Station Traffic System : A Traffic Handler's Utility Package With Integrated Packet Support

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The Station **Traffic** System (STS) **is** a utility program **for** National Traffic System (NTS) traffic handlers written in C for use in MS-DOS" and UNIX@ environments providing a set of menu-selectable functions for message operations and operating environment support.

1. INTRODUCTION

STS provides **a** unified system **for** origination **of** formal NTS messages, generation of administrative reports, filing and storage of received formal messages, and tools to aid in the tracking and administration of the above.

2. HISTORY

STS had its origins in a BASIC program to format Net Control reports for the South Tidewater Amateur Radio Emergency Services (STARES) net on the author's Tandy Color Computer in about 1984. The Color Computer version grew to include many of the features of the current release reaching its **peak** in 1988.

As the author migrated to MS-DOS **based** systems for personal use, the decision was made to port the code to that environment. Porting **was made** easier **because** both interpreters are products **of** Microsoft from roughly the same timeframe.

After porting, an **"If** it ain't broke don't **fix** it!" view was taken until late 1989. BASIC's limitations with respect **to** serial ports **and speed,** as well as the author's experience with the sysop side of PBBS operations, and preference for the C language led to **a** rewrite **of STS** in C with release 3.0 (the initial C release) delivered 1 January 1990 for **MS-**DOS. Release 3.1 was a "Bells **and** Whistles" enhancement. Release 3.2 added UNIX support **to the** source **and Message IDentification** strings (MID's) on all traffic generated as packet-ready. Release 3.3 changed the rules for MID generation including switching between levels of MID generation (default ZIP **Code●/postal** code routed messages only) along with adding support for an extended originator field in the preamble. The current release (3.4) adds additional support for hierarchical routing for packet-ready messages and enhances message input **via a set of** tilde **("")** escape commands in the rewritten input routine.

3. DIVERSE ENVIRONMENTS SUPPORTED

Given the view that the amateur traffic and packet networks **are parts of a** larger integrated system, it is reasonable to support operation in as many operating environments as one can within reason. To this end, **STS** is written **to** operate in multiple environments and has been compiled and run in the following: MS-DOS/TURBO **C●(1.5), MS-DOS/TURBO C●+** + ,(.1.J)) IJNJX. System **V (SVR2 and SVR3), SunOS**™(4.0.3c), Berkeley **UNIX(4.3BSD), and** ULTRIX~V3.1).

4. FUNCTIONAL DESCRIPTION

STS **is a** menu driven program using single keystroke entry where practical. On startup if the required local data files are missing the program will prompt **for the** data and prepare the needed files **for future use.** After the initial banner the Main Menu **is** presented listing functions with the invoking **keys.** These are:

4.1 Station Activity Report [A]

This will prompt for the data required for the monthly Station Activity / Public Service Honor Roll report for transmission to the Section Traffic Manager (STM). If the STM's name, call, and home PBBS (if any) arc not on file (in net.mgr) the data is prompted for and added. The report is generated as packet-ready traffic to call@PBBS if the STM's home PBBS is known.

4.2 Concatenate/Book Text Files [C]

As an aid to record keeping, this choice provides for combining existing files with optional leading comments into a new or existing file with an option of removing each of the source files once combined.

4.3 Directory [D]

Provides a short form listing of the current or specified directory.

4.4 Received Message Intake [I]

Formats and provides tracking data for messages received from sources other than one's own origination. Will prepare for filing to packet if needed data is available indicating the current station has handled the traffic while attributing the message to the proper originator.

4.5 License (Terms & Information) [L]

Redisplay of the opening screen information.

4.6 Message Origination [M]

Generate and format traffic originating at the user's station including timestamping, interrogation for special handling directives (HX instructions), and encapsulation for packet transport (if given the needed data).

4.7 Net Report (QNS) [N]

Formats a sorted post-event Net Control Station (NCS) report for transmission to a Net Manager. The report is packet encapsulated if the Net Manager's home PBBS has been included as part of the entry in the file net.mgr.

4.8 Print Files [P]

Prints files as per the underlying operating rystem.

4.9 Reset High Message Number [R]

Allows for resetting of the last message number used.

4.10 Display on Screen [S]

Display files to the screen like the 'more' command of Berkeley UNIX although only allowing Next, Quit, Restart, and page forward (default).

4.11 Toggle MID Generation Status [T]

Allows resetting of the conditions for attaching MID's to generated traffic as All, None, or Zip routed only. An invalid response aborts the change.

4.12 Validate Area or Postal Code vs. State [V]

This procedure allows advance checking of ZIP/Postal codes or North American Numbering Plan area codes against State/Province. This uses the same routines used to validate the data during address entry for both message origination and received message intake.

4.13 Shell Escape [!]

Spawns a sub-shell of the user's specified shell/command processor using the value of SHELL if ret or else COMSPEC for MS-DOS or the Bourne Shell (/bin/sh) for UNIX.

4.14 Exit [X]

Cease operations and return to the operating system.

5. COMMAND LINE OPTIONS

STS supports setting of the status of MID generation on the command line by the inclusion of an argument of All, None, or Zip. No switch character is required and any option may be entered as only the first letter.

6. ENVIRONMENTAL VARIABLES

STS makes use of several environmental variables if available. As often as could be done use is made of variables that are also used by other programs. These are detailed below.

6.1 COMSPEC

The MS-DOS system related variable detailing the location of a copy of COMMAND.COM,

its default command interpreter.

6.2 ED

The **pathname of** the editor **for the system to** invoke when required. It should include any options or switches required to render the resulting file as **ASCII** text without program specific mark-up data.

6.3 HOME

A given **user's** initial directory in multi-user environments. **HOME is** the first **choice for** where **to find user specific supporting data files. (If** not set **STSDIR** will **be** used.)

6.4 SHELL

The path **of** the user's chosen command interpreter that will **be** spawned **by** the shell **escape [!]** command. Defaults: MS-DOS **-** COMSPEC, UNIX **- /bin/sh.**

6.5 STSDIR

STS specific, the directory (if not the current directory) in which **to find** the common supporting data files. Also the location of user specific support files if HOME is not set.

6.6 SWITCEAR

For MS-DOS systems operating with an alternative switch character **(example '-') th**is should **be** set so it may **be** used **by the** program.

6.7 TFKDIR

STS specific, the directory (if not the current directory) in which to place the generated message files.

6.8 TZ

The initials **for** the **timezone** to which the system clock is set, the number of hours it lags **behind UTC/GMT,** and optionally the initials for daylight/summer time. Examples are: **ESTSEDT, CST6, MST7, PSTSPDT, EDT4, or** UTCO **(the default).** UNIX users should not set **this as it has already been** set as part **of** system initialization. MS-DOS systems running system clocks on local time should set **TZ so** that the UTC **based** timestamps **will be** correct.

7 . D E S I G N PHILOSOPHY

In the design of the program it has **been** attempted to maintain a consistency **of**

interface. The inclusion of interfaces to the graphical user interfaces supported by the various environments, in **particular, have been omitted for now to give a** common **presentation** on **all directly** supported operating systems. **In** general **the program is** case insensitive **for** single keystroke responses. The exceptions are overriding validation **failures and deleting files, both of** which are of **a serious** enough **nature** that accidental invocation sboulb **be avoided.** For these **actions the program** mandates **an** uppercase response. As mentioned above the **design of the program endeavors to make use of** environmental values that can **be shared by** multiple **programs as opposed to** creating a duplicative set of such values. Additionally portions **of** the user interface **have been designed to** match the presentation **of other** programs the user may have experience with, most notably the use of line **by** line entry of text with the availability of tilde commands to allow for greater control **of the** process. Also data is requested **by** labeled prompts so that even the infrequent user will maintain awareness **of** the current data **entry status and** requirements.

8. SPECIAL FEATURES

STS supports a **pair of features** that **have the potential to spark** controversy among **PBBS** operators **and** systems also within NTS itself.

8.1 Standardized MIDs for Traffic

Recent trends **in the works of some PBBS** authors indicate an awareness that message identification in general, not just the special case **of** Bulletin **IDentification** (BID), **is the** proper course to follow in our evolving network. STS supports this trend **by having** the ability to generate **MIDs for traffic (T-MIDs)** such that **a** message may freely transfer to and from the various components of NTS while maintaining the accountability **MIDs** provide. This MID **is** built from the preamble **of the** NTS message, **not** from external data, and thus, is **reproducable** at any stage. The **format used by** STS **and proposed for general adoption is the letter T,** the **message** number in the preamble, an underscore **(_), and** the **callsign of** the station **of** origin (without any **extended originator data).** Feedback from a bulletin **posted in** May **proposing this plan** indicated a potential problem if a message

must cross **a** previously traversed PBBS **enroute** its true destination. Analysis of this situation reveals that the message either has **been** re-addressed to **a** specific PBBS or **it is** starting a second tour of **a** routing loop that the sooner stopped the **better. In** consideration **of** this the author **proposes the** use **of T-MIDs** as outlined **above for** all NTS traffic on packet routed **ZIP@NTS<state> and, if readdressed,** any MID should be assigned **by** the station re-routing.

8.2 Extended **Originator** Field

Owing to the store **and forward nature of** packet message handling in conjunction with the growing popularity **of** personal mailboxes, increasingly, traffic originators may best **be** contacted via packet. In this light, provision for **packet** addressing data should aid especially the routing **and** distribution **of** service messages **be** they delivery advisories or failure reports. However, the address is useful only if available, and with the current state of directory **services** and percentage of the NTS operator population currently on packet, it is within reason to provide such data if available. This idea has potential drawbacks, and in the longer term, will require discussion and compromise. In the current release, STS supports the extended originator in the form **call@PBBS.st.nation if the needed data is** provided. **As a** point of departure **for the** evolution of this proposal stipulate that this format is transmitable via packet, **ASCII, and** voice. Further, that one or more of the characters used do not exist in the character sets used for CW, **RTTY(U.S.** Baudot or **CCITT** Number **2),** and AMTOR and thus require **a** translation of some form. Let an additional point of agreement **be to** limit the highest domain level used to the national domain (e.g. **usa,** can, etc.). There arc two characters that require translation or other handling **@ and #, for @ the author proposes to substitute a** pair **of fraction** (slant) **bars** (i.e. **//).** The **#** character used **by** some as **a** subdomain flag is unnecessary baggage and should be dropped as subdomains are easily located **by** position. There is also no reason that designations for current voice, **CW,** RTTY, and AMTOR nets could not **be** created **to provide** an equal degree **of** source indication for those operators **and in any** event the choice to include extended originator data **is the** option **of** any operator at the time of origination **of** each **message.** Continuing discussion is welcome **and encouraged** as the route to compromise.

9. DISTRIBUTION

The current primary methods **of** distribution **are via MS-DOS magnetic** media and downloading from variour BBS's and **PBBS's.** The set **of** self-extracting **LHarc** archives used **for PBBS/BBS** distribution are the following: **STSPC.COM the total package both** source and MS-DOS run-time, STSPCX.COM is the **MS-**DOS run-time only distribution for those who **do not need or** want source code, STSSRC.COM is source **code and** support files only **for** compilation in other environments. If required the source and support **files can be** provided in cpio or tar formats with or without compression or packing **by** special arrangement with the author.

10. DISTRIBUTION PHILOSOPHY

The licensing and distribution terms for the STS package are the result of much thought. STS is distributed as **a** class of "freeware" with a measure of influence **by the** Free Software Foundation's (GNU) philosophy. This is NOT **a** work in the public domain and the license terms art such that STS is available to all who might **need it** for but the cost of media **and** shipping or **a phone** call. These terms boil **down to -** spread the word but you may not profit from it; you may only recover the out of pocket cost for media and **postage** and no more. Yes, you sbould **make the** program available to others who can make use **of** it, on **a** non-profit basis. Enjoy!