

AD-A150 811

STREAMLINED TEST REPORTING AND PLANNING (STRAP):
COMPUTERIZED HUMAN FACTORS QUESTIONNAIRE(U) ARMY TROPIC
TEST CENTER APO MIAMI 34004 L 5 MAY SEP 84
USATTC-840905

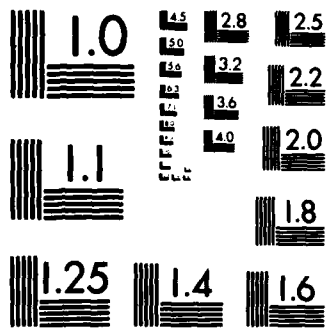
1/1

UNCLASSIFIED

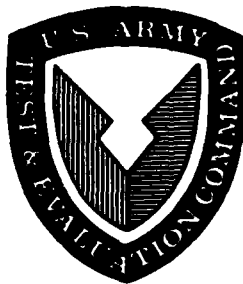
F/G 5/2

NL

		Q											
		END											
		FMED											
		DTIC											



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



AD No. TECOM Project No. 7-CO-RD4-TT0-001
USATTC Report No. 840905

AD-A150 811

METHODOLOGY INVESTIGATION
UNIT 3 REPORT
STREAMLINED TEST REPORTING AND PLANNING (STRAP):
COMPUTERIZED HUMAN FACTORS QUESTIONNAIRE

by

LLOYD S. HAY

DTIC
COLLECTED
MAR 04 1985
E D

Materiel Test Division

UNITED STATES ARMY TROPIC TEST CENTER

APO MIAMI 34004

SEPTEMBER 1984

Period Covered:
June through September 1984
Prepared for:
US Army Test and Evaluation
Command, Aberdeen Proving Ground,
MD 21005

Approved for public release;
distribution unlimited.

DTIC FILE COPY

Disposition Instructions

Destroy this report when no longer needed. Do not return to the originator.

Disclaimer

The views, opinions, and findings in this report are those of the author and should not be construed as an official Department of the Army position, unless so designated by other official documentation.

Trade Names Statement

The use of trade names in this report does not constitute an official endorsement or approval of the use of such commercial hardware or software. This report may not be cited for purposes of advertisement.

Neutral Language Statement

The word "he," when used in this report, represents both the masculine and feminine genders, unless otherwise specifically stated.



DEPARTMENT OF THE ARMY Mr. Egbert/aw/AV283-2170
HEADQUARTERS, U. S. ARMY TEST AND EVALUATION COMMAND
ABERDEEN PROVING GROUND, MARYLAND 21005-5055

REPLY TO
ATTENTION OF

AMSTE-AD-M

2 NOV 1984

SUBJECT: Streamlined Test Reporting and Planning: Computerized
Human Factors Questionnaire Methodology Investigation
Unit 3 Report

Commander
Us Army Tropic Test Center
ATTN: STETC-MTD-A
APO Miami 34004

Subject report is approved.

FOR THE COMMANDER:

A handwritten signature in cursive script, reading "Grover H. Shelton".

GROVER H. SHELTON
C, Meth Imprv Div
Analysis Directorate

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER TECOM Project No. 7-CO-RD4-TT0-001	2. GOVT ACCESSION NO. AD-A150811	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Streamlined Test Reporting and Planning (STRAP): Computerized Human Factors Questionnaire		TYPE OF REPORT & PERIOD COVERED Methodology Investigation Unit 3 Report-June through September 1984
7. AUTHOR(s) Lloyd S. Hay		5. PERFORMING ORG. REPORT NUMBER USATTC Report No. 840905
9. PERFORMING ORGANIZATION NAME AND ADDRESS US Army Tropic Test Center ATTN: STETC-MTD-A APO Miami 34004		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBER
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) US Army Test and Evaluation Command ATTN: AMSTE-AD-M Aberdeen Proving Ground, MD 21005		12. REPORT DATE September 1984
		13. NUMBER OF PAGES 25
		15. SECURITY CLASS. (of this report) Unclassified
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) (Cont. for p. 1)		
18. SUPPLEMENTARY NOTES Key words include:		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Questionnaires Human Factors Engineering, Computer Programs, <i>and</i> Ranking, Ratings Software		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) A computerized program for preparing questionnaires is presented. The computer operator enters the form title and lists of questions which are stored under a unique file name. He later assembles the questionnaire by entering the question variable number and using the appropriate special function key. The final product is letter quality ready for insertion into the test plan.		

(to p. 2)



DEPARTMENT OF THE ARMY
UNITED STATES ARMY TROPIC TEST CENTER
APO MIAMI 34004

STETC-MTD-A

14 SEP 1984

SUBJECT: Streamlined Test Reporting and Planning (STRAP) Methodology
Investigation: Unit 3 Report -- Computerized Human Factors
Questionnaire, TECOM Project No. 7-CO-RD4-TTO-001

SEE DISTRIBUTION

1. BACKGROUND

a. This is the third and final methodology report for the STRAP investigation. The methodology investigation proposal (MIP) is at enclosure 1. Work on the computer aided reporting system; the test status information program; and the reliability, availability and maintainability data collection system called for in the MIP will be deferred so that those efforts will fit better into the overall US Army Test and Evaluation Command (TECOM) effort for automating test plans and reports. TECOM test plan/report automation actions are now being worked out by a TECOM-wide functional coordinating group. The Environmental Issues Guide for the Humid Tropic Testing portion of STRAP has been transformed into a separate MIP and will be reported separately, if approved and funded.

b. The following paragraphs provide background information for this particular report in the STRAP series:

(1) Questionnaires are used during testing as diagnostic tools to ascertain equipment or system problems and to determine user acceptance. Questionnaires are employed to obtain test data for 90 percent of the tests conducted at the US Army Tropic Test Center (USATTC).

(2) Human factors questionnaires are drafted during test plan preparation. Previously, questionnaires were developed by a tedious process involving writing, typing, and manually applying linear graphics. After the initial product was prepared, it was distributed within the Materiel Test Division for review, correction, and additional input. The review process frequently resulted in a format change which required a repeat of the tedious process of questionnaire preparation. Normally, when test items arrive for testing, the technical manuals and the equipment are examined to assure that the prepared questionnaires encompass all important facets of the system. If the questionnaires were found to be lacking, a repeat of the tedious process of questionnaire preparation was again required to update the forms.

(3) An automated, more efficient method of questionnaire preparation and revision was required.

2. OBJECTIVE

Develop a computer program to reduce the time and effort required for questionnaire preparation and modification.

14 SEP 1984

STETC-MTD-A

SUBJECT: Streamlined Test Reporting and Planning (STRAP) Methodology Investigation: Unit 3 Report -- Computerized Human Factors Questionnaire, TECOM Project No. 7-CO-RD4-TT0-001

3. SUMMARY OF PROCEDURES

a. In order to reduce the time and effort required to produce questionnaires, the Human Factors Laboratory, USATTC, developed a computerized procedure for drafting questionnaires using a Hewlett-Packard 9845T (HP) desk top computer with program software developed in-house.

b. Now, when a questionnaire is needed, human factors personnel develop it using the computer and the in-house program. The program is interactive, questioning the operator as to the desired input for each distinct section of the questionnaire (e.g. the program will list the different types of rating scales available when that section of the questionnaire is ready to be prepared).

c. The program covers five distinct sections, including the questionnaire title, test participant data, rating scale, question category and question.

d. The program can store a maximum of 255 questions. The questions can be identified by category (e.g. loading procedures, maintenance, etc). For questionnaires requiring more than 255 questions, additional files of questions can be constructed.

e. The present program was written by the author for use with the HP-9845T desk top computer and an HP-9885M flexible disk drive for data and program storage. The minimum memory required is 18 K-bytes. Form titles, question category groups, questions and other text are stored under unique file names. This facilitates the recall of information for editing, expanding, or restructuring the draft questionnaires.

f. The special function key feature of the HP-9845T is used extensively in the program developed. By pressing the appropriate special function key (K0 through K15), the questionnaire can be assembled by manipulating text files previously stored. A template is used to indicate the function of each key. Pressing the "HELP" key provides detailed information on the use of each special function key.

4. SUMMARY OF RESULTS

a. A copy of the questionnaire preparation computer program is provided at enclosure 2.

b. A copy of a sample computer-prepared questionnaire is provided at enclosure 3. The rating statements used in Part I of this enclosure are adequate for local use but they do not comply with TECOM Pam 602-1, Vol 1, therefore additional questionnaires that comply with TECOM Pam 602-1, Vol 1 must be administered to satisfy Headquarters TECOM testing requirements.

14 SEP 1984

STETC-MTD-A

SUBJECT: Streamlined Test Reporting and Planning (STRAP) Methodology Investigation: Unit 3 Report -- Computerized Human Factors Questionnaire, TECOM Project No. 7-CO-RD4-TTO-001

5. ANALYSIS

Computer assisted questionnaire preparation saves time and effort during initial preparation, during text plan review, and during final preparation prior to testing. The result is a printed form of camera-ready quality that can be used as copy for the published test plan and that can be duplicated for data gathering.

6. Distribution for the report is at enclosure 4.

4 Encl
as

RP Barrere
RICHARD P. BARRERE
Colonel, Infantry
Commanding

DISTRIBUTION
IAW Encl 4

Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/ _____	
Availability Codes	
Dist	Avail and/or Special
A-1	



(COPY)

DEPARTMENT OF THE ARMY
United States Army Tropic Test Center
APO Miami 34004

February 1983

METHODOLOGY INVESTIGATION PROPOSAL

1. TITLE. Streamlined Test Reporting and Planning (STRAP)
2. CATEGORY. Environmental Susceptibility
3. INSTALLATION. US Army Tropic Test Center
ATTN: STETC-MTD-A
APO Miami 34004
4. PRINCIPAL INVESTIGATION. Robert J. Fuchs
US Army Tropic Test Center
STETC-MTD-A
APO Miami 34004
AUTOVON 313-285-5412
5. STATEMENT OF THE PROBLEM. Although the US Army Tropic Test Center (USATTC) has come a long way in the past few years to generate an efficient and productive system for preparing test plans and reports, there are a number of areas within the testing operation that need to be streamlined to a more systematic process. Improved operating procedures for the collection, flow, analysis and presentation of test data are needed for more efficient control of data throughout active testing and test reporting. Improvements in the process of developing detailed test plans are also needed, particularly in implementing USATTC's Computer Aided Test Planning (CATPLAN) and in producing computerized forms and questionnaires.
6. BACKGROUND. The lack of personnel has not allowed the Center to streamline the data flow process. Now that the Center is staffed properly in the data analysis area, the operations research and mathematical statistician personnel need to develop standard data handling procedures to fill the gaps between procedures established under previous methodology investigations, such as Computer Aided Test Planning (CATPLAN) and Reliable Acquisition Processing, and Integration of Data (RAPID).
7. GOAL. Specifically, the Center will develop techniques to include, but not be limited to the following:
 - a. Develop an implementation program for CATPLAN. This computer program will automatically copy issues and criteria from Appendix A and distribute them to their proper location in the CATPLAN subtests.

Enclosure 1

Streamlined Test Reporting and Planning (STRAP) (cont)

b. Develop a computerized method for producing human factors questionnaires in a standard (but pliable) format such that the computer output can be used as the printed questionnaires and can be inserted into the test plan without having to be formatted and typed by word processing personnel.

c. Develop a procedure for using data flow plans during active tests, to include data hand-off procedures to the Data Analysis Laboratory.

d. Develop an internal operating procedure for the Data Analysis Laboratory.

e. Develop computerized techniques for producing figures that will appear in final reports, such that stored data can be translated into charts and graphs that are acceptable for the final report.

f. Initiate plans to complete the data matrix designed and reported in the final report for Environmental Issues Guide for the Humid Tropics (EIGHT). Completion of the matrix is a necessary step in developing a systematic approach to an environmental test methodology program at USATTC and to developing a foundation for the TECOM environmental testing program.

8. DESCRIPTION. As needs such as the above arise during reviews and analyses of USATTC's operations, they will be defined specifically and undertaken as separate projects under this investigation. Each goal/project will be completed and reported on separately so that reports from the investigation will be produced as separate goals are accomplished.

9. JUSTIFICATION.

a. Problem. The goals stated above are necessary to the efficient operation of this Center. These goals will be accomplished regardless of the funding level of this investigation. The Center will have an approved project to charge direct labor hours and a mechanism for reporting results.

b. Dollar Savings. When available, the proposed technique will have an impact on every test conducted at USATTC. Estimated savings per test would be approximately 100 man-hours.

c. Workload. It is anticipated that the average USATTC test completion rate of 21 tests per year will be maintained in the near future, resulting in a total savings per year of 2,100 man-hours.

d. Recommended TRMS Priority. 1

e. Association with Requirements Documents. Not applicable.

f. Other. This investigation is being conducted to improve turn-around-time in producing USATTC's main products, the detailed test plan and the final test report.

Streamlined Test Reporting and Planning (STRAP) (cont)

10. RESOURCES.

a. Financial.

(1) Funding Breakdown:

	Dollars (thousands)			
	FY83		FY84	
	<u>In-House</u>	<u>Out-of-House</u>	<u>In-House</u>	<u>Out-of-House</u>
Personnel Compensation	--	--	--	--
Travel	--	--	3	--
Contractual Support	--	0.5	--	2
Consultant & Other Services	--	--	--	--
Materials & Supplies	0.5	--	2	--
Equipment	<u>--</u>	<u>--</u>	<u>2</u>	<u>--</u>
Subtotals	0.5	0.5	7	2
FY TOTAL		1.0	9	

(2) Explanation of Cost Categories:

(a) Personnel Compensation: Not applicable.

(b) Travel: Coordination with other Army environmental test and research activities.

(c) Contractual Support: Software Lease.

(d) Consultants: Not applicable.

(e) Materials and Supplies: Not applicable.

(f) Equipment: Not applicable.

b. Anticipated Delays. None.

c. Obligation Plan.

Obligation Rate (Thousand)	FY84	FQ	1	2	3	4
			2.0	2.0	3.0	2.0

Streamlined Test Reporting and Planning (STRAP) (concluded)

d. In-House Personnel.

	No.	FY84		Study Hours Required
		Man-Hours Required	Man-Hours Available	
Phy Sci Admin (GS-1301)	1	100	100	
Opns Rsch Anal (GS-1515)	2	1000	1000	
Elec Engr (GS-0855)	1	100	100	
Math Stat (GS-1529)	2	1900	1900	
Gen Engr (GS-801)	1	80	80	
Rsch Psych (GS-180)	1	200	200	
Program Analyst (GS-345)	1	40	40	
Programmer (GS-344)	1	1200	1200	
Tech Editor (GS-1083)	1	300	300	
Tech Info Spec (GS-)	1	500	500	
Biologist (GS-401)	1	300	300	
TOTAL		5,720	5,720	2,000

11. INVESTIGATION SCHEDULE.

	FY83												FY84											
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
In-House																								R
Contract																								

LEGEND:

- - - Active investigation work
- A Award of contract
- R Final report due at HQ, TECOM

12. ASSOCIATION WITH TOP PROGRAM. This proposal may result in a new TOP.

FRANK S. MENDEZ
Chief, Materiel Test Division

(END COPY)

```

10  ! COMPUTERIZED PROGRAM FOR CONSTRUCTING QUESTIONNAIRES. PROGRAM
20  ! STORED ON HF DISC #12 , FILE "QUEST5" [PROTECT:"QUEST5","Q"]
25  ! MODIFY RATING SCALES, INSTRUCTIONS & CATEGORIES AS REQUIRED
28  ! PROGRAM STORES UNNUMBERED QUESTIONS AND WILL
30  ! LIST FORM TITLES, CATEGORY TITLES AND QUESTIONS FOR RECORD
40  ! AUTHOR: L.S.H. - JULY 1984, VERSION: QUEST5-A
50  ! *****
51  PRINTER IS 16
52  PRINT PAGE
53  DISP "
54  Z$="."
60  DISP "PRINTER IS ?..[0]=Hard Copy Printout,[16]=CRT Display - SELECT,
    THEN CONT";
65  INPUT P
70  PRINTER IS P
80  LOAD KEY "Quest3"
90  DIM Q$(99,1)[78] ! NINETY-NINE 78-CHARACTER STRINGS RESERVED FOR QUESTION
LIST
91  DIM T$(2)[72] ! TWO 72-CHARACTER STRINGS RESERVED FOR TITLES
93  DIM O$(75) ! RESERVED FOR OPEN-ENDED QUESTIONS
110 DISP " INPUT NEW OR RECALL STORED DATA? (I)NPUT..(R)ECALL - SELECT, T
HEN CONT ";
120 INPUT D$
122 PRINT
124 PRINT " FILES AVAILABLE ON THIS DISC "
126 PRINT
128 CAT
129 PRINT LIN(3)
130 INPUT " INPUT FILE-NAME FOR DATA STORAGE ..(6-CHAR.MAX) - THEN PRESS
CONT ",F$
131 IF D$="R" THEN 133
132 GOTO 140
133 PRINT
134 ASSIGN #1 TO F$
135 MAT READ #1;T$,Q$
137 PRINT "-----"
138 PRINT LIN(5)
139 GOTO 400
140 PRINTER IS 0
150 PRINT
160 PRINT
170 PRINT " LIST OF TITLES, CATEGORIES AND QUESTIONS "
175 PRINT " DATA STORED IN FILE ";F$
180 PRINT
190 PRINT "CATEGORY VAR. TEXT "
200 PRINT
210 INPUT " (1)-LINE OR (2)-LINE TITLE?... SELECT ONE, THEN PRESS CO
NT ",Ln
220 IF Ln=2 THEN GOTO 270
230 INPUT "[<----- TEST TITLE (Max Characters=72)-----
---->]",T$(1)
240 PRINT "FORM TITLE";TAB(14);"T$(1)";TAB(20);T$(1)
250 PRINTER IS P

```

```

260 GOTO 320
270 INPUT "[<-----FIRST LINE OF TEST TITLE (Max Characters=72)-----
---->]",T$(1)
280 INPUT "[<-----SECOND LINE OF TEST TITLE (Max Characters=72)-----
-->]",T$(2)
290 PRINT "FORM TITLE";TAB(14);"T$(1)";TAB(20);T$(1)
300 PRINT "FORM TITLE";TAB(14);"T$(2)";TAB(20);T$(2)
310 PRINTER IS P
320 Nu=-1
323 GOTO 330
324 DISP "
325 DISP "
326 INPUT " INPUT LAST TEXT NUMBER...THEN PRESS CONT ",
Nu
330 Nu=Nu+1
335 TYPEWRITER ON
340 DISP "|<--WRITE TEXT #";TAB(18);Nu;TAB(23);" (Max Chars.=42)-->|----52---|
----62---|----72---|";
350 LINPUT Q$(Nu,1)
360 PRINTER IS 0
370 PRINT "TEXT";TAB(14);"Q$";Nu;TAB(20);Q$(Nu,1)
380 PRINTER IS P
385 IF Q$(Nu,1)="END" THEN 395
390 GOTO 330
395 TYPEWRITER OFF
400 INPUT " DO YOU WANT TO STORE DATA?? (Y/N) - SELECT, THEN PRESS CON
T ",Y$
401 DISP "
405 PRINT LIN(3)
406 PRINT "-----"
407 PRINT LIN(5)
410 IF Y$="N" THEN 498
411 INPUT " IS THIS A (N)ew FILE OR (E)xisting FILE?...<N/E> SELECT, THEN
CONT ",Y$
412 IF Y$="N" THEN 419
413 PURGE F$
414 WAIT 200
419 DISP TAB(14);" STORING DATA !! ";
420 CREATE F$,Nu/3+1
425 ON ERROR GOTO 443
430 ASSIGN #1 TO F$
440 MAT PRINT #1;T$,Q$
441 ASSIGN #1 TO *
443 OFF ERROR
444 DISP "
445 DISP " DATA STORED !!... PRESS CONT TO START PRINTING ";
446 PAUSE
450 L1=LEN(T$(1))/2 ! FORMULA FOR CENTERING TEST TITLE
460 L2=LEN(T$(2))/2 ! FORMULA FOR CENTERING TEST TITLE
470 L1=INT(38)-L1 ! " " " "
480 L2=INT(38)-L2 ! " " " "
490 GOTO 530
498 WAIT 200

```

```

500 DISP "                READY !!!!!... PRESS CONT TO START PRINTING  ";
502 PAUSE
503 DISP "
505 L=LEN(T$(1))/2          ! FORMULA FOR CENTERING TEST TITLE
510 L=INT(38)-L            ! " " " " "
520 GOTO 560
530 PRINT TAB(L1);T$(1)
540 PRINT TAB(L2);T$(2)
550 GOTO 570
560 PRINT TAB(L);T$(1)
570 PRINT
580 PRINT
600 PRINT
610 PRINT "Test exercise: _____ Date: _____"
"
620 PRINT
630 PRINT "Name: _____ Rank/grade: _____"
"
640 PRINT
650 PRINT "Unit: _____ Mos/job: _____"
"
660 PRINT
670 PRINT "Age: _____ Sex: _____ Time in Panama: _____"
"
680 PRINT
690 PRINT "Previous experience with test item: _____"
"
700 PRINT " _____"
"
710 PRINT " _____"
"
720 PRINT
725 WAIT 200
730 DISP "
731 WAIT 200
732 DISP "                SELECT APPROPRIATE FUNCTION KEY..... ";
740 PAUSE
750 PRINT "                | | | A | | |
| "
760 PRINT "                | | | | | |
| "
770 PRINT "                | | | L | | |
| "
780 PRINT "                | | | I | | |
C | "
790 PRINT "First, rate how easy or hard it was to perform|V E | E | T H | H | V H|
A | "
800 PRINT "the task. Then, if you checked 'Hard,' 'Very |E A | A | T A | A | E A|
N | "
810 PRINT "Hard,' or 'Can't Do,' explain the problem with|R S | S | L R | R | R R|
/ D | N | "
820 PRINT "the item in the space under the question. |Y Y | Y | E D | D | Y D|
T O | A | "
830 PRINT " _____"
"

```



```

1340 DISP "
1342 INPUT " INPUT TEXT VARIABLE NUMBER...THEN PRESS CONT
      ",N
1343 PRINT Q$(N,1)
1344 DISP "
1347 INPUT " ANOTHER LINE?..(Y/N) - SELECT ONE, THEN PRESS CO
NT      ",A$
1348 IF A$="Y" THEN 1340
1350 GOTO 1290
1450 GOTO 730
1460 PRINT
1470 PRINT
1480 PRINT
1510 PRINT " | E | | | | |
E | | " | X | | | | |
1520 PRINT " | X | | | | |
X | | " | T | | | | |
1530 PRINT " | T | | | | |
T | | " | R | | | | |
1540 PRINT " | R | | | | |
R | | " | E | | | | |
1550 PRINT "First, check how the TEST ITEM was designed | E | | | | |
E | | " | M G | V G | G | P | V P |
1560 PRINT "for each question. Then, if you checked 'Poor,' | M G | V G | G | P | V P |
M P | | " | E O | E O | O | O | E O |
1570 PRINT "'Very Poor,' or 'Extremely Poor,' explain the | E O | E O | O | O | E O |
E O | | " | L O | R O | O | O | R O |
1580 PRINT "problem with the item design in the space | L O | R O | O | O | R O |
L O | N | " | Y D | Y D | D | R | Y P |
1590 PRINT "under the question. | Y D | Y D | D | R | Y P |
Y R | A | "
1600 PRINT "
      "
-----
1610 GOTO 730
1620 PRINT "
      B
1630 PRINT " | | | B | | | |
      " | | | O | | | |
1640 PRINT " | | | O | | | |
      " | | | A | T T | A | |
1650 PRINT " | | | A | T T | A | |
      " | | | H H | | |
1660 PRINT " | | | H H | | |
      " | E | L E | E | L E | E |
1670 PRINT " | E | L E | E | L E | E |
      " | A | I A | A | I A | A |
1680 PRINT "First, compare the ease of performing tasks | A | I A | A | I A | A |
      " | M S | T S | B S | T S | M S |
1690 PRINT "while wearing the ITEM A with the ease of per- | M S | T S | B S | T S | M S |
      " | U I | T I | O A | T I | U I |
1700 PRINT "forming tasks while wearing ITEM B. If you | U I | T I | O A | T I | U I |
      " | C E | L E | U M | L E | C E |
1710 PRINT "check NA (not applicable,) explain why in the | C E | L E | U M | L E | C E |
      N |

```

```

1720 PRINT "space under the question.           |H R|E R|T E|E R|H R|
A |
1730 PRINT "
-----
1740 GOTO 730
1750 PRINT
1770 PRINT
1780 PRINT T$(1)[1,8];TAB(10);"<cont>"
1795 PRINT
1790 GOTO 730
1800 PRINT
1820 PRINT
1830 PRINT T$(1)[1,8];TAB(10);"<concluded>"
1835 PRINT
1840 GOTO 730
1860 PRINT
1863 DISP "
1865 INPUT "                INPUT LAST TEXT NUMBER..THEN PRESS CONT      ",Nu
1870 PRINT "                LIST OF TITLES, CATEGORIES AND QUESTIONS "
1880 PRINT "                DATA STORED IN FILE ";F$
1890 PRINT
1900 PRINT "CATEGORY      VAR.  TEXT      "
1910 PRINT
1930 PRINT "FORM TITLE";TAB(14);"T$(1)";TAB(20);T$(1)
1940 PRINT "FORM TITLE";TAB(14);"T$(2)";TAB(20);T$(2)
1941 PRINT
1942 FOR I=0 TO Nu
1950 PRINT "TEXT";TAB(14);"Q$";I;TAB(20);Q$(I,1)
1960 NEXT I
1961 PRINT LIN(4)
1970 GOTO 730
1975 DISP "
1977 INPUT "                INPUT PART (?) `COMPLETED`, PART (?) `BEGINS
",P$(1),P$(2)
1978 INPUT "                QUESTIONNAIRE BEGINS [THIS] OR [NEXT] PAGE???"
",N$
1980 PRINT
1990 PRINT "                PLEASE NOTE:-
2000 PRINT
2010 PRINT "                YOU HAVE JUST COMPLETED PART ";P$(1);" OF THIS QUESTIONNAI
RE."
2020 PRINT "                PART ";P$(2);" BEGINS ON ";N$;" PAGE AND USES A DIFFERENT
RATING"
2030 PRINT "                SCALE."
2040 PRINT
2050 GOTO 730
2090 PRINT
2100 PRINTER IS 16
2110 PRINT PAGE
2120 PRINT LIN(3);" SPECIAL FUNCTION KEYS ARE USED TO CONTROL THE QUERSTIONNAI
RE CONSTRUCTION PROGRAM:-"
2130 PRINT
2140 PRINT "      k0      2-LINE LEADER      Prints two blank lines."
2145 PRINT

```

2150	PRINT "	k1	PAGE 1	Prints questionnaire title and personal data "
2155	PRINT "			required from TPs. "
2160	PRINT "	k2	CATEGORY TITLE	Prompts operator to input category title
2165	PRINT "			variable number. "
2170	PRINT "	k3	1-LINE QUEST.	Prompts operator to input question line
2175	PRINT "			number and variable number of question to
2178	PRINT "			be printed. "
2180	PRINT "	k4	2-LINE QUEST.	Prompts operator to input question line and
2185	PRINT "			variable numbers of lines one and two."
2190	PRINT "	k5	FORM (Cont.)	Prints header 'FORM F-N (Cont)' at top of
2195	PRINT "			page. "
2205	PRINT "	k6	FORM (Concluded)	Prints header 'FORM F-N (Concluded)' at
2215	PRINT "			top of last page. "
2216	PRINT			
2225	PRINT			
2235	DISP TAB(15);"			PRESS CONT FOR MORE ";
2245	PAUSE			
2255	PRINT "	k7	PART CONCLUSION	Prints remark advising TP he/she has just
2265	PRINT "			completed a portion of questionnaire. I
2275	PRINT "			PART (NO.) completed and PART (NO.) to
2278	PRINT "			begin as required."
2285	PRINT "	k8	VERY EASY	Selects questionnaire 6-point rating scale:
2295	PRINT "			'Very Easy' to 'Can't Do'."
2305	PRINT "	k9	EXTREMELY GOOD	Selects and print 6-point rating scale:
2315	PRINT "			'Extremely Good' to 'Extremely Poor'."
2325	PRINT "	k10	COMPARATIVE	Selects and prints comparative rating scale;
2335	PRINT "			(Comparison between TEST ITEM A and TEST ITEM B)"
2345	PRINT "	k11	OPEN-ENDED	Used for formatting open-ended questions
2355	PRINT "			with varying string lengths (76-Max)."
2365	PRINT "			(1) Question with numbered line;TAB(1)"
2375	PRINT "			(2) Question w/o numbered line;TAB(4)"
2385	PRINT "			(3) Text or underlines;TAB(1)"
2386	PRINT			
2390	DISP TAB(15);"			PRESS CONT FOR MORE ";
2400	PAUSE			
2405	DISP TAB(15);"			"
2410	PRINT "	k12	EDIT	Puts computer into Edit Mode; can the
	n make "			

2420	PRINT "			changes to program list.
2430	PRINT "	k13	PRINT TEXT	Print text of pre-stored data list. I
	nput			
2440	PRINT "			last line number of text list as requir
	ed."			
2450	PRINT "	k14	ADD TEXT	Used for adding more questions and op
	en-ended"			
2460	PRINT "			texts to existing data list."
2470	PRINT "	k15	HELP !!!	To give some assistance to the confus
	ed			
2480	PRINT "			computer operator."
2490	PRINT LIN(4);"			PRESS DESIRED FUNCTION-KEY TO EXIT .
	..			
	;"			
2500	PAUSE			
2510	PRINT PAGE			
2520	GOTO 730			
2530	END			

SAMPLE HUMAN FACTORS QUESTIONNAIRE
TRANSPORTABLE HELICOPTER ENCLOSURE (THE)

Test exercise: _____ Date: _____

Name: _____ Rank/grade: _____

Unit: _____ Mos/job: _____

Age: _____ Sex: _____ Time in Panama: _____

Previous experience with test item: _____

	V	E	E	L	H	H	V	H	C	N	D	N
	E	A	A	T	A	A	E	A	A	A	A	A
	R	S	S	L	R	R	R	R	D	D	D	D
	Y	Y	Y	E	D	D	Y	D	T	O	O	A

First, rate how easy or hard it was to perform the task. Then, if you checked 'Hard,' 'Very Hard,' or 'Can't Do,' explain the problem with the item in the space under the question.

PART I. TASK PERFORMANCE	V	E	E	L	H	H	V	H	C	N	D	N
1. Unloading the THE from truck _____ _____ _____												
2. Unpacking the THE _____ _____ _____												
3. Joining components _____ _____ _____												
4. Aligning components _____ _____ _____												
5. Lifting components _____ _____ _____												

First, rate how easy or hard it was to perform the task. Then, if you checked 'Hard,' 'Very Hard,' or 'Can't Do,' explain the problem with the item in the space under the question.

			A					
V	E	E	L	H	H	V	H	C
E	A	A	I	A	A	E	A	A
R	S	S	T	R	R	R	N	D
Y	Y	Y	R	D	D	Y	D	N
			D				O	A

6. Fastening components _____

7. Installing anchoring devices _____

8. Erecting the THE _____

9. Operating blower _____

10. Unfastening components _____

11. Removing anchoring devices _____

12. Disassembling the THE _____

First, rate how easy or hard it was to perform the task. Then, if you checked 'Hard,' 'Very Hard,' or 'Can't Do,' explain the problem with the item in the space under the question.

	Y E A R S Y	E A S Y	L I T T L E	H A R D	H A R D	V E R Y	H A R D	C A N D O	N O
13. Repacking the THE _____ _____ _____									
14. Loading the THE onto truck _____ _____ _____									
15. Reading manuals _____ _____ _____									
16. Understanding manuals _____ _____ _____									
17. Towing aircraft into the THE _____ _____ _____									
18. Towing aircraft out of the THE _____ _____ _____									
19. Using aircraft hoist inside the THE _____ _____ _____									

First, rate how easy or hard it was to perform the task. Then, if you checked 'Hard,' 'Very Hard,' or 'Can't Do,' explain the problem with the item in the space under the question.

V	E	E	A	H	H	V	H	C		
E	A	A	T	A	A	E	A	A		
R	S	S	L	R	R	R	R	'	D	N
Y	Y	Y	E	D	D	Y	D	T	O	A

20. Performing aircraft maintenance inside the THE _____

21. Working safely inside the THE _____

22. Working comfortably inside the THE _____

23. Maintaining the THE _____

24. Repairing fabric _____

25. Repairing components _____

26. Using repair kit _____

First, check how the TEST ITEM was designed for each question. Then, if you checked 'Poor,' 'Very Poor,' or 'Extremely Poor,' explain the problem with the item design in the space under the question.

E							E		
X							X		
T							T		
R							R		
E							E		
M	G	V	G	G	P	V	P	M	P
E	O	E	O	O	O	E	O	E	O
L	O	R	O	O	O	R	O	L	O
Y	D	Y	D	D	R	Y	R	Y	R

PART II. COMPATIBILITY

28. Compatibility of the THE components with transport vehicles _____

--	--	--	--	--	--	--	--	--	--

29. Compatibility of the THE components with materials handling equipment _____

--	--	--	--	--	--	--	--	--	--

30. Compatibility of the THE components with the THE packing and transport cases _____

--	--	--	--	--	--	--	--	--	--

PLEASE NOTE:-

YOU HAVE JUST COMPLETED PART II OF THIS QUESTIONNAIRE. PART III BEGINS ON NEXT PAGE AND USES A DIFFERENT RATING SCALE.

DISTRIBUTION LIST
TECOM Project No. 7-CO-RD4-TT0-001

<u>Addressee</u>	<u>Number of Copies</u>
Commander US Army Combat Systems Test Activity ATTN: STEAP-MT	1
STEAP-MT-S	1
Aberdeen Proving Ground, MD 21005	
Commander US Army Test and Evaluation Command ATTN: AMSTE-CT-T	1
AMSTE-CT-A	1
AMSTE-AD-R	1
AMSTE-AD-M	2
AMSTE-TO-F	1
AMSTE-TO-I	1
AMSTE-AD-H	1
Aberdeen Proving Ground, MD 21005	
Director US Army Materiel Systems Analysis Activity ATTN: AMXSY-R	1
AMXSY-MP	1
Aberdeen Proving Ground, MD 21005	
Commander US Army White Sands Missile Range ATTN: STEWS-SC 1	
STEWS-TE-P	1
White Sands Missile Range, NM 84022	
Commander US Army Dugway Proving Ground ATTN: STEDP-MT-DA-T	1
STEDP-SD	1
Dugway, UT 84022	
Administrator Defense Technical Information Center ATTN: DDA	2
Cameron Station Alexandria, VA 22314	

Enclosure 4

Addressee

Number
of Copies

Commander
US Army Materiel Command
ATTN: AMCQA-S
 AMCSM-ID
 AMCDE-S
 AMCDE-PIP
 AMCDF
5001 Eisenhower Avenue
Alexandria, VA 22333

1
1
1
1
1

Commander
US Army Cold Regions Test Center
ATTN: STECR-OP-PM
 STECR-MT
APO Seattle 98733

1
1

Commander
US Army Tropic Test Center
ATTN: STETC-MTD
 STETC-MTD-P
 STETC-MTD-T
 STETC-MTD-A
 STETC-MTD-O (TIC)
 STETC-MTD-O (Tech Ed)
APO Miami 34004

1
2
5
2
5
2

END

FILMED

4-85

DTIC