A computer program for assessing readability. {U}

FEB 80 J KATZNELSON

HEL-TM-4-80
A COMPUTER PROGRAM FOR ASSESSING READABILITY

Judah Katzenelson

February 1980
AMCMS Code 612716.H700011

Approved for public release; distribution unlimited.
Destroy this report when no longer needed.
Do not return it to the originator.

The findings in this report are not to be construed as an official Department of the Army position unless so designated by other authorized documents.

Use of trade names in this report does not constitute an official endorsement or approval of the use of such commercial products.
A computerized program for assessing the readability of technical documentation is presented. This program is particularly useful to Army personnel responsible for the readability of Army publications. The program is designed to provide the user with an analysis of the text that includes:

(a) the complete text,  
(b) a listing of words containing 3 or more syllables and the number of times each multi-syllable word appears in the text,  
(c) the number of sentences,  
(d) the average sentence length,  
(e) the

Continued
20. ABSTRACT (Continued)

number of words, (f) the number of syllables, (g) the average syllables per word and (h) the Flesch-Kincaid reading grade level score. An appendix provides the reader with both a complete program listing (BASIC) and sample input and output files.
A COMPUTER PROGRAM FOR ASSESSING READABILITY

Judah Katzenelson

February 1980

APPROVED:

JOHN D. WEISZ
Director
U.S. Army Human Engineering Laboratory

U.S. ARMY HUMAN ENGINEERING LABORATORY
Aberdeen Proving Ground, Maryland 21005

Approved for public release; distribution unlimited.
CONTENT

INTRODUCTION ................................................. 3
READABILITY ASSESSMENT COMPUTER PROGRAM ..................... 4
SUMMARY ......................................................... 6
REFERENCES ...................................................... 7

APPENDIXES

A. Readability Assessment Program Listing ......................... 9
B. Instructions and Sample Inputs ................................ 17
C. Sample Printouts ............................................. 21
D. Comparisons of Similar Sample Texts ........................... 25

FIGURES

1. Useability formula ........................................... 4
2. Recalculated reading ease formula ............................. 4
A COMPUTER PROGRAM FOR ASSESSING READABILITY

INTRODUCTION

Studies have shown that technical materials are written at a level of difficulty well above the reading ability of the personnel who must read those materials (Kiare, 1963; Smith & Kincaid, 1970; Caylor, Sticht, Fox & Ford, 1973). Several studies have indicated that the average reading ability of enlisted personnel is about at the ninth grade level (Curran, 1977; Fletcher, 1977; U.S. Army Infantry School, 1978). Analyses have also found that technical manuals, training materials and government publications are often written at the college level or beyond causing a mismatch between the reading ability of the average serviceman and the readability of technical materials.

Various factors contribute to this problem; the complexity of modern weapons, the technical familiarity of the technical writer is greater than the user's familiarity with the system, and the average reading ability of servicemen has not kept pace with the rise in the level of complexity of the military systems they interact with and have responsibility for. When the readability mismatch exceeds 1-1/2 grade levels, serious inefficiencies result such as reduced reading speed, comprehension and retention.

Since it can be both impractical and costly to provide remedial reading courses for the average serviceman, another method must be used to solve the problem. It is not always an easy task to improve the readability of technical documents, but practical experience has shown that almost any document can be made more readable. The problem, of course, is to provide readable materials without a loss of content accuracy—a problem that can usually be solved.

It would be overly simplistic to lower the reading grade level of a document merely by using short words and short sentences. The readability of a document is only important to the extent that readability influences the useability of the document.

However, the comprehensibility of the document must also be taken into account. Contrary to the belief of some, a low reading grade level of a document does not ensure comprehensibility. Only if readability is understood to include good "style," a smooth flow of ideas, the avoidance of complex structures, interest appeal and usefulness can the document fulfill its purpose of information transfer and utilization. These factors plus the knowledge, reading skills and motivation of the intended audience interact with readability to provide an estimation of the useability of the document (Figure 1).
Even though adequate methodology for measuring comprehensibility and useability has not been developed, it is important to keep in mind that readability is a necessary, but not a sufficient, condition for high quality publications. Future research may enable people to measure the comprehensibility and useability of publications. This report addresses only the readability factor.

**READABILITY ASSESSMENT COMPUTER PROGRAM**

The most common method for predicting the ease or difficulty of a given piece of material is the readability formula. A great many of these have been developed, with the majority using as variables some index of sentence length, sentence structure and individual word length as measured by the number of syllables.

Probably the most widely used of the readability formulas is that developed by Rudolph Flesch (1948). This formula—termed the Reading Ease (RE) formula—uses as variables the number of words per sentence and the number of syllables per 100-200 words of text. The RE formula was developed and validated on children and civilian adults, with reading material appropriate to these samples. Its usefulness for assessing the difficulty of military technical writing may therefore be suspect. In order to overcome this problem, Kincaid (1975) recalculated the formula using enlisted personnel reading job-relevant literature (Figure 2).

\[
\text{RGL} = 0.39 \text{ (average words per sentence)} \\
+11.80 \text{ (average syllables per word)} \\
-15.59
\]

**Figure 2. Recalculated reading ease formula.**

The recalculated Flesch formula is known as the Flesch-Kincaid Reading Grade Level Formula and has been approved for use in measuring the readability of Army publications (Military Specification MIL-M-38784A, Amendment #5; DA Circular 310-9; TRADOC Circular 351-6). Using this method, it
is possible to compute the level of readability of a publication. This reading level is expressed numerically as a reading grade level (RGL).

To apply the formula, the number of syllables, words and sentences in the passage being analyzed must be counted. For long passages, several 100-200 word samples are chosen to save time. The formula variables and score are computed. A prediction of how readable the piece of writing is likely to be for the intended readers is provided by the formula score. For example, if the grade level score is 12.3, but the intended readers average only 9th grade ability, the passage is likely to be too difficult. The writer may then rewrite the passage to suit the intended target population. Ideally, the formula should be reapplied after the rewrite to verify that the passage is at the appropriate level.

In the past, readability formulas were computed manually. As familiarity with computers increased, some users saw the automation of readability formulas as a more efficient method of analyzing readability. One such industrial computer program (4) appeared to offer the most promise in meeting the Army's needs. This program was rewritten slightly to include parameters of interest to the Army. (See Appendix A for a complete listing of the program.)

To use the computerized program for assessing readability, the user should do the following:

a. Create a computer file containing the document to be evaluated. If the document is large, several text sample files of 100-200 words may be randomly selected. The file(s) should be typed in upper case letters and saved in line numbered file(s). (See Appendix B, pages 19 and 20.)

b. Run the computer program.

The program will ask for the file name(s) one at a time. Simply type in a file name containing the sample to be scored. After the last file has been scored, type the word "summary" if one is desired or type the word "stop" if the preliminary printout is adequate (see Appendix B, page 18).

RGL is comparable to, but not equivalent to, school grade; it is a somewhat arbitrary level at which a particular grade student 'should' be able to read with satisfactory comprehension. RGLs should be used with care as they are only partial evidence of the difficulty of written material. RGLs measure sentence length and vocabulary (poly-syllables). They do not measure other equally important readability factors such as concepts, format, organization, interest appeal, and usefulness. Nor do they measure the knowledge, reading skills and motivation of the reader.
One feature of this program is the various kinds of information that are presented to the user. The program has a routine which calculates the average reading grade level of any number of passages (sample inputs) (see Appendix B). This feature is useful because Military Specification MIL-M-38783A requires that manuals be written at some particular average reading grade level. The output of the program shows the analyzed text and lists the words of three or more syllables in the order that those words occur in the text. This list is entitled "HI-CAL" (a short form of "high-calorie"), and a writer can use this long word list to identify quickly those parts of the text that are most likely to be difficult for the intended readers (see Appendix C). The "SUMMARY AND CALCULATIONS" portion of the printout lists the raw data, formula variables and the reading grade level according to the Flesch-Kincaid formula. Using this data, the author can tell at a glance if his writing is at an appropriate level and whether military specification requirements have been met (see Appendix D).

SUMMARY

Summarizing the area of prediction of readability, it seems clear that while text readability is a basic characteristic, comprehension must also be taken into account. Future research should be directed to determining which of the variables involved in the readability and comprehensibility area stand in casual relationships with the ability of persons to comprehend the written word.
REFERENCES


4. General Motors, STAR: General Motors computerized simple test approach for readability, a tool for improved communications. Undated.


APPENDIX A

READABILITY ASSESSMENT PROGRAM LISTING
READABILITY ASSESSMENT PROGRAM LISTING

READ
1000 GOSUB 7050
1025 PRINT" COMPUTERIZED READABILITY PROGRAM"
1050 GOSUB 7075
1075 PRINT"DO YOU WANT INSTRUCTIONS (YES/NO)?";
1100 INPUT A$;
1125 IF A$="NO" THEN 1675
1150 IF A$="N" THEN 1675
1175 PRINT" THIS U.S. ARMY HUMAN ENGINEERING LABORATORY COMPUTER"
1200 PRINT" PROGRAM WILL BE RUN ON THE GSA HONEYWELL G440 TIME"
1225 PRINT" SHARE COMPUTER. IF YOU NEED ANY ASSISTANCE, PLEASE CALL"
1250 PRINT" COMMERCIAL 301-278-5538 OR AUTOVON 283-5538.";
1275 PRINT"
1300 PRINT"INSTRUCTIONS"
1325 PRINT"THE PROGRAM ACCEPTS SAMPLE INPUT FROM FILES AND SCORES THE"
1330 PRINT"READING GRADE LEVEL OF THE INPUT. TO USE THE PROGRAM,"
1340 PRINT"SIMPLY…"
1350 PRINT"
1375 PRINT"1) SELECT A TEXT SAMPLE SIZE OF ABOUT 100 WORDS OR MORE"
1380 PRINT" AND SAVE IN A LINE-NUMBERED FILE. (PLEASE TYPE ALL"
1390 PRINT" TEXT IN THE UPPER CASE.)"
1400 PRINT" NOTE: USE A SET OF APOSTROPHES ('......') FOR"
1410 PRINT" QUOTATION PURPOSES. DO NOT USE QUOTATION MARKS IN"
1425 PRINT" YOUR TEXT SAMPLE."
1440 PRINT"
1450 PRINT"2) USE AS MANY FILES AS NEEDED TO SAMPLE ALL THE STYLES"
1460 PRINT" OF WRITING THAT MAY APPEAR IN THE MATERIAL BEING"
1475 PRINT"SCORED."
1480 PRINT"
1500 PRINT"
1525 PRINT"3) THE PROGRAM WILL ASK FOR THE FILE NAME(S) ONE AT A"
1530 PRINT" TIME."
1540 PRINT"
1560 PRINT"4) AFTER THE LAST FILE HAS BEEN SCORED, TYPE IN ‘SUMMARY’"
1570 PRINT" IF ONE IS DESIRED, OTHERWISE TYPE IN ‘STOP’.
1580 PRINT"
1590 PRINT"5) WHEN YOU HAVE COMPLETED THE SCORING OF THE SAMPLE"
1600 PRINT" TEXTS AND HAVE NO FURTHER USE FOR THE FILE(S),"
1610 PRINT"UNSAVE THE FILE(S) YOU HAVE CREATED IN STEP #1.
1620 PRINT"
1640 PRINT"YOU ARE NOW READY TO BEGIN."
1650 GOSUB 7075
1675 P=Q=G=E=0
1700 REM ‘*’=FILE TO BE NAMED. ‘**’=SCRATCH FILE.
1725 FILES *;SCRAT1;SCRAT2;SCRAT3
1750 DIM A(50),V(12),X$(1000),P(100),C(100),R(132),E(50)
1775 R2=0
1800 REM DECIMAL CODE FOR A,E,I,O,U,Y,D,T,E,S,Z,L
1825 V(1)=65
1850 V(2)=69
1875 V(3)=73
1900 V(4)=79
1925 V(5)=85
<table>
<thead>
<tr>
<th>Year</th>
<th>V(6)</th>
<th>V(7)</th>
<th>V(8)</th>
<th>V(9)</th>
<th>V(10)</th>
<th>V(11)</th>
<th>V(12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td></td>
<td>68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td>84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2025</td>
<td></td>
<td></td>
<td></td>
<td>69</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2050</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2075</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>2100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>76</td>
</tr>
<tr>
<td>2125</td>
<td>SCRATCH #3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2150</td>
<td>REM END-OF-SENTENCE DELIMITERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2175</td>
<td>A$=&quot;.?!;:;&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2200</td>
<td>CHANGE A$ TO P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2225</td>
<td>P1 = P(0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2275</td>
<td>A$=&quot;.?!;:;&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2300</td>
<td>CHANGE A$ TO C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2325</td>
<td>PRINT&quot; TYPE IN A FILE NAME (OR SUMMARY, OR STOP).&quot;;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2350</td>
<td>INPUT A$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2375</td>
<td>IF A$=&quot;STOP&quot; THEN 7125</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2400</td>
<td>IF A$=&quot;SUMMARY&quot; THEN 6000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2425</td>
<td>FILE #1,A$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2450</td>
<td>SCRATCH #2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2475</td>
<td>SCRATCH #4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2500</td>
<td>GOSUB 7050</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2525</td>
<td>REM PRINT TEXT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2550</td>
<td>PRINT&quot;NAME OF SAMPLE TEXT:&quot;; A$, DAT$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2575</td>
<td>D$=A$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2600</td>
<td>GOSUB 7050</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2625</td>
<td>PRINT&quot;TEXT:&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2650</td>
<td>PRINT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2675</td>
<td>READ #1,A$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2700</td>
<td>PRINT A$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2725</td>
<td>REM R1 IS SIZE OF LINE R2 IS SIZE OF WORD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2750</td>
<td>REM BREAK SENTENCES INTO WORDS AND WRITE EACH AS RECORD IN NEW FILE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2775</td>
<td>CHANGE A$ TO R</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2800</td>
<td>FOR R1 = 1 TO R(0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2825</td>
<td>REM CHECK FOR END OF SENTENCE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2850</td>
<td>IF R1 = R(0) THEN 2900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2875</td>
<td>IF R(R1) &lt;&gt; 32 THEN 3200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2900</td>
<td>IF R2 = 0 THEN 3225</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2925</td>
<td>IF R1 &lt;&gt; R(0) THEN 3000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2950</td>
<td>GOSUB 8050</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2975</td>
<td>GO TO 3100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3000</td>
<td>FOR E1=1 TO R2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3025</td>
<td>E(E1) = R(E1 + (R1-(R2+1)))</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3050</td>
<td>NEXT E1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3075</td>
<td>E(0) = R2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3100</td>
<td>CHANGE E TO ES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3125</td>
<td>R2 = 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3150</td>
<td>PRINT #2, ES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3175</td>
<td>GO TO 3225</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3200</td>
<td>R2 = R2 + 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3225</td>
<td>NEXT R1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3250</td>
<td>IF MORE #1, THEN 2675</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3275</td>
<td>GOSUB 7050</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3300</td>
<td>PRINT&quot;HI-CAL WORDS:&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3325</td>
<td>PRINT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
REM ROUTINE FOR COUNTING SENTENCES, WORDS AND SYLLABLES

CHANGE A$ TO A
B=A(0)
REM CHECK FOR TRAILING COMA
IF A(B) <> C(1) THEN 3700
B=B-1
GOTO 3875
REM CHECK FOR END-OF-SENTENCE DELIMITER
FOR I=1 TO P1
IF A(B) <> P(I) THEN 3825
S=S+I
B=B-1
GOTO 3815
NEXT I
REM COUNT ONE SYLLABLE IF WORD IS .LE. THREE CHARACTERS LONG
IF B>3 THEN 3975
V=1
GOTO 4325
REM CHECK FOR TRAILING 'E'
IF A(B) <> V(2) THEN 4075
B=B-1
GOTO 4325
REM CHECK FOR TRAILING 'S'
IF A(B) <> V(10) THEN 4150
B=B-1
REM CHECK FOR 'E' BEFORE TRAILING 'S'
IF A(B) <> V(9) THEN 4525
B=B-1
REM CHECK FOR 'E,S,Z OR L' BEFORE TRAILING 'ES'
FOR I=9 TO 11
IF A(B) = V(I) THEN 4850
NEXT I
REM CHECK FOR 'L' BEFORE TRAILING 'ES' OR 'ED'
IF A(B) <> V(12) THEN 4875
B=B-1
REM CHECK FOR A VOWEL BEFORE TRAILING 'LES' OR 'LED'
FOR I=1 TO 6
IF A(B) = V(I) THEN 4850
NEXT I
GOTO 4800
REM CHECK FOR TRAILING 'D'
IF A(B) <> V(7) THEN 4875
B=B-1
REM CHECK FOR 'E' BEFORE TRAILING 'D'
IF A(B) <> V(9) THEN 4875
B=B-1
REM CHECK FOR 'D,T OR E' BEFORE TRAILING 'ED'
FOR I=7 TO 9
IF A(B) = V(I) THEN 4850
NEXT I
4750 GOTO 4325
4775 REM TRUNCATE '2' TRAILING LETTERS
4800 B=B+1
4825 REM TRUNCATE '1' TRAILING LETTER
4850 $=$+$1
4875 L=0
4900 REM COUNT NUMBER OF SYLLABLES IN WORD
4925 REM THIS PROGRAM COUNTS EVERY NON-CONSECUTIVE VOWEL AS A SYLLABLE
4950 FOR I=1 TO B
4975 FOR J=1 TO 6
5000 IF A(I) <> V(J) THEN 5175
5025 IF I=1 THEN 5100
5050 M=I-L
5075 IF M=I THEN 5125
5100 V=V+I
5125 L=I
5150 GOTO 5200
5175 NEXT J
5200 NEXT I
5225 REM MAKE SURE EVERY WORD HAS AT LEAST ONE SYLLABLE
5250 IF V<>0 THEN 5325
5275 V=1
5300 REM SUM UP NUMBER OF SYLLABLES IN TEXT
5325 T=T+V
5350 IF V<3 THEN 5450
5375 A(0)=V
5400 CHANGE A TO A$
5425 PRINT #4,A$
5450 IF MORE #2 THEN 3400
5475 REM TEXT HAS BEEN ANALYZED ------ PRINT RESULTS
5500 GOSUB 7450
5525 GOSUB 7050
5550 PRINT"SUMMARY AND CALCULATIONS:"" 
5575 APPEND #3
5600 PRINT #3, USING 5625,D$,S,W,T
5630 "$=LLLLLLLL,####,#######,#####.####,#####
5665 GOSUB 6875
5675 PRINT
5700 PRINT USING 5725,S,E
5725:* NUMBER OF SENTENCES=####.# AVERAGE SENTENCE LENGTH=####.#### * 
5750 PRINT USING 5775,W,Q
5775:* NUMBER OF WORDS=####.# AVERAGE SYLLABLES PER WORD=####.#### * 
5800 PRINT USING 5825,T,G
5825:* NUMBER OF SYLLABLES=####.# FLESCH-KINCAID RGL=####.#### *
5850 FILE #1,"*"
5875 GOSUB 7075
5900 PRINT
5925 GOTO 2325
5950 STOP
5975 REM SUMMARY OF ALL SAMPLE FILES
6000 RESTORE #3
6025 S=W=W=0
6050 IF END #3, THEN 6225
6075 INPUT #3,D$,S,W,T
6100 IF S=0 THEN 6225
6125 S1=S1+S
6150 WL=WL+W
6175 TI=TI+T
6200 GOTO 6050
6225 RESTORE #3
6250 APPEND #3
6275 PRINT #3, USING 6300,S1,WL,TL
6300:TOTAL
6325 GOSUB 7075
6350 PRINT
6375 PRINT TAB(28);"SUMMARY OF DATA"
6400 PRINT
6425 PRINT TAB(37);"AVE.";TAB(46);"SYL.";TAB(53);"FLESCH"
6450 PRINT TAB(12S);"SENT-";TAB(28);"SYL-";TAB(37);"SENT"
6475 PRINT TAB(46);"PER";TAB(53);"KINCAID"
6500 PRINT"FILENAME";TAB(12);"ENCES";TAB(20);"WORDS";TAB(28);
6525 PRINT"ABLES";TAB(37);"LENGTH";TAB(46);"WORD";TAB(53);"RGL"
6550 GOSUB 7075
6575 RESTORE #3
6600 IF END #3, THEN 6775
6625 INPUT #3,D$,S,W,T
6650 IF S=0 THEN 6775
6675 GOSUB 6875
6700 PRINT USING 6725,D$,S,W,T,E,Q,G
6725:LLL
6750 GOTO 6600
6775 GOSUB 7075
6800 STOP
6825 REM CALCULATION OF FLESCH READING EASE AND READING GRADE LEVEL
6850 REM CALCULATE WORDS PER SENTENCE
6875 E=W/S
6900 REM CALCULATE SYLLABLES PER WORD
6925 Q=T/W
6950 REM CALCULATE THE FLESCH-KINCAID RGL, STORE IN 'G'
6975 G=.39*E +11.8*Q -15.59
7000 RETURN
7025 REM SUBROUTINE
7050 PRINT"-------------------------------------------"
7075 PRINT RETURN
7100 RETURN
7125 STOP
7150 REM SORT ROUTINE FOR HI-CAL WORDS
7175 J=0
7200 FOR K=1 TO N-1
7225 IF X$(K)<=X$(K+1) THEN 7350
7250 T$=X$(K)
7275 X$(K)=X$(K+1)
7300 X$(K+1)=T$
7325 J=1
7350 NEXT K
7375 IF J=1 THEN 7175
7400 RETURN
7425 REM READ IN JI-CAL WORDS THEN CALL SORT ROUTINE
7450 ZS="Z2Z2Z2Z"
7475 PRINT #4,ZS
7500 RESTORE #4
7525 N=0

14
7550 N=N+1
7575 READ#4,X$(N)
7600 IF X$(N) < "ZZZZ" THEN 7550
7625 GOSUB 7150
7650 U1=0
7675 L=0
7700 FOR I=1 TO N-1
7725 U1=U1+1
7750 IF X$(I)=X$(I+1) THEN 7925
7775 IF X$(I)=" " THEN 7900
7800 REM PRINT SORTED HI-CAL WORDS AND NUMBER OF TIMES USED
7825 PRINT USING 7850,U1,X$(I);
7850 :####'LLLLLLLLLLLLLLL
7875 GOSUB 8200
7900 U1=0
7925 NEXT I
7950 FOR I=1 TO N
7975 X$(I)=" "
8000 NEXT I
8025 RETURN
8050 REM END OF LINE ROUTINE
8075 FOR E1 = 1 TO R2+1
8100 E(E1) = R(E1 + (R1 - (R2+1)))
8125 NEXT E1
8150 E(0) = R2 + 1
8175 RETURN
8200 REM SUB TO PRINT ONLY 3 HI-CAL WORDS PER LINE
8225 L=L+1
8250 IF L<3 THEN 8325
8275 PRINT
8300 L=0
8325 RETURN
8350 END
INSTRUCTIONS

READ

--------------------------------- COMPUTERIZED READABILITY PROGRAM ---------------------------------

DO YOU WANT INSTRUCTIONS (YES/NO) ? YES
THIS U.S. ARMY HUMAN ENGINEERING LABORATORY COMPUTER
PROGRAM WILL BE RUN ON THE GSA HONEYWELL G440 TIME
SHARE COMPUTER. IF YOU NEED ANY ASSISTANCE, PLEASE CALL
COMMERCIAL 301-278-5538 OR AUTOVON 283-5538.

INSTRUCTIONS
THIS PROGRAM ACCEPTS SAMPLE INPUT FROM FILES AND SCORES THE READING
GRADE LEVEL OF THE INPUT. TO USE THIS PROGRAM, SIMPLY...

1) SELECT A TEXT SAMPLE SIZE OF ABOUT 100 WORDS OR MORE AND SAVE IN
A LINE-NUMBERED FILE. (PLEASE TYPE ALL TEXT IN THE UPPER CASE.)
NOTE: USE A SET OF APOSTROPHES ('....') FOR QUOTATION PURPOSES.
DO NOT USE QUOTATION MARKS IN YOUR TEXT SAMPLE.

2) USE AS MANY FILES AS NEEDED TO SAMPLE ALL THE STYLES
OF WRITING THAT MAY APPEAR IN THE MATERIAL BEING SCORED.

3) THE PROGRAM WILL ASK FOR THE FILE NAME(S) ONE AT A TIME.

4) AFTER THE LAST FILE HAS BEEN SCORED, TYPE IN 'SUMMARY'
IF ONE IS DESIRED, OTHERWISE TYPE IN 'STOP'.

5) WHEN YOU HAVE COMPLETED THE SCORING OF THE SAMPLE TEXTS AND
HAVE NO FURTHER USE FOR THE FILE(S), UNSAVE THE FILE(S) YOU
HAVE CREATED IN STEP #1.

YOU ARE NOW READY TO BEGIN.

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

TYPE IN A FILE (OR SUMMARY, OR STOP)?
THE NATIONAL ANTHEM - THE STAR-SPANGLED BANNER

FILE1

100 OH, SAY CAN YOU SEE BY THE DAWN'S EARLY LIGHT
105 WHAT SO PROUDLY WE HAILED AT THE TWILIGHT'S LAST GLEAMING?
110 WHOSE BROAD STRIPES AND BRIGHT STARS THROUGH THE PERILOUS FIGHT
115 O'ER THE RAMPARTS WE WATCHED WERE SO GALLANTLY STREAMING?
120 AND THE ROCKET'S RED GLARE, THE BOMBS BURSTING IN AIR
125 GAVE PROOF THROUGH THE NIGHT THAT OUR FLAG WAS STILL THERE.
130 OH, SAY DOES THAT STAR-SPANGLED BANNER YET WAVE
135 O'ER THE LAND OF THE FREE AND THE HOME OF THE BRAVE?
FOUR SCORE AND SEVEN YEARS AGO OUR FATHERS BROUGHT FORTH ON THIS CONTINENT A NEW NATION, CONCEIVED IN LIBERTY AND DEDICATED TO THE PROPOSITION THAT ALL MEN ARE CREATED EQUAL.

NOW WE ARE ENGAGED IN A GREAT CIVIL WAR, TESTING WHETHER THAT NATION OR ANY NATION SO CONCEIVED AND SO DEDICATED CAN LONG ENDURE.

WE ARE MET ON A GREAT BATTLE FIELD OF THAT WAR. WE HAVE COME TO DEDICATE A PORTION OF THAT FIELD, AS A FINAL RESTING PLACE FOR THOSE WHO HERE GAVE THEIR LIVES THAT THAT NATION MIGHT LIVE. IT IS ALTOGETHER FITTING AND PROPER THAT WE SHOULD DO THIS.

BUT, IN A LARGER SENSE, WE CAN NOT DEDICATE - WE CAN NOT CONSECRATE - WE CAN NOT HOLLOW - THIS GROUND. THE BRAVE MEN, LIVING AND DEAD, WHO STRUGGLED HERE, HAVE CONSECRATED IT, FAR ABOVE OUR POOR POWER TO ADD OR DETRACT. THE WORLD WILL LITTLE NOTE, NOR LONG REMEMBER, WHAT WE SAY HERE, BUT IT CAN NEVER FORGET WHAT THEY DID HERE. IT IS FOR US THE LIVING, RATHER, TO BE DEDICATED HERE TO THE UNFINISHED WORK WHICH THEY WHO FOUGHT HERE HAVE THUS FAR SO NOBLY ADVANCED. IT IS RATHER FOR US TO BE HERE DEDICATED TO THE GREAT TASK REMAINING BEFORE US - THAT FROM THESE HONORED DEAD WE TAKE INCREASED DEVOTION TO THAT CAUSE FOR WHICH THEY GAVE THE LAST FULL MEASURE OF DEVOTION - THAT WE HERE HIGHLY RESOLVE THAT THESE DEAD SHALL NOT HAVE DIED IN VAIN - THAT THIS NATION, UNDER GOD, SHALL HAVE A NEW BIRTH OF FREEDOM - AND THAT GOVERNMENT OF THE PEOPLE, BY THE PEOPLE, FOR THE PEOPLE, SHALL NOT PERISH FROM THE EARTH.
APPENDIX C

SAMPLE PRINTOUTS
OH SAY CAN YOU SEE BY THE DAWN'S EARLY LIGHT,
WHAT SO PROUDLY WE HAILED AT THE TWILIGHT'S LAST GLEAMING?
WHOSE BROAD STRIPES AND BRIGHT STARS THROUGH THE PERILOUS FIGHT
O'ER THE RAMPARTS WE WATCHED WERE SO GALLANTLY STREAMING?
AND THE ROCKET'S RED GLARE
THE BOMBS BURSTING IN AIR
GAVE PROOF THROUGH THE NIGHT THAT OUR FLAG WAS STILL THERE.
OH SAY DOES THAT STAR-SPANGLED BANNER YET WAVE
O'ER THE LAND OF THE FREE AND THE HOME OF THE BRAVE?

HI-CAL WORDS:
1 GALLANTLY 1 PERILOU 1 STAR-SPANGLE

SUMMARY AND CALCULATIONS:
* NUMBER OF SENTENCES = 4.0
* NUMBER OF WORDS = 80.0
* NUMBER OF SYLLABLES = 97.0
AVERAGE SENTENCE LENGTH = 20.0
AVERAGE SYLLABLES PER WORD = 1.2
FLESCH-KINCAID RGL = 6.5
FOUR SCORE AND SEVEN YEARS AGO OUR FATHERS BROUGHT FORTH ON THIS CONTINENT A NEW NATION CONCEIVED IN LIBERTY AND DEDICATED TO THE PROPOSITION THAT ALL MEN ARE CREATED EQUAL. NOW WE ARE ENGAGED IN A GREAT CIVIL WAR TESTING WHETHER THAT NATION OR ANY NATION SO CONCEIVED AND SO DEDICATED CAN LONG ENDURE. WE ARE MET ON A GREAT BATTLE FIELD OF THAT WAR. WE HAVE COME TO DEDICATE A PORTION OF THAT FIELD AS A FINAL RESTING PLACE FOR THOSE WHO HERE GAVE THEIR LIVES THAT THAT NATION MIGHT LIVE. IT IS ALTOGETHER FITTING AND PROPER THAT WE SHOULD DO THIS.

BUT IN A LARGER SENSE WE CAN NOT DEDICATE - WE CAN NOT CONSECRATE - WE CAN NOT HOLLOW - THIS GROUND. THE BRAVE MEN LIVING AND DEAD WHO STRUGGLED HERE HAVE CONSECRATED IT FAR ABOVE OUR POOR POWER TO ADD OR DISTRACT. THE WORLD WILL LITTLE NOTE NOR LONG REMEMBER WHAT WE SAY HERE BUT IT CAN NEVER FORGET WHAT THEY DID HERE. IT IS FOR US THE LIVING RATHER TO BE DEDICATED HERE TO THE UNFINISHED WORK WHICH THEY WHO FOUGHT HERE HAVE THUS FAR SO NOBLY ADVANCED. IT IS RATHER FOR US TO BE HERE DEDICATED TO THE GREAT TASK REMAINING BEFORE US - THAT FROM THESE HONORED DEAD WE TAKE INCREASED DEVOTION TO THAT CAUSE FOR WHICH THEY GAVE THE LAST FULL MEASURE OF DEVOTION - THAT WE HERE HIGHLY RESOLVE THAT THESE DEAD SHALL NOT HAVE DIED IN VAIN - THAT THIS NATION UNDER GOD SHALL HAVE A NEW BIRTH OF FREEDOM - AND THAT GOVERNMENT OF THE PEOPLE BY THE PEOPLE SHALL NOT PERISH FROM THE EARTH.
<table>
<thead>
<tr>
<th>Liberty</th>
<th>Proposition</th>
<th>Remaining</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMEMBER</td>
<td>UNFINISH</td>
<td></td>
</tr>
</tbody>
</table>

**SUMMARY AND CALCULATIONS:**

- Number of sentences: 10.0
- Average sentence length: 27.9
- Number of words: 279.0
- Average syllables per word: 1.3
- Number of syllables: 370.0
- Flesch-Kincaid RGL: 10.9
APPENDIX D

COMPARISONS OF SIMILAR SAMPLE TEXTS
FILE 3

100 TO TEST THE ZERO SETTING (END-FOR-END TEST) OF THE GUNNER'S QUADRANT
105 PROCEED AS FOLLOWS:

110 A) SET BOTH THE INDEX ARM AND THE MICROMETER SCALE AT ZERO.
115 B) PLACE THE QUADRANT ON THE QUADRANT SEATS OF THE BREECH RING
120 WITH THE BLACK 'LINE OF FIRE' ARROW POINTED TOWARDS THE
125 MUZZLE. CENTER THE BUBBLE BY ELEVATING OR DEPRESSING THE GUN.
130 C) TURN THE QUADRANT END-FOR-END. IF THE BUBBLE RECENTERS ITSELF,
135 THE QUADRANT IS IN PERFECT ADJUSTMENT. IF THE BUBBLE DOES NOT
140 RECENTER ITSELF, TRY TO CENTER THE BUBBLE BY TURNING THE
145 MICROMETER KNOB.

150 D) IF THE BUBBLE RECENTERS, THE CORRECTION IS PLUS(POSITIVE) AND
155 EQUAL TO ONE-HALF THE MICROMETER READING. SET THIS ADJUSTED
160 READING ON THE MICROMETER SCALE; CENTER BUBBLE BY ELEVATING
165 THE GUN; VERIFY CORRECTION BY TURNING QUADRANT END-FOR-END.
170 WHEN LAYING THE GUN TO A GIVEN ELEVATION, ADD THE CORRECTION
175 TO THE GIVEN ANGLE. WHEN MEASURING EXISTING ELEVATION ANGLES,
180 SUBTRACT THE CORRECTION FROM THE MICROMETER KNOB READING.

185 E) IF THE BUBBLE DOES NOT RECENTER WHEN THE MICROMETER IS TURNED,
190 THE CORRECTION IS MINUS(NEGATIVE). THE AMOUNT OF CORRECTION IS
195 DETERMINED AS FOLLOWS: DROP THE ELEVATION INDEX TO -10 (ONE
200 NOTCH BELOW ZERO); ROTATE THE MICROMETER KNOB UNTIL THE BUBBLE
205 IS CENTERED BELOW ZERO; SUBTRACT THE MICROMETER READING FROM
210 10, AND DIVIDE THE REMAINDER BY 2. SET THIS ADJUSTED READING
215 ON THE MICROMETER SCALE; CENTER BUBBLE BY DEPRESSING GUN; TURN
220 QUADRANT END-FOR-END TO VERIFY. WHEN LAYING THE GUN TO A GIVEN
225 ELEVATION, SUBTRACT THE CORRECTION FROM THE GIVEN ELEVATION
230 ANGLE. IN THE EVENT THE REMAINDER THUS OBTAINED IS LESS THAN
235 ZERO, DROP THE INDEX TO -10; SUBTRACT THIS REMAINDER FROM 10
240 AND INDEX THE RESULTANT ANGLE ON THE MICROMETER. WHEN MEASURING
245 AN EXISTING ELEVATION ANGLE, ADD THE CORRECTION TO THE MICRO-
250 METER READING.

255 F) IF THE REQUIRED CORRECTION EXCEEDS 4/10THS, NOTIFY
260 ORGANIZATIONAL MAINTENANCE PERSONNEL.
TO TEST THE ZERO SETTING (END-FOR-END TEST) OF THE GUNNER’S QUADRANT PROCEED AS FOLLOWS:
A) SET BOTH THE INDEX ARM AND THE MICROMETER SCALE AT ZERO.
B) PLACE THE QUADRANT ON THE QUADRANT SEATS OF THE BREECH RING WITH THE BLACK ‘LINE OF FIRE’ ARROW POINTED TOWARDS THE MUZZLE. CENTER THE BUBBLE BY ELEVATING OR DEPRESSING THE GUN.
C) TURN THE QUADRANT END-FOR-END. IF THE BUBBLE RECENTERS ITSELF THE QUADRANT IS IN PERFECT ADJUSTMENT. IF THE BUBBLE DOES NOT RECENTER ITSELF TRY TO CENTER THE BUBBLE BY TURNING THE MICROMETER KNOB.
D) IF THE BUBBLE RECENTERS THE CORRECTION IS PLUS(POSITIVE) AND EQUAL TO ONE-HALF THE MICROMETER READING. SET THIS ADJUSTED READING ON THE MICROMETER SCALE; CENTER BUBBLE BY ELEVATING THE GUN; VERIFY CORRECTION BY TURNING QUADRANT END-FOR-END. WHEN LAYING THE GUN TO A GIVEN ELEVATION ADD THE CORRECTION TO THE GIVEN ANGLE. WHEN MEASURING EXISTING ELEVATION ANGLES SUBTRACT THE CORRECTION FROM THE MICROMETER KNOB READING.
E) IF THE BUBBLE DOES NOT RECENTER WHEN THE MICROMETER IS TURNED THE CORRECTION IS MINUS(NEGATIVE). THE AMOUNT OF CORRECTION IS DETERMINED AS FOLLOWS: DROP THE ELEVATION INDEX TO -10 (ONE NOTCH BELOW ZERO); ROTATE THE MICROMETER KNOB UNTIL THE BUBBLE IS CENTERED BELOW ZERO; SUBTRACT THE MICROMETER READING FROM 10 AND DIVIDE THE REMAINDER BY 2. SET THIS ADJUSTED READING ON THE MICROMETER SCALE; CENTER BUBBLE BY DEPRESSING GUN; TURN QUADRANT END-FOR-END TO VERIFY. WHEN LAYING THE GUN TO A GIVEN ELEVATION SUBTRACT THE CORRECTION FROM THE GIVEN ELEVATION ANGLE. IN THE EVENT THE REMAINDER THUS OBTAINED IS LESS THAN ZERO DROP THE INDEX TO -10; SUBTRACT THIS REMAINDER FROM 10 AND INDEX THE RESULTANT ANGLE ON THE MICROMETER. WHEN MEASURING AN EXISTING ELEVATION ANGLE ADD THE CORRECTION TO THE MICROMETER READING.
F) IF THE REQUIRED CORRECTION EXCEEDS 4/10THS NOTIFY ORGANIZATIONAL MAINTENANCE PERSONNEL.

HI-CAL WORDS:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>END-FOR-END</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>CORRECTION</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>ELEVATING</td>
<td>6</td>
</tr>
<tr>
<td>1</td>
<td>ADJUSTMENT</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>END-FOR-END</td>
<td></td>
</tr>
</tbody>
</table>
SUMMARY AND CALCULATIONS:

* NUMBER OF SENTENCES = 26.0  AVERAGE SENTENCE LENGTH = 11.5 *
* NUMBER OF WORDS = 298.0  AVERAGE SYLLABLES PER WORD = 1.7 *
* NUMBER OF SYLLABLES = 517.0  FLESCH-KINCAID RGL = 9.4 *
FILE4

100 TO TEST THE ZERO SETTING FOR THE GUNNER'S QUADRANT, JUST:
105 A) POINT QUADRANT AT MUZZLE.
110 B) DEPRESS OR ELEVATE TUBE TO CENTER BUBBLE.
115 C) REVERSE DIRECTION.
120 D) IF THE BUBBLE CENTERS, THE TEST IS COMPLETE.
125 E) IF THE BUBBLE DOES NOT CENTER, CENTER THE BUBBLE WITH
130 MICROMETER KNOB.
135 F) IF THE BUBBLE CENTERS, DIVIDE THE MICROMETER READING BY 2.
140 G) PUT THE RESULTS ON THE MICROMETER SCALE.
145 H) POINT QUADRANT AT MUZZLE.
150 I) DEPRESS OR ELEVATE TUBE TO CENTER BUBBLE.
155 J) REVERSE DIRECTION.
160 K) BUBBLE IS CENTERED AND END-FOR-END CORRECTION IS RECORDED.
165 L) IF THE BUBBLE DOES NOT CENTER AFTER STEP 'E', THEN SET THE INDEX
170 AT -10.
175 M) CENTER THE BUBBLE WITH THE MICROMETER KNOB.
180 N) ADD 10 TO MICROMETER READING.
185 O) DIVIDE THIS SUM BY 2.
190 P) PLACE ANSWER ON MICROMETER SCALE.
195 Q) POINT QUADRANT AT MUZZLE.
200 R) DEPRESS OR ELEVATE TUBE TO CENTER BUBBLE.
205 S) REVERSE DIRECTION.
210 T) BUBBLE SHOULD CENTER.
215 U) SUBTRACT MICROMETER READING FROM 10.
220 V) RECORD END-FOR-END CORRECTION.
TO TEST THE ZERO SETTING FOR THE GUNNER’S QUADRANT JUST:
A) POINT QUADRANT AT MUZZLE.
B) DEPRESS OR ELEVATE TUBE TO CENTER BUBBLE.
C) REVERSE DIRECTION.
D) IF THE BUBBLE CENTERS THE TEST IS COMPLETE.
E) IF THE BUBBLE DOES NOT CENTER CENTER THE BUBBLE WITH
MICROMETER KNOB.
F) IF THE BUBBLE CENTERS DIVIDE THE MICROMETER READING BY 2.
G) PUT THE RESULTS ON THE MICROMETER SCALE.
H) POINT QUADRANT AT MUZZLE.
I) DEPRESS OR ELEVATE TUBE TO CENTER BUBBLE.
J) REVERSE DIRECTION.
K) BUBBLE IS CENTERED AND END-FOR-END CORRECTION ISRecorded.
L) IF THE BUBBLE DOES NOT CENTER AFTER STEP ‘E’ THEN SET THE INDEX
AT -10.
M) CENTER THE BUBBLE WITH THE MICROMETER KNOB.
N) ADD 10 TO MICROMETER READING.
O) DIVIDE THIS SUM BY 2.
P) PLACE ANSWER ON MICROMETER SCALE.
Q) POINT QUADRANT AT MUZZLE.
R) DEPRESS OR ELEVATE TUBE TO CENTER BUBBLE.
S) REVERSE DIRECTION.
T) BUBBLE SHOULD CENTER.
U) SUBTRACT MICROMETER READING FROM 10.
V) RECORD END-FOR-END CORRECTION.

HI-CAL WORDS:

| 2 CORRECTION | 3 DIRECTION | 3 ELEVAT |
| 2 END-FOR-EN  | 7 MICROMETER | 1 RECORE |

SUMMARY AND CALCULATIONS:

* NUMBER OF SENTENCES= 23.0   AVERAGE SENTENCE LENGTH= 7.1 *
* NUMBER OF WORDS= 163.0   AVERAGE SYLLABLES PER WORD= 1.6 *
* NUMBER OF SYLLABLES= 256.0   FLESCH-KINCAID RGL= 5.7 *
FILE5

OBJECTIVES.

THE OBJECTIVES OF THE ROTC PROGRAM ARE TO ATTRACT, MOTIVATE, AND PREPARE SELECTED STUDENTS WITH POTENTIAL TO SERVE AS COMMISSIONED OFFICERS IN THE REGULAR ARMY OR THE US ARMY RESERVE, TO PROVIDE AN UNDERSTANDING OF THE FUNDAMENTAL PRINCIPLES OF MILITARY ART AND SCIENCE AND TO DEVELOPE LEADERSHIP AND MANAGERIAL POTENTIAL, A BASIC UNDERSTANDING OF ASSOCIATED PROFESSIONAL KNOWLEDGE, A STRONG SENSE OF PERSONAL INTEGRITY, HONOR, AND INDIVIDUAL RESPONSIBILITY, AND AN APPRECIATION OF THE REQUIREMENTS FOR NATIONAL SECURITY. ATTAINMENT OF THESE OBJECTIVES WILL PREPARE STUDENTS FOR COMMISSIONING AND WILL ESTABLISH A SOUND BASIS FOR THEIR FUTURE PROFESSIONAL DEVELOPMENT AND EFFECTIVE PERFORMANCE IN THE ARMY.
OBJECTIVES.
THE OBJECTIVES OF THE ROTC PROGRAM ARE TO ATTRACT
MOTIVATE
AND PREPARE SELECTED STUDENTS WITH POTENTIAL TO SERVE AS COMMISSIONED
OFFICERS IN THE REGULAR ARMY OR THE US ARMY RESERVE
TO PROVIDE AN
UNDERSTANDING OF THE FUNDAMENTAL PRINCIPLES OF MILITARY ART AND SCIENCE
AND TO DEVELOPE LEADERSHIP AND MANAGERIAL POTENTIAL
A BASIC
UNDERSTANDING OF ASSOCIATED PROFESSIONAL KNOWLEDGE
A STRONG
SENSE OF PERSONAL INTEGRITY
HONOR
AND INDIVIDUAL RESPONSIBILITY
AND AN APPRECIATION OF THE REQUIREMENTS FOR NATIONAL SECURITY.
ATTAINMENT OF THESE OBJECTIVES WILL PREPARE STUDENTS FOR
COMMISSIONING AND WILL ESTABLISH A SOUND BASIS FOR THEIR FUTURE
PROFESSIONAL DEVELOPMENT AND EFFECTIVE PERFORMANCE IN THE ARMY.

HI-CAL WORDS:

1 APPRECIATION 1 ASSOCIATE 1 ATTAINMENT
1 COMMISSION 1 COMMISSIONING 1 DEVELOP
1 DEVELOPMENT 1 EFFECTIV 1 ESTABLISH
1 FUNDAMENTAL 1 INDIVIDUAL 1 INTEGRITY
1 LEADERSHIP 1 MANAGERIAL 1 MILITARY
1 MOTIVAT 1 NATIONAL 3 OBJECTIV
1 OFFICER 1 PERFORMANC 1 PERSONAL
2 POTENTIAL 1 PRINCIPLE 2 PROFESSIONAL
1 REGULAR 1 REQUIREMENT 1 RESPONSIBILITY
1 SECURITY 1 SELECTE 2 UNDERSTANDING

SUMMARY AND CALCULATIONS:

* NUMBER OF SENTENCES= 3.0 AVERAGE SENTENCE LENGTH= 34.3 *
* NUMBER OF WORDS= 103.0 AVERAGE SYLLABLES PER WORD= 2.0 *
* NUMBER OF SYLLABLES= 207.0 FLESCH-KINCAID RGL= 21.5 *
OBJECTIVES.

THE OBJECTIVES OF THE ROTC PROGRAM ARE TO:

A) ATTRACT, MOTIVATE, AND PREPARE STUDENTS WITH POTENTIAL TO
SERVE AS COMMISSIONED OFFICERS IN THE REGULAR ARMY OR THE
US ARMY RESERVE.

B) UNDERSTAND THE CONCEPTS AND PRINCIPLES OF MILITARY ART
AND SCIENCE.

C) DEVELOPE POTENTIAL TO LEAD AND MANAGE.

D) UNDERSTAND OTHER PROFESSIONS.

E) DEVELOPE INTEGRITY, HONOR, AND RESPONSIBILITY.

F) APPRECIATE THE NEED FOR NATIONAL SECURITY.

ATTAINING THESE OBJECTIVES PREPARES STUDENTS FOR COMMISSIONS
AND ESTABLISHES A BASIS FOR FUTURE PROFESSIONAL DEVELOPMENT AND
PERFORMANCE IN THE ARMY.
OBJECTIVES.
The objectives of the ROTC program are to:
A) Attract
Motivate
and prepare students with potential to
serve as commissioned officers in the regular army or the
US Army Reserve.
B) Understand the concepts and principles of military art
and science.
C) Develop potential to lead and manage.
D) Understand other professions.
E) Develop integrity
honor
and responsibility.
F) Appreciate the need for national security.
Attaining these objectives prepares students for commissions
and establishes a basis for future professional development and
performance in the army.

HI-CAL WORDS:

1 APPRECIAT 1 ATTAINING 2 COMMISSION
2 DEVELOP 1 DEVELOPMENT 1 ESTABLISH
1 INTEGRITY 1 MILITARY 1 MOTIVAT
1 NATIONAL 3 OBJECTIV 1 OFFICER
1 PERFORMANC 2 POTENTIAL 1 PRINCIPLE
1 PROFESSION 1 PROFESSIONAL 1 REGULAR
1 RESPONSIBILITY 1 SECURITY 2 UNDERSTAN

SUMMARY AND CALCULATIONS:

* NUMBER OF SENTENCES = 9.0  AVERAGE SENTENCE LENGTH = 9.6 *
* NUMBER OF WORDS = 86.0  AVERAGE SYLLABLES PER WORD = 1.9 *
* NUMBER OF SYLLABLES = 164.0  FLESCH-KINCAID RGL = 10.6 *
## COMPARATIVE SUMMARY

### SUMMARY OF DATA

<table>
<thead>
<tr>
<th>FILENAME</th>
<th>SENTENCES</th>
<th>WORDS</th>
<th>SYLLABLES</th>
<th>AVE. SENT LENGTH</th>
<th>SYL. SENT PER</th>
<th>WORD RGL</th>
<th>FLESCH KINCAID</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILE1</td>
<td>4</td>
<td>80</td>
<td>97</td>
<td>20.0</td>
<td>1.2</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>FILE2</td>
<td>10</td>
<td>279</td>
<td>370</td>
<td>27.9</td>
<td>1.3</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td>FILE3</td>
<td>26</td>
<td>298</td>
<td>517</td>
<td>11.5</td>
<td>1.7</td>
<td>9.4</td>
<td></td>
</tr>
<tr>
<td>FILE4</td>
<td>23</td>
<td>163</td>
<td>256</td>
<td>7.1</td>
<td>1.6</td>
<td>5.7</td>
<td></td>
</tr>
<tr>
<td>FILE5</td>
<td>3</td>
<td>103</td>
<td>207</td>
<td>34.3</td>
<td>2.0</td>
<td>21.5</td>
<td></td>
</tr>
<tr>
<td>FILE6</td>
<td>9</td>
<td>86</td>
<td>164</td>
<td>9.6</td>
<td>1.9</td>
<td>10.6</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>75</td>
<td>1009</td>
<td>1611</td>
<td>13.5</td>
<td>1.6</td>
<td>8.5</td>
<td></td>
</tr>
</tbody>
</table>