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Thesis

THE CONSTRUCTION AND EVALUATION OF A TEST TO MEASURE
THE FLEXIBILITY OF READING RATE

Submitted by

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. STATEMENT OF THE PROBLEM</td>
<td>1</td>
</tr>
<tr>
<td>The purpose of the problem</td>
<td>1</td>
</tr>
<tr>
<td>Source of the problem</td>
<td>2</td>
</tr>
<tr>
<td>Justification of the problem</td>
<td>2</td>
</tr>
<tr>
<td>Scope of the problem</td>
<td>4</td>
</tr>
<tr>
<td>II. SURVEY OF RESEARCH RELATED TO FLEXIBILITY OF READING RATE</td>
<td>6</td>
</tr>
<tr>
<td>Background of the problem</td>
<td>6</td>
</tr>
<tr>
<td>Eye Movement Studies Related to the Problem</td>
<td>8</td>
</tr>
<tr>
<td>Limitations of eye movement studies</td>
<td>13</td>
</tr>
<tr>
<td>Studies of Speed and Comprehension Related to the Problem</td>
<td>13</td>
</tr>
<tr>
<td>The relationship of speed and comprehension</td>
<td>13</td>
</tr>
<tr>
<td>Disagreement in techniques of measuring speed and comprehension</td>
<td>14</td>
</tr>
<tr>
<td>Confusion in terms and importance of defining them</td>
<td>15</td>
</tr>
<tr>
<td>Studies related to speed and comprehension</td>
<td>18</td>
</tr>
<tr>
<td>Continued confusion in the areas of speed and comprehension</td>
<td>24</td>
</tr>
<tr>
<td>Summary of research pertinent to this study</td>
<td>25</td>
</tr>
<tr>
<td>III. PROCEDURES</td>
<td>27</td>
</tr>
<tr>
<td>Designing the Instrument</td>
<td>27</td>
</tr>
<tr>
<td>Name of the test</td>
<td>27</td>
</tr>
<tr>
<td>&quot;Parts&quot; of the test</td>
<td>27</td>
</tr>
<tr>
<td>Selection of the variables</td>
<td>28</td>
</tr>
<tr>
<td>Interest level</td>
<td>28</td>
</tr>
<tr>
<td>Neutral nature</td>
<td>29</td>
</tr>
<tr>
<td>Continuous context</td>
<td>29</td>
</tr>
<tr>
<td>Length of selection</td>
<td>30</td>
</tr>
<tr>
<td>Timing of the test</td>
<td>31</td>
</tr>
<tr>
<td>Difficulty level</td>
<td>32</td>
</tr>
<tr>
<td>Rate and comprehension measured separately</td>
<td>35</td>
</tr>
<tr>
<td>The reading selections</td>
<td>36</td>
</tr>
<tr>
<td>Establishing the purpose</td>
<td>37</td>
</tr>
<tr>
<td>Construction of the items to measure understanding of the material read</td>
<td>38</td>
</tr>
<tr>
<td>Early tryouts</td>
<td>39</td>
</tr>
<tr>
<td>Format of the test</td>
<td>39</td>
</tr>
<tr>
<td>Final tryout of the finished test</td>
<td>41</td>
</tr>
<tr>
<td>Time requirements and directions</td>
<td>41</td>
</tr>
</tbody>
</table>
### III. Administration of the Test

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timing procedures</td>
<td>42</td>
</tr>
<tr>
<td>Directions</td>
<td>42</td>
</tr>
<tr>
<td>Cooperating schools</td>
<td>43</td>
</tr>
<tr>
<td>Additional test data</td>
<td>44</td>
</tr>
<tr>
<td>Scoring procedures</td>
<td>44</td>
</tr>
<tr>
<td>Rates of reading scores</td>
<td>45</td>
</tr>
<tr>
<td>Flexibility scores</td>
<td>45</td>
</tr>
</tbody>
</table>

### IV. ANALYSIS OF THE DATA

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Descriptive Data</td>
<td>47</td>
</tr>
<tr>
<td>Reading Purpose Test</td>
<td>47</td>
</tr>
<tr>
<td>Criterion measures</td>
<td>51</td>
</tr>
<tr>
<td>Negative flexibility scores</td>
<td>52</td>
</tr>
<tr>
<td>Reliability of the Data</td>
<td>58</td>
</tr>
<tr>
<td>Reliability of rate scores</td>
<td>58</td>
</tr>
<tr>
<td>Reliability of flexibility score</td>
<td>58</td>
</tr>
<tr>
<td>Reliability of comprehension scores</td>
<td>59</td>
</tr>
<tr>
<td>Internal consistency</td>
<td>59</td>
</tr>
<tr>
<td>Validity Data</td>
<td>63</td>
</tr>
<tr>
<td>Total validity</td>
<td>63</td>
</tr>
<tr>
<td>Item analysis</td>
<td>66</td>
</tr>
<tr>
<td>Item validity</td>
<td>71</td>
</tr>
<tr>
<td>Conclusions</td>
<td>77</td>
</tr>
</tbody>
</table>

### V. SUMMARY AND CONCLUSIONS

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary</td>
<td>86</td>
</tr>
<tr>
<td>The purpose</td>
<td>86</td>
</tr>
<tr>
<td>The instrument</td>
<td>86</td>
</tr>
<tr>
<td>The procedure</td>
<td>87</td>
</tr>
<tr>
<td>Conclusions</td>
<td>87</td>
</tr>
<tr>
<td>Flexibility of rate</td>
<td>87</td>
</tr>
<tr>
<td>Reliability of the test</td>
<td>88</td>
</tr>
<tr>
<td>Validity of the test</td>
<td>89</td>
</tr>
<tr>
<td>Relationships</td>
<td>89</td>
</tr>
<tr>
<td>CHAPTER</td>
<td>Page</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------</td>
</tr>
<tr>
<td>VI. BIBLIOGRAPHY</td>
<td>94</td>
</tr>
<tr>
<td>VII. APPENDIX</td>
<td>99</td>
</tr>
</tbody>
</table>
### LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Flexibility in the Rate Adjustment to Subject Material by Fastest and Slowest Readers</td>
<td>20</td>
</tr>
<tr>
<td>2. Correlation Between Comprehension Scores and the Three Rate Scores</td>
<td>23</td>
</tr>
<tr>
<td>3. Rate of Reading Correlations Found for Different Time Intervals Compared with Correlations Predicted with the Spearman-Brown Formula</td>
<td>31</td>
</tr>
<tr>
<td>4. Flesch Readability Formula Interpretation Table</td>
<td>34</td>
</tr>
<tr>
<td>5. Population Tested in this Study</td>
<td>43</td>
</tr>
<tr>
<td>6. Means and Standard Deviations of Rates in Words Read Per Minute in Accordance with Difficulty of Material and Flexibility of those Rates</td>
<td>47</td>
</tr>
<tr>
<td>7. Means and Standard Deviations of Rates in Words Read Per Minute in Accordance with the Purpose and Flexibility of those Rates</td>
<td>48</td>
</tr>
<tr>
<td>8. Means and Standard Deviations of Comprehension as Number of Items Right</td>
<td>50</td>
</tr>
<tr>
<td>9. Comprehension Rate for Total Group Based on Total Number of Items Tried and Total Number of Rights</td>
<td>50</td>
</tr>
<tr>
<td>10. Means and Standard Deviations of Scores of Groups on the Cooperative Reading Test, Otis Self-Administering Test of Mental Ability and the Ohio State University Psychological Examination</td>
<td>51</td>
</tr>
<tr>
<td>11. Comparison of Comprehension Scores of Negative and Positive Flexibility Groups in Reading According to the Difficulty of the Material</td>
<td>53</td>
</tr>
<tr>
<td>12. Comparison of Comprehension Scores of Negative and Positive Flexibility Groups in Reading According to the Purpose</td>
<td>53</td>
</tr>
<tr>
<td>13. Cumulative Frequencies of Negative and Positive Flexibility Scores in Words Per Minute in Accordance with the Difficulty of the Material</td>
<td>54</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>14. Cumulative Frequencies of Negative and Positive Flexibility Scores in Words Per Minute in Accordance with the Purpose of Reading</td>
<td>56</td>
</tr>
<tr>
<td>15. Analysis of Variance for Estimating the Internal Consistency of Subtest M, Easy to Read Selection</td>
<td>61</td>
</tr>
<tr>
<td>16. Analysis of Variance for Estimating the Internal Consistency of Subtest N, Difficult to Read Selection</td>
<td>61</td>
</tr>
<tr>
<td>17. Analysis of Variance for Estimating the Internal Consistency of Subtest R, Read for the Story</td>
<td>62</td>
</tr>
<tr>
<td>18. Analysis of Variance for Estimating the Internal Consistency of Subtest S, Read for Mastery</td>
<td>62</td>
</tr>
<tr>
<td>19. Difference in Mean Reading Rates and Comprehension Scores According to Difficulty for Total Population Tested</td>
<td>64</td>
</tr>
<tr>
<td>20. Difference in Mean Reading Rates and Comprehension Scores According to Purpose for Total Population Tested</td>
<td>66</td>
</tr>
<tr>
<td>21. Number of Right Responses, Number Tried and Proportion Passing Each Item in Subtest M, Easy Reading Material</td>
<td>67</td>
</tr>
<tr>
<td>22. Number of Right Responses, Number Tried and Proportion Passing Each Item in Subtest N, Difficult Reading Material</td>
<td>68</td>
</tr>
<tr>
<td>23. Number of Right Responses, Number Tried and Proportion Passing Each Item in Subtest R, Read for the Story</td>
<td>69</td>
</tr>
<tr>
<td>24. Number of Right Responses, Number Tried and Proportion Passing Each Item in Subtest S, Read for Mastery</td>
<td>70</td>
</tr>
<tr>
<td>25. Number of Attempts and Proportion of High and Low Groups Passing Items 1-15; Flanagan's Validity Coefficient and Fisher's Z Conversion Scores on Subtest M</td>
<td>72</td>
</tr>
<tr>
<td>26. Number of Attempts and Proportion of High and Low Groups Passing Items 1-15; Flanagan's Validity Coefficient and Fisher's Z Conversion Scores on Subtest N</td>
<td>73</td>
</tr>
<tr>
<td>27. Number of Attempts and Proportion of High and Low Groups Passing Items 1-15; Flanagan's Validity Coefficient and Fisher's Z Conversion Scores on Subtest R</td>
<td>74</td>
</tr>
<tr>
<td>28. Number of Attempts and Proportion of High and Low Groups Passing Items 1-15; Flanagan's Validity Coefficient and Fisher's Z Conversion Scores on Subtest S</td>
<td>75</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>29. Validity Coefficient Averages for Subtests based on Items 1-15</td>
<td>77</td>
</tr>
<tr>
<td>30. Inter-correlation of Reading Rates and of Comprehension Scores</td>
<td>79</td>
</tr>
<tr>
<td>Between Subtests</td>
<td></td>
</tr>
<tr>
<td>31. Correlation Between Reading Rates and Comprehension Scores of</td>
<td>80</td>
</tr>
<tr>
<td>the Four Subtests with Comprehension as the Number of Right</td>
<td></td>
</tr>
<tr>
<td>Responses</td>
<td></td>
</tr>
<tr>
<td>32. Correlation Between Reading Rates and Comprehension Scores of</td>
<td>81</td>
</tr>
<tr>
<td>the Four Subtests with Comprehension as the Number of Right</td>
<td></td>
</tr>
<tr>
<td>Responses Divided by the Number of Attempts</td>
<td></td>
</tr>
<tr>
<td>33. Correlation Between Flexibility Scores Obtained on Main Parts</td>
<td>82</td>
</tr>
<tr>
<td>of the Reading Purpose Test</td>
<td></td>
</tr>
<tr>
<td>34. Correlations Between Rate Scores of the Reading Purpose Test</td>
<td>83</td>
</tr>
<tr>
<td>and Speed of Comprehension Scores of the Cooperative Reading</td>
<td></td>
</tr>
<tr>
<td>Test</td>
<td></td>
</tr>
<tr>
<td>35. Correlations Between Flexibility Rates of the Reading Purpose</td>
<td>84</td>
</tr>
<tr>
<td>Test and Total Scores of the Cooperative Reading Test</td>
<td></td>
</tr>
<tr>
<td>36. Correlations Between Flexibility Scores, the Ohio State</td>
<td>84</td>
</tr>
<tr>
<td>University Psychological Examination, and the Otis Self-Adminis-</td>
<td></td>
</tr>
<tr>
<td>tering Tests of Mental Ability by Groups</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER I
STATEMENT OF THE PROBLEM

The purpose of the problem.— In our modern world where time is money and every minute counts, the ability to read effectively is one of the outstanding characteristics of an educated person. Much of our formal and our informal education is based on the ability to read effectively. A widely-recognized but little-explored skill that contributes toward this effectiveness is the ability to vary the rate of reading.

During the past two decades great emphasis has been placed on speed in reading. Some studies have shown that speed in itself is not the desired end for there are times when speed is a detriment to comprehension. On the other hand, there are also times when speed is an attribute and has contributed to better comprehension.

Attention to flexibility of reading rate, or the ability to vary one's speed, is an outgrowth of the perhaps overemphasis of speed, a kind of refinement of the idea of speed. Although there is wide recognition of the importance of this flexibility, very little effort has been expended in developing materials, methods, or tests for this aspect of reading.

It is the purpose of this study to construct and evaluate a test which will measure the ability to vary the rate of reading in accordance with the difficulty of the material and in accordance with the purpose in reading the material.
Source of the problem. -- The original purpose of the writer was to build a workbook for developing reading flexibility and to carry out an experimental study, but in considering this plan it was found that no testing instrument existed by which to measure flexibility of reading rate. Hence, before an experimental project could be carried out, a testing instrument to measure that flexibility was needed.

"A major problem seems to be that we have no instrument suitable to check our objectives of developing flexibility, and therefore have a tendency to ignore this phase of reading instruction."

Justification of the problem. -- Nearly every authority in the field of reading recognizes the importance of being able to vary the rate of reading and many express the need for further research in the area, particularly in testing.

2/ Betts says, "Varying the rate of reading and the skills employed is an important achievement and, therefore, facility in this respect should be appraised."

3/ McKee has this to say, "Every pupil should learn to adjust his speed of reading in a given situation to the purpose for which he is reading and to the difficulty of the reading matter."

Durrell states that instruction aimed at improving study skills


should emphasize, "intensive reading for the purposes of making accurate, complete, and well-organized summaries, of noting details, of selecting major ideas, of following directions, and of other study assignments that demand careful reading." This type of slow, careful reading "is offset by lessons in how to skim, how to locate relevant material, and how to adjust the rate and type of reading to the assignment."

Of the importance of this skill in a high school program of reading development, Bond and Bond have this to say: "One of the major responsibilities of the developmental program is to show each individual that he must continuously adjust his rate of reading to meet the demands of both the material and the reading purpose."

Gates reports, "Very proficient readers have a wide range of speeds from the maximum to a thorough analysis of more difficult materials. . . . Such a flexibility is a great asset."

To Harris "The choice of an inappropriate rate of reading is sometimes an important factor in comprehension difficulties."

This skill is also recognized by the Commission on the English Curriculum. "Adjustment of speed and method of reading to the material and task at hand is, therefore, a major reading skill to be mastered in high school. Perhaps more than any other skill, this one is characteristic


of intellectual maturity and conditions to a large degree success in college."

And, finally, Carrillo and Sheldon \footnote{1/} sum up the situation:

"The mature reader is the adaptable, versatile reader; he should be able to adapt his rate of reading to the purpose with which he approaches the printed page, and to the difficulty level of the material.... A number of tests have been published which attempt to measure speed of reading. However, if one remains cognizant of the principles of flexibility or versatility of rate of reading comprehension, these tests would seem to fall short of their objectives.... An instrument in this direction would seem to be an improvement over the present situation."

Scope of the problem.--- The first step in this problem was to define the terms as they are used in this study:

**Flexibility of reading rate.** The ability of a reader to adjust, change or vary his speed or rate of reading.

**Difficulty level.** This refers to the degree of difficulty of the material to be read. The degree of difficulty of materials used in this problem was determined by a readability formula.

**Purpose.** A reader may have any of a number of purposes in reading a selection. The term here used refers to the reason for which the reader reads a selection, or what he expects to get from the selection.

**Comprehension.** Attention to or understanding of the material read; aided recall of factual material by multiple-choice questions "to check your understanding of the material." \footnote{*} quoted from Direction in the Reading Purpose Test

Since no satisfactory tests of flexibility of reading rate were available, the second step was to build an instrument capable of measuring this skill. The test was constructed to measure flexibility of reading rate according to two demands on the reader: (1) the difficulty level of the material being read, and (2) the purpose for which the material was

The third step was to administer this test to a population of 601 thirteenth year students in college and in junior college and to analyze the data.

As a result of this analysis two main variations in reading rate were identified and means for obtaining and interpreting scores in each of these variations are provided.

The implications of these findings for reading instruction in high school and in college are discussed and suggestions made for further study.
CHAPTER II

SURVEY OF RESEARCH RELATED TO FLEXIBILITY OF READING RATE

Background of the problem. — Research in the field of reading began toward the end of the nineteenth century as a result of an increased interest in the nature of the reading act. In about 1879 Javal made the discovery that eye movements in reading are not continuous but are a series of alternate movements and pauses. This led to many scientific studies concerned chiefly with the mechanical aspects of the reading process, and particularly with eye movements and their relationship to the whole process of reading.

The past fifty years have witnessed a tremendous interest in reading and its relation to man and his culture. Many experimental studies of an increasingly wide range of interest have been conducted with the result that "we are far more conscious of the extreme complexity of the reading problems and are far less certain of the answers to many of them."

Despite this complexity, there have been many contributions that have furthered our knowledge of the reading problem. As early as 1917 Thorndike 2/ pointed out the extent and variety of the mental activity involved in the reading act:

1/William S. Gray, "Summary of Investigations Related to Reading," Supplementary Educational Monograph #28, University of Chicago, 1925.

"It consists in selecting the right relations, and also with the right amount of weight or influence or force for each. The mind is assailed as it were by every word in the paragraph. It must select, repress, soften, emphasize, correlate and organize, all under the influence of the right mental set or purpose or demand."

An unmistakable implication of this statement is that the mental process involved in reading varies with the purposes of the reader and with the nature of the material being read. It is with these two variables and their influence on rate of reading that the present work is concerned.

Any research related to varying the rate of reading becomes inevitably bound up with speed and comprehension. Investigators have studied widely the achievement of students in these two areas, the factors that influence rate and comprehension, and ways of employing them to improve instruction in reading. Hillard 1/ early recognized the close relationship of these when he identified twelve factors influencing comprehension. He reported that rate of reading was the third most important factor contributing to difficulties, underlying low scores in comprehension, the first two being intelligence and vocabulary.

Just as comprehension involves rate of reading, so does rate of reading involve comprehension. Quants, 2/ before the turn of the century, studied the factors influencing rate of reading, emphasizing in his findings the importance of power of concentration and mental alertness. In 1921 O'Brien 3/ in a summary of the literature related to speed of reading,


called attention to the importance of character of the subject matter, purpose, and ability to grasp meaning.

It becomes obvious that even from the earliest investigations, the matter of flexibility of reading rate was recognized as being directly concerned with the factors of speed and comprehension, and all three of these as being influenced by the kind of material being read and by the purpose of the reader in reading the material.

Although the importance of flexibility in the reading act was early recognized, it was regarded as a natural concomitant of the whole process of reading and little attention has been paid to it until recently. Practically all textbooks and instruction in reading now emphasize flexibility as an invaluable skill and one of the most important assets of an effective reader.

Nevertheless there have been a surprisingly small number of experimental studies concerned directly with flexibility of reading rate. In examining the research related to this problem, the literature will be summarized in the following order: (1) Eye movement studies related to the problem, and (2) Speed and comprehension studies related to the problem.

1. Eye Movement Studies Related to the Problem

The study of eye movements, made possible by the development of photographic equipment such as the ophthalmograph, has played an important part in the analysis of the reading process. Since the discovery that the eyes "read" in a series of alternate stop-and-go moves, investigators have attempted to measure these pauses or fixations as to number per line and as to duration. It was recognized that variability of the material
and of the purpose would cause a corresponding variability in eye movements which would in turn alter the rate of reading.

In 1922 Judd and Buswell photographed the eye movements of twenty subjects who were asked to read a paragraph from a newspaper for two different purposes: first, to read it rapidly to find out what it was about; and second, to read it carefully to be able to answer questions about it. Results showed that the careful reading was accomplished by more fixations, by longer duration of the fixations, and by more regressions per line. Eye movements, photographed as the subjects read various other kinds of materials such as poetry or scientific exposition, also reflected a variation in the reading process. These adjustments by the reader indicated, according to the authors, that the processes involved in reading vary with the purpose and with the kind of material being read.

In 1938 Walker studied the eye movements of good readers. He found that, on the average, fixations for these subjects were evenly distributed for both easy and difficult material.

Anderson compared the eye movements of fifty good and fifty poor readers to find out how such readers adjusted to changes in difficulty of material and to reading for different purposes. He presented to the subjects three passages of from seven to eighteen lines in length, the difficulty of which was established by the grade level of the textbook from which the selection was copied. He then presented three more short


passages to be read for different purposes; namely, to secure a general idea from one, to obtain a moderate knowledge from another, and to obtain a complete knowledge of the third. All eye movements measured were reported to distinguish the good from the poor readers with the former showing greater flexibility in adjusting to increasingly difficult material. Anderson concluded that two important determinants of eye movement patterns are (1) difficulty of material read and (2) purpose of reading.

In 1943 Seibert analyzed the eye movements of eighth grade pupils as they read various types of subject matter, including biography, mathematics, adventure, geography, history, and science. He found that "there were individuals who read all the selections with variation, but there were also many subjects who read all the selections with little variation in eye movement measure."

In 1944 Helms sought to determine the effect of difficulty on rate and comprehension by studying the eye movements of 672 eleventh and twelfth grade pupils. Finding that "evidence relative to the hypothesis of a general reading rate is contradictory," he attempted to establish further evidence regarding the hypothesis. Using the composite reading rate scores on fourteen easy and fourteen hard selections, he obtained a correlation of .74, concluding that "a given individual has a general relative reading rate which is independent of the difficulty and content of the material read."


Helms also attempted to ascertain "if there is any difference in the relationship between rate of reading and comprehension as measured on easy material and on difficult material." He obtained correlations of .29 on the easy and .31 on difficult materials, concluding that there is no significant difference between rate and comprehension as measured on easy and on difficult material.

Ledbetter in 1947 studied the eye movements of sixty eleventh grade pupils in order to analyze their reactions to varied types of subject matter. She found that in reading different kinds of materials there was a definite variation in eye movements as well as in comprehension scores. She concluded that (1) prose selections are read most efficiently in terms of comprehension and poetry least efficiently; (2) science selections are read most efficiently in terms of rate of reading and poetry least efficiently.

In 1951 two studies tended to go against the findings which up to that time had in the great majority of cases reported that changes in the difficulty of the material brought about variation in eye movements. Morse reported that eye movements in reading are more characteristic of the individual than of the difficulty of the material being read.

Dixon, using sixteen professors and sixteen graduate students from


3/ Ibid.
the fields of history, education, and physics, sought answers to two questions; namely, 
Are different types of eye movements induced by different kinds of subject matter? and, 
How does specializing in the materials of one field affect reading performance in other fields? 
Studying the eye movements of these subjects as they read materials from each of the fields represented, 
he concluded that "(1) familiarity with materials is a factor in reading performance; (2) the idea that 
different types of material automatically elicit different types of reading is of doubtful validity."

This conclusion varies significantly from the earlier findings of Judd and Buswell and subsequent studies of eye movements. The fact that Dixon used far more mature readers may account, in part at least, for some of the differences in results.

The most recent eye movement study reported was conducted by Laycock who in 1955 examined the eye movements of 72 college students for significant evidence of ability to vary reading rate. He presented several short, very easy selections, asking the subjects to read some normally and others as rapidly as possible. Those who "slipped into high speed very smoothly and comprehended satisfactorily" were placed in one group and those who could not do this effectively were placed in another group. Eye movements of the two groups were then studied as the groups read. Laycock reports that the two groups were strikingly different in the apparent control of the motor aspects of reading. "The suggestion is that either


the optic and motor apparatus differs, or that habit-rigidity may be responsible for the differences."

Limitations of eye movement studies.— With studies of eye movements the question inevitably arises, Is the reader able to give a typical performance in the apparently artificial laboratory situation where the photographing of eye movements takes place? In answering this question Tinker states that "if eye movement measures are to have meaning for validity evaluation there must be adequate comprehension of the material read. Users of Ophthalmograph have commonly employed short samples of material with questions on comprehension furnished with the apparatus." Tinker reports that "Imus, Rothney and Bear have found this check to be useless."

The literature related to eye movement studies appears to be both inconclusive and open to question as a valid measure of the reading process.

2. Studies of Speed and Comprehension Related to the Problem

The relationship of speed and comprehension.— The matter of the interrelations of speed and comprehension in silent reading has brought forth numerous studies with considerable controversy and little clear-cut agreement. In 1925 Gray, in a summary of related experimental literature up


to that time, presented the following conclusions:

1. There is a positive correlation between speed and comprehension.

2. The degree of correlation varies among different groups.

3. The correlation between speed and comprehension varies with the
difficulty of the material, the purpose of reading, and the
measure of comprehension.

1/ Eurich reported in 1930 that "there is a positive but not close
relationship between rate of reading and comprehension, but the relationship
is dependent upon the manner in which it is measured."

2/ Harris states that "the degree of relationship between rate and
comprehension varies with the age of the readers, the kinds of material
used, and the methods used in measuring the two factors."

Disagreement in techniques of measuring speed and comprehension.-- In
1932 Tinker took exception to the manner and methods employed by many
investigators in measuring speed and comprehension.

"To correlate a speed score for reading easy narrative with a compre-
hension score in reading chemistry and state that the obtained coefficient shows the relationship between speed and comprehension in
reading is not justified. The only adequate method of discovering a
true relation between speed and comprehension is to measure rate and
comprehension on the same or strictly comparable material."

1/A. C. Eurich, "The Relation of Speed of Reading to Comprehension,"
*School and Society*, 32:404-6, September 30, 1930.

2/Albert J. Harris, *How to Increase Reading Ability*, Longmans, Green

3/Miles A. Tinker, "The Relation of Speed to Comprehension in Reading,"

4/F. P. Robinson, "Speed Vs. Comprehension in Reading - A Discussion,"
*Journal of Educational Psychology*, 31:554-560, October 1940.

5/Miles A. Tinker, "Speed Versus Comprehension in Reading as Affected by
measuring speed and comprehension, stating that

"Different methods of work will give different rate and comprehension scores, e.g., some read the selection through and then start finding the answers, others first read a question and then look for the answer - some skim in looking for phrases, others read and reread. The different methods will cause students to reach different points in the questions to be covered and has little to do with speed of comprehension."

Stroud agreed with Robinson that many of the "published coefficients between rate and comprehension are spuriously high." Studying the experimental literature in relation to speed and comprehension, he found that the average obtained correlation to be about .4. He referred to the studies of Flanagan who obtained a correlation of .77 between speed of comprehension and level of comprehension scores, and a correlation of .17 between rate of reading and the level of comprehension score on a test. The difference, Stroud pointed out, was due to the fact that the test was not timed. Comparing timed and untimed reading tests, he concluded, will yield results that are unreliable unless the aspects of the reading being correlated are clearly defined.

In 1943 Stroud and Henderson objected to the "conventional methods" of measuring rate and comprehension on the grounds that they do not represent natural reading situations. They objected to the number of items attempted constituting the rate score, and to the number answered correctly.


3/ J. B. Stroud and Margaret Henderson, "Rate of Reading and Learning by Reading," Journal of Educational Psychology, 34:193-205, 1943.
as the comprehension score. This procedure would then include under "rate of reading, the time spent in reading, rereading, thinking and answering." 

Preston and Botel, studying the effects of time on comprehension, conclude:

"It is clear that the usual procedure for measuring comprehension is untenable. It errs in its measurement of comprehension by designating as 'comprehension' what is in reality partly speed. Most reading tests report comprehension scores which are not true measures of an individual's comprehension score at all because speed and comprehension are relatively independent of each other."

Confusion in terms and importance of defining them. -- Davis was careful to avoid this point of vulnerability by specifically defining his terms. He calls this inclusion of time spent in answering the questions "rate of comprehension" as distinguished from rate of reading. Speaking of the Cooperative Reading Test, he says, "The test, it is emphasized, is to measure the thinking process in reading, not just mechanical process. Speed score represents the product of rate and success in comprehending."

Tinker defines his terms as follows:

1. **Power of comprehension** is the number of exercises in a test done correctly in standard time.

2. **Level of comprehension** is the number of exercises done correctly in unlimited time.

3. **Rate of comprehension** is the number of exercises attempted in standard time.

4. **Rate of work** is the time taken to complete the test.

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3/Miles A. Tinker, "Rate of Work in Reading Performance as Measured in Standardized Test," *Journal of Educational Psychology*, 36:217-226, April 1945.
Shores and Husbands refer to their terms as meaning:

1. **Reading time** is the time required to read a selection through once.
2. **Working time** is the time needed to reread, find, and record answers to questions on the selection.
3. **Total time** is the time required for reading and answering.

Other terms that are used in relation to speed and comprehension testing include: rate of thinking, speed of association, speed of visual recognition, speed of reading.

Tinker claims that **speed of reading** is the **rate of comprehension**.

Blommers and Lindquist maintain that **rate of comprehension** is the time required to complete the test.

Buswell assumes that **rate of thinking** may be inferred from timed mental ability tests, provided that the reading process itself is not a necessary part of the test.

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5/Miles A. Tinker, "Rate of Work in Reading Performance as Measured in Standardized Tests," *Journal of Educational Psychology*, 36:217-228, April 1945.


It is evident from the foregoing that there is considerable confusion in the terminology related to speed and comprehension. Precise terms, defined unequivocally are indispensable in studies involving rates of reading.

*Studies related to speed and comprehension.* In 1932 Tinker reviewed the previous studies and found little agreement "as to what constitutes an adequate measure of either speed or comprehension." His own studies led him to conclude that if rate and comprehension are measured on the same or similar materials, "there is a close relationship between rate and comprehension."

In 1937 Seashore, Stockford, and Swartz, in a study of the factors in speed of reading tests, reported that:

1. Studies of speed of reading whose tests are characterized by a continuous context cannot be compared with studies of speed of reading employing tests of different selections.

2. The ranking of an individual in speed of reading varies according to the method of measurement.

Flanagan in 1939 studied the effects of various speeds on comprehension. He summarized and interpreted the results obtained from training 300 twelfth-grade pupils to read and sense questions about certain rather

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difficult materials at different rates. He found that increasing the rate of reading decreased the comprehension scores, concluding that the degree of comprehension is influenced materially by:

1. the purpose of reading
2. the demand made upon the reader
3. the difficulty of the material
4. the rate of reading

1/In 1939 Tinker investigated the relation of speed to various difficulty levels of test selections. He administered to 600 college students five tests whose difficulty level ranged from easy to hard materials and studied the relation of these with rates of reading involved. He found the correlation between rate and comprehension of easy material to be high, but as the difficulty of the material increased, the correlation coefficients decreased. He concluded that "the type of material including the kind of response required in the reading test also affects the correlation between speed and comprehension."

2/In 1941 Robinson and Hall carried out an experiment designed to measure reading facility in specific fields. Using 205 college freshmen, separate rate and comprehension scores were derived from reading selections from art, history, fiction, and science. An attempt was made to study the adjustment in rate from one subject area to another. This flexibility is shown in Table 1, using the number of words read in nine minutes for the highest and lowest fifths of the group.


Table 1. Flexibility in the Rate Adjustment to Subject Material by Fastest and Slowest Readers

<table>
<thead>
<tr>
<th>Selection</th>
<th>Number in each subgroup</th>
<th>Mean rate</th>
<th>Mean rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>Lowest fifth</td>
</tr>
<tr>
<td>Art</td>
<td>62</td>
<td>1496</td>
<td>3014</td>
</tr>
<tr>
<td>History</td>
<td>67</td>
<td>1500</td>
<td>2804</td>
</tr>
<tr>
<td>Fiction</td>
<td>75</td>
<td>1574</td>
<td>3462</td>
</tr>
<tr>
<td>Science</td>
<td>57</td>
<td>1430</td>
<td>2648</td>
</tr>
</tbody>
</table>

From this study, the authors concluded that:

1. Reading in different subject matter fields is not highly related.

2. Poor readers read different subject matter selections at comparable rates and good readers adjust their rate to comprehension difficulty levels of various selections.

Stroud and Henderson experimented in 1943 with the relationship of speed and learning. The term "learning" they defined as "understandings, concepts, and meanings gained from reading the text when a test was administered without a time limitation immediately after completion of reading." In a series of tests involving pupils in Grades V through VIII, correlations between rate of reading and "learning" scores yielded coefficients ranging from .02 to .12. The authors concluded from these studies that:

1. There is some evidence that good learners (comprehenders) are more successful in adapting rate to difficulty than are poor learners.

1/ J. B. Stroud and Margaret Henderson, "Rate of Reading and Learning by Reading," *Journal of Educational Psychology*, 34:193-205, 1943.
2. For these conditions, rate and quality (comprehension) are virtually unrelated.

In 1944 Blommers and Lindquist conducted a study of rates of comprehension on a test administered to 672 juniors and seniors in four Iowa high schools. They attempted to control the purpose factor by first asking a question which was to be answered from the reading of a single paragraph. From this it was possible to derive a measure of an individual's (1) rate of comprehension from the total number of exercises completed, and (2) power of comprehension from the number of exercises done correctly.

The authors concluded from their investigation that:

1. The relation between rate of comprehension and power of comprehension was significant but low (r = .30)

2. An individual tends to maintain about the same rank within a group.

3. Good comprehenders adjust their rate by slowing down as the material increases in difficulty, whereas poor comprehenders apparently read easy and difficult materials at much the same rate.

4. Reading rate scores which in part measure comprehension are poor measures of reading rate.

A year later Tinker conducted an investigation to study the various aspects of rates obtained from testing 100 high school freshmen on the Iowa Silent Reading Test. Correlations from the testing were reported as follows:


2/Miles A. Tinker, "Rate of Work in Reading Performance as Measured in Standardized Tests," Journal of Educational Psychology, 36:217-28, April 1945.
1. Between rate of work and rate of comprehension, high (.95).
2. Between rate of work and power of comprehension, "moderate."
3. Between rate of work and level of comprehension, "too small to indicate any significant relation."

Tinker's conclusion from this investigation was that

"There is a significant relation between rate and comprehension. ...This tendency varies from a slight relationship to a moderately high correlation. Factors which appear to affect the size of this correlation include the nature of the reading task, technique of measurement, the difficulty of the material, and the purpose for which the reading is done."

1/ In 1949 Carlson gave a battery of tests to 300 fifth graders in an effort to find out if the relationship between speed and comprehension was a constant one or varied as the material and purpose were varied. The data obtained led to the conclusion that "the effectiveness of fast and slow readers as measured by accuracy of comprehension was dependent on:

1. levels of intelligence
2. purposes for reading
3. level of difficulty of material
4. opportunities for referral in answering questions
5. continuity of context."

2/ In 1950 Shores and Husbands sought to find an answer to the question of whether the fastest readers are the best readers. Their purpose was to determine the relationship between comprehension and rates of reading in problem-solving situations at the fifth grade level.


Table 2. Correlation Between Comprehension Scores and the Three Rate Scores

<table>
<thead>
<tr>
<th>Comprehension Score Versus Reading Time</th>
<th>Comprehension Score Versus Working Time</th>
<th>Comprehension Score Versus Total Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>-.13</td>
<td>.06</td>
<td>-.05</td>
</tr>
</tbody>
</table>

These results suggest that fast readers are not the best readers (comprehenders) when:

1. Speed and comprehension are measured simultaneously.
2. The purpose is set in advance.
3. When only basic data, not a direct solution is presented.
4. When critical thought as well as fact-finding is required.

The implication of the study, according to the authors, is that (1) the fast readers are not necessarily the best readers, and (2) with some purposes and some materials, the fastest readers are the best; with other purposes and materials, the best readers will read as slowly or more slowly than the inefficient readers."

In 1951 Preston and Botel conducted an experiment at the Wharton School which involved the testing of 32 freshmen, a very small number on which to base evidence that would be very reliable. Regarding their purpose, the authors state that:

"The belief persists that the rapid reader understands the content of his reading better than does the slow reader. It is a belief based on flimsy evidence of correlations between rate and comprehension under timed conditions and which make no adjustment in score for the slow reader who happens to be an accurate one. Evidence has been presented by Stroud and Henderson 1/ that when reading comprehension of children is tested under untimed conditions 'rate and quality of reading are virtually unrelated.'"

The writers tested this hypothesis by administering the Iowa Silent Reading Test with and without time limits to their subjects, obtaining a correlation coefficient of .48 between rate and timed comprehension and of .20 between rate and untimed comprehension. This led them to conclude that "since untimed comprehension is the 'purer' comprehension score, we conclude that there was little relationship between rate and comprehension."

Continued confusion in the areas of speed and comprehension.-- Still there appears to be very little agreement among investigators regarding the relationship of speed and comprehension. Some find a significant relationship; others practically none. All are agreed, however, that many factors are present which have considerable influence on these variables. These include the purpose of the reader, the degree of difficulty of the material, and the methods and manner of testing.

2/

Coper and Mills 2/ voice almost despair in their conclusions regarding current knowledge concerning comprehension. Basing their knowledge of the relationship of speed and comprehension on their teaching experience at Purdue, they say of comprehension:

"We really know very little in an objective way about the nature of comprehension. As things stand now, about all we can

1/J. B. Stroud and M. Henderson, "Rate of Reading and Learning by Reading," Journal of Educational Psychology, 34:193-205, 1943.

do is ask questions over what a student reads. If the questions are good ones, we may place some confidence in one measure of comprehension, but we should limit our evaluation to comprehension in terms of these questions.

Continuing to show the inadequacies of measuring comprehension, 1/ Shores and Saupe the same year concluded from intercorrelations among scores made by 214 fourth- fifth- and sixth-grade pupils on five tests of different materials,

"that reading ability differentiates beyond the primary grades into somewhat specific abilities to read different kinds of material for different purposes......The investigators believe that with measuring instruments of greater discrimination and precision the findings would be substantiated and the extent and nature of the differentiation ascertained."

2/ Holmes in 1954 presented an analysis of test data secured from over 200 students to check the hypothesis that reading ability is a composite of "speed" and "power" reading, each of which is a composite of related factors.

He concluded from this study: "Though the general rule is for powerful readers also to be the fast readers, many individuals in college may be slow but powerful readers, or again, non-powerful but fast readers."

Summary of research pertinent to this study. -- There seems to be disagreement on the following:

1. The relationship of speed and comprehension.
2. The terminology associated with the various skills related to speed and comprehension.


3. The methods of measuring reading rate and comprehension.

There seems to be general agreement among authorities on the following:

1. The level of difficulty of the material influences the rate and comprehension.
2. The purpose of reading influences the rate and comprehension.
3. To be reliable, a correlation between speed and comprehension scores should be based on the same or similar material.
4. Time taken for answering questions should not be included in the speed or rate of reading.
5. Rate of reading measures are more reliable if made on longer selections.
6. Continuous text is preferable to short passages for measuring rate of reading.
7. The faster readers tend to be the better comprehenders.
8. The ability to vary the rate of reading is a desirable skill that contributes to effective reading.
9. Good readers tend to be more flexible in their rates of reading than poor readers.
10. An individual tends to maintain about the same rank within a group in rates of reading.
11. Because of the divergent conclusions reached there is great need for research and experiment in the relation of speed and comprehension.
12. There is much need for research and experiment to develop measures of flexibility of reading rates.
CHAPTER III
PROCEDURES

1. Designing the Instrument

*Name of the test.* -- One of the important reading skills is that of varying the rate of reading. Leading authorities in the field (Chapter I) have specified this and called for an instrument to measure the skill. Related research (Chapter II) has further pointed this out, emphasizing that varying the reading rate depends primarily on two variables: (1) the difficulty of the material, and (2) the purpose of the reader in reading the material.

Because of the importance of the reader's "purpose" as a determinant of flexibility of reading rate, the test designed for this study was called the *Reading Purpose Test* and will be referred to as such hereafter in this paper.

*Parts of the test.* -- After consultation with the writer's committee, study of the design of reading tests, and experiment with various levels of difficulty and the variety of purposes, it was decided that the test would consist of two parts: one to test the flexibility of rate in accordance with the difficulty of the material, holding constant the purpose; the other to test the flexibility of rate in accordance with the purpose, holding constant the difficulty.

Part I of the *Reading Purpose Test* consisted of two selections: one of material easy to read; the other of material difficult to read.
The purpose for both of these remained the same: to read the selection as rapidly as possible and still understand it.

Part II of the test consisted of two selections of equal difficulty level to be read for different purposes: one, to be read as rapidly as possible for the story; the other to be read for complete mastery of ideas and details.

In order to avoid any indication to the testee that the selections were designed to measure flexibility through Part I and Part II, the test identified these four selections as A, B, D, and E with no further intimation of the design of the instrument other than the purpose which was conspicuously specified at the beginning of each selection.

Selection of the variables. -- The selections of the materials to be read constituted the major task in the development of the instrument. Five basic criteria were established for these and had to be satisfied:

1. The material must be of an interesting nature.
2. It must be of a neutral nature, not favoring any subject matter area.
3. Each selection must be of continuous context.
4. Each selection had to be of sufficient length to assure a reliable rate.
5. Each selection had to be of the appropriate difficulty level.

Interest level. -- In establishing the interest level, many volumes were examined. It was felt that in obtaining a reliable rate of reading ability it was of the utmost importance that the reader would be performing, as nearly as possible, at the rate - or rates - he would normally employ in his every-day reading. It was found in informal testing that
selections which were not interesting were either skipped over lightly or else the reader would "bog" down on them.

By the same token, it was found in informal pretesting that selections which offered too much interest, particularly in the way of a "relishing" style or humor, would induce a slow rate as the reader wanted to "relish" the humor or style and slow down to enjoy it to the fullest measure. The selections in the test have been chosen to avoid either of the extremes, yet to maintain a "middle of the road" appeal interest-wise.

Shores stresses the importance of this factor, "It would be a step forward for test makers to realize that interest factors are operative with respect to the materials of reading tests."

Neutral nature.--- An effort was made to keep the material away from any particular subject matter area. Experience and research suggest that this effort would tend to eliminate possible bias.

McAllister in a study of reading difficulties in the subject fields concluded the "reading ability is dependent on the content area."

Husbands and Shores say of the material essentially the same thing, that the ability to read effectively is determined in part by the "content or problem area" in which the reading is done.

Continuous context.--- Many tests of reading are made up of short paragraphs of unrelated material. While these may serve to measure

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certain factors in reading, they would not be appropriate to measure a rate of reading. The preference for continuity of context over numerous short selections has been pointed out by Carlson: 

"It is questionable whether studies of speed of reading can be compared with confidence unless the materials of appraisal are strictly comparable in level of difficulty and in continuity of context."

Seashore, Stockford and Swartz, in analyzing factors in speed of reading tests, suggest that "speed of reading tests characterized by a continuous context" are preferable where rate is being measured.

Length of selection.— It was decided that the selections should be of considerable length (2500 words or over) in order (1) to establish a ceiling whereby most readers would be unable to finish the reading in the allotted time, and (2) to obtain a more reliable rate of reading score. Traxler has shown that the reliability of rate is increased by the length of time from an experiment in reading rates on two forms of a rate test:


Table 3. Rate of Reading Correlations Found for Different Time Intervals Compared with Correlations Predicted with the Spearman-Brown Formula

<table>
<thead>
<tr>
<th>Time Intervals</th>
<th>Correlations Found</th>
<th>Predicted Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( r )</td>
<td>( \text{P.E.} )</td>
</tr>
<tr>
<td>100 seconds</td>
<td>.620 ± .047</td>
<td>.620</td>
</tr>
<tr>
<td>200 seconds</td>
<td>.725 ± .036</td>
<td>.765</td>
</tr>
<tr>
<td><strong>300 seconds</strong></td>
<td>.760 ± .032</td>
<td>.830</td>
</tr>
<tr>
<td>400 seconds</td>
<td>.827 ± .024</td>
<td>.867</td>
</tr>
</tbody>
</table>

**Reading Purpose Test**

*Timing of the test.*—To make the Reading Purpose Test practical, it was decided to "streamline" it for use in one period, that is, of forty-five or fifty minutes' time. By experimentation in the early tryouts, a five-minute period was finally allotted for the reading of each selection. The administrator with stop watch in hand called for the students to "mark" at the end of two and one-half minutes and again at the end of five minutes. This "double check" was used in the event that a student completed the reading of the selection before the allotted time. If he did, his rate was then based on the two and one-half minute rate.

An unusual feature of the test is that it may be used in several different ways, according to the time available for its administration. It may be used, for instance, where much time exists, in its entirety; that is, each selection can be read through entirely with a total time check at the end. This would permit the testee to answer all of the
thirty questions following each selection and would yield a maximum reliability in the measure of a student's rate and comprehension, as well as of his flexibility.

Or, the amount of time may be set at any number of minutes desired. It should, however, be kept in mind that the longer the time, the greater the reliability (Table 3).

Further provision has been made for split timing by including "Mark One" and "Mark Two" columns for recording two time intervals, say at three and again at six minutes, should the user of the test wish to measure changes in rate.

**Difficulty level.** This refers to the degree of difficulty of the materials to be read. The degree of difficulty was established by the Flesch Formula of Reading Ease.

In determining the difficulty level to be chosen for the selection, the two factors, speed and comprehension, were weighed.

Gulliksen defines a pure speed test as "a test composed of items so easy that the subjects never give a wrong answer to any of them." Laycock states, "The purest (speed) test comes with passages which make practically no demands on intelligence or prior knowledge."

These suggest that in a test where rate is the prime concern, neither the material (nor the items of the comprehension test) should be of such great difficulty as to cause the reader to interrupt his rate of reading.


to reread involved, complex, or profound ideas as one might expect to find in tests of critical thinking or in tests whose chief objective is to measure comprehension.

While this may obtain for certain measures of rate, it must be recognized that "speed is a function of comprehension," and should not be "merely the measure of words per minute without regard to the thought content."

To keep each of these factors of speed and comprehension in proper balance with regard to its function in the Reading Purpose Test, and to keep the interest level of the selections as high as possible, the difficulty level of the selections was kept moderate; that is, they are rated "easy," "fairly easy," and "fairly difficult." (Table 4) In the first part of the test where the results were to be studied in relation to the student's flexibility when faced with material of varying difficulty, the two selections rate as "easy" and as "fairly difficult." On the second part of the test, where the material was to be read in accordance with the purpose, the difficulty level of both selections is rated as "fairly easy."

The Flesch Formula for testing the reading ease of a selection was used in these estimates. Of this Triggs says, "The extent to which a


4/ Frances O. Triggs (Chairman), Committee on Diagnostic Reading Tests, Manual, page 19.
passage is hard or easy can be measured rather accurately by using what has become known as a "readability formula." She then goes on to say that these formulas are not the final step in selecting material. "Materials must be tried out ultimately and sometimes their use must be modified in the light of experience."

The writer submitted to small groups of college students various selections, including those of the Reading Purpose Test, asking the students to rate the selections—after reading them under timed conditions and taking comprehension tests—as to

(1) interest: (a) very (b) average (c) little
(2) difficulty: (a) very (b) average (c) little

On the basis of answers to these questions and informal discussions, several selections were eliminated. On the selections chosen for the Reading Purpose Test there was general agreement that they were of a sufficiently interesting nature to induce rapid, continuous reading and of a difficulty level which required attention to the facts but not so severe as to impair continuous rate in reading the material.

Table 4. Flesch Readability Formula Interpretation Table

<table>
<thead>
<tr>
<th>Readability Score</th>
<th>Difficulty Level Designation</th>
<th>Location of Reading Purpose Test Selections</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>90 - 100</td>
<td>Very easy</td>
<td>Selection M</td>
</tr>
<tr>
<td>80 - 90</td>
<td>Easy</td>
<td>Selections R &amp; S</td>
</tr>
<tr>
<td>70 - 80</td>
<td>Fairly easy</td>
<td></td>
</tr>
<tr>
<td>60 - 70</td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>50 - 60</td>
<td>Fairly difficult</td>
<td>Selection N</td>
</tr>
<tr>
<td>30 - 50</td>
<td>Difficult</td>
<td></td>
</tr>
<tr>
<td>0 - 30</td>
<td>Very difficult</td>
<td></td>
</tr>
</tbody>
</table>
Selection M, designed for easier reading, falls in the "easy" reading scale of the Flesch formula. Selection N, designed for harder reading, falls in the "fairly difficult" scale according to the formula. It is the difference in the speeds at which these two selections are read that determines the flexibility of reading rate according to the difficulty of the material.

Selections R and S, designed to be read for different purposes with the difficulty level kept constant, fall in the area of "fairly easy" reading according to the Flesch ratings.

Rate and comprehension measured separately.-- Research in this area suggests that a reading test containing a rate of reading score and a comprehension score should consist of a selection to be read and timed; and afterward, a comprehension test as a separate entity, not timed.

Eurich said some time ago that the "relationship between speed and comprehension is dependent upon the manner in which each is measured."

Preston and Botel state that the "usual procedure" for measuring comprehension error "by designating as 'comprehension' what is in reality partly speed. Most reading tests report comprehension scores which are not true measures of an individual's comprehension score at all because speed and comprehension are relatively independent of each other."

J. B. Stroud says approximately the same of rate scores on many tests,


and on the Cooperative Reading Test in particular, that the rate/speed/
part is not so good because it "is influenced by rate of not comprehending."
The speed score of this same test includes the time taken to answer
questions; that is, to read the question, look back and reread the text -
many times possibly. This then would yield a speed of working, rather
than a speed of reading score.

Of this Robinson 1 says, "Different methods of work by students on
tests will give different reading and comprehension scores."

From these data and experimentation in the area, the writer decided
that the two factors of rate and comprehension should be measured inde-
dependently of each other; that is, the rate score should be based on
straight, uninterrupted reading of the passage for the allotted time;
then, afterwards, comprehension should be measured in an untimed test
done without recourse to the text.

The reading selections.-- Using the criteria just described as a
basis, the following selections were chosen as the variables of flexibility
according to difficulty and purpose:

Selection M. This was chosen as material of an easy-to-read nature.
The Flesch Formula rated it as "easy" (score 52). It is a selection
of 2992 words from the book "Here is Your War" by Ernie Pyle.2/

Selection N. This was chosen to represent the harder-to-read
selection and was rated as "fairly difficult" by the Flesch Formula
(score 48). It is an essay of Joseph Conrad's,3/ entitled "Land-
falls and Departures," a passage of 2671 words.

1/F. P. Robinson, "Speed Versus Comprehension in Reading - a Discussion."
Journal of Educational Psychology, 31:554-550, October 1940.


As these two selections were designed to be read to test the effect of difficulty of the material, the purpose was to be held constant. The purpose as set down in the directions for these selections was: "To read the material as rapidly as you can and still understand it so that you can answer some questions that will check your understanding of the selection."

Selections R and S were chosen to be read for different purposes, holding constant the difficulty level. This was accomplished by taking the selections from the same book. The Flesch Formula rates the material as "fairly difficult" (score 72). Both selections are chapters from the book "Hunter" by John Hunter. 1

Selection R of 2619 words was to be read "as rapidly as you can and in much the same way that you would read any adventure story. You will be asked some questions afterwards; these are only to make sure that you have read the material."

Selection S, of 2575 words, was to be read "thoroughly for complete mastery of ideas and details so that you can answer some questions that will check your thorough mastery of the material."

In some instances the selections were abridged in order to obtain the approximate number of words. This was done with the permission of the copyright owners who also gave special permission to reprint the selections for this test.

Establishing the purpose.— The matter of establishing the purpose or "mental set" of the reader was given a great deal of consideration. Several methods for trying to bring about this "mental set" were considered, but it was felt, in the final analysis, that in any given reading situation—whether in a test, in a reading assignment, or in the reading of a magazine or a book—the reader, if he were at all flexible, would adjust to the purpose specified and vary his reading accordingly; if he could not adapt or adjust to the purpose, it would be due to "inflexibility."

and he would reflect this in his score.

Construction of the items to measure understanding of the material read. — Inasmuch as the Reading Purpose Test was to measure primarily rates of reading, the comprehension "checks" on each selection were designed to serve as measures of what might be called "attention" to the material, or understanding of it.

Davis identified nine factors as being involved in reading comprehension:

1. Word knowledge - recognition vocabulary
2. Determining meaning of words from contextual setting
3. Ability to follow organization of a passage and to identify antecedents and find references in the passage
4. Ability to select the main thought of a passage
5. Ability to answer questions which are answered directly in the passage
6. Ability to answer questions which are answered in the passage, but not in the words in which the question is asked
7. Ability to draw inferences
8. Ability to recognize literary devices and apprehend tone and mood
9. Ability to determine the writer's purpose, intent, and point of view.

Of the nine factors, two would apply to the items of the Reading Purpose Test: 5, Ability to answer questions which are answered directly in the passage; and 6, Ability to answer questions which are answered in

the passage but not in the words in which the question is asked. No attempt was made to measure any of the "higher" reading skills, such as 7, 8, and 9 identify.

The kind of item was a multiple-choice item with four choices, one of which was the correct answer.

The number of items for each selection was thirty. From forty to fifty items were prepared and presented in early tryouts of the test. An item analysis of these revealed the most discriminatory ones and served to point out others that needed revision. From these, thirty were chosen for each of the selections.

Since each selection was of approximately 3,000 words, an attempt was made to space the items at about every 100 words.

**Early tryouts.**—Reading selections and comprehension items were duplicated and assembled into separate tryout units. These were then tried out informally in small sections of a reading improvement course taught by the writer at the Boston University High School and College Reading Center.

In these tests the selections were presented in their original length. Timing procedures allowed each student to read the entire selection, recording his time at the completion of the reading. He was then allowed unlimited time to answer the items on the material just read. After this he was asked to rate the selection as to "difficulty" and to "interest" levels.

These informal tests provided information that was valuable in determining the final choice of the selections and the comprehension items.

**Format of the test.**—Since rate of reading was the primary concern
of the instrument, presentation of the material to be read in the most readable manner was of utmost importance. The writer examined the format of reading tests and consulted with an experienced, commercial printing representative.

To obtain maximum readability, proportional spaced type was chosen. All right-hand margins were "justified," or made even, as a means of making the print more readable. "This is a modern development in the field of composition. Improved appearance and greater legibility, as compared to typewritten matter are among the advantages of this kind of composition. Each printed character occupies the proper amount of space according to its width, thereby eliminating 'rivers' between irregularly shaped letters."

Final specifications for the printing job included: light face book type with six line spacing, right side justified, reduced 85 per cent for photo-offset camera, saddlewired self-cover bound, and printed in double columns on 11" x 8 1/2", #50 white offset stock, 32-page booklet.

All selections and comprehension tests were included in one booklet. Provision was made for answers to be written in the booklet; or, I.B.M. answer sheets could be adapted for machine scoring. (See test booklet and answer sheet in Appendix).

At first it was thought to number the lines, as many tests do. This would allow the testee to record the line at which he was reading when a time check was called for. Such a procedure makes it possible to avoid marking the booklet which may then be used again. This, however, was

decided against as it was felt that marginal numbers would tend to distract
the reader. Rate checks were made by circling the words, thus eliminating
the booklet from further use.

Final tryout of the finished test. — Once the gross deficiencies of
the tryout forms had been eliminated, it became necessary to obtain in-
formation concerning the administration of the test. This served to
indicate exactly how the test functioned under actual conditions.

The data were obtained by administering the test to 35 college
freshman, similar to those to whom the test was finally given.

The factors to be checked in this "dress-rehearsal" were (1) the
efficacy of the directions, and (2) the time requirements.

In all instances the writer distributed and collected all materials,
gave the directions, both general and specific, clocked all the time
requirements, and kept a diary of the administration so that the maximum
reliability and validity could be had in the administration of the test.

Time requirements and directions. — Inasmuch as the Reading Purpose
Test had been constructed to be administered in a single 45- or 50-minute
period, it was necessary in the final tryout to determine the exact time
requirements that would make this possible.

Informal checking had shown that approximately five minutes of reading
time would be the maximum. On this basis the following time schedule
evolved:

<table>
<thead>
<tr>
<th>Time</th>
<th>Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 min. for distributing and collecting materials</td>
<td>5</td>
</tr>
<tr>
<td>5 min. for giving directions</td>
<td>5</td>
</tr>
<tr>
<td>5 min. for reading each selection</td>
<td>20</td>
</tr>
<tr>
<td>5 min. for answering items each selection</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
</tr>
</tbody>
</table>
It was possible to vary the length of reading of the Reading Purpose Test without changing rate or comprehension measures as both were a matter of percentage: words read divided by number of minutes, and number of items right divided by the number tried.

The directions were found to be simple and clear so that no confusions were found to exist. A copy of these may be found in the Appendix.

2. Administration of the Test

Timing procedures.— Having administered the test in the tryout to ascertain exact time limits, the writer, who personally administered all the tests, encountered no difficulties in the timing procedures.

Five minutes of total reading time were allotted for each selection. As a means of checking the number of words read, testees were asked to circle the word being read at two and one-half minutes and again at the completion of two and one-half minutes more — for a total of five minutes. A stop watch was used for all measures of time.

At the end of the five minutes, testees were instructed to turn to the questions following the selection and told that they would be allotted four minutes with two-and one-minute notices of remaining allotted time. If at the end of the four minutes anyone wanted more time, extra time was allowed. In the large majority of instances an additional half minute was sufficient for this.

Directions.— The General Directions, page 3, were read aloud as soon as the booklets and answer sheets had been labeled. The first selection to be read was then turned to, directions for this being read by the testees with the warning from the test administrator: "Be sure to
read the purpose over twice and keep it in mind as you read the selection." About ten seconds was allowed for this, after which the "Begin" signal was given.

In order to eliminate the possible influence of the reading of one part on the other, the group being tested was divided into A's and B's. This was done by lettering every other answer sheet "A" and the intervening ones "B." Testees were told that they were either A or B.

A's read the first selection (M) first, B's the third selection (R). A's read the second selection (N) next as B's read the last selection (S). Next the A's read R and S in that order as the B's read M and N. Timing and number of questions being the same for all selections, no difficulties were met with in this arrangement for alternating the sequence of reading the selections.

Cooperating schools. — The test was administered to three groups of students in the thirteenth grade. Two of these groups were female population and one male.

Table 3. Population Tested in this Study

<table>
<thead>
<tr>
<th>Date of Test</th>
<th>Group</th>
<th>Sex</th>
<th>Number Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 1956</td>
<td>1</td>
<td>F</td>
<td>264</td>
</tr>
<tr>
<td>February 1956</td>
<td>2</td>
<td>F</td>
<td>125</td>
</tr>
<tr>
<td>March, April 1956</td>
<td>3</td>
<td>M</td>
<td>212</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>601</td>
</tr>
</tbody>
</table>
Two of the schools were located in the Boston area and the third in a nearby state. These groups met the general specifications of the types of population sought: first, all were of the same grade level (grade 13); second, it was a population of average ability at the level of high school graduation or beginning college; third, the individuals of these schools represented considerable variation in backgrounds and types of training they had received from the secondary schools from which they had recently graduated.

Additional test data.— In addition to the data obtained from the Reading Purpose Test, scores from other criteria were obtained for all participating groups.

As a measure of reading ability, Cooperative English Test: Reading Comprehension scores were obtained for each group. As an index of mental ability, the Ohio State University Psychological Examination provided scores for groups 2 and 3. Group 1 measures were taken from scores on the Otis Self-Administering Tests of Mental Ability.

Any persons who did not have test scores in both of these areas were excluded from the analysis of data.

Scoring procedures.— All hand-scored parts of the Reading Purpose Test were done by the author himself and the rest was done by machine scoring.


2/ Herbert A. Toops, Ohio State University Psychological Examination, Ohio College Association.

Any papers that were incomplete or imperfectly marked were excluded from the analysis of data.

Rates of Reading Scores.—Rates of reading were obtained by using a key which when placed on the proper page and column, gave the number of words read at the line where the student had circled.

The same key contained the information as to the number of questions that should have been answered in the material read up to that point. This also was recorded for each selection and constituted "number tried" for each student. If the student answered more items than the number he should have tried, these were eliminated.

Flexibility score.—This was calculated on each part of the test to measure ability to vary the rate in accordance with difficulty (Selections M and N) and in accordance with purpose (Selections R and S). The actual score is the difference in these rates.

When the scoring was completed the following data was placed on a data sheet and subsequently punched on I.B.M. cards:

1. Group identifying number
2. Individual identification
3. Sex
4. Scores from tests of mental abilities
5. Cooperative Reading Test Score: speed, comprehension, total
6. Number of words read per half minute for Selections M, N, R, and S of the Reading Purpose Test
7. Number of items tried for Selections M, N, R, and S of the Reading Purpose Test
8. Number of items right for Selections M, N, R, and S of the Reading Purpose Test.

These data on I.B.M. cards represent the data of this study and were analyzed to ascertain
1. The validity of the Reading Purpose Test
2. The reliability of the Reading Purpose Test
3. The extent to which thirteenth grade students vary their reading rate
4. The relationship of varying the rate of reading, or flexibility, as measured by this test, to intelligence and to reading ability as measured by outside criteria.
CHAPTER IV
ANALYSIS OF THE DATA

1. Descriptive Data

Reading Purpose Test. -- As an initial step in the treatment of the basic data as described at the end of Chapter III, means and standard deviations of scores in each of the variables were computed, for groups separately and combined for the total group. These are shown in Tables 6, 7, and 8.

Table 6. Means and Standard Deviations of Rates in Words Read Per Minute in Accordance with Difficulty of Material and Flexibility of those Rates

<table>
<thead>
<tr>
<th>Groups and Number</th>
<th>Subtest M Easy to Read</th>
<th>Subtest N Difficult to Read</th>
<th>Flexibility of Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>G N</td>
<td>M S.D.</td>
<td>M S.D.</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(2) (3)</td>
<td>(4) (5)</td>
</tr>
<tr>
<td>1</td>
<td>264</td>
<td>258 60.0</td>
<td>231 56.9</td>
</tr>
<tr>
<td>2</td>
<td>125</td>
<td>245 57.7</td>
<td>219 55.8</td>
</tr>
<tr>
<td>3</td>
<td>212</td>
<td>297 47.0</td>
<td>216 69.8</td>
</tr>
<tr>
<td>Total</td>
<td>601</td>
<td>269 67.1</td>
<td>239 62.7</td>
</tr>
</tbody>
</table>

An examination of the rates of reading according to the difficulty of the material shows that the average student read the easy material at the
rate of about 269 words per minute and the difficult material at approximately 239 words per minute. This represents a difference of about 30.5 words per minute, the flexibility score in words read per minute. Since the purpose for reading these selections was the same, it is assumed that the slowing down in rate, or the flexibility, was caused by the increased difficulty of Selection N.

Table 7. Means and Standard Deviations of Rates in Words Read Per Minute in Accordance with the Purpose and Flexibility of those Rates

<table>
<thead>
<tr>
<th>Groups and Number</th>
<th>Subtest R Read for Story</th>
<th>Subtest S Read for Mastery</th>
<th>Flexibility of Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>G N</td>
<td>M S.D.</td>
<td>M S.D.</td>
<td>M S.D.</td>
</tr>
<tr>
<td>(1)</td>
<td>(2) (3)</td>
<td>(4) (5)</td>
<td>(6) (7)</td>
</tr>
<tr>
<td>1 264</td>
<td>280 76.1</td>
<td>266 67.4</td>
<td>14.1 46.1</td>
</tr>
<tr>
<td>2 125</td>
<td>274 85.8</td>
<td>260 69.1</td>
<td>14.7 48.1</td>
</tr>
<tr>
<td>3 212</td>
<td>315 83.8</td>
<td>284 68.0</td>
<td>24.1 49.4</td>
</tr>
<tr>
<td>Total 601</td>
<td>292 83.8</td>
<td>271 68.7</td>
<td>21.4 48.7</td>
</tr>
</tbody>
</table>

In reading according to the purpose, the means and standard deviations show that the average student read the story at about 292 words per minute, and the material to be read for complete mastery at about 271 words per minute, a difference of approximately 21.4 words a minute. As the difficulty level of the material of these two subtests was constant, it is assumed that the reduction in speed was induced by the purpose, to read for complete mastery.

From the mean flexibility rates in Tables 7 and 8 it is possible to arrive at certain tentative conclusions. It is evident that the population
tested responded to a greater degree to the difficulty of the material
than to the purpose of reading; or, the difficulty of the material in
the Reading Purpose Test was a more determining factor than purpose.

The variation in reading rates does not appear to be very great.
This may be due to a number of causes. It may be due to the fact that
the subtests do not represent extremes. The easy and difficult material
might have been very easy, as in a second grade reader, or very difficult,
as in a medical treatise; but these extremes would not have confronted
the testees with reading situations that were realistic — or normal
reading situations.

Another cause of low variability is the fact that instruction in
varying the rate of reading is almost non-existent. It is safe to assume
that the groups tested had received no instruction in this ability. "A
major problem seems to be that we have no instrument suitable to check our
objective of developing flexibility, and therefore have a tendency to
ignore this phase of reading instruction." 1

In general, it may be concluded that the test called for reading
the four subtests at different rates.

Means and standard deviations of the comprehension scores of each
of the subtests of the Reading Purpose Test are shown in Table 8.

---

Table 8. Means and Standard Deviations of Comprehension as Number of Items Right

<table>
<thead>
<tr>
<th>Groups and Number</th>
<th>Subtest M Easy to Read M (1)</th>
<th>Subtest N Difficulty to Read M (3)</th>
<th>Subtest R Read for Story M (4)</th>
<th>Subtest S Read for Mastery M (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 264</td>
<td>10.6 2.7</td>
<td>8.9 3.3</td>
<td>11.2 3.9</td>
<td>12.4 3.3</td>
</tr>
<tr>
<td>2 125</td>
<td>10.6 2.5</td>
<td>9.0 3.1</td>
<td>11.6 4.2</td>
<td>12.2 3.3</td>
</tr>
<tr>
<td>3 212</td>
<td>12.6 3.2</td>
<td>10.1 3.2</td>
<td>13.0 3.8</td>
<td>13.3 3.2</td>
</tr>
<tr>
<td>Total</td>
<td>11.3 3.0</td>
<td>9.4 3.4</td>
<td>11.9 4.0</td>
<td>12.7 3.3</td>
</tr>
</tbody>
</table>

An examination of Table 8 shows the mean number of items right by students on the four subtests.

Data from Table 9 are based on the total number of attempts on each subtest and total number of rights.

Table 9. Comprehension Rate for Total Group Based on Total Number of Items Tried and Total Number of Rights

<table>
<thead>
<tr>
<th>Variable</th>
<th>Percentage of Tried and Right (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtest M (Easy)</td>
<td>.643</td>
</tr>
<tr>
<td>Subtest N (Difficult)</td>
<td>.599</td>
</tr>
<tr>
<td>Subtest R (For Story)</td>
<td>.783</td>
</tr>
<tr>
<td>Subtest S (For Mastery)</td>
<td>.777</td>
</tr>
</tbody>
</table>

As a whole, the population tested obtained scores that might have been expected, except in the instance of Subtest N in which the difficulty
level was higher than the others. On this subtest a .599 score suggests that the slowing down for more difficult material was not of a sufficient degree to enable the student to comprehend as well as he might have.

Apparently the population found the difficulty level of the subtests to be as indicated by the estimate as described in Chapter III.

Criterion Measures. -- Table 10 shows the means and standard deviations of the criterion measures.

Table 10. Means and Standard Deviations of Scores of Groups on the Cooperative Reading Test C2T, Otis Self-Administering Test of Mental Ability and the Ohio State University Psychological Examination

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group 1</th>
<th></th>
<th>Group 2</th>
<th></th>
<th>Group 3</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>S.D.</td>
<td>M</td>
<td>S.D.</td>
<td>M</td>
<td>S.D.</td>
<td>M</td>
<td>S.D.</td>
</tr>
<tr>
<td>Cooperative Reading Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed of Comprehension</td>
<td>53.53</td>
<td>7.91</td>
<td>53.90</td>
<td>7.97</td>
<td>56.67</td>
<td>7.76</td>
<td>54.71</td>
<td>8.00</td>
</tr>
<tr>
<td>Level of Comprehension</td>
<td>53.58</td>
<td>7.23</td>
<td>53.60</td>
<td>6.55</td>
<td>55.42</td>
<td>5.84</td>
<td>54.23</td>
<td>6.68</td>
</tr>
<tr>
<td>Total Score</td>
<td>52.35</td>
<td>7.08</td>
<td>52.94</td>
<td>6.89</td>
<td>55.71</td>
<td>6.19</td>
<td>53.66</td>
<td>6.91</td>
</tr>
<tr>
<td>Otis Test of Mental Ability (IQ)</td>
<td>106.07</td>
<td>9.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ohio State Psychological</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Examination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results obtained by the three groups of thirteenth grade level on the criterion measures indicate that on these measures the groups separately and as a whole are very normal and quite homogeneous. Scores on the Cooperative Reading Test are only slightly above the 90th percentile with a standard deviation of less than seven points. This factor of very "average" reading ability may account for a limited degree of flexibility of scores.
Negative flexibility scores.-- In analyzing the data relative to flexibility scores, there was a portion of the population who reversed their rates by reading the more difficult material at a more rapid rate and likewise the material to be read for mastery at a faster rate.

An analysis of these groups and their scores sheds light on possible reasons for reading one selection faster or slower than another. Other factors no doubt exert influence on each individual's rate; these include familiarity with the area on which the material is based and interest in the material.

Of the total population tested, 96 individuals read the more difficult material of Subtest N at a faster rate than the material of the easier subtest, and 203 read the material of the subtest to be read for mastery faster than the material of the subtest read for the adventure story. In studying these reversals to find reasons for this behavior, which confutes the hypothesis of this thesis that a good reader slows down for more difficult material or to achieve mastery of the material, the question arises that if these readers read these materials faster, did they read them with equal or better comprehension. Tables 11 and 12 give information relative to this question.
Table 11. Comparison of Comprehension Scores of Negative and Positive Flexibility Groups in Reading According to the Difficulty of the Material

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>Easy to Read</th>
<th>Difficult to Read</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>96</td>
<td>.815</td>
<td>.541</td>
</tr>
<tr>
<td>Positive</td>
<td>205</td>
<td>.853</td>
<td>.617</td>
</tr>
<tr>
<td>All</td>
<td>601</td>
<td>.847</td>
<td>.603</td>
</tr>
</tbody>
</table>

An examination of these scores in Table 11 shows that the group of 96 who read the more difficult material at a faster rate than the easier material had as a group a comprehension score of .541 as compared to .617 for the group who slowed down for the more difficult material. This supports the hypothesis that the better readers slow down their reading rate as the difficulty of the material increases.

Table 12. Comparison of Comprehension Scores of Negative and Positive Flexibility Groups in Reading According to the Purpose

<table>
<thead>
<tr>
<th>Group</th>
<th>Number</th>
<th>For Story</th>
<th>For Mastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>203</td>
<td>.783</td>
<td>.779</td>
</tr>
<tr>
<td>Positive</td>
<td>396</td>
<td>.777</td>
<td>.778</td>
</tr>
<tr>
<td>All</td>
<td>601</td>
<td>.785</td>
<td>.781</td>
</tr>
</tbody>
</table>

Scores of the negative and positive groups in Table 12 are not nearly so pronounced, with practically no differences in comprehension. This suggests two possibilities: either the purpose of reading is not so strong a determining factor of rate as difficulty of materials read, or that the call to read for mastery induces an increased mental alertness. Cumulative frequencies of negative and positive flexibility scores for total population are shown in Tables 13 and 14.
Table 13. Cumulative Frequencies of Negative and Positive Flexibility Scores in Words Per Minute in Accordance with the Difficulty of the Material

<table>
<thead>
<tr>
<th>Flexibility Rate</th>
<th>F</th>
<th>CF</th>
<th>Flexibility Rate</th>
<th>F</th>
<th>CF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td></td>
<td></td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td>-164</td>
<td>1</td>
<td>1</td>
<td>-122</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>-122</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>14</td>
<td>19</td>
</tr>
<tr>
<td>-122</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>15</td>
<td>19</td>
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2. Reliability of the Data

Reliability is the degree of accuracy and consistency with which a test measures whatever it does measure. According to Lindquist, "In measurement of speed or rate the primary concern is for accuracy and uniformity in counting and timing."

Reliability of rate scores.—Accuracy and uniformity in measuring the rate scores of the test were attained in the administration of the test. At the completion of the five-minute reading period, testees were instructed to stop reading, circle the last word read and turn immediately to the questions. The writer administered all tests and checked to make certain that none of the testees continued to read beyond the allotted time.

As was noted in Chapter III (page 30), length of reading time increases the reliability of the reading rate. According to Traxler many rate scores are based on the reading of short selections requiring brief time lengths which reduces the reliability of the rate scores thus obtained. The length of time for each subtest of the Reading Purpose Test, five minutes, was deemed sufficient to minimize any minor fluctuations of rate and insure the reliability of the rate scores.

Reliability of Flexibility Score.—The flexibility score of the Reading Purpose Test is the difference between rate scores on the pairs of subtests, one according to difficulty of material and the other


according to the purpose of reading. Assuming that the rate scores were measured with accuracy and uniformity, the flexibility score, or difference, would also be a reliable measure.

To ascertain whether the flexibility scores thus obtained were significant and could not have resulted from chance, a t-test of significance of two means was performed. Results of this showed the flexibility scores to be highly significant: 8.99 on selections read in accordance with the difficulty of the material, and 10.64 in accordance with the purpose. The demand for significance with 601 degrees of freedom is 1.96 at the five per cent level and 2.58 at the one per cent level.

As a further means of ensuring reliability of the flexibility score, the reading order of the subtests was interchanged so that half the group read the first selection during the first reading period and the other half read the second selection. During the second reading period, this order was reversed. This method was used for both parts of the test.

Reliability of comprehension scores.— Comprehension scores of the Reading Purpose Test were obtained from multiple-choice items. Testees turned immediately following the reading of each selection to the questions and were given ample opportunity to answer the items as far as they had read. Items not marked up to that point were considered wrong, and items attempted after that point were not counted.

Internal consistency.—Ordinarily the internal consistency of a test is determined by test and retest, or a split-half method. Test and retest was not possible because in the rereading of the selections, rate changes would occur; and since relatively few items were attempted by the majority of testees, any split-half procedure would have reduced the number of
items to too few for any appreciable degree of reliability.

This matter of different numbers attempting the separate items of comprehension upsets to a large degree efforts to obtain a completely satisfactory estimate of internal consistency. In an analysis of variance such as was applied to the Reading Purpose Test the fact that the number of attempts of the separate items varies so widely that the results of such an estimate are open to question. In speaking of the reliability estimates of speeded tests, Thorndike says, "The role of the speed factor in a test score is a matter of degree....whether a particular test is sufficiently speeded to distort reliability estimates based on a single time limit is a matter of judgment."

Hoyt's analysis of variance procedure was used to obtain an estimate of the internal consistency of each of the four subtests of the Reading Purpose Test. This technique is an adaptation of the better-known Kuder-Richardson formulas also designed to extract a reliability estimate from the consistency of performance within the test items.

The results of the analysis of variance for the subtests of the Reading Purpose Test are shown in Tables 25-29. In each instance actual scores for item, subject, and residual variation have been included together with F-scores for significance. The extent of significance for the

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F-scores is indicated by asterisks: one asterisk for significance at the five per cent level and two for significance at the one per cent level.

Table 15. Analysis of Variance for Estimating the Internal Consistency of Subtest M, Easy to Read Selection

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The estimate of internal consistency on Subtest M, the selection of material that was easy to read, was .7085.

Table 16. Analysis of Variance for Estimating the Internal Consistency of Subtest N, Difficult to Read Selection

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</table>

The estimate of internal consistency on Subtest N, the selection of material that was difficult to read, was .7012.
Table 17. Analysis of Variance for Estimating the Internal Consistency of Subtest R, Read for the Story

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items</td>
<td>99.30</td>
<td>29</td>
<td>3.4242</td>
<td>23.95**</td>
</tr>
<tr>
<td>Subjects</td>
<td>235.27</td>
<td>600</td>
<td>0.3921</td>
<td>2.74**</td>
</tr>
<tr>
<td>Residual</td>
<td>1213.11</td>
<td>8485</td>
<td>0.1429</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1547.68</td>
<td>9114</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The estimate of internal consistency on Subtest R, read for the purpose of reading a story, was .6354.

Table 18. Analysis of Variance for Estimating the Internal Consistency of Subtest S, Read for Mastery

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items</td>
<td>291.06</td>
<td>29</td>
<td>10.0366</td>
<td>76.80**</td>
</tr>
<tr>
<td>Subjects</td>
<td>191.91</td>
<td>600</td>
<td>0.3198</td>
<td>2.45**</td>
</tr>
<tr>
<td>Residual</td>
<td>1191.86</td>
<td>9116</td>
<td>0.1307</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1674.83</td>
<td>9745</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The estimate of internal consistency on Subtest S, read for complete mastery, was .5915.
The estimates of internal consistency, if compared to standard reliability coefficients from test-retest or split-half methods, are not high. However, in judging these estimates it is to be noted that these are based on relatively few items being attempted.

3. Validity Data

The problem of how effectively a test measures whatever it attempts to measure may be investigated either by comparison with an external criterion that attempts to measure the same area as the test, or by an examination of the test itself. For the Reading Purpose Test it was impossible to find a suitable external criterion to use as a basis for comparison. There are no published tests which attempt to measure the ability to vary the rate of reading according to difficulty of material and purpose. Therefore, it became evident that in estimating validity, the test would have to be its own criterion.

Test validity depends on two things: (1) the validity of the whole test to measure whatever it purports to measure, and (2) the validity of the individual items that make up the test. To estimate the validity of the Reading Purpose Test in these two areas, two types of validity measures were applied: psychological or logical validity to the whole test, and statistical validity, by means of an item analysis, to individual items.

Total validity.—Because there were no outside criteria available on which to secure an objective or statistical basis of validation of the whole test, an analysis of the purposes of the test and of the
desired outcomes by psychological and logical methods reveals a sufficient
degree of commonality to support the belief that the Reading Purpose Test
is a valid measure of flexibility of reading rate.

The Reading Purpose Test consists of two main divisions designed to
measure flexibility of reading rate. Each of these divisions contains
two subtests or reading selections whose purpose is to induce different
reading rates. Do these pairs of selections induce different rates of
reading and provide a measure of that difference, or flexibility?

In the first part of the total test, subtests M and N were designed
to measure ability to read easy and difficult materials at different
rates. The difficulty level of these selections was determined by
formula and experimental judgments as described in Chapter III. The
desired outcome, to vary reading rate, is borne out by the variation
in rates as shown in Table 19.

Table 19. Difference in Mean Reading Rates and Comprehension Scores
According to Difficulty for Total Population Tested

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Mean Reading Rate in Words Read Per Minute</th>
<th>Mean Comprehension Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (easy)</td>
<td>270</td>
<td>.84</td>
</tr>
<tr>
<td>N (difficult)</td>
<td>238</td>
<td>.60</td>
</tr>
</tbody>
</table>

The number of words read per minute for M, the easy selection,
was 270 and for N, the difficult selection, 238, showing a variation
in reading rate of approximately 32 words per minute for total
population. The difficulty levels of the selections may be said to have induced a variation in rate from one subject to the next as they were designed to do.

Mean comprehension scores accompanying these rates, 84 per cent on the subtest of easy material and 60 per cent on the subtest of difficult material, support the contention that the population tested encountered more difficult material and as a result slowed down their rate.

These data give evidence, therefore, that the test measured flexibility of reading rate in accordance with the difficulty of the material.

The second part of the Reading Purpose Test was designed to measure flexibility of reading rate in accordance with the purpose of reading. Desired outcomes on this part of the test are not so pronounced and suggest that the validity is not as high as on the other part. The difficulty level of the two subtests, R and S, was held constant as judged by the same measures as were used in the other part of the test, and the mean comprehension scores on these selections, 78 and 80, are sufficiently close to indicate that the population encountered about the same difficulty in each selection. The variation in rate, then, for this part of the test was designed to be brought about by changing the purpose in reading the two selections. Table 20 shows this variation in rate and comprehension.
Table 20. Difference in Mean Reading Rates and Comprehension Scores According to Purpose for Total Population Tested

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Mean Reading Rate in Words Read Per Minute</th>
<th>Mean Comprehension Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>R (story)</td>
<td>292</td>
<td>78</td>
</tr>
<tr>
<td>S (mastery)</td>
<td>270</td>
<td>80</td>
</tr>
</tbody>
</table>

The mean number of words read per minute for R, the adventure story, was 292 words per minute, and for S, to be read for complete mastery, was 270 words per minute, showing a variation of approximately 22 words per minute. The purpose of reading the selections may be said to have induced a variation in the rates of reading.

*Item analysis.*—An item analysis of all the items comprising the four subtests was performed. The number attempting each item was computed and this, together with the number passing the item, provided the proportion of those passing the item. The results are shown in Tables 21, 22, 23 and 24.

It is important to notice that the number attempting the items diminishes as later items are analyzed. This factor in a speed test imposes severe problems in estimating reliability and validity measures.
<table>
<thead>
<tr>
<th>Item Number</th>
<th>Right Responses</th>
<th>Number of Attempts</th>
<th>Proportion Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>563</td>
<td>601</td>
<td>0.937</td>
</tr>
<tr>
<td>2</td>
<td>584</td>
<td>601</td>
<td>0.972</td>
</tr>
<tr>
<td>3</td>
<td>367</td>
<td>601</td>
<td>0.911</td>
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<tr>
<td>4</td>
<td>539</td>
<td>601</td>
<td>0.897</td>
</tr>
<tr>
<td>5</td>
<td>433</td>
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<td>0.824</td>
</tr>
<tr>
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<td>563</td>
<td>601</td>
<td>0.937</td>
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<td>601</td>
<td>0.938</td>
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<td>592</td>
<td>0.873</td>
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<td>570</td>
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<tr>
<td>11</td>
<td>451</td>
<td>530</td>
<td>0.851</td>
</tr>
<tr>
<td>12</td>
<td>398</td>
<td>441</td>
<td>0.902</td>
</tr>
<tr>
<td>13</td>
<td>265</td>
<td>354</td>
<td>0.749</td>
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<tr>
<td>14</td>
<td>158</td>
<td>236</td>
<td>0.669</td>
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<td>90</td>
<td>96</td>
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<td>79</td>
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<tr>
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</table>

Total: 6805 8035 0.847

*Median
Table 22. Number of Right Responses, Number Tried and Proportion Passing Each Item in Subtest N, Difficult Reading Material

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<tr>
<th>Item Number</th>
<th>Right Responses</th>
<th>Number of Attempts</th>
<th>Proportion Passing</th>
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<td>601</td>
<td>.597</td>
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<td>564</td>
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``Median``

<p>| | 5620 | 9334 | .602 |</p>
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<th>Item Number</th>
<th>Right Responses</th>
<th>Number of Attempts</th>
<th>Proportion Passing</th>
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<tbody>
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</table>

Total: 7159 / 9115 = .785

*Median
Table 24. Number of Right Responses, Number Tried and Proportion Passing
Each Item in Subtest S, Read for Mastery

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Right Responses</th>
<th>Number of Attempts</th>
<th>Proportion Passing</th>
</tr>
</thead>
<tbody>
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<td>29</td>
<td>2</td>
<td>2</td>
<td>1.000</td>
</tr>
<tr>
<td>30</td>
<td>2</td>
<td>2</td>
<td>1.000</td>
</tr>
</tbody>
</table>

7634 9746 .783

*Median
**Item Validity.** — To obtain a measure of the validity of the items on the four subtests, an analysis of the discriminatory power of the items was carried out.

Since the methods for obtaining validity coefficients are based on the assumption that a relatively large proportion of the population has attempted each item, this analysis was performed on the first half of the items in each subtest, Items 1 through 15. In each case this was approximately the median and since an arbitrary "break-off" point had to be made, this was chosen.

The assumption of homogeneity of parts of a test is basic to practically all estimates of validity and reliability. For the Reading Purpose Test, homogeneity was assumed since the items for each subtest were designed to test the same factor of recall and were all based on the reading of a single, continuous selection.

Steps in the procedure for estimating item validity were:

First, selection of the extreme groups, high and low with respect to a continuous variable, the Cooperative Reading Test scores, dropping out the middle group. Basis of selection was the top and bottom 27 per cent groups according to the technique developed by Kelley who pointed out that the most accurate arrangement of items in order from the most to the least discriminating was obtained by basing the analysis on only the top and bottom 27 per cent of the total group. To select these groups it was necessary to divide the 601 total population according to the Cooperative Reading Test scores and then to perform an item analysis of

Table 25. Number of Attempts and Proportion of High and Low Groups
Passing Items 1-15; Flanagan's Validity Coefficient and
Fisher's Conversion Scores on Subtest M

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Number of Attempts</th>
<th>Proportion Passing</th>
<th>Number of Attempts</th>
<th>Proportion Passing</th>
<th>Flanagan's Coefficient</th>
<th>Fisher's Z Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
</tr>
<tr>
<td>1</td>
<td>162</td>
<td>.96</td>
<td>162</td>
<td>.91</td>
<td>.17</td>
<td>.1717</td>
</tr>
<tr>
<td>2</td>
<td>162</td>
<td>.98</td>
<td>162</td>
<td>.95</td>
<td>.16</td>
<td>.1614</td>
</tr>
<tr>
<td>3</td>
<td>162</td>
<td>.65</td>
<td>162</td>
<td>.56</td>
<td>.10</td>
<td>.1003</td>
</tr>
<tr>
<td>4</td>
<td>162</td>
<td>.95</td>
<td>162</td>
<td>.79</td>
<td>.32</td>
<td>.3316</td>
</tr>
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<td>5</td>
<td>162</td>
<td>.80</td>
<td>162</td>
<td>.67</td>
<td>.16</td>
<td>.1614</td>
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<td>.72</td>
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<td>.2027</td>
</tr>
<tr>
<td>7</td>
<td>162</td>
<td>.97</td>
<td>162</td>
<td>.87</td>
<td>.30</td>
<td>.3095</td>
</tr>
<tr>
<td>8</td>
<td>162</td>
<td>.98</td>
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<td>.86</td>
<td>.37</td>
<td>.3684</td>
</tr>
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<td>159</td>
<td>.94</td>
<td>157</td>
<td>.76</td>
<td>.33</td>
<td>.3428</td>
</tr>
<tr>
<td>10</td>
<td>156</td>
<td>.92</td>
<td>146</td>
<td>.76</td>
<td>.28</td>
<td>.2877</td>
</tr>
<tr>
<td>11</td>
<td>152</td>
<td>.93</td>
<td>133</td>
<td>.74</td>
<td>.33</td>
<td>.3428</td>
</tr>
<tr>
<td>12</td>
<td>132</td>
<td>.94</td>
<td>97</td>
<td>.84</td>
<td>.23</td>
<td>.2342</td>
</tr>
<tr>
<td>13</td>
<td>112</td>
<td>.89</td>
<td>69</td>
<td>.51</td>
<td>.46</td>
<td>.4973</td>
</tr>
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<td>14</td>
<td>82</td>
<td>.82</td>
<td>41</td>
<td>.51</td>
<td>.35</td>
<td>.3694</td>
</tr>
<tr>
<td>15</td>
<td>43</td>
<td>.95</td>
<td>20</td>
<td>.70</td>
<td>.43</td>
<td>.4599</td>
</tr>
</tbody>
</table>

Average  : .283  .2905
Table 26. Number of Attempts and Proportion of High and Low Groups Passing Items 1-15; Flanagan’s Validity Coefficient and Fisher’s Z Conversion Scores on Subtest N

<table>
<thead>
<tr>
<th>Item Number</th>
<th>High</th>
<th>Low</th>
<th>Flanagan’s Coefficient</th>
<th>Fisher’s Z Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Attempts</td>
<td>Number of Attempts</td>
<td>Proportion Passing</td>
<td>Number of Attempts</td>
<td>Proportion Passing</td>
</tr>
<tr>
<td>1</td>
<td>162</td>
<td>162</td>
<td>.72</td>
<td>.62</td>
</tr>
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<td>2</td>
<td>162</td>
<td>162</td>
<td>.78</td>
<td>.68</td>
</tr>
<tr>
<td>3</td>
<td>162</td>
<td>162</td>
<td>.56</td>
<td>.31</td>
</tr>
<tr>
<td>4</td>
<td>162</td>
<td>162</td>
<td>.52</td>
<td>.31</td>
</tr>
<tr>
<td>5</td>
<td>162</td>
<td>162</td>
<td>.55</td>
<td>.46</td>
</tr>
<tr>
<td>6</td>
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<td>162</td>
<td>.54</td>
<td>.54</td>
</tr>
<tr>
<td>7</td>
<td>162</td>
<td>162</td>
<td>.64</td>
<td>.43</td>
</tr>
<tr>
<td>8</td>
<td>162</td>
<td>161</td>
<td>.77</td>
<td>.45</td>
</tr>
<tr>
<td>9</td>
<td>161</td>
<td>159</td>
<td>.91</td>
<td>.60</td>
</tr>
<tr>
<td>10</td>
<td>157</td>
<td>154</td>
<td>.96</td>
<td>.80</td>
</tr>
<tr>
<td>11</td>
<td>156</td>
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<td>.80</td>
<td>.58</td>
</tr>
<tr>
<td>12</td>
<td>155</td>
<td>145</td>
<td>.75</td>
<td>.50</td>
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<td>13</td>
<td>149</td>
<td>130</td>
<td>.88</td>
<td>.64</td>
</tr>
<tr>
<td>14</td>
<td>139</td>
<td>116</td>
<td>.31</td>
<td>.17</td>
</tr>
<tr>
<td>15</td>
<td>111</td>
<td>73</td>
<td>.64</td>
<td>.41</td>
</tr>
</tbody>
</table>

Average | .255 | .2610 |
Table 27. Number of Attempts and Proportion of High and Low Groups Passing Items 1-15; Flanagan's Validity Coefficient and Fisher's Z Conversion Scores on Subtest R

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Number of Attempts</th>
<th>Proportion Passing</th>
<th>Number of Attempts</th>
<th>Proportion Passing</th>
<th>Flanagan's Coefficient</th>
<th>Fisher's Z Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
</tr>
<tr>
<td>1</td>
<td>162</td>
<td>.91</td>
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<td>.85</td>
<td>.15</td>
<td>.1511</td>
</tr>
<tr>
<td>2</td>
<td>162</td>
<td>.90</td>
<td>162</td>
<td>.72</td>
<td>.28</td>
<td>.2077</td>
</tr>
<tr>
<td>3</td>
<td>162</td>
<td>.93</td>
<td>162</td>
<td>.86</td>
<td>.16</td>
<td>.1614</td>
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<td>162</td>
<td>.80</td>
<td>162</td>
<td>.67</td>
<td>.16</td>
<td>.1614</td>
</tr>
<tr>
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<td>162</td>
<td>.67</td>
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<td>.76</td>
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</tr>
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<td>.90</td>
<td>135</td>
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<td>.22</td>
<td>.2237</td>
</tr>
<tr>
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<td>148</td>
<td>.97</td>
<td>122</td>
<td>.87</td>
<td>.29</td>
<td>.2966</td>
</tr>
<tr>
<td>12</td>
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<td>.93</td>
<td>117</td>
<td>.70</td>
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<td>.4001</td>
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<td>.91</td>
<td>96</td>
<td>.58</td>
<td>.43</td>
<td>.4599</td>
</tr>
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<td>.77</td>
<td>87</td>
<td>.53</td>
<td>.26</td>
<td>.2661</td>
</tr>
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<td>15</td>
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<td>.95</td>
<td>52</td>
<td>.79</td>
<td>.34</td>
<td>.3541</td>
</tr>
</tbody>
</table>

Average: .231 .23486
Table 28. Number of Attempts and Proportion of High and Low Groups Passing Items 1-15; Flanagan's Validity Coefficient and Fisher's Z Conversion Scores on Subtest S

<table>
<thead>
<tr>
<th>Item Number</th>
<th>High</th>
<th>Low</th>
<th>Flanagan's Coefficient</th>
<th>Fisher's Z Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
</tr>
<tr>
<td>1</td>
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<td>.83</td>
<td>162</td>
<td>.69</td>
</tr>
<tr>
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</tr>
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<td>4</td>
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<td>5</td>
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<td>.98</td>
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<td>.93</td>
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<td>6</td>
<td>162</td>
<td>.76</td>
<td>162</td>
<td>.66</td>
</tr>
<tr>
<td>7</td>
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<td>.78</td>
</tr>
<tr>
<td>11</td>
<td>158</td>
<td>.99</td>
<td>156</td>
<td>.93</td>
</tr>
<tr>
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<td>155</td>
<td>1.00</td>
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<td>.93</td>
</tr>
<tr>
<td>13</td>
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<td>.71</td>
<td>122</td>
<td>.60</td>
</tr>
<tr>
<td>14</td>
<td>136</td>
<td>.79</td>
<td>99</td>
<td>.59</td>
</tr>
<tr>
<td>15</td>
<td>132</td>
<td>.97</td>
<td>93</td>
<td>.68</td>
</tr>
</tbody>
</table>

Average: .249 .2538
the resulting top and bottom groups of 162 each.

Second, the next step was to determine the percentage of cases succeeding with each item in the top and bottom groups and then to obtain an item validity coefficient for each item. According to Thorndike, ¹/ "The most satisfactory item validity index based on the upper and lower 27 per cent is the estimate of the coefficient of correlation between item and test obtainable from tables prepared by Flanagan." Tables 25 through 26 present the results of these in column six.

Third, a limitation of such validity coefficients is that the units on the scale of correlation values do not always have the same significance as they move from small to larger correlation values. To compensate for this limitation, Davis ²/ developed an item index based on Fisher's Z—transformation of the correlation coefficient. To make use of this, Flanagan's correlation values (column six) were corrected to Z-values and are presented in column seven of Tables 25 through 26. This procedure yields values in which the units are approximately equal throughout the scale and may be averaged by summation and dividing by the number of cases. This average, shown at the foot of column seven, was then converted back to a validity coefficient from Flanagan's table which provides a


legitimate average index. The results of these averages for each of the four subtests are shown in Table 29.

Table 29. Validity Coefficient Averages for Subtests based on Items 1-15.

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Average Validity Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>According to Difficulty</td>
<td></td>
</tr>
<tr>
<td>M (Easy)</td>
<td>.283</td>
</tr>
<tr>
<td>N (Difficult)</td>
<td>.285</td>
</tr>
<tr>
<td>According to Purpose</td>
<td></td>
</tr>
<tr>
<td>R (Story)</td>
<td>.231</td>
</tr>
<tr>
<td>S (Mastery)</td>
<td>.249</td>
</tr>
<tr>
<td>Total</td>
<td>.255</td>
</tr>
</tbody>
</table>

Conclusions: The purpose of obtaining item validity coefficients is twofold:

1. To provide an estimate of the validity of the test items
2. To provide a basis for improving the test by selecting the best items and rejecting or revising those items shown to be weak.

Table 29 provides an estimate of the over-all validity of the Reading Purpose Test items analyzed. The average for the four subtests was computed to be 0.255. In judging this as a measure of item validity, Thorndike has this to say of item validity obtained in this manner. An item with a validity coefficient as high as 0.25 or 0.30 usually represents an outstandingly valid item." This suggests, then, that the

items of the test are, on the whole, outstandingly valid. However, certain items are shown to be weak and in need of elimination or revision.

If it is assumed that any item below 0.20 is weak, an examination of Tables 25 through 28 reveals that on subtest N items 1, 2, 3 and 5 fall in this category. As might be expected early questions frequently inquire about certain basic information in the reading that the majority should know. This may account for the low discriminatory powers of these early items.

In subtest N, items 1 and 2 are the only ones that fall below 0.20 and as there are early items, they also inquire about general information.

Subtest R which has seven items, 1, 3, 4, 5, 6, 7 and 9 falling below 0.20 would seem to be in greatest need of revision. However, it should be noted that this selection is an adventure story in which important ideas are so readily understood that valid discriminatory powers of the items could not be expected.

Items 4, 6, 9 and 13 in Subtest S appear weak and in need of revision as a means of increasing the validity of that part of the test.

4. Relationship Data

An important aspect of the study was to discover the relationships that existed between the ability to vary the rate of reading as measured by the Reading Purpose Test and other variables. These, as well as inter-correlations between the variables of the subtests, are presented with correlation figures in accompanying tables. Product-moment correlations were obtained by using the entire population of 601 cases, except in one instance in which the outside criteria of mental ability, based on
different tests, made necessary correlations by groups.

**Intercorrelations between parts of the Reading Purpose Test.**—Product-
moment intercorrelations of variables of the Reading Purpose Test were
computed for rates, comprehension, and flexibility scores. The results
of these are shown in Tables 30 through 33.

Table 30 shows the intercorrelations of the reading rate between the
subtests of the Reading Purpose Test and the intercorrelations of the
comprehension scores between the subtests.

**Table 30. Intercorrelation of Reading Rates and of Comprehension Scores
Between Subtests**

<table>
<thead>
<tr>
<th></th>
<th>According to Difficulty</th>
<th>According to Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Subtest M vs. Subtest N</td>
<td>Subtest R vs. Subtest S</td>
</tr>
<tr>
<td>Rate</td>
<td>r = .817</td>
<td>r = .811</td>
</tr>
<tr>
<td>Comprehension</td>
<td>r = .560</td>
<td>r = .686</td>
</tr>
</tbody>
</table>

**Reading rates.**—The relationship of reading rates of .817 and .811
show that there is a marked positive relationship between the subtests of
the Reading Purpose Test. This is as might be expected since measures of
speed are being considered. In the instance of the relationship between
subtest comprehension scores, the correlations of .560 and .686 show a
moderate positive relationship.

**Speed versus Comprehension.**—The relationship of speed to compre-
hension has long been a controversial one. The relation between these two
variables as measured on the Reading Purpose Test are shown in Table 31.
Table 31. Correlation Between Reading Rates and Comprehension Scores of the Four Subtests with Comprehension as the Number of Right Responses

<table>
<thead>
<tr>
<th>Subtest M Easy</th>
<th>Subtest N Difficult</th>
<th>Subtest R For Story</th>
<th>Subtest S For Mastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>.765</td>
<td>.461</td>
<td>.799</td>
<td>.747</td>
</tr>
</tbody>
</table>

The correlations shown in Table 31 were obtained to discover the relationship between pupil performance in speed of reading and in comprehension. Three of the correlation coefficients show a marked relationship from .747 to .799. The coefficient of .461 for Subtest N of difficult material is comparatively small. From this it would appear the difficulty of material exerts a greater influence on the rate of reading than do the other factors.

These correlations are based on the number of right responses. For this reason high correlations could be expected, for the more material that is read (rate) the greater the number of items that will be attempted and thereby, the greater chance for more correct responses (comprehension). It is on this point of just what constitutes "comprehension" in comparing speed and comprehension that many authorities have disagreed. Those who use the number of "rights" obtain high correlations, and those who use the ratio of rights divided by the number of attempts obtain very low or negative correlations.

The relationships between reading rates as measured by the Reading Purpose Test and comprehension as determined by the number of right responses divided by the number of attempts, are shown in Table 32.
Table 32. Correlation Between Reading Rates and Comprehension Scores of the Four Subtests With Comprehension as the Number of Right Responses Divided by the Number of Attempts

<table>
<thead>
<tr>
<th>Subtest M: Easy Reading</th>
<th>Subtest N: Difficult Reading</th>
<th>Subtest R: For the Story</th>
<th>Subtest S: For Mastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>-.102</td>
<td>-.099</td>
<td>-.096</td>
<td>-.134</td>
</tr>
</tbody>
</table>

All correlations between speed of reading and comprehension measured in this way are negative and very low. These confirm the findings of Robinson and Hall \(^1\) who reported correlations obtained in the same way of from -.23 to .08. This suggests that the fastest readers are not necessarily the best comprehenders. No doubt many of the fast readers are good comprehenders, but there is probably a relatively small group of readers who read very rapidly, possibly just skimming through the material, and not obtaining enough of the information to answer questions based on this information. These persons, at the top in rate, but down in comprehension, distort the relationship to the extent that very small or negative small correlations will result.

**Flexibility of Rates.**—The relationship between the main parts of the test, to vary the rate according to the difficulty of the material and according to the purposes of reading, were computed. The results are shown in Table 33.

---
\(^{1}\)F. P. Robinson and Prudence Hall, "Studies of Higher-Level Reading Abilities," *Journal of Educational Psychology*, 32:241-252, April 1941.
Table 33. Correlation Between Flexibility Scores Obtained on Main Parts of the Reading Purpose Test

<table>
<thead>
<tr>
<th>Flexibility Rate According to Difficulty of Material</th>
<th>versus Flexibility Rate According to Purpose of Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>.120</td>
</tr>
</tbody>
</table>

The correlation coefficient of .120 between the parts of the test is low, showing that there is almost no relationship between pupil performance on the two parts of the test. Reading according to the difficulty of the material as measured on the test apparently calls for a different kind of adjustment than that required when the purpose is differentiated.

Correlations with other variables.—Information concerning the relationship between the scores of the Reading Purpose Test and the factors of reading ability, intelligence and achievement as measured by outside criteria were computed.

As an outside criterion of reading ability the Cooperative Reading Test was used. This test is primarily designed to measure comprehension. Its "speed" score is speed of comprehension as the time taken includes time in rereading and studying as well as in answering the questions. Results of the comparison of speeds are shown in Table 34.
Table 34. Correlations Between Rate Scores of the Reading Purpose Test and Speed of Comprehension Scores of the Cooperative Reading Test

<table>
<thead>
<tr>
<th>Reading Purpose Test Rate of Reading</th>
<th>Cooperative Reading Test Speed of Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Subtest M (Easy)</td>
<td>.411</td>
</tr>
<tr>
<td>Subtest N (Difficult)</td>
<td>.033</td>
</tr>
<tr>
<td>Subtest R (Story)</td>
<td>.444</td>
</tr>
<tr>
<td>Subtest S (Mastery)</td>
<td>.408</td>
</tr>
</tbody>
</table>

Since these tests do not presume to measure the same thing, the results are about as might have been expected, positive and with some degree of relationship except in the instance of Subtest N. The .033 on this variable is low, giving further evidence of the factor of speed being notably affected by the difficulty of the material.

Table 34 shows the relationship between the variables of the Reading Purpose Test and the Cooperative Reading Test as to comprehension.

Table 34. Correlation Between Comprehension Scores (Right Responses) of the Reading Purpose Test and the Level of Comprehension Scores of the Cooperative Reading Test

<table>
<thead>
<tr>
<th>Reading Purpose Test Comprehension Scores</th>
<th>Cooperative Reading Test Level of Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Subtest M (Easy)</td>
<td>.383</td>
</tr>
<tr>
<td>Subtest N (Difficult)</td>
<td>.412</td>
</tr>
<tr>
<td>Subtest R (Story)</td>
<td>.394</td>
</tr>
<tr>
<td>Subtest S (Mastery)</td>
<td>.399</td>
</tr>
</tbody>
</table>
The correlation coefficients of from .383 to .412, showing the relationship between comprehension scores of the Reading Purpose Test and the Cooperative Reading Test are positive but low, showing some relationship.

Table 35. Correlations Between Flexibility Rates of the Reading Purpose Test and Total Scores of the Cooperative Reading Test

<table>
<thead>
<tr>
<th>Reading Purpose Test Flexibility Rate</th>
<th>vs.</th>
<th>Cooperative Reading Test Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td></td>
<td>(2)</td>
</tr>
<tr>
<td>According to Difficulty of Material</td>
<td></td>
<td>.169</td>
</tr>
<tr>
<td>According to Purpose of Reading</td>
<td></td>
<td>.187</td>
</tr>
</tbody>
</table>

The coefficients of .169 and .187 show a slight positive correlation between flexibility of rate as measured on the Reading Purpose Test and total scores of the Cooperative Reading Test. This might be expected since the Cooperative Reading Test makes no provision for flexibility of reading rates. The two tests apparently measure quite different abilities.

Table 36. Correlations Between Flexibility Scores, the Ohio State University Psychological Examination, and the Otis Self-Administering Tests of Mental Ability by Groups

<table>
<thead>
<tr>
<th>Reading Purpose Test Flexibility Score</th>
<th>vs.</th>
<th>Otis Test of Mental Ability</th>
<th>Ohio State Examinations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>According to Difficulty of Material</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 1 (264)</td>
<td></td>
<td>.070</td>
<td>.039</td>
</tr>
<tr>
<td>Group 2 (125)</td>
<td></td>
<td></td>
<td>.045</td>
</tr>
<tr>
<td>Group 3 (212)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>According to Purpose of Reading</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 1 (264)</td>
<td></td>
<td>.254</td>
<td>.203</td>
</tr>
<tr>
<td>Group 2 (125)</td>
<td></td>
<td></td>
<td>.024</td>
</tr>
<tr>
<td>Group 3 (212)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The correlation coefficients of from .024 to .254 show that there is a negligible relationship between the flexibility scores as measured by the Reading Purpose Test and the abilities measured by the Ohio State University Psychological Examination and the Otis Self-Administering Tests of Mental Ability.

These low correlations between the Reading Purpose Test and outside criteria suggest that the ability to vary the rate of reading has little relationship to reading achievement or to mental ability as measured by the outside criteria. Flexibility of reading rate is apparently a characteristic that is acquired rather than innate.
CHAPTER V
SUMMARY AND CONCLUSIONS

1. Summary

The purpose.-- The Reading Purpose Test was constructed to measure the flexibility of reading rates (1) in accordance with the difficulty of the material, and (2) in accordance with the purpose of reading. This ability is, according to authorities, a contributing factor in effective reading. There are no such tests of flexibility of rate published, but a test of this order would be an aid to instruction.

The instrument.-- To measure flexibility of reading rate in accordance with the difficulty of the material, two selections of over 2,500 words each were chosen. One of these selections was easy to read and the other difficult, as measured by formula. The purpose was the same for both: to read as rapidly as possible and still understand the material well enough to be able to answer questions on it.

To measure flexibility of reading rate in accordance with the purpose of reading the material, two other selections of over 2,500 words each were chosen. One of these selections was to be read for general information about the story and the other for complete mastery of the material. The difficulty level of these two selections was held constant. Each of the four reading selections was followed by a set of thirty multiple-choice items, to be answered without looking back.
The procedure. — The test was administered to a population of 601 pupils in the thirteenth grade. These testees read each selection for five minutes, at the end of which they stopped reading, marked the last word read, and answered questions based on the material as far as they had read.

Data concerning reading rates and comprehension on each of the four subtests were secured. These were analyzed to determine the extent of flexibility as measured by the Reading Purpose Test, and the relationships that existed between flexibility and other elements as measured by the test.

2. Conclusions

Flexibility of rate. — The differences between the mean reading rates on the subtests had a range of from 239 words per minute to 292 words per minute indicating that there was a significant variation in the reading rate. This variation was not so large as might have been expected probably because (1) the selections were chosen to represent normal reading situations and not extremes of difficulty or purpose, and (2) the population tested had not been instructed in the ability to vary the rate of reading.

The mean flexibility score for varying the rate in accordance with the difficulty of the material was found to be larger than that of varying the rate in accordance with the purpose of reading. This, plus other data throughout the analysis of results, suggests that the difficulty level of materials read has more influence on the rate of reading than does the purpose.

An examination was made of the groups who reversed their rates by
reading the harder selection more rapidly and the selection to be read for mastery more rapidly. This revealed that in comprehension of the selections read according to the difficulty, the "reverse" group fell considerably below the group whose flexibility rate was positive.

On the other hand, the group who reversed flexibility rate according to the purpose comprehended slightly better. The conclusion to be drawn from this is that slowing down to read more difficult materials is essential to good comprehension; and that it is not essential to slow down for mastery of the material, assuming that the materials under consideration are of the same difficulty level.

Relative to this last point, it is a known fact that the call to read for complete mastery engenders an alertness above normal, and such a mental set would render the reader capable of reading with greater comprehension and speed. This probably accounts, in part at least, for the maintenance of comprehension of the readers who did not slow down according to the purpose as indicated in this test.

Reliability of the test. — The reliability of the rate scores appears to be high as long as the reading period is of a reasonable length and means of measuring the time interval for reading is accurate and consistent.

A test of the significance of the two mean rates, whose difference is the flexibility score, showed them to be highly significant.

Reliability of internal consistency was not, according to the Hoyt method, impressive, ranging for the four subtests from .59 to .70. Inasmuch as this was primarily a speed test and not all items attempted by all testees, there is some question about such an estimate.
Validity of the test. -- An analysis of the purposes of the test and of the desired outcomes by psychological and logical methods revealed a sufficient degree of commonality to support the belief that the test is a valid measure of flexibility of reading rate.

To obtain a measure of the validity of the items, an analysis of the discriminatory power of each item was carried out. Results of this showed the average item validity coefficient to be .255.

Relationships. -- Relationship data indicated that flexibility of reading rate is, in general, a rather independent characteristic, showing little direct relationship to speed and comprehension as usually measured. In comparisons with outside criteria, correlation coefficients show small relationships, suggesting that flexibility as measured on the Reading Purpose Test is a separate factor, dissimilar to reading ability, mental ability or achievement as measured by outside criteria.

This inclination toward "unrelatedness" would seem to imply that the ability to vary the rate of reading in accordance with the difficulty of the material and in accordance with the purpose of reading is acquired rather than innate.

3. Limitations of the Study

In the construction of an instrument, particularly where no other exists, an author cannot help but be aware of certain limitations of either the instrument or of the techniques by which that instrument was evaluated. Below are listed some limitations of this study.

1. In an effort to determine the relative influence of difficulty of material and of purpose in varying the rate of reading, the
"purpose" part of the test, while it served its purpose, did not constitute as designed, a very discriminatory measure. In other words, in a flexibility test, the call to read for mastery would more normally be applied to more difficult material. In constructing a test to measure flexibility, the constructor would not be concerned with holding either the purpose or the difficulty level constant. In fact, the highest degree of flexibility would result from various combinations of these two factors.

2. The absence of a parallel form of the test.

3. The absence of an available test of flexibility of rate according to difficulty and purpose for comparisons.

4. Absence of a population which had been instructed in the ability to vary the rate of reading.

5. Absence of any method by which to analyze the influence of the "interest factor" in determining rates for the various selections.

6. Avoidance of extremes in the difficulty level and in the purposes of the subtest, constituted a limitation in the range of flexibility scores. These two factors offer a wide range; much of which was not and could not be used in the Reading Purpose Test. Varying the rate should include some measurement of skimming, or reading for the gist of the matter, or reading to locate certain information.

7. The fact that students were not allowed to finish all the reading and answer all the questions proved to be a limitation in analyzing the data, for a more reliable estimate of internal consistency.
4. Recommendations for Further Research

Some recommendations for further study of the Reading Purpose Test are:

1. Revision of the items shown to be weak.
2. Construction of a parallel form.
3. Revision of the subtest to be read for mastery, increasing the difficulty of the material.
4. Administration of the Reading Purpose Test, timed, but allowing each testee to complete the reading and answer all items as a basis for (1) a split-half reliability estimate, (2) a true relation between rate and comprehension.
5. An investigation into related factors contributing to rate, such as interest in the material, familiarity with it and motivation.
6. A study of those who learn to vary reading rate compared to those who are not able to develop this ability.
7. Successful methods for teaching flexibility in the classroom.
8. Inclusion of a wider variety of reading for many different purposes.

5. Implications for Instruction

There is need for instruction in the ability to vary the rate of reading according to difficulty of material and purpose. "A major problem seems to be that we have no instrument suitable to check our objectives of developing flexibility, and therefore have a tendency to ignore this phase of reading instruction."

Results of this study indicate that flexibility of reading rates can be measured to provide instructors with information concerning the ability of a group to vary the rate of reading. From scores of the test, needs of the group may be ascertained: whether the need is for greater speed, improved comprehension, or for greater flexibility of reading rate.

Correlations indicate that flexibility of reading rate is sufficiently independent to warrant the conclusion that it should be taught as a separate skill.

For diagnostic purposes, the Reading Purpose Test provides separate measures of reading rates and of comprehension ability. It would be of value to the instructor to be able to locate the too-rapid readers who are not comprehending; or to locate the too-slow readers who are overly-cautious.

Further provision has been made in the Reading Purpose Test for a "scaled score." This could be used by the instructor as a means of obtaining a combined speed and comprehension score. By penalizing the reader's speed for each error in comprehension, a scaled or corrected score would yield a comprehension rate. As an example, the instructor might use one hundred words per error to be deducted from the total number of words read. This number was arbitrarily chosen since there is approximately one question per one hundred words of text. The instructor could specify the number of words for penalty in accordance with the abilities of the group. By posting the number thus obtained on record graphs, students could be motivated to read more rapidly and with improved comprehension.

There is no apparent reason why flexibility of reading rate, as dealt with in this study, cannot be taught as an independent skill in
high school or college. The tendency has been until recently to stop the teaching of reading skills once pupils have learned the mechanics of reading. Today there is a growing realisation by many educators that certain reading skills, particularly those of a more refined nature, must be taught at the secondary school or college level for the great majority of students if they are to become proficient readers.
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Instructions for Administering

READING PURPOSE TEST

Pass out booklets, answer sheets and scoring pencils. Tell students not to open the booklets until told to do so. Have information items filled out on booklets and answer sheets.

Have students turn to page 3, and read aloud to them General Directions. Then have them turn to page 4 and read aloud the Directions for Reading Selection M. Then say KEEPING THIS PURPOSE IN MIND, BEGIN.

Start stop watch. At end of 2½ minutes, say MARK. CIRCLE THE WORD YOU ARE READING AND GO RIGHT ON READING. At the end of 2½ minutes more (total of 5 minutes) say, STOP. CIRCLE THE WORD YOU READ LAST AND TURN TO THE QUESTIONS FOLLOWING THE SELECTION.

Give the following directions before the answering of questions on the first selection:

1. MAKE SOLID, GLOSSY MARKS BETWEEN THE VERTICAL LINES IN THE APPROPRIATE SPACE ON THE ANSWER SHEET.

2. IF YOU MAKE A MISTAKE, ERASE IT COMPLETELY.

3. ANSWER QUESTIONS ONLY SO FAR AS YOU READ. AS SOON AS YOU COME TO QUESTIONS NOT COVERED IN THE MATERIAL, STOP ANSWERING.

4. THERE WILL NOT BE A TIME LIMIT BUT THERE WILL BE AN ALLOTTED TIME. YOU WILL BE TOLD WHEN THERE ARE TWO MINUTES REMAINING AND ONE MINUTE. (Note: allow four minutes, warming after 2 and 3. If any need more time, allow an extra minute or so.)

Repeat this process for each of the next selections, N, R and S.

At the end, have the answer sheet tucked in the booklet and collected along with the pencils.
READING PURPOSE TEST

By Charles T. Letson

Name ____________________ Grade ______ Date ____________
(Last) (First)

School ____________________ City __________ State ________

Date of Birth __________ Age ______ Instructor ___________________

**SCORING**

<table>
<thead>
<tr>
<th>Selection</th>
<th>Comprehension</th>
<th>Rates of Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Score</td>
<td>Mark-1</td>
</tr>
<tr>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td></td>
<td></td>
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<tr>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
GENERAL DIRECTIONS

This is a test to measure your ability to read material for a specific purpose. It is very important, therefore, that you pay particular attention to the directions which precede each of the four selections. These directions will state the purpose for which you are to read the selection.

At intervals during the reading of each selection the instructor will say, "Mark." This means that you are to circle the word you are reading at that moment and continue reading. When the instructor says, "Stop reading," turn immediately to the questions following the selection and answer them without looking back. If you have not finished reading the selection, and it is not expected that you will, answer questions only as far as you have read. Do not begin any selection until you are told to.

Remember to keep in mind your PURPOSE for reading each selection!

CONTENTS AND ACKNOWLEDGMENTS

Selection M
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Selection N

Selection R

Selection S

(Wait for signal to turn page)
YOUR PURPOSE in reading the selection which follows:

To read the material as rapidly as you can and still understand it so that you can answer some questions that will check your understanding of the selection.

SELECTION M

It was late afternoon at our desert airdrome. The sun was lazy, the air was warm, and a faint haze of propeller dust hung over the field, giving it softness. It was time for the planes to start coming back from their mission, and one by one they did come--big Flying Fortresses and fiery little Lightnings. Nobody paid a great deal of attention, for this returning was a daily routine thing.

Finally they were all in--all, that is, except one. Operations reported a Fortress missing. Returning pilots said it had lagged behind and lost altitude just after leaving the target. The last report said the Fortress couldn't stay in the air more than five minutes. Hours had passed since then. So it was gone.

Ten men were in that plane. The day's accomplishments had been great, but the thought of ten lost friends cast a pall over us. We had already seen death that afternoon. One of the returning Fortresses had released a red flare over the field, and I had stood with others beneath the great plane as they handed its dead pilot, head downward, through the escape hatch onto a stretcher.

The faces of his crew were grave, and nobody talked very loud. One man clutched a leather cap with blood on it. The pilot's hands were very white. Everybody knew the pilot. He was so young, a couple of hours before. The war came inside us then, and we felt it deeply.

After the last report, half a dozen of us went to the high control tower. We went there every evening, for two things--to watch the sunset, and to get word on the progress of the German bombers that frequently came just after dusk to blast our airdrome.

The sunsets in the desert are truly things with souls. The violence of their color is incredible. They splatter the sky and the clouds with a surging beauty. The mountains stand dark against the horizon, and palm trees silhouette themselves dramatically against the fiery west.

As we stood on the tower looking down over this scene, the day began folding itself up. Fighter planes, which had patrolled the field all day, were coming in. All the soldiers in the tent camps had finished supper. That noiseless peace that sometimes comes just before dusk hung over the airdrome. Men talked in low tones about the dead pilot and the lost Fortress. We thought we would wait a few minutes more to see if the Germans were coming over.

And then an electric thing happened. Far off in the dusk a red flare shot into the sky. It made an arc against the dark background of the mountains and fell to the earth. It couldn't be anything else. It had to be. The ten dead men were coming home!

"Where's the flare gun? Gimme a green flare!" yelled an officer.

He ran to the edge of the tower, shouted, "Look out below!" and fired a green rocket into the air. Then we saw the plane--just a tiny black speck. It seemed almost on the ground, it was so low, and in the first glance we could sense that it was barely moving, barely staying in the air. Crippled and alone, two hours behind all the rest, it was dragging itself home.

I was a layman, and no longer of the fraternity that flies, but I could feel. And at that moment I felt something close to human love for that faithful, battered machine, that far dark speck struggling toward us with such pathetic slowness.

All of us stood tense, hardly remembering anyone else was there. With all our nerves we seemed to pull the plane toward us. I suspect a photograph would have shown us all leaning slightly to the left. Not one of us thought the plane would ever make the field, but on it came--so slowly that it was cruel to watch.

It reached the far end of the airdrome, still holding its pathetic little altitude. It skimmed over the tops of parked planes, and kept on actually reaching out--it seemed to us--for the runway. A few hundred yards more now. Could it? Would it? Was it truly possible?
They cleared the last plane, they were over the runway. They settled slowly. The wheels touched softly. And as the plane rolled on down the runway the thousands of men around that vast field suddenly realized that they were weak and that they could hear their hearts pounding.

The last of the sunset died, and the sky turned into blackness, which would help the Germans if they came on schedule with their bombs. But nobody cared. Our ten dead men were miraculously back from the grave.

And what a story they had to tell! Nothing quite like it had happened before in this war.

The Tripoli airdrome, which was their target, was heavily defended, by both fighter planes and antiaircraft guns. Flying into that hailstorm, as one pilot said, was like a mouse attacking a dozen cats.

The Thunderbird--for that was the name of their Fortress--was hard hit just as it dropped its bomb load. One engine went out. Then a few moments later the other engine on the same side went. When both engines went out on the same side it was usually fatal. And therein lay the difference of that feat from other instances of bringing damaged bombers home.

The Thunderbird was forced to drop below the other Fortresses. And the moment a Fortress dropped down or lagged behind, German fighters were on it like vultures. The boys didn't know how many Germans were in the air, but they thought there must have been thirty.

Our Lightning fighters, escorting the Fortress, stuck by the Thunderbird and fought as long as they could, but finally they had to leave or they wouldn't have had enough fuel to make it home.

The last fighter left the crippled Fortress about forty miles from Tripoli. Fortunately, the swarm of German fighters started home at the same time, for their gas was low too.

The Thunderbird flew on another twenty miles. Then a single German fighter appeared, and dived at them. Its guns did great damage to the already crippled plane, but simply couldn't knock it out of the air.

Finally the fighter ran out of ammunition, and left. Our boys were alone with their grave troubles. Two engines were gone, most of the guns were out of commission, and they were still more than four hundred miles from home. The radio was out. They were losing altitude, five hundred feet a minute--and then they were down to two thousand.

The pilot called up his crew and held a consultation. Did they want to jump? They all said they would ride the plane as long as it was in the air. He decided to keep going.

The ship was completely out of trim, cocked over at a terrible angle. But they gradually got it trimmed so that it stopped losing altitude.

By then they were down to nine hundred feet, and a solid wall of mountains ahead barred the way homeward. They flew along parallel to those mountains for a long time, but they were then miraculously gaining some altitude. Finally they got the thing to fifteen hundred feet.

The lowest pass was sixteen hundred feet, but they came across at fifteen hundred. Explain that if you can! Maybe it was as the pilot said: "We didn't come over the mountains, we came through them."

The co-pilot said, "I was blowing on the wind-shield trying to push her along. Once I almost wanted to reach a foot down and sort of walk us along over the pass."

And the navigator said, "If I had been on the wingtip, I could have touched the ground with my hand when we went through the pass."

The air currents were bad. One wing was cocked away down. It was hard to hold. The pilots had a horrible fear that the low wing would drop clear down and they'd roll over and go into a spin. But they didn't.

The navigator came into the cockpit, and he and the pilots navigated the plane home. Never for a second could they feel any real assurance of making it. They were practically rigid, but they talked a blue streak all the time, and cussed--as airmen do.

Everything seemed against them. The gas consumption doubled, squandering their precious supply. To top off their misery, they had a bad headwind. The gas gauge went down and down.

At last the navigator said they were only forty miles from home, but those forty miles passed as
though they were driving a horse and buggy. Dusk, coming down on the sandy haze, made the vast flat desert an indefinite thing. One oasis looked exactly like another. But they knew when they were near home. Then they shot their red flare and waited for the green flare from our control tower. A minute later it came—the most beautiful sight that crew had ever seen.

When the plane touched the ground they cut the switches and let it roll. For it had no brakes. At the end of the roll the big Fortress veered off the side of the runway. It climaxed its historic homecoming by spinning madly around five times and then running backwards for fifty yards before it stopped. When they checked the gas gauges, they found one tank dry and the other down to twenty gallons.

Deep dusk enveloped the field. Five more minutes and they never would have found it. The weary, crippled Fortress had flown for the incredible time of four and one-half hours on one pair of motors. Any pilot will tell you it's impossible.

That night, with the pilot and some of the crew, we drank a toast. One visitor raised his glass: "Here's to your safe return."

But the pilot raised his own glass and said instead, "Here's to a damned good airplane!"

And the others of the crew raised their glasses and repeated, "Here's to a damned good airplane!"

Perhaps the real climax was that during the agonizing homeward crawl that one crippled plane shot down the fantastic total of six German fighters. The score was officially confirmed.

The Fortress crew was composed of men who were already veterans of the war in the air. They had been decorated for missions over Europe. They already had two official kills and several probables to their credit. The Tripoli mission, which only by a miracle was not their last, was their twenty-second.

The skipper of the prize crew was 23-year-old Lieutenant John L. Cronkhite, of St. Petersburg, Florida. They called him Cronk. He was short, with a faint blond mustache and a very wide mouth, from which the words came in a slow drawl. His shoulders were broad, his arms husky. Usually he didn't wear a tie. He said he wasn't married because nobody would have him.

When the Fortress finally reached home, Cronkhite decided to go through the copilot's window onto the wing. As he stepped onto the wing his feet hit some oil and flew out from under him, and he went plummeting off the high wing onto the hard ground. The doctors thought he had been wounded, and picked him up and put him into an ambulance.

Cronkhite didn't want to be picked up. "I wouldn't have given a damn if I had broken a leg when I fell off the wing, I was so glad to be on the ground again. I just felt like lying there forever."

Cronk's father was a St. Petersburg florist. He had three pictures of his mother and father in his room. I spent the evening with Cronk and his copilot and navigator after their return from the dead. When he walked into the room Cronk picked up something from the bed.

"Hell, I can't be dead," he said. "Here are my dog tags. I forgot to take them with me. I can't be dead, for they wouldn't know who I was."

He and his copilot were bound by an unbreakable tie then, for together they had pulled themselves away from death.

The copilot was Lieutenant Dana F. Dudley, of Mapleton, Maine. This is a little town of eight hundred, and Dud said he was the only pilot who ever came from there. He was a tall and friendly fellow, who got married just before coming overseas. His wife was in Sarasota, Florida. Dud said one of the German fighters dived toward his side of the plane, and came on with bullets streaming until it was only a hundred feet away. At that moment, what might have been his last thought passed through Dud's head: Gee, I'm glad I sent my wife that $225 this morning.

The navigator was Lieutenant Davey Williams, 315 Miller Street, Fort Worth, Texas. He too had been recently married. The pilots gave Davey all the credit for getting them home. He was about the busiest man on the trip, navigating with one hand and managing two machine guns with the other. When they thought they were done for, Davey said to the pilots, "I'll bet those guys back home have got our stuff divided up already."

He said he thought mainly about how he was going to get word to his family that he was a German prisoner, and he felt sure that friends of his would get to go home to America while he'd have to spend the rest of the war in a prison camp.
The airdromes were full of such stories about freakish escapes from death.

Our airmen had been dishing it out to the Germans; on the other hand, they had been taking it too. Our ratio of losses was vastly lower than that of the enemy, yet our boys had to fly constantly against terrible opposition. It made quick veterans out of them. They went through more in Africa than they ever did on missions to Europe from English bases.

It was generally agreed among airmen that the bombing runup over Bizerte was one of the hottest spots in the world to fly through. It lasted less than a minute, but they had to fly straight and steady through an absolute cloudburst of noise and black smoke puffs—little black puffs of death everywhere they looked—and after a few of those something began to jump inside them.

There was no lack of bravery among our bomber and fighter pilots. But also they were human beings, and I doubt if there was one among them who wouldn't have liked to be sent home. The English had long had a system of resting aircrewmens after a certain number of missions over enemy territory. This consisted of transferring such men to noncombatant flying for several months, after which they went back for another tour of combat duty. Rumors were rampant among our fliers that we would soon have such a system.

Many of our pilots had executed as many as twenty-five missions and were certainly due for a rest of some kind soon. They banked all their hope in a belief that they would be transferred back to America. Wishfulness became almost fact, and I heard pilot gunners say, "I've got half enough trips now to go home" or "I've got two-thirds enough."

The fact was that no permanent system of posting the men for leave or transfer had been worked out at that time. But some crews were going home before long. They were going back for a much-deserved respite from combat, and to train and organize new crews. After several months they would probably return and start a second tour of combat missions. Many British pilots were then on their third tour of combat duty.

It was unlikely that our air crews would ever have a system whereby a certain number of missions would earn a one-way ticket home. It would have been wonderful for them to know they could quit the front forever after thirty missions and spend the rest of the war working at home, but airmen were needed too badly to permit that. It was more likely that some crews would be sent home just for a while and that others would take their rest periods in Africa.

There were discussions of rest camps in the mountains, and recreation centers staffed in such a way as to give the men some American female companionship—that being one of the most important lacks of the soldiers on foreign soil. But whatever the system, and whatever the number of missions before posting, there would be a wild rush for the planes when that magic last mission came up. If we were working our men hard we could take comfort from the fact that the Germans were working theirs hard too.

New bombers and fighters arrived several times a week, in little groups. We heard reports that absolute floods of planes were on the way, that planes were backed up all along the route clear to Miami. I talked to one crew that was ready to go into action only six days after leaving Connecticut.

Also, specialists from Washington popped in on quick flying trips, stayed a few days, and headed back across the ocean to give firsthand information on war needs at the front. I am sure that what they saw must have made their eyes pop out of their heads. Things were being done over here that just weren't possible on paper.
Questions on
Selection M

Directions: Answer the following questions by blacking in the appropriate space on your answer sheet.

1. One day all the planes returned except
   1. a Lightning
   2. a reconnaissance plane
   3. a Flying Fortress
   4. one carrying a senator

2. The number of men aboard the missing plane was
   1. two
   2. five
   3. eight
   4. ten

3. The last message had said that the plane couldn't stay in the air for more than
   1. five minutes
   2. thirty minutes
   3. one hour
   4. two hours

4. The men at the base had already seen death come that day to
   1. a parachutist whose 'chute had failed to open
   2. the gunner in the tail of a returning Fortress
   3. the pilot of a bomber
   4. a mechanic accidentally killed on the ground

5. One reason why the author and some of the men went to the control tower was to
   1. watch the sunset
   2. radio the missing plane
   3. check on the weather for the next day
   4. look for any signs of the missing plane

6. It was customary at this time of the day for the Germans to
   1. send over reconnaissance planes
   2. drop leaflets
   3. strafe the chow lines
   4. bomb the airdrome

7. The first indication that the missing plane was not lost came from a
   1. radar signal
   2. radio message
   3. red flare
   4. reconnaissance plane

8. The answer from the base to the missing plane was
   1. radar signal
   2. searchlight
   3. green flare
   4. radio message

9. The missing plane returned at
   1. dawn
   2. noon
   3. dusk
   4. midnight

10. The men on the plane said that the main damage to the plane was
    1. loss of a motor
    2. loss of two motors
    3. damage to its controls
    4. leak in the fuel tank

11. Escorting planes had to leave the Thunderbird because
    1. antiaircraft fire was so heavy
    2. they were running out of fuel
    3. they had to stay with the fleet
    4. they were ordered to do so

12. They said the pilot had held a consultation to find out if they
    1. should bail out
    2. should radio for aid
    3. should land behind the enemy lines
    4. try to repair the damages
13. Flying at an altitude of 1500 feet, the plane crossed a mountain of
1. 1300 feet
2. 1400 feet
3. 1500 feet
4. 1600 feet

14. During the flight home the crew
1. sang songs
2. kept quiet
3. talked and cursed
4. relaxed philosophically

15. After the plane landed it was found to have
1. five gallons of gas
2. twenty gallons of gas
3. fifty gallons of gas
4. one hundred gallons of gas

16. The toast they drank that night was
1. Here's to your safe return
2. Here's to a lucky crew
3. Here's to a damned good plane
4. Here's to a brave crew

17. The plane was called the Thunderbird because
1. that was the name of that type of plane
2. that was the nickname of the plane
3. that was the kind of motor it had
4. it resembled a thunderbird in appearance

18. It was officially confirmed that this crippled plane during its return had shot down
1. two enemy planes
2. four enemy planes
3. six enemy planes
4. eight enemy planes

19. The pilot was taken from the plane in an ambulance because he had
1. slipped getting out of the plane
2. been wounded
3. passed out from exhaustion
4. broken a leg trying to repair a damaged motor

20. The pilot discovered that he
1. neglected to have the plane checked before taking off
2. taken the wrong navigation tables with him
3. forgotten to sign out before the mission
4. left his dog tags at the base

21. The thought that went through the copilot's mind as a German fighter dived was
1. This is it
2. I hope they miss me
3. I wish I had finished high school
4. I'm glad I sent the wife that money this morning

22. The navigator had said when they thought they were done for that he would bet
1. The Germans will torture us if we are captured
2. The guys back home have got our stuff divided already
3. The pearly gates will soon be opening
4. We could bail out and find our way out of the desert

23. According to the author, the ratio of our losses in air combat at this particular base was
1. higher than the Germans'
2. lower than the Germans'
3. about the same
4. impossible to determine

24. The author thinks that in bombing missions over Africa our boys
1. had it harder than in other areas
2. had it easier than in other areas
3. didn't seem to mind it so much
4. considered desert bombing good sport

25. The author says that after a few bombing missions
1. the men became hardened to it
2. many of the men became so jittery they were unfit
3. the chances were heavy that a man would not come back
4. something began to jump inside the men
26. As for a system for resting aircrewmen, the selection indicates that the
   1. British crews did not want any rest
   2. the American crews did not want any rest
   3. Americans had a system
   4. British had a system

27. The reason that our men didn't return home permanently after combat service was that
   1. they preferred to remain in combat service
   2. there were no places for them at home
   3. they were needed too badly
   4. this would have broken up bomber teams

28. The author thinks that in relation to the German air force
   1. American crews were working harder
   2. German crews were working harder
   3. both were working about the same
   4. neither was working too hard

29. The author says that specialists from Washington who came over for firsthand information
   1. saw things that opened their eyes
   2. saw things they weren't supposed to see
   3. were always getting in the way
   4. were helpful in cheering the men up

30. According to the author, the airdromes were full of stories of
   1. freakish escapes
   2. heroic deeds
   3. wild parties
   4. mechanical failures

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<tr>
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Directions for reading Selection N

YOUR PURPOSE in reading the selection which follows:

To read the material as rapidly as you can and still understand it so that you can answer some questions that will check your understanding of the selection.

SELECTION N

Landfall and Departure mark the rhythmical swing of a seaman's life and of a ship's career. From land to land is the most concise definition of a ship's early fate. A "Departure" is not what a vain people of landsmen may think. The term "Landfall" is more easily understood; you fall in with the land, and it is a matter of a quick eye and of a clear atmosphere. The Departure is not the Ship's going away from her port any more than the Landfall can be looked upon as the synonym of arrival. But there is this difference in the Departure: that the term does not imply so much a sea event as a definite act entailing a process--the precise observation of certain landmarks by means of the compass card.

Your Landfall, be it a peculiarly shaped mountain, a rocky headland, or a stretch of sand-dunes, you meet at first with a single glance. Further recognition will follow in due course; but essentially a Landfall, good or bad, is made and done with at the first cry of "Land ho!" The Departure is distinctly a ceremony of navigation. A ship may have left her port some time before; she may have been at sea, in the fullest sense of the phrase, for days; but, for all that, as long as the coast she was about to leave remained in sight, a southern-going ship of yesterday had not in the sailor's sense begun the enterprise of a passage.

The taking of Departure, if not the last sight of the land, is, perhaps, the last professional recognition of the land on the part of a sailor. It is the technical, as distinguished from the sentimental, "good-by." Henceforth he has done with the coast astern of his ship. It is a matter personal to the man. It is not the ship that takes her Departure by means of cross-bearing which fix the place of the first tiny pencil-cross on the white expanse of the trackchart, where the ship's position at noon shall be marked by just such another tiny pencil-cross for every day of her passage. And there may be sixty, eighty, any number of these crosses on the ship's track from land to land. The greatest number in my experience was a hundred and thirty of such crosses from the pilot station at the Sand Heads in the Bay of Bengal to the Scilly's Light. A bad passage...
backing up my self-confidence, though invisible to my eyes behind a maple-wood veneered cabin-door with a white china handle.

The good MacWillis would not even come out to his meals, and fed solitarily in his holy of holies from a tray covered with a white napkin. Our steward used to bend an ironic glance at the perfectly empty plates he was bringing out from there. This grief for his home, which overcomes so many married seamen, did not deprive Captain MacWillis of his legitimate appetite.

Some commanders in their periods of seclusion are constantly grumpy, but a grumpy recluse cannot worry his subordinates, whereas a man in whom the sense of duty is strong (or, perhaps, only the sense of self-importance), and who persists in airing on deck his moroseness all day--and perhaps half the night--becomes a grievous infliction. He walks the poop darting gloomy glances as though he wished to poison the sea, and snaps your head off savagely whenever you happen to blunder within ear-shot. And these vagaries are the harder to bear patiently, as becomes a man and an officer, because no sailor is really good-tempered during the first few days of a voyage. There are regrets, memories, the instinctive longing for the departed idleness, the instinctive hate of all work. Besides, things have a knack of going wrong at the start, especially in the matter of irritating trifles. And there is the abiding thought of a whole year or more or less hard life before one. Yes; it needed a few days after the taking of your departure for a ship's company to shake down into their places, and for the soothing deep-water ship routine to establish its beneficient sway.

It is a great doctor for sore hearts and sore heads, too, your ship's routine, which I have seen soothe--at least for a time--the most turbulent of spirits. There is health in it, and peace, and satisfaction of the accomplished round; for each day of the ship's life seems to close a circle within the wide ring of the sea horizon. It borrows a certain dignity of sameness from the majestic monotony of the sea. He who loves the sea loves also the ship's routine.

Nowhere else than upon the sea do the days, weeks, and months fall away quicker into the past. They seem to be left astern as easily as the light air-bubbles in the swirls of the ship's wake, and vanish into a great silence in which your ship moves on with a sort of magical effect. They pass away, the days, the weeks, the months. Nothing but a gale can disturb the orderly life of the ship; and the spell of unshaken monotony that seems to have fallen upon the very voices of her men is broken only by the near prospect of a Landfall.

Then there is the spirit of the ship's commander stirred strongly again. It seems unable to abide for many seconds together in the holy of holies of the captain's stateroom; it will go out on deck and gaze ahead, through straining eyes, as the appointed moment comes nearer. Meanwhile, the body of the ship's commander is being enfeebled by want of appetite; by a disregard for food, sleep, and all the ordinary comforts, such as they are, of sea life. In one or two cases I have known that detachment from thegrosser needs of existence to remain regrettably incomplete in the matter of drink.

But these two cases were, properly speaking, pathological cases, and the only two in all my sea experience. In one of these two substances of a craving for stimulants, developed from sheer anxiety, I cannot assert that the man's seaman-like qualities were impaired in the least. It was a very anxious case, too, the land being made suddenly, close-to, on a wrong bearing, in thick weather, and during a fresh on-shore gale. Going below to speak to him soon after, I was unlucky enough to catch my captain in the very act of hasty cork-drawing. The sight, I may say, gave me an awful scare. I was well aware of the morbidly sensitive nature of the man. Fortunately, I managed to draw back unseen, and taking care to stamp heavily with my sea-boots at the foot of the cabin stairs, I made my second entry. But for this unexpected glimpse, no act of his during the next twenty-four hours could have given me the slightest suspicion that all was not well with his nerve.

Quite another case, and having nothing to do with drink, was that of poor Captain Blake. He used to suffer from sick headaches, in his young days, every time he was approaching a coast. Well over fifty years of age when I knew him, short, stout, dignified, perhaps a little pompous, he was a man of a singularly well-informed mind, the least sailor-like in outward aspect, but certainly one of the best seamen whom it has been my good luck to serve under. He was a Plymouth man, I think the son of a country doctor, and both his elder boys were studying medicine. He commanded a big London ship, fairly well known in her day. I thought no end of him, and that is why I remember with a peculiar satisfaction the last
words he spoke to me on board his ship after an eighteen months' voyage. It was in the dock of Dundee, where we had brought a full cargo of jute from Calcutta. We had been paid off that morning, and I had come on board to take my sea chest away and to say good-bye. In his slightly lofty but courteous way he inquired what were my plans. I replied that I intended leaving for London by the afternoon train, and thought of going up for examination to get my master's certificate. I had just enough service for that. He commended me for not wasting my time, with such an evident interest in my case that I was quite surprised; then, rising from his chair, he said:

"Have you a ship in view after you have passed?"

I answered that I had nothing whatever in view.

He shook hands with me and pronounced the memorable words:

"If you happen to be in want of employment, remember that as long as I have a ship you have a ship, too."

In the way of compliment there is nothing to beat this from a ship's captain to his second mate at the end of a voyage, when the work is over and the subordinate is done with. And there is a pathos in that memory, for the poor fellow never went to sea again after all. He was already ailing when we passed St. Helena; was laid up for a time when we were off the Western Islands, but got out of bed to make his Landfall. He managed to keep up on deck as far as the Downs, where, giving his orders in an exhausted voice, he anchored for a few hours to send a wire to his wife and take aboard a North Sea pilot to help him sail the ship up the east coast. He had not felt equal to the task by himself, for it is the sort of thing that keeps a deep-water man on his feet pretty well night and day.

When we arrived in Dundee, Mrs. Blake was already there, waiting to take him home. We travelled up to London by the same train; but by the time I have managed to get through with my examination the ship had sailed on her next voyage without him, and, instead of joining her again, I went by request to see my elder commander in his home. This is the only one of my captains I have ever visited in that way. He was out of bed by then, "quite convalescent," as he declared, making a few tottering steps to meet me at the sitting room door. Evidently he was reluctant to take his final cross-bearings of this earth for a Departure on the voyage to an unknown destination a sailor ever undertakes. And it was all very nice—the large, sunny room; his deep easy-chair in a bow window, with pillows and a footstool; the quiet, watchful care of the elderly, gentle woman who had borne him five children, and had not, perhaps, lived with him more than five full years out of the thirty or so of their married life. His youngest boy, a late-comer, a great cricketer it seemed, twelve years old or thereabouts, chattered enthusiastically of the exploits of W. G. Grace. As I remember his eldest son, too, a newly-fledged doctor, who took me out to smoke in the garden, and, shaking his head with professional gravity, but with genuine concern, muttered: "Yes, but he doesn't get back his appetite. I don't like that--I don't like that at all." The last sight of Captain Blake I had was as he nodded his head to me out of the bow window when I turned round to close the front gate.

It was a distinct and complete impression, something that I don't know whether to call a Landfall or a Departure. Certainly he gazed at times very fixedly before him with the Landfall's vigilant look, this sea-captain seated incongruously in a deep-back chair. I learned more of him in that interview than in the whole eighteen months we had sailed together. It was then that he mentioned to me how, as a young commander, he was always ill for a few days before making land after a long voyage. Afterwards, he added, as he grew older, all that nervousness wore off completely; and I observed his weary eyes gaze steadily ahead, as if there had been nothing between him and the straight line of sea and sky, where whatever a seaman is looking for is first bound to appear. But I have also seen his eyes rest fondly upon the faces in the room, upon the pictures on the wall, upon all the familiar objects of that home, whose abiding and clear image must have flashed often in his memory in times of stress and anxiety at sea. Was he looking out for a strange Landfall, or taking with an untroubled mind the bearings for his last Departure?

It is hard to say; for in that voyage from which no man returns Landfall and Departure are instantaneous, merging together into one moment of supreme and final attention. Certainly I did not remember any sign of faltering in the set expression of his wasted face, no hint of the nervous anxiety of a young commander about to make land on an uncharted shore. He had had too much experience of Departures and Landfalls! And had he not "served his time" in the famous copper-ore trade out of Bristol Channel, the work of the staunchest ships afloat, and the school of staunch seamen?
Questions on
Selection N

Directions: Answer the following questions by blacking in the appropriate space on your answer sheet.

1. The author says that the most precise definition of a ship's earthly fate is
   1. ability to withstand the hardships of the sea
   2. from cradle to the grave
   3. included in the ceremony of navigation
   4. from land to land

   1. ( )

2. The matter of a quick eye and a clear atmosphere pertains to
   1. Landfalls
   2. Departures
   3. decisions of the captains
   4. reading of the ship's compass

   2. ( )

3. The term Departure, according to the author, is not
   1. the ship's going away from port
   2. the observation of landmarks by a compass card
   3. the technical "good-by."
   4. the last professional sight of land

   3. ( )

4. The term Landfall, according to the author, is not
   1. a falling in with the land
   2. met with a single glance
   3. a synonym of arrival
   4. greeted with a cry of "Land ho!"

   4. ( )

5. Crosses on the ship's chart indicate her position each day at
   1. daybreak
   2. noon
   3. midafternoon
   4. nightfall

   5. ( )

6. The greatest number of crosses in the author's experience was
   1. 70
   2. 90
   3. 110
   4. 130

   6. ( )

7. A Landfall may be regarded as
   1. a lucky break
   2. a goal
   3. an arrival
   4. a misfortune

   7. ( )

8. Fogs, snow, gales with clouds and rain are, according to the author, enemies of
   1. Landfalls
   2. Departures
   3. both of these
   4. neither of these

   8. ( )

9. The only captain the author knew to take his departure without sadness was one who was leaving behind
   1. a quarrelsome wife
   2. a pet vice
   3. a welter of debts
   4. a raft of enemies

   9. ( )

10. Many captains would, for several days, react to the sadness of the departure by
    1. reprimanding the crew unmercifully
    2. staying alone in their quarters
    3. forbidding any singing or playing of games
    4. not addressing any of the crew

   10. ( )

11. According to the author, any seaman worthy of the name
    1. likes to be trusted
    2. can't be trusted
    3. likes to be left alone
    4. can be trusted if not left alone

   11. ( )

12. On his first voyage as chief mate with Captain MacWillis, the author felt that he was virtually a
    1. navigator
    2. cook
    3. swab
    4. commander

   12. ( )
13. Captain MacWillis' grief did not deprive him of his:
   1. good nature
   2. rum
   3. appetite
   4. tyranny

14. According to the author, the captain to avoid is the one:
   1. who loses himself in drink
   2. who keeps below all the time
   3. who has a strong sense of duty
   4. who has an irritable temper

15. The great doctor for sore hearts and sore heads too is the ship's:
   1. captain
   2. company
   3. routine
   4. fare

16. The author seems to feel that aboard ship time:
   1. is more leisurely
   2. passes rapidly
   3. is of the essence
   4. passes slowly

17. The one thing mentioned by the author that makes a captain restless and on edge is the prospect of:
   1. sighting land
   2. mutiny
   3. meeting another ship
   4. bad weather

18. In all his experiences at sea, the author ran across how many cases of captains who craved stimulants?
   1. two
   2. half a dozen
   3. seven
   4. a dozen

19. When the author once caught his captain in the act of taking a drink, he (the author):
   1. coughed
   2. drew back unseen
   3. apologized
   4. reprimanded him

20. When Captain Blake was younger, every time he approached the coast he suffered from:
   1. nausea
   2. temper tantrums
   3. sick headaches
   4. insomnia

21. The author regarded Blake, under whom he had served, as one of the:
   1. worst seamen
   2. most cruel seamen
   3. stupidest seamen
   4. best seamen

22. The author told Burke that upon leaving the ship his plans were to:
   1. go home for a visit
   2. take exams for a certificate
   3. get a job on a larger ship
   4. leave the maritime service

23. When they parted, Captain Blake told the author:
   1. If you ever want a recommendation, I'll be glad to oblige
   2. I hope our paths cross again
   3. If I have a ship, you have a ship too
   4. I have a feeling this is my last trip

24. Before the ship had landed it had been necessary to:
   1. enlist the aid of the crew in steering the ship
   2. replace the second mate
   3. take aboard a helping pilot
   4. relieve the captain of his command
25. Later, when the author visited Captain Blake he said that this visiting of his former captain was
1. a regular habit he tried to practice
2. the only captain he had ever visited
3. necessary in order to obtain the captain's signature
4. only the second captain he had ever visited
25. ( )

26. On this visit, the author found Blake
1. sick but comfortable
2. well but bogged down with domestic troubles
3. sick and in need of hospitalization
4. well but uncomfortable
26. ( )

27. The author learned that Blake's wife had borne him
1. no children
2. two sons
3. two daughters
4. five children
27. ( )

28. As the author took his leave of Blake, he
1. called it a Landfall
2. called it a Departure
3. did not know which to call it
4. called it both a Landfall and a Departure
28. ( )

29. Whatever a seaman is looking for is, according to the author, first bound to appear
1. after the first voyage
2. at his captain's instance
3. on his first voyage
4. on the horizon
29. ( )

30. The author says that in the voyage from which no man returns Landfall and Departure are
1. forgotten
2. instantaneous
3. separate entities
4. incompatible
30. ( )

Selection N
Number correct
Number attempted
Score ______ %

(Wait for signal to turn page)
Directions for reading Selection R

**YOUR PURPOSE** in reading the selection which follows:
To read it as rapidly as you can and in much the same way that you would read any adventure story. You will be asked some questions afterwards; these are only to make sure that you have read the material.

**SELECTION R**

Two natives were returning to their village one evening when they saw a great black mass standing motionless in the shadows of the huts. The men shouted to scare the thing away. At once the mass left the shadows and charged them at fearful speed. Then the men saw it was a large bull elephant.

They ran for their lives, each going in a different direction. One man was wearing a red blanket and that blanket was his death warrant, for the elephant followed him. The villagers cowering in their huts listened to the chase, powerless to help their friend. They heard the man’s screams as the elephant caught him. The great brute put one foot on his victim and pulled him to pieces with his trunk. Then he stamped the body into the ground and went away.

I was guiding two Canadian sportsmen through the Aberdare Forest in British East Africa when runners arrived from the chief of the murdered man’s village to ask my help in killing the elephant. The natives in Kenya knew me well, for I had lived there many years as a white hunter—taking out sportsmen to shoot big game and killing dangerous animals at the request of the government. The chief sent me word that this bull was a rogue elephant that had been destroying farms and terrorizing the district for many months. If the animal were not destroyed, he was sure to kill someone else sooner or later.

I was under contract to my two sportsmen. They were brothers, Allen and Duncan McMartin, and we had been in the bush many weeks looking for bongo, a rare antelope not easily come by. If I took off time to track down the rogue, it would lessen the brothers’ chances of getting a good trophy. Still, the McMartins told me to go ahead. I have seen other sportsmen who would not have been so generous. I started back at once with the runners, taking Saseeta, my Wakamba gun-bearer who had been with me many years.

When we arrived at the village, I was met by the chief. His name was Ngiri and we were old friends. But we had little time to talk of past adventures for the village was in a panic. The natives were afraid to venture into the shambas, as their maize fields are called, and many of them would not even leave their huts although the wattle shacks would have been little enough protection against a rogue elephant. Ngiri told me the rogue moved from village to village, destroying the maize fields as he went, and unless he was killed the villagers would be in dire straits indeed.

I was ready to start at once on the rogue’s spoor but Ngiri told me to wait. The bull was sure to despoil another village that evening and runners would bring in word during the night. Then I could start out on the fresh spoor in the morning and save a day or more of hard tracking. Ngiri was right. I could only wait and hope that the rogue would ruin a shamba and not take another life.

A few hours before dawn, a runner arrived all breathless from a village in the uplands some five miles away, telling of an attack.

As soon as dawn broke, Saseeta and I started out for the village. We had a stiff, uphill climb of nine thousand feet and the going was hard on the lungs. In the village we picked up the bull’s spoor at the trodden gap in the thorn-bush barricade around the shamba.

The tracks led us into a belt of dense bamboo, intergrowing with a tall plant like forest nettle that was anything but desirable to hunt in. We put up troops of Colibi and Sykes monkeys that bounded away through the trees and I prayed the rogue wouldn’t hear their startled crashing. In any case, the rotting bamboo underfoot made it impossible to walk quietly. I tried to step in the deep impressions made by the bull but his great stride dwarfed the efforts of mere man. Every time a red-legged francolin or tiny duiker antelope burst out of the cover, my heart gave a jump and I clutched my rifle. This kind of work is very different from trophy hunting where you can locate a herd in open bush and pick your bull. If it hadn’t been for my promise to Chief Ngiri, I would have turned back and tried again when the bull was in better country.
The bamboo opened out and we came on a spot where natives had been cutting wood. I swore to myself when I saw how the bull had shied away from the hated man smell and knocked the bamboos aside as he raced off through the grove. An elephant that has no fear of human scent at night in shambas will often grow panicky when he smells man in the jungle. So far the bull had been moving slowly, grazing as he went. Now he was trying to put as many miles as possible between him and the woodcutters' camp.

Saseeta and I looked at each other. He shrugged. It was hunting luck. Doggedly we set out on the great spoor which took us up an almost unbelievably steep slope to a high ridge. Soon a distinct crackling sound came from ahead. The noise came again. The bull was feeding in a grove of bamboo only a few feet ahead of us. I knew we must be almost up with him but I could see little through the tall stalks of bamboo hemming us in on every side.

Saseeta stopped and pointed with his lips toward our left. I could still see nothing but I slowly raised my rifle. I was using a .475 Jeffry #2, double-barrel express—a reliable gun that has never failed me or I wouldn't be writing these notes. The crashing sounded again only a few feet away. I held my breath, waiting for a shot.

Suddenly the noises ceased. There was absolute silence. Saseeta and I stood motionless and I wished I could stop the noise of my heart. It sounded to me like a drum. Then we heard the bamboos crack and sway as the bull turned and ran through the grove at full speed. That accursed breeze had given him our scent.

Saseeta and I looked at each other. Poor fellow, there is no profanity in his language but I was more fortunate and swore for us both. But I did so silently, for even though the elephant was now far away, we never spoke in the bush unless absolutely necessary.

The sun was beginning to drop and I knew it must be about five o'clock. We had been going since dawn through very hard country, and the elephant was now definitely alarmed. He might go for miles before he stopped. A wise man would have given up and returned to camp, but I have never been very wise, as far as hunting is concerned and I motioned to Saseeta that we'd continue.

After an hour's tracking, Saseeta gave a low, birdlike whistle—the recognized bush signal for "attention." We stopped and listened. I could hear the bull moving through the bamboo to our left. He was going downwind, trying to pick up our scent. Then the sounds stopped and I knew he had paused to listen. Instead of our stalking the elephant, he was now stalking us, and in my experience an elephant is a better stalker than a man.

I again considered turning back but I hated to break my promise to old Ngiri. My chances of getting a shot at the rogue were now very slim but Saseeta and I kept on. He could not have caught our scent as yet for we didn't hear him crashing away. He was still standing there, probably testing the air with his raised trunk. If he waited a few more minutes, we would be up to him. My eyes ached from the constant strain of peering ahead through the greenish yellow bamboo poles.

Suddenly I saw an indistinct, shadowy shape through the bamboo. I stopped dead and slowly raised my rifle. In the thick cover I could not tell head from tail. There was no gleam of white or yellow ivory to guide me. I held my breath until I nearly strangled to avoid the slightest noise and I knew Saseeta behind me was doing the same. I wanted badly to fire but was afraid of only wounding him. If he moved a few feet one way or the other I could tell where to shoot.

Then a sudden breeze swept through the bamboo. In an instant the bull got our scent and was gone.

There was no use in going on. Evening was falling and the camp many miles away. Saseeta and I slowly toiled back over the long route to the village.

The next morning a heavy fog covered the forest. The grass was heavy with dew and the air was distinctly chilly. While I was drinking my hot tea, a half-naked runner rushed into camp. During the night the bull had raided a shamba three miles away and destroyed the crop. The rogue was so cunning that he never raided the same village twice in succession and this made hunting him far more difficult.

Saseeta and I started off at once. When we reached the raided village, some of the natives volunteered to go along as guides. We picked up the bull's trail. By now, I knew every toenail in
his huge feet and was beginning to hate the sight of them. We followed him as fast as we could go. He was headed toward the hills and our guides assured me that the country was more open there. I hoped they were right.

We came on a spot where the bull had lain down at full length to sleep. I could see the imprint of his hide on the soft earth. This was encouraging, for if he had kept going, we never would have caught up with him. At the same time, I hoped we would not meet him in this thick stuff. We were in a secondary growth of bamboo, the stalks barely half as high as the long poles we had struggled through the previous day, and their tufted tops made it impossible to see beyond muzzle range.

Gusts of wind began to spring up making the long bamboos clank together. We moved forward with the greatest caution as it is difficult to tell whether wind-borne noises are caused by stems or by beast. This was the last place I wanted to meet the rogue, for when an elephant charges in bamboo, he knocks down the long, springy stems in front of him and you may be pinned under them before getting a chance to shoot. Even Saseeta, generally afraid of nothing, made an ugly grimace when I looked back as if to say, "This is a sticky business."

Suddenly we heard a movement in the bamboo ahead of us. Saseeta and I both stopped dead and I raised my rifle, waiting for the charge. Instead of the elephant, a magnificent male bongo broke out of the cover and stood in front of us. This was the very trophy the Me Martins and I had been after for many long weeks. Yet I could not shoot for fear of alarming the rogue. Often it happens you see the best trophies when you can't collect them.

While we were checking the signs, one of our native guides darted back to say he heard a noise in the bamboo ahead of us. This might mean much or little. Saseeta and I moved forward as quietly as possible. The wind was steady now and in our favor. We moved slowly through the high stalks. Then we heard the ripping noise of bamboo being torn apart. The bull was right ahead of us. He could not hear us above the noise of his own feeding, and if the wind held, we had him.

I saw his trunk appear above the stalks and pull a particularly succulent tip down to him. I crept along, trying to see through the stalks ahead and at the same time watch where I put my feet. Saseeta kept behind me, constantly testing the breeze with a small forest fungii puff. When shaken, these little puffballs give off a fine white powder almost like smoke and you can tell every shift of the wind by watching it. As we went deeper into the bamboo, the heavy growth cut off the breeze and the puffball dust hung motionless around Saseeta's hand. Then I saw the bull not fifteen yards from me.

I could hear him munching bamboo shoots as the line conveying elevator of his trunk hoisted them into his mouth. Between us was a network of bamboo poles through which I dared not shoot lest the bullet be deflected by one of the tough stems. Another of those terrible decisions. Should I take the chance and shoot? Or should I wait a few minutes and hope the bull would shift his position slightly and give me a shoulder shot? I would have to make up my mind quickly for we were so close that our smell would permeate to him in the absence of wind.

Suddenly the bull saw us. He did not run as he had the day before. Without the slightest hesitation or warning, he spun around and charged.

Almost before I could raise my rifle he was on top of us. His great ears were folded back close to his head and his trunk was held tight against the brisket. He was screaming with rage--a series of throaty "urrs" is the nearest I can describe the sound. I aimed the right barrel for the center of his skull, a point three inches higher than an imaginary line drawn from eye to eye, and fired. For an instant after the shot the bull seemed to hang in the air above me. Then he came down with a crash. He lay partly hidden by the bamboo, giving off high-pitched cries and low, gurgling sounds. I fired the second barrel through the center of his neck. Instantly the whole body relaxed, the hind legs stretched to their fullest. So ended the raider that had brought death and terror to Chief Ngiri's people.

Our local scouts had wisely vanished when the shooting started. Now they began to appear as if out of the earth. They gathered around the dead rogue and stood looking at him, so overjoyed that they could not speak. It must have seemed to them almost too good to be true that they could now work their fields in peace and security.
I sat down on one of the dead rogue's legs to fill my pipe. Everyone wanted to do something to express his gratitude, although all the poor fellows could do was to offer me a drink of cool water. Some of the sectional parts of the bamboo stems showed tiny openings bored by insects. The natives, selecting these sections, cut them down and pressed them on me. Each section contained a few mouthfuls of clean, cold water.

When I had finished my pipe, I examined the dead rogue's carcass. The ivory was very poor. The tusks were only about forty pounds each, whereas a really good bull will carry ivory weighing three times that much. Forest vegetation seems to lack calcium, for the forest elephants never have as good tusks as the bush dwellers. While examining the tusks, I found an old bullet hole at the base of the right hand tusk. With my knife I dug out a musket bullet, probably fired by an Arab ivory hunter years before. The bullet was embedded in the nerve center of the tusk and the pain must have been terrible. The constant suffering had driven the old bull mad and that was why he had become a rogue. No doubt the Arab who had fired the shot was now living comfortably with never a thought for the suffering he had caused to both man and beast.

We headed back toward camp. Everyone was in high spirits and elated with success. The leading scouts cut a path for us through the tangle with their knives, shouting and laughing as we progressed, a noisy contrast to the deathly stillness with which we had crept along that same trail a few hours before.

Back in camp, a great welcome was given Saseeta and me. Even the old and sick tottered out of their huts to thank us. The white man had not failed them. I sent word to Chief Ngiri that the raider was dead and then sat down to a well-earned supper.
Questions on
Selection R

Directions: Answer the following questions by blacking in the appropriate space on your answer sheet.

1. The red blanket worn by one of the men being chased by the rogue elephant
   1. protected the man
   2. served as a decoy
   3. caused his death
   4. repelled the beast

2. When the author was asked to aid in destroying the elephant he was
   1. a retired business man
   2. on a government mission
   3. a professional guide
   4. visiting relatives

3. The natives wanted to be rid of the elephant because he was
   1. harming people, not crops
   2. harming crops, not people
   3. harming crops and people
   4. harming the children

4. To hunt the elephant, the author took with him Saseeta, his
   1. cook
   2. guide
   3. gun bearer
   4. apprentice

5. The author helped the natives because
   1. they were old friends
   2. that was his job
   3. he feared trouble if he didn't aid them
   4. they would pay him

6. The author and Saseeta started out on fresh tracks the first day because
   1. they stumbled on them
   2. the rogue despoiled another village
   3. they knew where to look for them
   4. the dogs found them

7. One factor that seemed to hinder the hunter was
   1. a storm
   2. bamboo trees
   3. intrusion of other game
   4. faintness of the tracks

8. The author did not quit the hunt because
   1. he needed the money
   2. he had given his promise
   3. he never quit a job
   4. of his reputation

9. At the spot where natives had been cutting wood the elephant had
   1. fled
   2. killed a man
   3. knocked over wood piles
   4. broken the tool shed

10. The author says his gun was a reliable weapon because
    1. it was the best make
    2. it never had failed him
    3. he kept it in perfect order
    4. he kept it ready always

11. They were unsuccessful in their next encounter with the rogue because
    1. he scented them
    2. he heard them
    3. he saw them
    4. Saseeta lighted a cigarette

12. There being no profanity in Saseeta's language
    1. he became frustrated
    2. the author laughed at him
    3. he tore his hair in rage
    4. the author swore for him
13. According to the author, which is the best stalker?
1. the elephant
2. the white hunter
3. the native
4. a combination of #2 and #3

14. The recognized bush signal for attention is a
1. hiss
2. hand signal
3. whistle
4. firing of a revolver

15. The first time he saw the elephant, the author did not shoot because
1. it was such a perfect specimen
2. he got buck fever
3. his gun failed to go off
4. he had a poor view of the animal

16. At the end of the first day the author and Saseeta
1. built a bush camp
2. slept in a tree
3. returned to the village
4. stayed at the author's house

17. On the second day's hunt they were joined by
1. the native chieftain
2. native guides
3. hunting dogs
4. the author's wife

18. Evidently the elephant slept
1. standing up
2. against a tree
3. lying down
4. between two trees

19. Hunting an elephant in bamboo is dangerous for when an elephant charges,
1. you may be pinned under a bamboo tree
2. he will be too close for a shot
3. you can't see his approach
4. he can uproot the poles and sweep you off your feet

20. Once as the author awaited the appearance of the elephant, he was disappointed to see in its stead
1. some pygmies
2. a young water buffalo
3. a perfect specimen of a bongo
4. a white elephant

21. Elephants apparently gravitate to bamboo trees because
1. they could feed there
2. they could move more quietly there
3. they could be sure to find other elephants there
4. they could hide there more easily

22. Saseeta tested the wind direction by
1. wetting his finger
2. observing the tree tops
3. lighting a cigarette and watching the smoke
4. puffball dust

23. When he saw the rogue not fifteen yards away, the author did not shoot because
1. he feared the elephant would hear him raise the gun
2. he feared the bamboo poles would deflect the shot
3. he feared the movement would draw the elephant's attention
4. he could not make out plainly enough which end he saw

24. Suddenly the bull charged because he had
1. scented them
2. seen them
3. heard them
4. stumbled on them

25. John Hunter shot the elephant
1. once
2. twice
3. three times
4. four times
26. When the shooting started the natives
   1. threw their spears
   2. shot poisoned arrows at the elephant
   3. charged
   4. vanished

27. The natives showed their gratitude by
   1. offering the author a drink of water
   2. offering the author a drink of their liquor
   3. performing a ritualistic dance around
   4. hacking the carcass to pieces

28. Upon examining the tusks of the rogue, the author
   1. estimated them to be the largest he had ever seen
   2. regarded the ivory as being exceptionally yellow
   3. considered the ivory poor in quality
   4. found them to be worn blunt from use

29. A possible explanation with the rogue's bad temper was
   1. an early encounter with someone who had tricked him
   2. heredity
   3. revenge for the death of his mate
   4. a bullet in a tusk nerve center

30. Back in camp they received such a great welcome that even
   1. the old and sick tottered out to offer thanks
   2. the witch doctors participated in the dance
   3. the women were allowed to eat with the men
   4. the chief himself over-indulged
Directions for reading Selection S

YOUR PURPOSE in reading the selection which follows:

To read it thoroughly for complete mastery of ideas and details so that you can answer some questions that will check your thorough mastery of the material.

SELECTION S

I was born near Shearington in the south of Scotland, thirteen years before the close of the last century. My father had one of the finest farms in that part of the country, having three hundred acres of good farming land and three square miles of grazing. There was a tradition in the family that our name "Hunter" was derived from the profession of a remote ancestor, and certainly the love of hunting ran in our veins. My father was always out in the marshes that surround the Solway Firth with a fowling piece over his arm and my older brother was regarded as one of the best field naturalists in Scotland. My mother was the only non-sporting member of the family, her time being amply filled with trying to keep the household running.

But what was merely recreation to the rest of my family was the very breath of life to me. When I was little more than a baby I used to toddle after my father to pick up his cartridge cases after he fired and sniff the delicious odor of gunpowder that clung to them. When I grew older I spent all my days in the great Lochar Moss, a vast bog full of black game, duck and colonies of black-headed gulls that nested so thickly on the ground that you could hardly move without stepping on their eggs.

When I was eight, I borrowed father's gun while he was out one day and went shooting with it. This gun was an old Purdey and to my mind the Purdey shotgun is the finest firearm ever made by man. The first day I took the gun out, I nearly shot off my foot with it. I was stalking partridge and in my excitement I happened to squeeze the trigger. When father heard what had happened, he was very put out but he did not forbid me the gun. Soon I learned to handle the lovely instrument correctly and spent every night in my room cleaning and oiling it until the barrels shone like dull silver and the old engraving on the breach was nearly rubbed away by so much polishing.

As I grew older, some of the country folk introduced me to an ancient and honorable sport which has no better name given to it than poaching, yet it is a fine business requiring the greatest of skill. There were some noble poachers in the south of Scotland but I think I can say there was none my equal, for I spent every hour that was not given over to my Purdey and fishing rod learning how to set a snare or run a net. Many's the dark night I crawled through cover, my fine silk net twisted around my neck like a scarf, listening for the sound of the keepers' footsteps on the frosty ground. The keepers carried guns and were not slow to use them, putting the life of a pheasant or a rabbit higher than that of a man. But this only made the sport more exciting and I often think the practice I got as a lad dodging keepers stood me in good stead years later when I came to stalk big game. I worked with my lurcher, a very knowing dog of a breed originally developed by the gypsies for their poaching work. The dog warned me when the keepers were about and once he and I lay on our bellies while two keepers stood ten feet away and wondered together where I was hiding. Those were good days and I often think I got as much of a thrill bagging a rabbit behind the keeper's back as I did later bringing down a bull elephant with two hundred pounds of ivory in his tusks.

So I grew up, caring little for farming and less for the solid people in Shearington who, for the most part, were poor shots and could no more set a rabbit snare than they could flick a salmon fly into a pool thirty feet away. The only stone in my pudding was school. It was my habit to arrive late, for I hated to pass the marshes without a look around to see how the birds were moving.

Our schoolmaster was a brutal man who used the birch and cane freely, but his favorite method of punishment was to cuff a boy's head, hitting him first on one side and then on the other until his ears turned black and blue and the child fell down nearly unconscious. Several of my schoolmates grew up partly deaf as the result of this treatment. I was a big lout and although our dominie thrashed me plentifully with his cane, he seldom dared to lay his hands on me. But one day when I was fourteen, I arrived in school covered with mud from one of my trips through the marsh. That was too much for the teacher and he fell upon me in a sort of wild rage, beating me with his fists and cuffing me until the
blood ran out of my ears. I was truly afraid for my life, for he seemed like a madman, and snatching up my slate, I hit him as hard as I could. I had strong muscles from climbing trees after birds' eggs and handling my heavy gun. The man staggered back and nearly fell, clinging to a desk to support himself. I decided I had better leave school for the rest of the day and went back to my beloved Lochar Moss where I could be alone. When I returned home, I found the dominie had been there before me with the local minister. My parents were sore put out but when they heard my side of the story, father refused to punish me and mother simply begged that I spend more time with my books and less with the Purdey. From then on the master was afraid of me so it was little enough time I spent in school, preferring to be out with my fishing tackle or my gun.

When I was eighteen, I got in a serious scrape. The lasses in that part of Scotland had changed little since the days of Robbie Burns and were not miserly with their favors. I had my share of good times, but, although I fancied myself a man of experience, I was still only a lad and I fell deeply in love with an older woman. Yet I think I would have gotten over my infatuation had not the local minister interfered. The minister went to my parents with a tale of my sins. I was summoned before the family council and ordered to give up the lady, but I defied them all and swore I would marry her. The minister departed, promising me hell and damnation while my poor parents did not know where to turn.

With the minister against me and my record none too good (except among those who were grateful for the gifts of game I had brought them during the bitter days of winter) I was an Ishmael in the community. Meanwhile, my parents were in mortal dread that I would fulfill my threat and marry the lady. One evening while I was sitting moody and sullen alone in my room, my father came up to see me.

"John, I've been talking to other members of the family about you," he said, sitting down on my bed and staring at his hands. "We've decided it would be nice if you took a trip somewhere...say to Africa. Some relations of ours have a cousin who is living there. He has a farm in Kenya near a town called Nairobi. If you are willing to go, I would buy you a half interest in the place."

I knew the relations father meant and an unco, tight-fisted lot they were. Whenever a farthing passed through their fingers it screamed for help. If their cousin were like them it was a hard time I'd have in Africa. But I cared nothing about that. There were lions in Africa and elephants and rhinoceros. That was the land for me. I was ready to leave that night and so I told my father.

As my father left the room, he hesitated a moment at the door. "Son, you may take the Purdey," he said. Then I knew that he had forgiven me all my sins.

When my father said good-by, he told me, "John, this trip will either make or break you. You would have nothing of our dull ways and wanted adventure. Very well, lad, here is your adventure. It will be hard in Africa but if you come back with your tail between your legs, never let me hear more of your fine talk. You will have been beaten, my lad, and from then on you must settle down to an honest job and work at it as other folks do."

After a three months' voyage I reached Mombasa. To a raw Scotch lad like myself, it was like being picked up and set down in the middle of the Arabian Nights. For the first time in my life I saw palm trees growing, walked through native bazaars with leopard hides hanging up for sale and watched half-naked savages coming in from the jungles of the interior. Although it was the middle of winter, the tropical heat was heavy in the town and I sweated freely in my Scotch tweeds.

I was not able to stay long in Mombasa for I had to take the train north to Nairobi. I boarded the train in the evening and for the first part of the trip we traveled through tropical jungles. At the stations, natives offered bananas, oranges and grapefruit for sale, plucked fresh off the trees, a seeming miracle to me who had always regarded such fruits as something of a luxury.

The next day I arrived at Nairobi about noon. I was not able to stay long in Mombasa for I had to take the train north to Nairobi. I boarded the train in the evening and for the first part of the trip we traveled through tropical jungles. At the stations, natives offered bananas, oranges and grapefruit for sale, plucked fresh off the trees, a seeming miracle to me who had always regarded such fruits as something of a luxury.

The man walked up to me and bellowed, "Are you John Hunter?"
"I am," said I, regretfully.

"I'm your cousin," he said with an oath. I was to learn he seldom spoke without cursing. "Get in the rig."

We drove to his ranch some twenty miles away. My cousin talked and swore the whole way, drinking from a bottle of rum he had on the seat beside him. The man's talk brought the sweat out over me. He had been the skipper of a windjammer that operated along the African coast and judging from what he said, the ship was little better than a pirate. He told me fearful stories of keelhauling and flogging. I was soon to see that he was as brutal as his words. When we reached his plantation, some native women were walking across the fields, chattering and laughing together as women do.

"I've told those bloody natives to keep off my land," shouted my cousin. Without more ado, he whipped out one of his great revolvers and started shooting at them. The women fled screaming. One of them tripped and fell. My cousin bellowed with laughter as the bullets kicked up dust around her bare black behind. Whether any of them were hit or not I cannot say but they all managed to escape while my cousin roared with delight at their terror.

My cousin's house was nothing but a mud-and-wattle hut with one room. This room had been divided into two compartments against my coming by hanging a strip of calico from a string that ran from wall to wall. My cousin introduced me to his wife—a timid, thin woman who might once have been very pretty. She hardly dared to greet me and jumped nervously whenever my cousin spoke to her, as well she might, for it was a word and a blow with him. I was given one of the two compartments and a camp cot. I lay down on it, never more miserable in my life.

I stayed on the plantation for three months, I learned nothing of Africa during this time except how to speak Swahili. Although there are scores of native tribes in British East Africa, Swahili is the universal language, and nearly everywhere you go, there are at least some natives who can understand it. I could tell my cousin nothing about how to run a farm and the place was deteriorating daily. I held on, remembering what my father had said about coming back with my tail between my legs. I bitterly pictured myself crawling back to Shearington, asking my family to take me in and humbly apologizing to the minister and schoolmaster. How the old brutes would gloat! This was to be the end of all my fine dreams and ambitions. But at last flesh and blood could endure it no longer. I packed my few belongings and, getting a ride from a friendly farmer, returned to Nairobi.

What little money I had was in the Bank of India and there I went to get enough for my return passage. When the man behind the grill heard the Scotch burr in my voice, he looked at me curiously.

"What part of Scotland do you come from, lad?" he asked. There was a bit of a burr in his voice too.

"Shearington, seven miles from Dumfries," I told him.

"Why, you must know my brother, Major Cruickshanks of the Ayrshire Imperial Yeomanry."

Now it so happened I had been a trooper in the Ayrshire and Major Cruickshanks was my officer. He and I were good friends.

When the banker heard that, there was nothing for it but I must sit down with him and tell my adventures. When he heard that I was beaten and ready to go home, he would have none of it.

"A Scotsman is never licked, lad," he told me. "We'll have no more of that talk. I have a friend on the railroad and he'll give you a position as guard. That will tide you over until you find something more to your liking."

A week later I was put on the same Mombasa-Nairobi railroad on which I'd traveled three months before. I found that as a railroad guard, I had a fine opportunity for shooting.

For the first time I realized that it was possible for a man to make his living as a hunter—and a very good living, too. Such a thought had never occurred to me before. Being able to make my living with my gun seemed too good to be true, yet plenty of men in Nairobi were doing that very thing. One good point about being a railroad guard is that you get to meet people, and I made the acquaintance of some of the great white hunters of the period—to my mind, the most colorful group of men that ever lived.
Questions on

Selection S

Directions: Answer the following questions by blacking in the appropriate space on your answer sheet.

1. The author, John Hunter, seems to regard his name as
   1. a compulsion for him to become a hunter
   2. derived from the profession of an ancestor
   3. having no relationship to his profession
   4. an aid to his profession
      1. ( )

2. The author was born thirteen years before
   1. Irish Revolution
   2. World War I
   3. close of the last century
   4. Boer War
      2. ( )

3. The only non-sporting member of the family was his
   1. mother
   2. father
   3. brother
   4. sister
      3. ( )

4. As a boy the author considered hunting as
   1. a pastime
   2. his life's work
   3. a dangerous game
   4. all important
      4. ( )

5. The author gained his first experience with guns from
   1. a sportsman's manual
   2. his father's shotgun
   3. the local rifle club
   4. his own shotgun
      5. ( )

6. When his father heard that John had almost shot off his foot, he
   1. forbade the boy to use the gun
   2. did not forbid the boy to use the gun
   3. forbade the boy to go hunting without an older person
   4. gave his son a lesson in the use of firearms
      6. ( )

7. The author considered poaching as
   1. an ancient and honorable sport
   2. a dishonest activity
   3. an economic necessity
   4. just retribution to the wealthy landowners
      7. ( )

8. When the author says he worked with his lurcher, he refers to a
   1. snare
   2. game wagon
   3. dog
   4. gun
      8. ( )

9. John Hunter said that school was
   1. the fly in the ointment
   2. the stone in his pudding
   3. the bane of his existence
   4. the cream in his coffee
      9. ( )

10. The term used to refer to the schoolmaster was
    1. teacher
    2. professor
    3. dominie
    4. doctor
       10. ( )

11. As a result of the schoolmaster's punishments
    1. some of the boys grew up partly deaf
    2. pupils frequently couldn't sit down for a couple of days
    3. parents complained
    4. he lost his job
       11. ( )

12. When the master beat Hunter one day, the boy
    1. ran away from him
    2. reported it to the authorities
    3. took his punishment without flinching
    4. staggered him with a blow
       12. ( )
13. In the matter of girl friends, the author compares himself to
1. Walter Scott
2. Thomas Carlyle
3. Young Lochinvar
4. Robert Burns

14. In the matter of reputation, he compares himself to
1. Absolom
2. Ishmael
3. Purdey
4. Shearington

15. When the boy said he would marry the older woman, he showed his
1. loyalty
2. dependence
3. defiance
4. wisdom

16. If John would go to Africa, his father offered to
1. pay his fare
2. accompany him
3. buy him an interest in a place
4. get him a job there

17. The boy decided to go because
1. of the wild animals there
2. of his father's offer
3. it offered an escape from unpleasant surroundings
4. it offered an escape from marrying

18. The author had found life at home dull because
1. his parents were too strict
2. he had an adventurous spirit
3. there was so little to do
4. he was antisocial

19. How many days did it take to reach Mombasa?
1. 30 days
2. 60 days
3. 90 days
4. 120 days

20. The place where his cousin lived was
1. Swahili
2. Mombasa
3. Bombay
4. Nairobi

21. The cousin with whom Hunter stayed was not
1. inefficient
2. temperate
3. brutal
4. unkempt

22. Hunter seems to think that his cousin
1. is a born farmer
2. has lost his nerve
3. has committed some crime
4. loves animals but not people

23. During his stay at his cousin's plantation Hunter learned to
1. farm the African way
2. respect his cousin's wife
3. work with natives
4. speak Swahili

24. The house that belonged to his cousin contained
1. one room
2. three rooms
3. five rooms
4. ten rooms

25. Hunter found his cousin's plantation
1. flourishing
2. deteriorating
3. in debt
4. just beginning to show a profit

26. The only thing that prevented the author from returning home was
1. lack of funds
2. help from a banker
3. persuasion of his cousin
4. opportunity to become a professional hunter
27. Hunter remained in Africa, taking a job as
   1. professional hunter
   2. farmer
   3. bank teller
   4. railroad guard

28. The author realized it was possible for a hunter to make a living as a result of
   1. selling skins
   2. selling tusks
   3. talking with a professional hunter
   4. talking to people

29. He soon realized that shooting back home had been mainly for
   1. recreation
   2. boys
   3. professionals
   4. the poorer people

30. To the author, the most colorful group of men of that period were
   1. the native hunters
   2. the Dutch Boers
   3. the great white hunters
   4. the African witch doctors

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RATE TOTALS

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