

SHARE PROGRAM LIBRARY AGENCY



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SHARE PROGRAM LIBRARY SUBMITTAL FORM



SPLA

CONTROL NUMBER: SHR 255

SHARE PROGRAM LIBRARY AGENCY

Triangle Universities Computation Center

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This form should be completed and submitted with the program package to the SHARE Program Library Agency at the address shown above. Standards and instructions for submitting programs are in the SHARE Reference Manual, Section 6.

(1) Program Number (to be filled by SPLA) 370D-70.0.003

(2) Title of Program T.E.X.A.S.

TPNS EXTENDED AUTOMATIC SCRIPTOR

(3) System Type(s) (Machine) OS

(4) Search Key(s) TPNS

NETWORK

(5) Programming Systems/Languages PL/I

(6) Primary Subject Code TPNS & PL/I

(7) Minimum System Requirements

(8) New (N) or Revision (R) (if revision, show prior Program Number in Item 1) N

(9) Date of Submittal FEBRUARY, 1982

(10) Documentation (number of original pages submitted) 5

(11) Author's Name and Address William Bryan

c/o El Paso Natural Gas Company

P. O. Box 1492

El Paso, Texas 79978

(12) Direct Technical Inquiries to Name & Address
(if different than Author)

(13) Submitter's Installation Membership Code ENG

(14) Abstract (should contain sufficient information for a reader to determine the value of the program). Listed on the reverse side of this form are subjects which may serve as a guide for a descriptive abstract.

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SHARE PROGRAM LIBRARY SUBMITTAL FORM

Subject Guide:

- a. Purpose
- b. Programming Language used
- c. Version and modification level or release number
- d. Field of application
- e. Type of routine (main program, subroutine, etc.)
- f. Specific description of machine requirements

A) Purpose: Simply stated, TEXAS produces RJP
TPNS Scripts, ready for input into the TPNS pre-processor.

B) The program is written in PL/I

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documentation, function, or performance of the con-
tributed programs.

(Please attach additional pages if necessary) Total pages attached _____

An "Acknowledgement of Assistance" statement must be attached to this Submittal Form.

Permission to Publish

"I hereby give the SHARE Program Library Agency permission to reprint, reproduce, and distribute this program"

(15) Signature of Submitter and Date W. H. Bryan Feb 10 1982

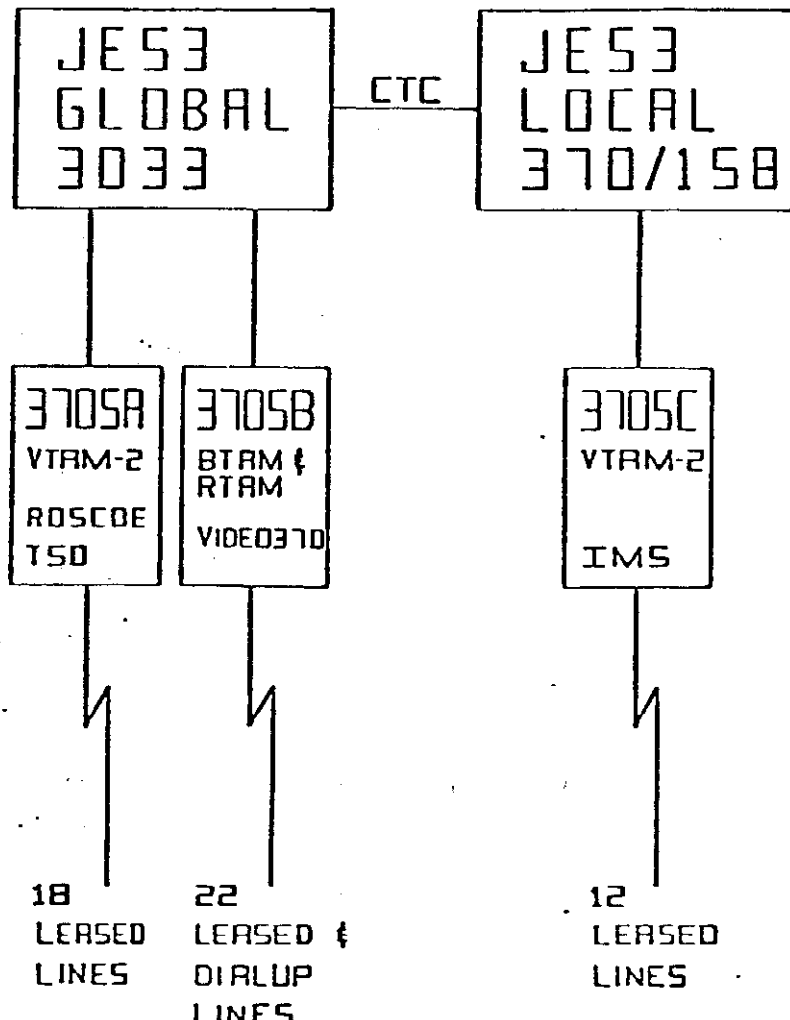
(15) Signature of Installation Addressee W. H. Bufan

TAPE KEY:

This volume contains 1 file of an un-loaded (IEBCOPY) Source PDS (Partions Data Set). Example of the JCL and Control Statments need to unload the file are as follows:

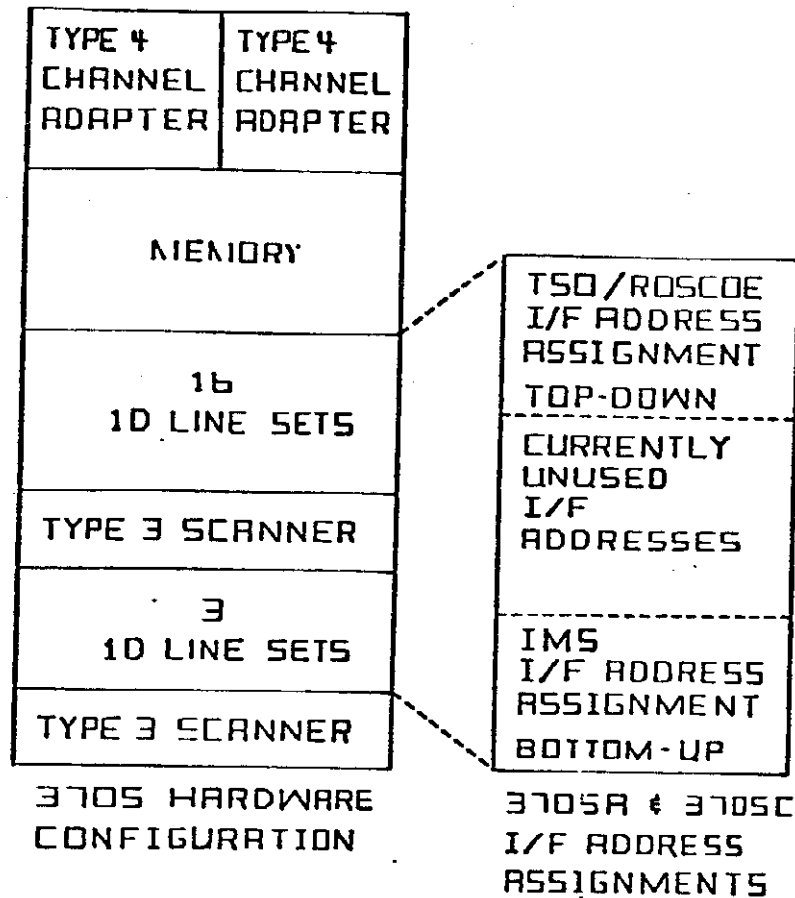
```
//UNLOAD JOB ('YOUR DATA here','Accting Code here'),  
//      MSGLEVEL=1,MSGCLASS=A  
//UNLOAD EXEC PGM=IEBCOPY,REGION=512K  
//SYSUT3 DD  UNIT=DISK,SPACE=(TRK,(10,10))  
//SYSUT4 DD  UNIT=DISK,SPACE=(TRK,(10,10))  
//INPUT DD   UNIT=TAPE,DISP=OLD,VOL=SER=XXXXXX,DSN=NNN  
//OUTPUT DD  UNIT=DISK,SPACE=(CYL,(2,1,10),RLSE),DISP=(,KEEP),  
//          DSN=NAME2  
//SYSIN DD   *  
          COPY INDD=INPUT,OUTDD=OUTPUT  
/*
```

915-543-2790



ALL THREE 3705'S ARE IDENTICALLY CONFIGURED FOR EASE OF NETWORK RECOVERY.

(SEE FIGURE#2 3705 HARDWARE CONFIGURATION & APPLICATIONS)



INTERACTIVE TP LINES ARE EACH ASSIGNED A UNIQUE 3705 INTER-FACE ADDRESS (I/F). EACH LINE RETAINS ITS 3705 I/F ADDRESS REGARDLESS OF THE 3705 ON WHICH IT RUNS. NETWORK RECOVERY PROCEDURES HAVE BEEN SIGNIFICANTLY IMPROVED BY THESE METHODS OF ADDRESS ASSIGNMENT AND 3705 HARDWARE CONFIGURATION.

BY EARLY 1978 IT WAS REALIZED THAT SOMETHING HAD TO CHANGE IF THIS INSTALLATION WAS TO MEET A MANDATED 95% UPTIME FOR ALL MAJOR SUB-SYSTEMS. NEW RELEASES AND PTF'S INSTALLED ON THE OPERATING SYSTEM (OS) WERE PRINCIPLE CAUSES OF DOWNTIME. THE TECHNIQUE USED TO VALIDATE THESE CHANGES WAS COSTLY AND OBVIOUSLY A FAILURE. WHAT WE NEEDED WAS A TOOL THAT COULD:

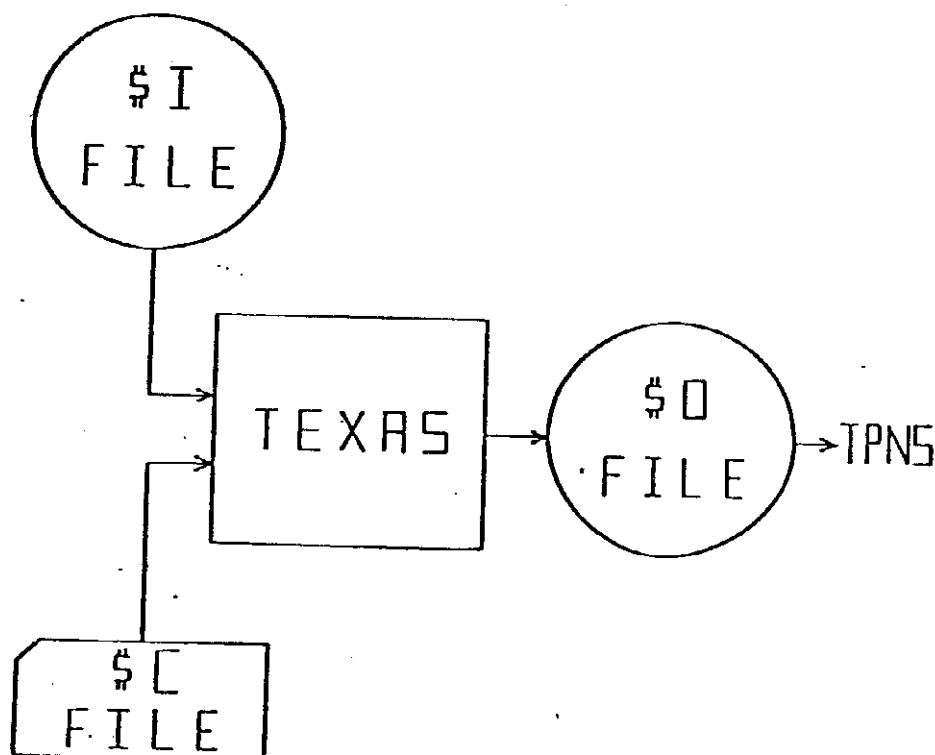
- 1) FUNCTION TEST CHANGED SUB-SYSTEMS IN A TEST ENVIRONMENT
- 2) STRESS TEST CHANGED SUB-SYSTEMS IN A TEST ENVIRONMENT
- 3) AID IN CONDUCTING PERFORMANCE TESTING AND CAPACITY PLANNING

IBM'S TELE-PROCESSING NETWORK SIMULATOR (TPNS) WAS SELECTED TO BE THAT TOOL. WE HAVE ACCUMULATED APPROXIMATELY 9 MONTHS OF EXPERIENCE WITH TPNS. OUR CURRENT RELEASE IS 4.0. OUR FIRST APPLICATION OF TPNS WAS TO BOTH FUNCTION AND STRESS TEST PROPOSED MODIFICATIONS, MAINTENANCE AND RE-CONFIGURATIONS OF OS. TPNS IS TURNING-UP BUGS THAT WOULD NOT HAVE APPEARED UNTIL THE NEW SYSTEM WAS IN PRODUCTION. THE PREVIOUS VALIDATION TECHNIQUE, USED ON JES3 AND OS HAD ALLOWED UP-TIME TO DECLINE TO 70%. DURING ACCEPTANCE TESTING OF OS IPO 3.0 WITH TPNS WE UNCOVERED NUMEROUS BUGS THAT WOULD NOT HAVE ALLOWED US TO MEET THE 95% UP-TIME CRITERION. ALL CHANGES TO OS ARE NOW TPNS VALIDATED.

LACK OF STATISTICS ON USERS USAGE OF BOTH TSO AND ROSCOE FORCED US TO "BEST-GUESS" SCRIPTS FOR THESE FUNCTIONS. IMS USERS WERE ABLE TO PROVIDE US WITH FAIRLY ACCURATE DATA AND SCRIPT PREPARATION PROCEEDED EASILY. HOWEVER, THE NEED TO TEST JES3-RTAM REQUIRED US TO DEVELOP AN RJP TPNS SCRIPT. THE EFFORT REQUIRED TWO PEOPLE 240 MAN-HOURS. CLEARLY, THERE ARE TOO MANY JOB STREAMS FOR EACH OF TOO MANY USERS TO MANUALLY PREPARE SCRIPTS FOR THESE CONSTANTLY CHANGING JOB STREAMS. THIS MANUAL PREPARATION GREATLY EXCEEDS THE RESOURCES OF OUR GROUP. THIS PROBLEM OF SCRIPT PREPARATION HAS BEEN SOLVED BY "TEXAS" TPNS EXTENDED AUTOMATIC SCRIPTOR. SIMPLY STATED, TEXAS PRODUCES RJP TPNS SCRIPTS, READY FOR INPUT INTO THE TPNS PREPROCESSOR.

(SEE FIGURE#3 TEXAS FUNCTIONAL DIAGRAM)

SYSTEM FLOW



THE OUTPUT FILE (\$0) IS CHARACTERS AND IS FORMATTED FOR DIRECT INPUT INTO TPNS PRE-PROCESSOR.

THE \$1 FILE (INPUT FILE) CONTAINS THE CARD IMAGE JCL AND/OR DATA WHICH IS TO BE SCRIPTED. TEXT DATA THAT IS ENCLOSED IN QUOTES IS CONVERTED TO HEX BY TPNS. EACH INPUT RECORD IS SCANNED FOR QUOTES OR THE TPNS TEXT DELIMITER CHARACTER. THE QUOTES AND TEXT DELIMITER CHARACTERS ARE REPLACED BY DOUBLE QUOTES OR DOUBLE TEXT DELIMITER CHARACTERS. THE CURRENT IMPLEMENTATION OF TEXAS USES ONLY TRAILING BLANK SUPPRESSION ON RECORDS THAT CONTAIN QUOTES OR TEXT DELIMITER CHARACTERS. ALL OTHER RECORDS USE STANDARD MULTI-LEAVING COMPRESSION OF TWO OR MORE BLANKS AND THREE OR MORE EQUAL CHARACTERS. THE MESSAGE DECK, TEXT, AND END TEXT CARDS ARE GENERATED AND INSERTED BY TEXAS. THE NETWORK DEFINITION, INCLUDE, PATH, AND LINE CARDS MAY EITHER BE INPUT FROM THE USER OR GENERATED BY TEXAS THROUGH INFORMATION SUPPLIED IN THE CONTROL CARD OR (\$C FILE). THE CONTROL CARD CONTAINS INFORMATION TO IDENTIFY EACH RUN UNIQUELY BY NETWORK AND MESSAGE DECK NAME. NETWORK CARDS MAY BE INSERTED FOLLOWING THE CONTROL CARD. IN WHICH CASE THEY OVERRIDE THE NETWORK INFORMATION ON THE CONTROL CARD. THE \$C FILE (CONTROL CARD) CONTAINS THE FOLLOWING INFORMATION:

(SEE FIGURE#4 CONTROL CARD FORMAT)

CONTROL CARD FORMAT:

COLS.	1- 8	MESSAGE DECK NAME.
	9-16	NETWORK NAME.
	17-18	BEGINNING REMOTE NUMBER. BOTH DIGITS MUST BE CODED. A NUMBER GREATER THAN 60 AND LESS THAN 76. DEFAULT IS 61.
	19-20	NUMBER OF REMOTE LINES. BOTH DIGITS MUST BE CODED. A NUMBER GREATER THAN 0 AND LESS THAN 15. BEGINNING REMOTE NUMBER PLUS NUMBER OF LINES SHOULD BE LESS THAN OR EQUAL TO 75. IF THE SUM IS GREATER THAN 75, THEN BEGINNING REMOTE NUMBER IS RESET TO 61 AND NUMBER OF LINES IS RESET TO 5.
	21-23	STARTING LINE NUMBER. ALL THREE DIGITS MUST BE CODED.
	24-25	TPNS NCP NUMBER. BOTH DIGITS MUST BE CODED. DEFAULT IS 50.
	26	CONSOLE MESSAGES TO BE INSERTED. 0 = NONE 1 = JES3 2 = JES2 3 = MVS
	27-28	MESSAGE DECK COUNT OR ITERATION FACTOR. BOTH DIGITS MUST BE CODED. DEFAULT IS 1.
	29-31	WAIT TIME AT END OF MESSAGE DECK IN SECONDS. ALL THREE DIGITS MUST BE CODED. (DELAY BEFORE MESSAGE DECK IS RE-ENTERED, IN SECONDS.) DEFAULT IS 030.
	32-33	NUMBER OF JOBS BETWEEN REQUEST TO SEND AND READER CLOSE.
	34	S IF \$ID, N\$ USED FOR JOBNAME. TERMINAL NAME PLACED IN POSITION 3-8 OF JOBNAME.
	35-37	BUFFER SIZE FOR RJP.

OUR USERS HAVE EMPLOYED TEXAS VERY SUCCESSFULLY IN BUILDING THEIR OWN RJP TPNS SCRIPTS.

TRAINING THE TPNS USER COMMUNITY TO PATCH BETWEEN THE 3705'S AND OPERATING PROCEDURES IS A PRESENT PROBLEM. SO WE ARE ALSO GENERATING PATCHING AND OPERATING INSTRUCTIONS TO FUNCTION AND STRESS TEST ALL MAJOR SUB-SYSTEMS. PLANNING IS ALSO IN PROGRESS TO GIVE CLASS ROOM INSTRUCTION ON TPNS NETWORK PROBLEM DETERMINATION. FRANKLY OUR STAFF IS TIRED OF COMING IN AT 3:00 A.M. TO HELP A SYSTEM USER GROUP WITH TPNS RUNS.

CAPACITY PLANNING AND PERFORMANCE EVALUATION ARE TWO MORE AREAS WHERE WE EXPECT TPNS TO BE OF ASSISTANCE TO US. WE HOPE IT CAN SHOW US HOW NETWORK PERFORMANCE IS AFFECTED BY CHANGES TO VTAM AND NCP. SOME TP ANALYSIS OF APPLICATION MESSAGE AND RESPONSE TIME STATISTICS IS BEING DONE BY IN-HOUSE PROGRAMS BASED ON GTF DATA. MUCH BETTER NETWORK ANALYSIS REPORTS COULD BE OBTAINED IF WE COULD INPUT THE TPNS MSGLOG FILE INTO THESE IN-HOUSE PROGRAMS.

TEXAS WAS WRITTEN IN PL/I BY A MEMBER OF OUR STAFF, WHO REGRETS VERY MUCH BEING UNABLE TO ATTEND THIS SHARE CONFERENCE. HE HAS SENT WITH ME A FEW MICRO-FICHE COPIES OF THE TEXAS PROGRAM AND HE HAS ASKED ME TO MAKE THEM AVAILABLE TO THOSE OF YOU WHO HAVE AN INTEREST IN THIS AREA. I WOULD ALSO LIKE THE OPPORTUNITY TO MEET WITH ANY OF YOU TO DISCUSS TP PERFORMANCE/ANALYSIS PROGRAMS.