DOS. Insert
    the disk containing the TELESTAR program in any drive. Note
    that the file to be read from or written to must reside in
    drive number 1.

2. If you will be going to a disk TRANSFER mode and recieving
    a disk file, establish voice communication over the phone with
    the other party and agree on the file name and size, and then
    create that file in your disk directory.
        If you will be going to the disk WRITE mode, the file or
    files to be written to should be created and each file should
    be as large as your memory starting from 31$\emptyset\emptyset$H.

3. Execute the program with "GO TELESTAR". The message:

                    T E L E S T A R
            A NORTH STAR DISK-TO-MODEM PROGRAM

            CUSTOMIZE (C),
            +TRANSFER (T), WRITE (W) OR READ (R) DISK?+

    should display on the terminal. If customizing of the program
    is desired type the "C" command and refer to the customizing
    section of this documentation.

4. It is highly recommended that the modem connection be made
    before going to the TRANSFER or WRITE modes to avoid garbage
    from getting into the program.
        If this will be a link between two TELESTAR users, one user
    must set his modem to "ANSWER", insert the handset in the phone
    coupler and send the ANSWER tone. The other user must set his
    modem to "ORIGINATE", wait for the tone and then insert his
    phone handset in his coupler. Once the carrier is recieved as
    indicated by the carrier light on the modems, the users may then
    type the "T" or "W" command as desired.
        If the connection will be with a timesharing computer in the
    disk WRITE mode (ONLY!), the remote system will send the ANSWER
    tone and the user must set his modem to ORIGINATE, wait for the
    carrier light and then type the "W" command.

5. If the carrier is not recieved or is lost during the trans-
    mission, re-establish communication before attempting to type
    on your terminal. Once the +ON LINE+ message is displayed on
    the terminal,data typed in at the terminal will be sent to the
    modem and if the modem does not respond the system will lock-up!.

        Should you wish to return to the DOS prior to any
        command, you may use the CTRL-Q command.

        To re-enter a loaded TELESTAR program from the DOS,
        type "JP 2A14". This is the re-entry point for this
        mode.

transfer mode

Upon recieving a "T" command, TELESTAR will display the message:

+ ON LINE +

Any characters typed at the terminal of one user will be sent
thru the modem to display on the remote terminal and
display on his terminal also.
The users should take turns in sending messages by waiting for
a carriage return from the other party before typing a message.
When encountering a carriage return, TELESTAR will send out a line
feed to save the user from having to type it. To send a file the
SENDER must type a CTRL-S. This will cause the sender's terminal
to display:

+ FILE NAME? +

and the reciever's terminal to display:

+ STANDBY FOR FILE NAME +

Only the SENDER must type the name, using "RUB" to backspace or a
CTRL-C to abort the name entry. File errors on either party's disk
directory will cause an error message and both systems to return to
the conversational mode. Once the file is loaded in sender's memory
it will be sent in 256 byte blocks, confirmation of a block transm-
itted display   in both terminals with the character:

#

If a checksum error occurs in a block, TELESTAR will attempt to re-
transmit it one more time. This will be noted by the character:

=

displaying on the terminals. If another error occurs in the same
block, the transfer will be aborted, the message:

+ FILE TRANSFER ABORTED +

displayed, and both systems sent back to the conversational mode.
Once the file has been correctly recieved and saved to disk the
message:

+ FILE TRANSFER COMPLETE +

should display and return the systems to the conversation mode.
Should a user wish to return to the DOS, he may use the CTRL-Q
command and may re-enter the conv. mode with a "JP 2A3C". This is
the re-entry point to the TRANSFER program. ONLY the user that hit
the CTRL-Q will return to the DOS, the other user will not return
to the DOS as a result of the other user typing CTRL-Q.

write mode

TELESTAR will go into the WRITE mode upon recieving a "W"
command and will ask for :

+ FILE NAME? +

The file to be written to should be made as large as user's
memory from 31ØØH. For example, if the top of memory is 9FFF, the
file should be 111 blocks long. The user should allocate as many
files and can fit on his disk, named for example, DATA1, DATA2, etc.
No file type is required by the program but the NS BASIC program
in the addenda will require it to be type 3.
After the name is entered the system will ask if the transmission
will be in a half-duplex or full-duplex mode:

+ HALF (H) OR FULL (F) DUPLEX? +

If in half-duplex, data typed at the terminal AND data recieved
thru the modem will be stored, else only that data being recieved
or echoed back thru the modem will display and be stored. After
the selection is made, the prompt:

+ ON LINE +

will display and the user may now type whatever code or password
is required to access the remote system. All data will be stored
in memory and ONLY will be dumped to disk when one of the following
occurs;
      1. The file has reached the limits of memory, this limit
         having been defined by the user when the program was
         customized.
      2. The user has typed the ESCAPE, "ESC", key to manually
         cause the program to dump what it has recieved so far
         to disk.
NOTE that either event must take place in order to save the data
to the disk file; that is, if the program has not dumped the file
at the end of the connection, the user MUST hit the ESCAPE key to
manually dump the file. If the remote system has disconnected,
typing any other key besides ESC may cause your system to lock-up
with possible irretrievable loss of data.

The ESC key is used internally in this mode and is never
sent thru the modem. Should a remote computer require the ESC
key to be transmitted, the user may change the code 1B (ESC) at
address 2C9DH to any other convinient key code.

To return to the command mode, when being asked for a file name
the user may hit the CTRL-C key.

read mode

Once a file recieved thru the modem in the WRITE mode has been saved to disk, it may be read using the "R" command. The program will display:

+ FILE NAME? +

The file name entry may be backspaced with "RUB" or aborted with CTRL-C, and then the program will ask if the display is to be sent to a different port than the terminal with:

+ DATA TO PRINTER (Y OR N)? +

The program will then load the chosen file to memory and will display it in 23-line pages at a time. The desired number of the lines to display may also be specified in the customization part. At each page, the program will pause and the user may enter any of the following:

CTRL-B	Backs up the display to the first page.
CTRL-P	Toggles the printer "ON" or "OFF" regardless of the original selection.
CTRL-C	Aborts the display and returns the program to the START command mode.
Any other key	Displays the next page of text.

At the end of the file the program will return to the START or command mode and the user may then request another file to display or send to the printer.
If the data is to be sent to a printer on a separate port, then none of the TELESTAR prompts will print, only the data in the file, so that several files may be printed out without any extraneous text.

The addenda lists a program written in North Star BASIC that will also retrieve TELESTAR format (or any ASCII only) data files if the user prefers to use BASIC to display the text. This may also be used to display data files larger than available memory since NS BASIC buffers the data in RAM before displaying it. If this program is to be used, then the file must be changed to a type 3 BASIC data file.

messages

TELESTAR encloses it's messages in plus signs "+", to
distinguish it from messages typed in by a remote system.

+++ ON LINE +++	Indicates the program will send typed data to the modem or is expecting data from the modem to send to the terminal.
+ FILE NAME? +	Program is asking for name of file to transfer, write to or read from.
+ STANDBY FOR FILENAME +	Remote system will be sending file name to be TRANSferred to local system.
+ NAME TOO LONG +	More than 8 characters were entered in file name.
+ FILE NOT FOUND +	Either the sender's or reciever's disk directory has no file entry by that name.
+ ARG ERROR +	Disk access arguments passed to the DOS are illegal.
+ FILE TRANSF ABORTED +	Transmission errors prevent further file tranfer. More than 1 checksum error per blk.
+ TRANSFER COMPLETE +	File has been sent or recieved and saved to disk. Returns to conversational mode.
+ STANDBY, WRITING +	Program is writing to disk and no data will be accepted until finished.
+ HALF (H) OR FULL (F)+	In the WRITE mode, whether transmission will be in half or full duplex mode.
+ DATA TO PRINTER? +	In the READ mode, whether data is to be sent to a printer on a separate port.
+ RETURNING TO DOS +	Leaving the TELESTAR program in response to a CTRL-Q or modem errors.

Note that there may be as much as an 8 second delay between
reciept of a block of data and a +TRANSFER ABORTED+ message
since the file transfer will only be aborted at the end of a
256 byte block of data.

commands

MODE	COMMAND	ACTION
At START-up	"C"	Goes to customizing routine
	"T"	Goes to file TRANSFER mode
	"W"	Goes to file WRITE mode
	"R"	Goes to file READ mode
	CTRL-Q	Returns to DOS
TRANSFER mode	CTRL-Q	Returns to DOS
	CTRL-S	Sets system to send a file
	CTRL-C	Aborts file name entry, or transfer.
WRITE mode	CTRL-C	Aborts file name entry,goto START
	ESC	Save file to disk, goto START
READ mode	CTRL-C	Abort file name entry, goto START
	CTRL-B	Back display to first page
	CTRL-P	Toggles printer ON or OFF
	Any other key	Displays next page of text file

user routines

   256 bytes starting at 3ØØØH have been reserved for any user
required initialization routines. The routines must end with a
RET. All registers may be used.
   TELESTAR calls this location on initial start-up only. If
the user wishes to re-enter the program without the initialization
being repeated , he should "JP 2AØ3" from the DOS.

N O T E

   Any extensive modifications to TELESTAR may render it incom-
patible with another user, preventing disk file transfers. Please
inform me of any recommended changes being made so they can be
distributed to the other users.

memory map

Total memory	Addr.	Max.size	Approx. time
48K	DFFF —— 175 Blks —— 25 min.		
40K	BFFF —— 143 Blks —— 20.3 min.		
32K	9FFF —— 111 Blks —— 15.7 min.		
24K	7FFF —— 79 Blks —— 11.2 min.		
16K	5FFF —— 47 Blks —— 6.6 min.		
8K	3FFF —— 15 Blks —— 2.1 min.		
	31ØØ Ø Ø		
telestar			
DOS	2ØØØ		
Not Used			
	Ø		

addenda

```
10 REM    TELEREAD - A PROGRAM TO READ TELESTAR FORMAT DISK FILES -
20 REM              THIS ROUTINE MAY BE USED TO RETRIEVE FILES
30 REM              WRITTEN IN TELESTAR FORMAT (OR ANY ASCII ONLY
40 REM              FILE) AND DISPLAY IT OR SEND IT TO A PRINTER.
50 REM                  FILE MUST BE CHANGED TO A TYPE 3.
60 REM
100 L=0                         \REM  L IS NUMBER OF LINES COUNTER
110 INPUT "FILE NAME? ",F$
120 INPUT "TO PRINTER?",P$
130 IF P$(1,1)="Y" THEN P=2 \REM  P IS PRINTER DEVICE NUMBER
140 OPEN #0,F$
150 READ #0,&A                  \REM  DATA ACCESS AT BYTE LEVEL
160 IF A>127 THEN 220           \REM  IF NOT ASCII, MUST BE END-OF-FILE
170 IF A=10   THEN L=L+1        \REM  ASCII LINE FEED?, INCR. LINE COUNT
180 A$=CHR$(A)                  \REM  CONVERT THE BYTE TO STRING VARIABLE
190 PRINT #P,A$,                \REM  DISPLAY/PRINT THE CHARACTER
200 IF L=23 THEN GOSUB 600      \REM  23 LINES PRINTED?,STOP SCROLL
210 GOTO 150                    \REM  READ NEXT BYTE
220 CLOSE #0
230 END                         \REM  ALL CHARACTERS READ, END PROGRAM
600 REM---ROUTINE TO STOP SCREEN SCROLL---
610 IF P>0 THEN RETURN          \REM  BEING SENT TO PRINTER?, FORGET IT
620 INPUT "PRESS RETURN ",X$    \REM  STOP SCROLLING
630 L=0                         \REM  RESET NUMBER OF LINES
640 RETURN                      \REM  GO DISPLAY ANOTHER PAGE
```

A compressed version of this program is included on
the TELESTAR disk under the name "TELEREAD".

" hello?"

THIS IS A LIST OF COMPUTER SYSTEMS THAT MAY BE CALLED FREE OF CHARGE
USING TELESTAR'S 'WRITE' MODE.   ALL OPERATE IN THE FULL-DUPLEX MODE.
WHEN ACCESSED, TYPE THE RECOGNITION CODE AND THEN FOLLOW INSTRUCTIONS.

CBBS COMPUTERIZED BULLETIN BOARD SERVICE

CHICAGO	WARD CHRISTENSEN & RANDY SEUSS	(312) 528-7141	HIT A FEW CR'S
DALLAS	RIC MARTIN & BILL KENNEDY	(214) 641-8759	''
BOSTON	MITCH WOLRICH	(617) 963-8310	''
SANTA CLARA	PCNET	(408) 246-2805	(INACTIVE?)
SAN DIEGO	-	(714) 565-0961	
ATLANTA	-	(404) 458-4886	

CBBS+ BULLETIN BOARDS IN NORTH STAR BASIC

COLUMBIA, SC	FRED COLLINS	(803) 771-0922	HIT CR, THEN "H"
ATLANTA	RANDY WILSON	(404) 428-8958	''
ATLANTA	LES FREED	(404) 939-1520	''
ATLANTA	BOB STRONG	(404) 252-2324	''
ATLANTA	MUCHIRI MOTILEWA	(404) 289-5538	ACCOUNT# 34, 50 PASSWORD=CHEVY

AMRAD MESSAGE BOX

WASHINGTON, DC	BOB BRUNINGA	(202) 281-2125	HIT CR, THEN "H"

JOURNAL OF WASHINGTON AMATEUR COMPUTER SOCIETY

WASHINGTON, DC	JWACS	(202) 635-5730	HIT CTRL-C, THEN "I" , THEN "HELP WACS"

telshare

DESCRIPTION

The TELSHARE program included in the disk is a separate program that allows a remote user to access and share any program running under the North Star DOS. This gives a user the facility to demonstrate the running of a program to the other user via the telephone, or a required sequence of commands for an assembler or the playing of games that require more than one player.

When executed in the local system, the program will locate the addresses of the user's I/O routines, patch them into it's own, re-route the DOS character-in and character-out routines and return to the DOS. The program can then scan and accept inputs from either the local terminal or the modem and will output all data to both users. Once the TELSHARE program is operational it will essentially simulate the extension port of a standard terminal.

The disk contains six versions of the program assembled for various memory locations, and the user should run the one that matches the highest memory in his system. For example, if 36K of memory starting at 2ØØØH are in the system, the user should run "TELSH36K". TELSHARE should reside in the highest possible memory so as to allow any program to be loaded and run in the area between it and the North Star DOS.

OPERATION

1. Once the North Star DOS is loaded, make the modem connection with the other party. It is assumed that the modem port has been previously configured to run the TELESTAR program (page 3). The remote user may call using TELESTAR's "WRITE" mode in full-duplex transmission or using a simple terminal/modem system.

2. Start the program with: "GO TELSHxxK, where xx is the total amount of memory starting at 2ØØØH. The message:

```
                TELSHARE
       CUSTOMIZE (C) OR EXECUTE (E) PGM?
```

should display. If customization is required, type "C" and refer to TELESTAR's customizing routines (page 2), else use "E" to execute the program or CTRL-Q to return to the DOS without any modifications made to the DOS I/O routines. Once the "E" command is entered, the message:

```
            "I/O NOW RE-ROUTED THRU THIS PGM"
            "IF BASIC IS USED, MEMSET NO HIGHER THAN xxxxx"
            "RETURNING TO DOS 'ON LINE'..."
```

will display indicating that the I/O routines have been patched and that either user may list the directory, load a program, etc. with all data accepted from either user and all outputs sent to both.

The customizing routine resides in the first part of the program so that it may be overlaid when a file is loaded, however, since North Star BASIC places temporary data at the highest memory for which it has been set, the BASIC interpreter must be "MEMSET" after it has been loaded by either user to an address no higher than given by "xxxxx" above so as to not overlay the functional portion of the TELSHARE program.

3. If the local user wishes to restore the DOS I/O routines to their normal configuration he should enter a CTRL-Q from his terminal. This will restore the DOS to accept data from the terminal only. Note that this character is reserved and should not be used in the normal course of entering or running a program and should be used while the modem connection is still "on line".

If the customizing routine was in effect overlaid, the program cannot be re-entered after exiting with CTRL-Q, but must be re-executed from disk.

```
2DAB                       0010 *       T E L E S T A R
2DAB                       0020 *     .
2DAB                       0030 * THIS IS TELESTAR'S I/O AREA.
2DAB                       0040 * ITEMS UNDERLINED ARE THOSE
2DAB                       0050 * MODIFIED BY THE CUSTOMIZING
2DAB                       0060 * ROUTINE.
2DAB                       0070 *   (ADDRESSES MAY VARY SLIGHTLY
2DAB                       0080 * FOR OLDER VERSIONS OF THE PGM)
2DAB                       0090 *
2DAB                       0100 TPORT   EQU    02H          TERMINAL PORT
2DAB                       0110 TSTAT   EQU    03H          TERMINAL STATUS
2DAB                       0120 MPORT   EQU    04H          MODEM PORT
2DAB                       0130 MSTAT   EQU    05H          MODEM STATUS
2DAB                       0140 DAV     EQU    02H          DATA AVAILABLE
2DAB                       0150 TBE     EQU    01H      ,   XMITTER BUFFER EM
2DAB                       0160 UNIT    EQU    303AH        DEVICE # STORAGE
2DAB                       0170 *
2DAB                       0180 * TERMINAL CHAR-IN
2DAB AF                    0190 CHIN    XRA    A            CLEAR ACCUM
2DAC CD 10 20              0200         CALL   2010H        CALL DOS CHR-IN
2DAF C9                    0210         RET                 RETURN
2DB0                       0220 * TERMINAL CHAR-OUT
2DB0 3A 3A 30              0230 CHOUT   LDA    UNIT         LOAD UNIT# IN ACC
2DB3 CD 0D 20              0240         CALL   200DH        CALL DOS CHR-OUT
2DB6 C9                    0250         RET                 RETURN
2DB7                       0260 * MODEM CHAR-IN
2DB7 DB 05                 0270 MDIN    IN     MSTAT        IN MODEM STATUS
2DB9 E6 02                 0280         ANI    DAV          CHK DATA AVAILABL
2DBB CA B7 2D              0290         JZ     MDIN         LOOP IF NOT READY
2DBE DB 04                 0300         IN     MPORT        GET THE CHAR
2DC0 C9                    0310         RET                 RETURN W/O MASKIN
2DC1                       0320 * MODEM CHAR-OUT
2DC1 DB 05                 0330 MDOUT   IN     MSTAT   ,    IN MODEM STATUS
2DC3 E6 01                 0340         ANI    TBE          CHECK IF TBE
2DC5 CA C1 2D              0350         JZ     MDOUT        LOOP TILL EMPTY
2DC8 78                    0360         MOV    A,B          PUT CHAR IN ACCUM
2DC9 D3 04                 0370         OUT    MPORT        SEND IT
2DCB C9                    0380         RET                 RETURN
2DCC                       0390 * TERM STATUS CHK
2DCC DB 03    .   .        0400 TCHK    IN     TSTAT        IN TERMINAL STATU
2DCE E6 02                 0410         ANI    DAV -        ANY DATA
2DD0 CA D6 2D              0420         JZ     NDATA        JMP IF NONE
2DD3 3E FF                 0430    .    MVI    A,0FFH       IF DATA,FF IN ACC
2DD5 C9                    0440         RET                 RETURN W/FF
2DD6 3E 00                 0450 NDATA   MVI    A,00H        NO DATA,00 IN ACC
2DD8 C9                    0460         RET                 RETURN W/00
2DD9                       0470 * MODEM STATUS CHK
2DD9 DB 05                 0480 MCHK    IN     MSTAT        IN MODEM STATUS
2DDB E6 02                 0490         ANI    DAV          ANY DATA?
2DDD CA E3 2D              0500         JZ     NDAT         JMP IF NONE
2DE0 3E FF                 0510         MVI    A,0FFH       IF DATA,FF IN ACC
2DE2 C9                    0520         RET                 RETURN W/FF
2DE3 3E 00                 0530 NDAT    MVI    A,00H        NO DATA,00 IN ACC
2DE5 C9                    0540         RET                 RETURN W/00
```

```
9FC7                    0010 *            T E L S H A R E
9FC7                    0020 *
9FC7                    0030 * THESE ARE THE TELSHARE PROGRAM'S I/O ROUTIN
9FC7                    0040 * ITEMS UNDERLINED ARE THOSE THAT ARE MODIFIE
9FC7                    0050 * BY THE PROGRAM'S CUSTOMIZING ROUTINES.
9FC7                    0060 * THE DUMMY ADDRESSES (0000) WILL BE FILLED W
9FC7                    0070 * THE USER'S I/O ROUTINE ADDRESSES UPON EXECU
9FC7                    0080 *   (ADDRESSES ARE FOR THE VERSION 'TELSH32K'
9FC7                    0090 *    AT 9A00H. OFFSET ADDR FOR OTHER VERSIONS)
9FC7                    0110 *
9FC7                    0120 * EQUATES
9FC7                    0160 TPORT  EQU    02H              TERM DATA
9FC7                    0170 TSTAT  EQU    03H              TERM STATUS
9FC7                    0180 MPORT  EQU    04H              MODEM DATA
9FC7                    0190 MSTAT  EQU    05H              MODEM STATUS
9FC7                    0200 TDAV   EQU    02H              TERM DATA AVAIL.
9FC7                    0210 MDAV   EQU    02H              MODEM DATA AVAIL.
9FC7                    0220 MTBE   EQU    01H              MODEM XMITTER EMPT
9FC7                    0230 *
9FC7                    0240 * THIS IS THE PGM TERMINAL CHAR-OUT ROUTINE
9FC7 CD 00 00           0260 CHOUT  CALL   0000H            DUMMY ADDR
9FCA C9                 0270        RET                     RETURN
9FCB                    0280 *
9FCB                    0290 * THIS IS THE PGM TERMINAL CHAR-IN ROUTINE
9FCB CD 00 00           0310 CHIN   CALL   0000H            DUMMY ADDRESS
9FCE C9                 0320        RET                     RETURN
9FCF                    0330 *
9FCF                    0340 * THIS IS THE PGM MODEM CHAR-OUT ROUTINE
9FCF DB 05              0360 MDOUT  IN     MSTAT            IN STATUS
9FD1 E6 01              0370        ANI    MTBE             CHK XMITTER BUFFER
9FD3 CA CF 9F           0380        JZ     MDOUT            LOOP TILL EMPTY
9FD6 78                 0390        MOV    A,B              CHAR IN A
9FD7 D3 04              0400        OUT    MPORT            SEND IT
9FD9 C9                 0410        RET                     RETURN
9FDA                    0420 *
9FDA                    0430 * THIS IS THE PGM MODEM CHAR-IN ROUTINE
9FDA DB 05              0450 MDIN   IN     MSTAT            IN STATUS
9FDC E6 02              0460        ANI    MDAV             CHK DAV BIT
9FDE CA DA 9F           0470        JZ     MDIN             LOOP TILL READY
9FE1 DB 04              0480        IN     MPORT            IN DATA
9FE3 E6 7F              0490        ANI    7FH              MASK TO 7-BIT ASCI
9FE5 C9                 0500        RET                     RETURN
9FE6                    0510 *
9FE6                    0520 * THIS IS THE TERMINAL STATUS CHK
9FE6 DB 03              0540 TCHK   IN     TSTAT            IN STATUS
9FE8 E6 02              0550        ANI    TDAV             CHK DAV BIT
9FEA CA F0 9F           0560        JZ     NDATA            JMP IF NO DATA
9FED 3E FF              0570        MVI    A,0FFH           IF DATA,FF IN A
9FEF C9                 0580        RET                     RET W/ FF
9FF0 3E 00              0590 NDATA  MVI    A,00H            IF NONE,00 IN A
9FF2 C9                 0600        RET                     RET W/ 00
9FF3                    0610 *
9FF3                    0620 * THIS IS THE MODEM STATUS CHK
9FF3 DB 05              0640 MCHK   IN     MSTAT            IN STATUS
9FF5 E6 02              0650        ANI    MDAV             CHK MODEM DAV
9FF7 CA FD 9F           0660        JZ     NDAT             JMP IF NO DATA
9FFA 3E FF              0670        MVI    A,0FFH           IF DATA,FF IN A
9FFC C9                 0680        RET                     RET W/ FF
9FFD 3E 00              0690 NDAT   MVI    A,00H            IF NONE,00 IN A
9FFF C9                 0700        RET                     RET W/ 00
```

ADDENDUM

An additional command has been added to TELESTAR's WRITE mode to allow the user to skip portions of text being recieved or sent from being stored in memory.

This command may be used to skip system commands, messages from the remote timesharing system, etc. which need not be saved to disk later.

On start-up, the WRITE mode will store all text to memory and will indicate this by displaying the character " + " at the beginning of each line. The user may hit a CTRL- X (Cancel) to disable this memory write function and use the system as a "dumb" terminal only. Portions of text not being saved to memory will be displayed, but without the " + " preceeding each line.

To re-enable the memory write function, the user should hit another CTRL X, causing the " + " to re-appear.

This function may be used as often as desired to eliminate portions of the text from being saved to memory.

Note that the " + " character is only displayed as a reminder of the mode that is being used at any particular time, but is not a part of the text in the data file.

This command should be used preferably at a pause in the transmission to avoid words from being cut in half in the data file text later.

The CTRL-X command is used internally by the program and is never sent thru the modem. Should a remote system require a CTRL-X to be sent, the character code 18_H at address $2CA8_H$ may be changed to any other convinient, unused character.

Since the WRITE mode will be sending to the terminal an additional character, the speed of the terminal should be faster than the 110 or 300 baud modem speed to avoid characters from the modem from being lost.

As a rule, the speed of the terminal should not be less than 1200 baud when using the WRITE mode to insure proper operation.

Due to the increse in size of the program, the initialization routines are now at 3050_H instead of 3000_H.
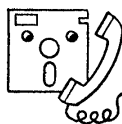
Dear TELESTAR user:

Thank you for your response to the TELESTAR package. To date over a hundred programs are in use around the country. If you sent in the reply form to be included in the user's list, see the attached listing for the user directory. Unfortunately, not too many people returned the reply form so the list is rather small.

UPGRADING

If your disk does not contain the program named TELSHARE, then you may returning to me with the postage required to cover the mailing and I will add it to your disk. TELSHARE will allow you to share your BASIC or DOS or any program running under DOS with another user over the modem, and is now included in the TELESTAR disk. Although the price for the new package is $30, original users may have the new program free.

ADDRESSES

Here are a few key addresses in the TELESTAR program if you have to do so jumping around: To enter a TELESTAR program that already has a file loaded in memory, jump from the DOS to: 2A0DH. To jump directly to the WRITE mode: 2C72H. To jump directly to the READ mode jump to address 2CF4H. All these addresses are for the standard version of the program assembled at 2A00H. Offset the addresses by +300H for double density version.

FOR SOL USER'S

There have been troubles reported when using the TELSHARE program in the SOL computer. Apparently the system takes over when the local user types something and returns the system to the SOL monitor. If any user has info on why please let me know. Most SOL users are aware by now that the status bits on the SOL keyboard are inverted; that is they go LOW when active. Thus, the program's JZ (Jump if zero) must be changed to JNZ (Jump if Not Zero) in the keyboard status check around 2D8A.

MORE NUMBERS...

If your phone bill has not hit the $100 mark from calling around, here are a few newer phone numbers for systems just recently ON-LINE:

In Chicago, Alpha-Microsystems: (312) 729-9374 or 9375
                                  Password: ALPHA, Account: 100,100

Kansas City, Missouri, CBBS :   (816) 737-1031
Maynard, Massachussets, CBBS: (617) 897-0346 (New number)
Atlanta, Georgia, (CBBS):   (404) 394-4220 (New number)

San Diego, Calif. (CBBS): (714) 449-5689
Beaverton, Oregon (CBBS): (503) 646-5510
Kansas City, Missouri (TRS-80): (816) 861-7040
Houston, Texas (ABBS) (Apple System): (713) 977-7019

Not all of these hobby systems are up 24 hours a day and some do not last very long on-the-air due to the high modem mortality rate, so if you cannot access them right away, try later.

Les Freed of the Atlanta CBBS+ has advertised his software to auto-answer the DC Hayes modem under North Star DOS and run CBBS-type programs and also for the CP/M-North Star combo. His phone is (404) 939-1520 (modem).

A timesharing system called "SMARTSYSTEM", mainly designed for TRS-80 and APPLE users, is mentioned in the Dallas CBBS. For $125 one time hook-up fee and $2.75/hr connect time you get FORTRAN, COBOL, Extended BASIC, RPG, PL/C, United Press International wire services, commercial data bases and, soon, PASCAL. It is said to be available from all the major cities and you can even pay the by-the-minute charge with VISA/MC !
For information, the phone number listed is (312) 743-2030.

NO SPEEDING !

If you are using TELESTAR in a HORIZON and are talking to a commercial timesharing system, you may note that some characters may be missing. The HORIZON initializes the serial ports to a stream of 1 start bit, 8 data bits and 2 stop bits. This ussually will work on most systems. However, some remote computers are very picky as to the number of stop bits causing the transmission to be erratic, if not impossible. If this occurs, you can change the code in the DOS to initialize the right (modem) serial port to send only one stop bit.

The code in the DOS: Should be changed to:

```
3E  CE    MVI A,0CEH        3E  4E    MVI A,4EH
D3  05    OUT 05H           D3  05    OUT 05H
```

and then boot-up with that DOS whenever you are going to use the program.
If you don't want to mess around with your DOS, then let TELESTAR do it. TELESTAR "calls" address 3000H on start-up only. Right now there is only a C9 (RETurn) code there. Add this code instead to do the same as above:

```
3E  4E    MVI A,4EH
D3  05    OUT 05H
C9        RET
```

If you are still missing characters, consult with the remote system' technical people for the correct word size & protocols used.

FILE RECOVERY

Occasionally, you may give the WRITE mode the name of a file on the disk that already had ASCII data previously recieved and that you wanted to keep.

If the system is already "+++ ON-LINE +++", go ahead and hit the ESC key. This will write a blank file (length ∅) over the existing file on disk. If you try to READ it you would get absolutely nothing displayed.

To recover the old file:

1. Return to DOS with a CTRL-Q.
2. Load the file in memory with "LF NAME 3∅FF".
3. Jump to the display portion of the READ routine with "JP 2D26".
4. The file should display on your screen.
5. Exit to DOS again and save the file with "SF NAME 31∅∅".
   TELESTAR writes an End-of-File at the end of the text
   so it can know when to stop displaying the data. This EOF
   is an FF. Since the text is normally loaded and saved
   starting at 31∅∅H, when the ESC was hit the program put
   an EOF at that address since that was the end of text.
   Loading the file 1 byte lower in memory put the EOF out
   of the data area and the file displayed normally.

If some text had already been written to disk over part of the old file, then you can load the file under DOS in memory anywhere, search for the FF of the last text that was written and replace the FF with any ASCII character. 20H, for instance, is the ASCII character for a space. The EOF of the last text to be written can be found using the search command of any North Star MONITOR.

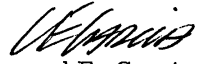After this is done, re-save the file back to disk.

C P / M ?

If you have CP/M, the disk operating system from Digital Research, via Lifeboat Associates, or are planning in getting it, see the January '79 issue of INTERFACE AGE magazine. A program similar to TELESTAR for the CP/M system is listed in that issue, except that it is very, very short due to all the built-in features of CP/M, which North Star DOS does not have.

Speaking of magazines, watch for the July issue of CREATIVE COMPUTING for a review of the TELESTAR package & other telecommunications software and hardware items !

As always, should you have a
problem with the TELESTAR
program, please let me know.

Regards,

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