VT220 TERMINAL EMULATION INFORMATION

FOR PCSA V2.0
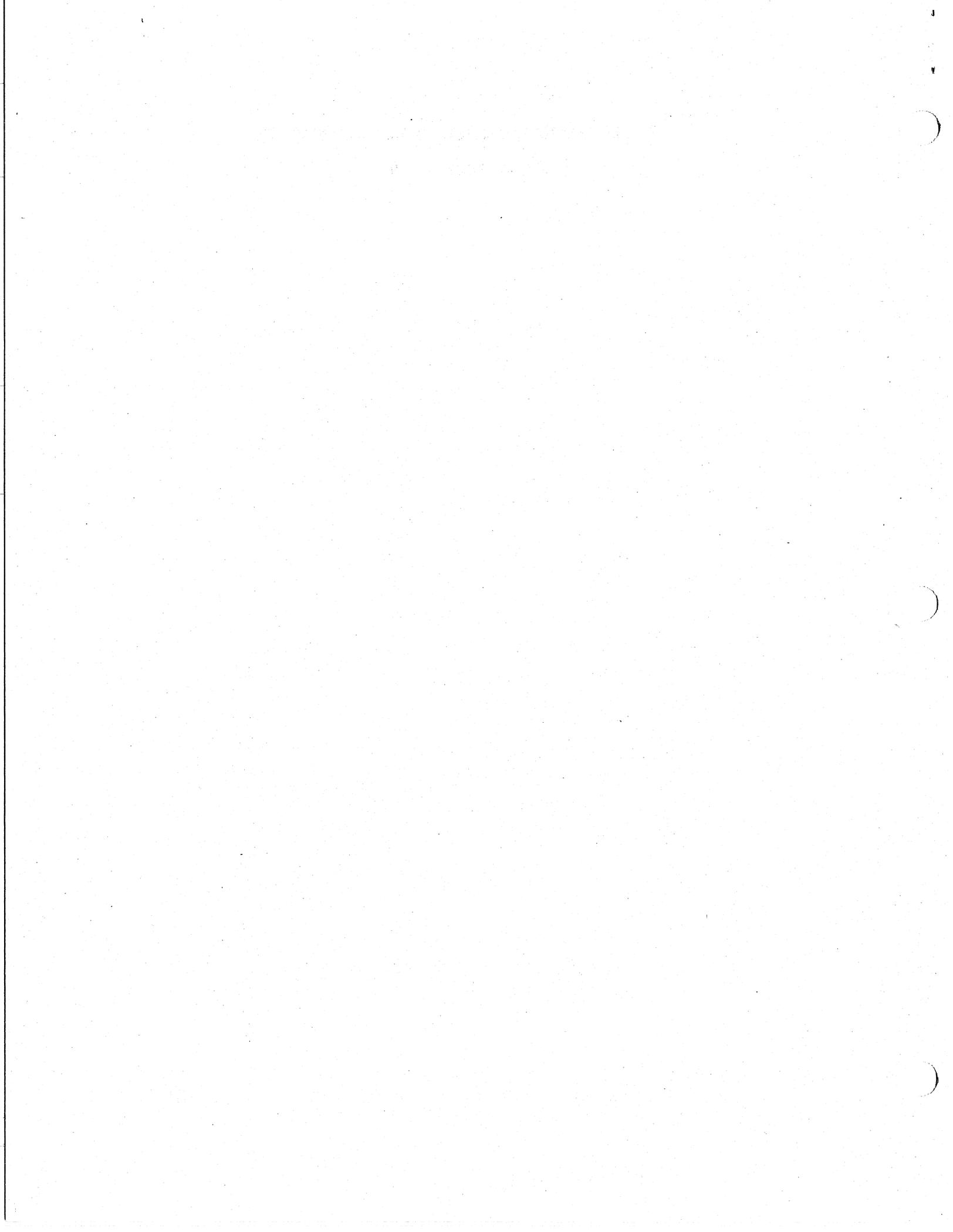
```
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*                                                *
* PCSA V2.0 VT220 TERMINAL EMULATOR PROBLEMS *
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```

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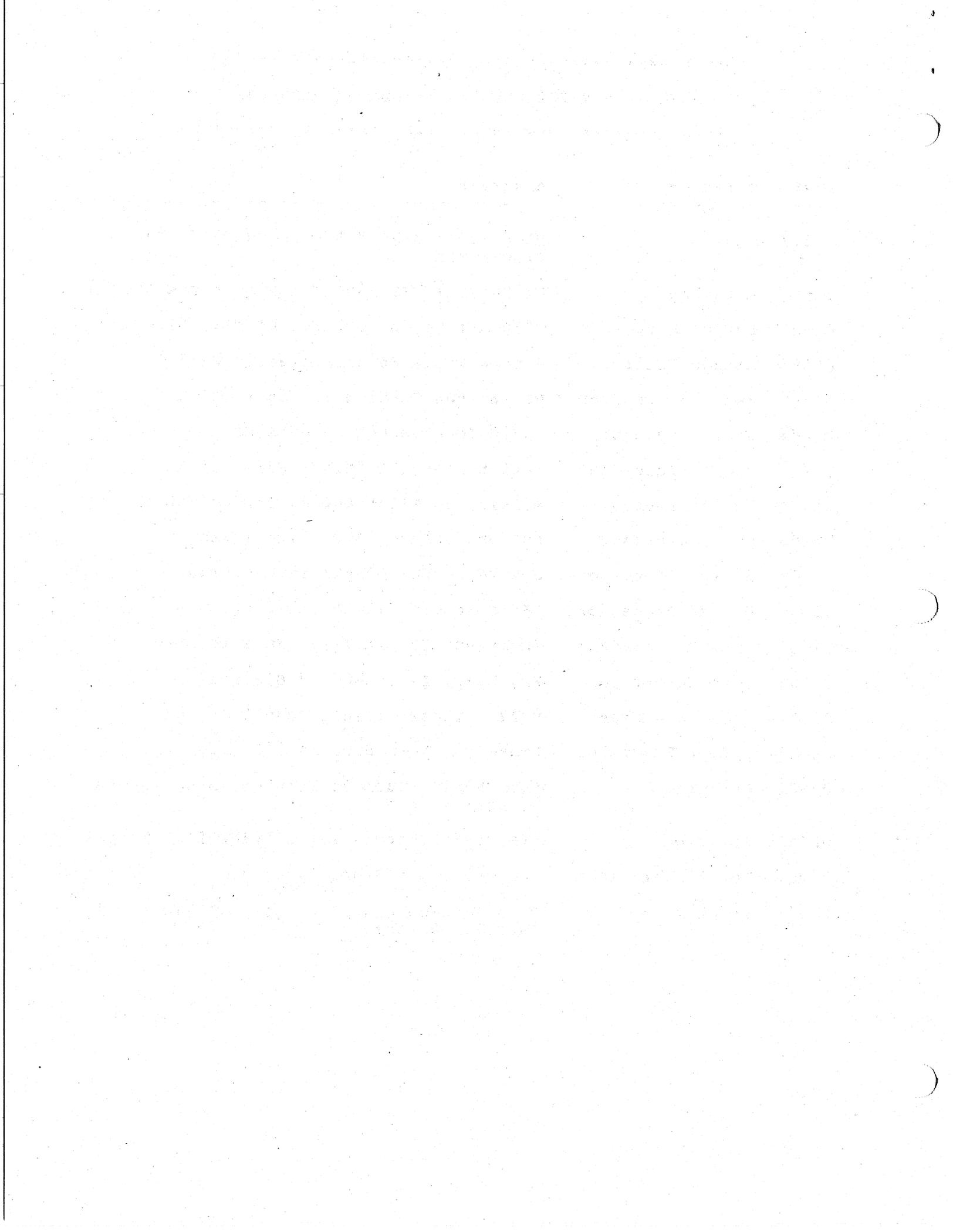
```
SPR #:          1333
Product:        VT220 TERMINAL EMULATOR
VERSION:        2.0
Class:          Bug
Component:      Other
```

PROBLEM: UDKs Won't Take 7-Bit Sequence To Be Programmed

It looks like the VT220 emulator does not accept the 7-bit equivalent to
the terminal commands. But, I am able to successfully program the
function keys using the 8-bit character sequences.

The "VT220 Pocket Programmer Guide" outlines the command like this:

DCS Pc;Pl | Ky1/st1;ky2/st2;...kyn/stn ST

Where:

> DCS is an 8-bit control character expressed as <ESC>P when
> coding for a 7-bit environment. DCS has an ASCII value of
> 144 Decimal.

> Pc is for clearing key values

> Pl is for locking keys against future redefinition

> Kyn is a unique value assigned to each key

> stn is a string of hex pairs on ASCII characters that will
> define the specific key

> ST is an 8-bit control character expressed by <ESC>/ when
> coding for a 7-bit environment. ST has an ASCII value of
> 156 Decimal.

For example, to redefine the <Shift><F6> key sequence to print the
string "Hi" (with no quotes), you would issue the following command:

> <DCS>1;1|17/4869<ST>

After issuing that command, every time you type <Shift><F6>, you would
get "Hi" on the screen. We are supposed to be able to substitute the
7-bit sequences in place of <DCS> and <ST> as described above, but it
doesn't seem to work with those sequences.

ACTION/REMARKS:

```
SPR #:          1650
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      Printing
```

PROBLEM: VT220 DOES NOT HANDLE XON/XOFF CONDITIONS

When printing a large file to an attached LA75, if the printer hits a
buffer full condition, VT220 returns a "Printer Error" message.

Under the test, the LA75 was put in Letter Quality mode to insure that
the buffer fills due to the slow speed of the print head. In all cases
VT220 returned this error.

Under the same conditions, SETHOST did not have this problem.

ACTION/REMARKS:

```
SPR #:          1828
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      Script Processor
```

PROBLEM: DISPLAY: Needs <LF> For DEBUG:, SYSTEM:

The DISPLAY: string command doesn't always work unless <LF> is included
after the string. <CR> does not make a difference; only <LF> does. Th
two cases I've seen are:

(1) The DEBUG: command causes the displayed lines to be overwritten. T
    see this, write a script with DEBUG: and DISPLAY commands:

```
        debug:
        display: first line
        display: second line<CR>
        display: third line<CR>
        exit:
```

    Run the script and watch how the debug lines overwrite the previous
    displayed lines, so that all you see are debug lines!

    Now edit the three DISPLAY: commands to end with <LF> and it will
    work better, though with more white space.

(2) The SYSTEM: command clears all but the last two DISPLAY: lines.
    To see this, write a script with 5 pairs of DISPLAY: and SYSTEM:
    commands and name the file DISPLAY.SCR:

```
        display: 1
        system: dir
        display: 2
        system: dir
        ...
        display: 5
        system: dir
```

    (You need a COMMAND.PIF with Close on Exit, and a WIN.INI without
    the "command.com=32" line.) Run the script: WIN VT220 DISPLAY.SCR

    Watch the VT220 window in between COMMAND.COM windows. Do not
    attempt to scroll or resize the vt220 window. Notice how only
    the last two numbers appear.

    If you add <LF> to the DISPLAY: n commands and rerun the test, you
    will see all the numbers and a lot of white space.

Assuming the user figures out what's needed, they may not like it too
much. DISPLAY: lines cannot be consecutive; the <LF> causes a blank
line between them.

ACTION/REMARKS:

PROBLEM: Window Title Reinstantiation Fails

The following sequence of events results in a failure of the "Window
Title" enhancement, an option on the Display Set-up Screen, to
reinstantiate or PUT BACK the user's title selection after a default:

    Start the emulator from a default.220 file
    Hit F3 (this refers to toggling {entering, exiting} Set-Up Mode)
    Select "Display" from the Set-up Screen Main Menu
    Select the "Window Title" option from the Display Screen
      BOTH the resultant Dialog Box title and the Parent VT220 title ar
      identical[1], i.e. reflect the user's "default.220" title choice --
      Eg. 'VT220 Modem Support' for purposes of this description
    Hit the DEL key (keypad period [.]) then respond OK to force the
    default window title -- this is 'VT220 Emulator'
      BOTH the Dialog Box and the Parent titles are the same =
      'VT220 Emulator' in both title bars
    Select "Actions" from the Main Menu
    Select "Recall Set-up Parameters" from the Actions Screen, respond
      OK
      Now, the parent title says 'VT220 Modem Support' once again, whil
      the dialog box contains the 'VT220 Emulator' title; this is fine
    Select "Display" and "Window Title" once again
      The default title in the edit portion of the Window Title dialog
      box indicates 'VT220 Modem Support' -- the user's choice was
      "brought back" as the default during the parameter recall --
      note here that the dialog box title still says 'VT220 Emulator'
    Select OK: THE DIALOG BOX TITLE BAR DOES NOT CHANGE!
      When the user selects OK, he expects, once again, to see a match
      between the PARENT window title and the modal DIALOG BOX window
      title -- in this example, 'VT220 Modem Support' in both windows

    Hitting F3 twice (exit, then re-enter Set-Up) corrects the problem.

 [1]with the exception, of course, of the words "Set-Up" following
  the title text in the dialog box window

ACTION/REMARKS:

```
SPR #:          1242
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      Redefinable Icon
```

PROBLEM: Dialog Box Tabbing Is Destructive

When using the "User Icon Name" dialog box, hitting TAB twice gets me
by the Cancel button to the edit box where I carefully enter the name
of my new icon. Hitting TAB again puts me at the 'Use standard VT220
icon' check box. As I do not wish this option, I TAB again to the
'Use special icon' check box. This is the one I want! When I hit the
space bar (or click the mouse) to indicate this choice, the box is
checked, the 'Use VT220 icon' box is unchecked, and my icon name is
GONE.

ACTION/REMARKS:

```
SPR #:          1265
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      User Interface
```

PROBLEM: VT220 Icon Select Non-Standard

The selection of the STANDARD VT220 icon, whether by clicking on the
icon with the mouse or by ALT-TABing to the icon and hitting ALT-space
& ALT-M from the keyboard, results in a white void or abyss (a white
square), "full of sound and fury, signifying nothing," rather than the
icon UNCHANGED, as is the case with ALL OTHER application icons, even
the generic terminal.exe's icon!

The VT220 icon select logic must change for reasons of Windows
conformity and application compatibility.

ACTION/REMARKS:

```
SPR #:          1371
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      Redefinable Icon
```

PROBLEM: Script Causes A "Black Hole" Icon

When a script file is invoked from the command line, the iconic emulato
is a black hole or black square. The invocation was as follows:

        win vt220 viking.scr

where viking.scr is a 3-line script file that simply loads a .220
Set-Up file.

ACTION/REMARKS:

This is a problem with the definable Icon itself. Tested the
conditions of this SPR once again, this time using the DOS command
shown below to bring up the emulator in Windows:

        win vt220 mosaic.scr

where mosaic.scr is a script file that loads the related Set-Up file.
The latter contains the "Standard VT220 Icon," the one shown when the
emulator is iconic.

A re-test shows the same "black square" icon problem as indicated
above (09-Dec entry). This time, however, the Set-Up file used a
valid REDEFINABLE icon rather than the Standard Icon.

```
SPR #:          1384
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      Script Processor
```

PROBLEM: Marking Is Blind During Script Run

While in the middle of running a script, Eg. waiting on a Read command,
you can select the 'Mark' option from the emulator title box. When
you go to actually mark some text with the mouse, the text is not
highlighted, but the marking is taking place nevertheless! The latter
is verified by looking at the clipboard when the 'Copy' option is
selected next.

Further testing shows that, if the screen is repainted, the marked
text shows up. This is accomplished by making the emulator iconic,
then active again, or by bringing up another application alongside the
emulator, forcing the latter, now sharing the client space, to repaint
for the smaller window. Perhaps the easiest method to force a repaint
is via the 'Zoom' selection, also possible during this 'script wait
state.'

A similar situation obtains when a piece of text is UNMARKED, that is,
the text returns to its un-highlighted state, but only after the
screen is repainted.

ACTION/REMARKS:

This is only a cosmetic problem. Fixed in next release.

PROBLEM: Actions Screen Is Un-highlighted

When in the emulator Set-Up mode, with the Actions Screen the currently
selected (highlighted) screen, whether by default or by user selection,
clicking on Set-Up's title box (clicking and releasing) or hitting
Alt-Space and then Return (or Escape) UN-HIGHLIGHT's the 'Actions'
screen selection. The screen, however, is still the selected one as
its associated menu items remain the same and can be selected.
Clicking on the 'Actions' screen selection itself, however, has no
effect. An easy workaround is to hit the left arrow and then the
right arrow to regain the reverse video on the option.

Another method to regain the reverse video is by hitting Alt-A. This
action, however, is unsettling in that it disables F3, that is, you
CANNOT LEAVE SET-UP MODE this way! Hitting the right and left arrow
keys to highlight other screen titles is not a remedy. However,
hitting the Return key (or the Escape key) enables the F3 option once
again. Also, hitting Alt-?, where ? is the first letter of any of the
other screen titles, THEN RELEASING the Alt key, re-enables everything.

The obvious conclusion from all this is that there is some missing
logic related to the "default" Actions screen option in Set-Up mode.

ACTION/REMARKS:

```
SPR #:          1563
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      Script Processor
```

PROBLEM: UDK Value Not Displayed On Screen

If the UDK is terminated with a carriage return, the UDK value is not
displayed on the screen. The value is read into the variable and the
next line in the script is executed because a return was sent via the
UDK. If the UDK is not terminated with a CR, the value is displayed
on the screen and the processor waits for the user to type in a
carriage return at some point in time.

ACTION/REMARKS:

To be fixed in next release.

```
SPR #:          1579
Product:        VT220 TERMINAL EMULATOR      31-DEC-1987
Version:        2.0
Class:          Compatability
Component:      Script Processor
```

PROBLEM: "Hold Screen" Incompatibility

An incompatibility exists with the way the "Hold Screen" works outside
scripting in VMS. If you're typing out a file and hit F1 (Hold Screen
function key) or Ctrl/S, the display eventually stops. If the
emulator is made iconic, then active again during this mode, no
further output is evidenced. When this is done during a script, there
is residual output beyond the cursor. Also, Ctrl/S does not appear to
work during scripting as indicated above (along w/ Ctrl/Q).

The above problems are summarized here:

        (1) Residual output in "F1 mode," iconic then active
        (2) Ctrl/S standard terminal hold mode incompatibility

ACTION/REMARKS:

To be fixed in next release.

```
SPR #:          1749
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      Script Processor
```

PROBLEM: Incorrect Script File Names Ignored

The VT220 takes no action when you tell it to run a script file that
doesn't exist. It does not prompt you to Change Disks, like Notepad
does. It doesn't treat a non-existent script file like any other
script error, either; there's no %SCR message and nothing is written
to the log file.

To try this, do: (a) c:\>win vt220 missing.scr

        or: (b) put into win.ini: run missing.scr
                                                 ..
                                                 scr=vt220.exe ^.scr

        or: (c) choose Script from the VT220 system menu and
                          type missing.scr as the filename

There is one way to invoke a script that does notice a missing file:
Choose the Script File item from the Set-up Actions menu; that will
display a "Cannot find file" dialog box.

ACTION/REMARKS:

PROBLEM: Key Usage In Set-Up Is Bizzare

Running Set-Up by using the keyboard rather than the mouse is possible, but it's nonstandard and very messy. To see how this works, do the following:

(1) Start up the Vt220 and get into Set-Up (press F3 or use system menu). Move the cursor to the Printer choice.

(2) Enter keyboard-Set-up mode

Press Alt-spacebar once. Next, hit the right arrow key repeatedly, watching the second cursor (the first cursor is still on Printer) move from the System Menu to Actions to each of the Set-Up choices, until it "joins up" with the first cursor.

(3) Watch how this works ...

Keep pressing right-arrow; the cursor will jump from the last Set-up choice, Telephone, to the blank line below the Set-Up choices, to the first Printer setting, Print Extent. Keep pressing right-arrow; the cursor moves through the Printer settings, then over two blank lines below the last setting, and back to the System Menu!

(4) Change a setting and exit

Keep pressing right-arrow until you're back in the Print Extent Setting drop-down menu. This time, use the down-arrow key to put the cursor on the default setting and hit <Return>. The menu disappears.

Notice that there is now no cursor (most of the time) and Set-up looks dead. Press right-arrow, and now you're back into regular Set-up.

Some additional observations:

o You cannot exit from Set-up by hitting F3 while you are in this funny mode you got into from alt-spacebar. You must first exit the mode by hitting Return, Esc, Alt-uparrow or Alt-downarrow (Prev and Next don't do anything), unless you're in a drop-down menu in which case these alt-arrow keys just move you in the menu.

o Most of the time the cursor will not be displayed when you've exited this mode. The keys that worked in the mode, ESC, CR and alt-arrow, don't work now, and you must press Prev, Next, F3, Alt-spacebar, left or right arrow to restore the cursor.

o The plain arrow keys work identically to the alt-arrow keys in moving through choices. I understand only the alt-arrow keys were

documented, for consistency.

o Every Set-up screen has at least one blank line that you can
  highlight; the Telephone screen has four.

o When you choose Manually Set Tabs, it is the spacebar key that
  toggles tabs, not the up and down arrows as documented. Also,
  ctrl-break doesn't choose the Cancel button in manual tab settings,
  though tabbing to Cancel and pressing spacebar does work.

o You can move around the set-up screens by typing the first
  character of a set-up choice or setting.

The way this works is like no other Windows software that I've seen, and
the Windows manual (needless to say) doesn't describe this very well.
It's hard to imagine a customer figuring this out without considerable
aggravation at best, if they figure it out at all.

ACTION/REMARKS:

```
SPR #:          1829
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      User Interface
```

PROBLEM: VT220 Window Doesn't Scroll Enough

On an IBM with a CGA, the VT220 window doesn't show the bottom 1-3
lines. To see this in a script, write a script with enough DISPLAY:
commands to fill the screen:

```
        display: 1<LF>
        display: 2<LF>
        ...
        display: 11<LF>
        exit:
```

and run it. You will not see the last number or two, even though the
script has completed. If you move the scroll box, or Zoom the window,
you will see the last number.

The Vaxmate displays about 24 lines in a VT220 window; the IBM displays
about 21 lines. I don't know if this problem is a natural consequence
of the different number of lines displayed on the IBM or if the VT220
could take the number of displayed lines into account when scrolling.
It was this problem that led me to attempt to move the scroll box
during a SYSTEM: command.

ACTION/REMARKS:

```
SPR #:          1838
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      Script Processor
```

PROBLEM: Line Nos. > 99 Show As 0 In Log File

The error messages written into the ERROR.LOG file show a source script
line number of 0 (zero) for source line numbers greater than 99. This
means that users with scripts of greater than 100 lines (including
comments and blank lines) may not be able to tell which line of their
script caused an error. The script line is echoed in the log file, so
this bug is not too troublesome unless the user has duplicate script
lines past line 99.

ACTION/REMARKS:

```
SPR #:          901
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      Printing
```

PROBLEM: "<ESC>[5i" (Turn On Printer) Also Resets Printer

This problem is demostrated using the following configuration:

IBM PC/XT w/DEPCA, Epson printer connected to parallel printer port
(LPT1) talking through the VT220 terminal emulator (ethernet connect)
to an All-in-1 system.   This can also be demonstrated from a VAXmate.

All-in-1 issues an "<ESC>[5i" command to the terminal emulator, which
is a valid VT220 command that directs the emulator to turn on the
local printer port in preparation for printing.

When the VT220 emulator receives this command, it responds by
completing the task, then issues a "<ESC>[0w" command to the printer.
For the DEC (ANSI) environment, this is the command to reset the
default pitch on the printer.

The problem is that we are printing to a printer that does NOT
recognize this command.   It does swallow the "<ESC>[", but then it
prints out the "0w" at the top of the document.   This happens
regardless of the printer used.

Considering that we are talking about the IBM environment where the
user is very likely using a non-DEC printer, we cannot make the
assumption that all printers at the other end of LPT1 can interpret
this command.

I recommand that we either check with Windows to see whether the
printer is a DEC printer or not before issuing this command, or that
we do not issue this command at all.

The VT220 terminal does NOT issue this command to the printer.

ACTION/REMARKS:

Epson printers are not a supported printer.

PROBLEM: "<ESC>[5i" Forces Extra "<ESC>[4i" To Printer

This problem is demonstrated using the following configuration:

IBM PC/XT w/DEPCA, Epson printer connected to parallel printer port (LPT1) talking through the VT220 terminal emulator (ethernet connect) to an All-in-1 system. This can also be demonstrated with a VAXmate.

All-in-1 issues an "<ESC>[5i" command to the terminal emulator, which is a valid VT220 command that directs the emulator to turn on the local printer port in preparation for printing.

After this point, the very next character I type will be preceded by "<ESC>[4i". Which means that typing "a" after the printer port has been turned in will result in "<ESC>[4ia" being sent to the printer. It is only the first character typed that does this. All other characters are send to the printer properly.

Note – this has NOTHING to do with All-in-1. This error can be demonstrated using the VT220 emulator in local mode.

There should be no extra characters sent to the printer at this point.

ACTION/REMARKS:

The EPSON printer is an unsupported printer.

```
SPR #:          1257
Product:        VT220 TERMINAL EMULATOR
Version:        2.0
Class:          Bug
Component:      Redefinable Icon
```

PROBLEM: Icon File Not Properly Imaged

Depending upon the sophistication of the user in the creation of his own
icons, there is the very real possibility that, with the proper tool, he
can create an icon that is relatively uncommon among the diverse icons
that already exist to represent a generous variety of Windows
applications.

A tool such as EDITICON, for example, or nearly any of the other common
icon editors, is all that is necessary to create an icon that does not
follow the standard "black and white" convention that seems to
predominate the selection of images for a tiled Windows environment
almost to the present time. I believe, however, that with the nearly
infinite possiblities in color provided by the EGA board, multiple
greying and shadowing effects on a monochrome display, the introduction
of Windows 2.0 and the more powerful DECwindows System, the trend
toward fancier icons has already begun.

The ability to select a "screen" pencolor allows for an icon that has
one or more "windows" inside the icon, that is, you can see the screen
background through the icon as it sits in the icon area, or text and
graphics in other portions of the Windows screen. An example of this
type of icon may be found in the SPY program, a Public Domain Windows
program written by Michael Geary, that actually "spies on all the open
windows" and reports everything it can, Eg. active vs. iconic, window
title and class names, window handles (in hex), parent handles, child
windows, etc. It is this kind of espionage that leads me to the
thrust of the SPR:

        an icon having the "window effect" previously described is shown
        by the emulator as that icon with its window filled in, i.e. the
        'screen color' becomes the icon background color, either white
        or black.

ACTION/REMARKS:

```
SPR #:           1679
Product:         VT220 TERMINAL EMULATOR
Version:         2.0
Class:           Bug
Component:       Printing
```

PROBLEM: Print Screen <F2> Doesn't Print To Local Parallel Printer

Configuration:

        IBM PC/AT, 640K, LK250, DEPCA, V2.0 software

I have a multi-function card in the AT with a single parallel port. I
have plugged an IBM ProPrinter onto LPT1:. When I try to print from
Windows through the PRINT function, it prints fine. I can print from
DOS fine.

But, when I hit <F2> (VT220 print screen) it does not print properly.
Either I get nothing, or I get a couple of lines, then it stops.
Sometimes hitting the <F2> key repeatedly will get a couple of lines
of output if the first time didn't do it.

This does work find with a LA75 Parallel, but since we are getting
closer and closer to supporting non-DEC equipment, it is unreasonable
to expect any user to automatically discard their printers for DEC
gear, especially a printer as popular as the IBM ProPrinter.

ACTION/REMARKS:

In compliance with the VT220 specifications we support the following
printers:

        LA34/38, LA35/LA36, LA12, LA100, LA120, LA75, LA50, LQP02

Digital terminals use DEC standard 8-bit character sets & ESC sequences
It was never the intention to translate Digital standards to another
vendor's format. This idea has not even been architected as of this
date.

A way to achieve the results requested, the user can employ session
logging. In Set-Up, the user can open a Receive file to capture all
the information that appears on the screen. When the user wants to
end session logging the user closes the Receive file. The file can
then be printed using the MSDOS print function.