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The Effects of Systematic Phonics and Contingency Management on Reading Achievement with Intermediate Special Education Students

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THE EFFECTS OF SYSTEMATIC PHONICS AND CONTINGENCY MANAGEMENT
ON READING ACHIEVEMENT WITH INTERMEDIATE
SPECIAL EDUCATION STUDENTS

A Thesis
Presented to
the Graduate Faculty
Central Washington State College

In Partial Fulfillment
of the Requirements for the Degree
Master of Special Education in Education

by
Allena M. Combelic

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APPROVED FOR THE GRADUATE FACULTY

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This paper presents a study of the effects of systematic phonics and contingency management on reading achievement with intermediate special education students. The thirty-six week program was divided into four phases. The four equivalent forms of the Gray Oral Reading Tests were used as measuring devices. No statistically significant results were found by using the Gray Oral Reading Tests as measuring devices. Statistically significant results were found on graph data.

Recommendations included: (1) the use of different reading tests other than the Gray Oral Reading Tests as measuring devices and (2) that the study be conducted longer than thirty-six weeks.

CHAPTER I

THE PROBLEM AND REVIEW OF LITERATURE

Reading is indispensable in our world today which depends on written communication for both personal growth and national survival. Many educators and parents are concerned about the large numbers of children who, because of their difficulties in reading cannot handle school work. When it is observed that a child does not read as well as he should, when compared to the amount of instruction he has received, it is necessary to re-evaluate his incorrect responses and implement a program which will raise the probability of success and rapid improvement.

I. REVIEW OF LITERATURE

This writer attempted to exhaust the archives available in an effort to review literature relevant to this study. The following are excerpts gleaned from the literature, however, briefly in an effort to acquaint the reader with the wide field of materials available regarding this study.

Since this study revolved around phonics, reading rate, and contingency management research of the available materials was focused toward these areas.

Phonetics

Guren and Hughes (21:341) reported the following facts concerning phonetics. The criticism that a "phonetic" approach slows down fast learners is not supported by research. They further state that the "phonetic" program is not too hard for slow learners, and does not cause slower reading in later developmental years. Guren and Hughes conclude that "phonetic" groups tend to be superior to "non-phonetic" groups in later grades as well as in first and second grade.

McNeil and Stone support Guren and Hughes by stating, "To learn to read, the child must be able to hear and distinguish the separate sounds in words." (29:13). They continued by stating:

However, memorization of a printed, whole word is not considered reading in the sense of texting, whereby a child is confronted with a printed word, never seen by him before, and is able to orally pronounce this word by phonetic analysis. Accurate phonetic analysis is presumed to require understanding by the child that the sound patterns of a word are divisible into smaller units and that these units are common to the sound patterns of other words (29:13).

Staiger pointed out the following facts concerning phonetics:

1. Phonics is one of the essential skills that help children identify printed words they have not seen

before and then understand the meaning that those words represent.

2. Without phonics most children cannot become self-reliant, discriminating, efficient readers (35:206).

Bear found that the results of his study revealed that synthetic phonics can be used successfully along with a basal reading program as a valuable supplement in developing reading skills. Along with this, Bear concluded: "Pupils whose intelligence quotient was below 101 achieved higher results with the synthetic method. . . ." (4:402).

Bloomer found that the experimental group which had received additional training in phonics produced significantly better test results. He emphasized this by stating:

In the experimental group in the 8 weeks subsequent to phonetic training, each of the children in the experimental class read the pre-primers, primers, and first readers of the basal reader series. In the control group, who had been working on the same material for 16 additional weeks, 17% of the children did not finish the first reader (6:189).

In his conclusion Duncan wrote on a study conducted by educators in Tulsa, Oklahoma, in an effort to answer the question, Is phonics important or not? The results at the end of both two and three years showed significant results in favor of a "phonetics-first and the basal approach" to reading over "the look-say approach" to reading (14:5).

Today, there is a growing concern in our educational system when individuals fail to respond and learn by traditional techniques of teaching. Contingency management using reinforcement is an efficient and effective teaching method which produces an increase in performance, retention and interest in reading.

Contingency Management

Staats, Minke, Finley, Wolf, and Brooks used token reinforcement for correct reading responses. They concluded that:

An operant conditioning methodology apparatus, plus a system of self-variable reinforcers backing up a token can be used with children engaged in complex verbal learning to produce learning curves analogous to operant conditioning records obtained with more simple behaviors of children or with simpler organisms (7:223).

In further evidence they state that they were able to present reinforcers systematically and precisely measure the acceleration of the responses that occurred (7:223).

Hewett taught a thirteen year old mute, autistic boy to read and write using candy as a reinforcer along with programmed reading instructions. Previous efforts in teaching him to read and write had been unsuccessful.

Haring and Hauck arranged reinforcing events to accelerate performance rate and maintain the high rate.

They found that:

When learning conditions were individual appropriate, each child averaged between 100 and 200 more correct responses every day and spent very few minutes avoiding reading. The students not only made more correct responses daily and worked longer, but also progressed in instructional reading levels from one and one-half to 4 years over 5 months instruction. Behavior and performance and other academic areas within the regular classroom also improved markedly, according to unsolicited comments from the classroom teachers (22:350).

Holt used three reinforcement techniques to determine their effect on programmed learning. The results showed that:

Programmed reading and mathematics instruction supplemented by contingency management, and a RE menu, reinforcement results in higher rates of responding than a programmed reading and mathematics curricula without supplemental reinforcement techniques (26:368).

Holt also was quoted as stating: "The contingency relation of reinforcing behaviors being dependent upon the completion of programmed reading and mathematics tasks appears to produce high interest in the later tasks" (26:368).

Busse (9) in his unpublished thesis, "Effects of Contingency Management on Reading Achievement of Junior High Special Education Students"; Hertlein (24) in his

unpublished thesis, "The Effects of Contingency Management on Reading Achievement of Institutionalized Offenders" and Albertson (2) in his unpublished thesis, "Effects of Controlled Reading Reinforcement on Junior High Students" all found similar results in their studies. In a consensus all found that contingency management in the instruction of learning to read was a highly valuable and effective teaching technique.

Skinner summarized his research based point of view in Harvard Education Review as: "Once we have arranged the particular type of contingencies called a reinforcement, our techniques permit us to shape the behavior of an organism almost at will" (33:6).

Raygor, Wark and Warren reported on their study concerning operant conditioning of reading rate with secondary reinforcers. "Shaping the behavior of our students whether or not we like to say it, is the fundamental justification for teaching" (31:155). In further research they reported that operant techniques, using a secondary reinforcer can produce significant gains in the speed with which an adult reads (31:154).

Reading Rate

Rankin compared comprehension and rate and concluded that:

The rate group not only read faster both at the mid part and at the end of the course, but they also improved as much in vocabulary comprehension, and total reading proficiency as the comprehension group at both times (30:53).

Artley discussed the use of "speed reading" which enhances motivation. He stated that:

Use a stop-watch and easy practice materials for 'pressure reading.' Have each student establish his normal rate of comprehension in terms of words per minute and level of understanding for a given reading purpose.

On each subsequent practice period, using the same type of reading purpose, each student should try to surpass his past record while keeping his level of comprehension uniformly high. Keeping a graph of his gain provides visual evidence of growth as well as motivation (3:60).

Robinson and Smith stated:

We find that an increase in rate is more likely to carry over to outside reading if students are encouraged to read a certain amount each day and to keep a record of the number of pages read. Progress in reading rate is usually fairly continuous without large spurts (32:424).

Over the years, elementary schools have consistently continued to stress instruction in reading. Educators have diligently sought the methods, materials, and organizational procedures that would provide optimum reading

instruction for each child. Certainly more research has been conducted concerning reading than any other single area of elementary education. Yet, questions remain unanswered regarding this problem. While the preceding quotations do not give "the answer", they do provide a clue as to how researchers have undertaken to study key aspects of reading, what tentative conclusions were reached, and what ideas deserve further study.

II. THE PROBLEM

Statement of the Problem

The problem of this study was to determine the correct procedure in motivating fifteen special education students to produce accountable results in reading. It was proposed that through systematic phonetics, and applied contingency management program, dealing with oral phonetic and reading rate; significant changes would occur. Therefore, the operational hypothesis was:

1. There would be statistically significant differences in grade level reading achievement, as measured by equivalent forms of the Gray Oral Reading Test during observation baseline period and the initial learning of the sixty-five phonetic symbols.
2. There would be statistically significant differences in grade level reading achievement, as measured by equivalent forms of the Gray

- Oral Reading Test during observation baseline period and the application of contingency management through graphing of both oral phonetic and reading rates with reinforcement.
3. There would be statistically significant differences in grade level reading achievement, as measured by equivalent forms of the Gray Oral Reading Test during observation baseline period and the graphing of both oral phonetic and reading rates after previous reinforcement was withdrawn.
 4. There would be statistically significant differences in grade level reading achievement, as measured by equivalent forms of the Gray Oral Reading Test during an initial learning of the sixty-five phonetic symbols and the application of contingency management through graphing of both oral phonetic and reading rates with reinforcement.
 5. There would be statistically significant differences in grade level reading achievement, as measured by equivalent forms of the Gray Oral Reading Test during an initial learning of the sixty-five phonetic symbols and the graphing of both oral phonetic and reading rates after previous reinforcement was withdrawn.
 6. There would be statistically significant differences in grade level reading achievement, as measured by equivalent forms of the Gray Oral Reading Test during the application of contingency management through graphing of both oral phonetic and reading rates with reinforcement and graphing of both oral phonetic and reading rates after previous reinforcement was withdrawn.

Limitations of the Study

This study was limited to fifteen intermediate special education students at Roosevelt Elementary School, Granger,

Washington. Social, economic level, home conditions, and other environmental factors were not considered. The time period needed for the study was limited to thirty-six weeks.

One variable quite difficult to control was the amount of reading the students did outside of class. It was assumed that the amount of reading done was of minimum amounts which would have not effected the study. Two other limitations were that the student's I.Q.'s ranged between fifty to eighty, and the age range was between ten to fifteen.

Purpose of the Study

The initial purpose of this study was to provide an example of how sufficient knowledge of phonetic sounds would provide a significant gain in reading level. The secondary purpose of this study was to use contingency management techniques as a means of motivating and teaching reading to special education students. These two purposes would facilitate the necessity of special education teachers being aware of these new teaching techniques and programs for maximum learning efficiency.

Significance of the Study

This study was undertaken to add to previous established information in drawing more definite data on the type of reading program which should be introduced into special

education classrooms for a maximum increase in reading achievement.

It was assumed that this study would benefit all educators who directly deal with deficiency in the area of reading. The results of this study should also provide insight into the task of deciding whether systematic phonics is an important aspect of reading. It should also help decide whether contingency management is an effective way of motivation.

Definition of Terms

Systematic phonics. Letter-sounds correspondences taught separately from reading.

Free time. Time earned for increased oral reading rate and used for activity of choice.

Reading rate. Number of words read correctly per minute orally from material functional at the student's individual grade level.

Phonic rate. Number of sounds read correctly per minute orally from the sixty-five phonetic symbol cards.

CHAPTER II

METHODS AND PROCEDURES

I. SUBJECTS

The subjects consisted of fifteen students from Granger, Washington School District, intermediate special education program held at Roosevelt Elementary School. The class was divided into four girls and eleven boys. The chronological age range of the subjects was from ten to fifteen years. The students had attended an elementary special education program throughout their educational careers.

All the students enrolled in the Granger intermediate special education program must have an I. Q. of between fifty and eighty, and low standardized achievement test results accompanied by teacher referrals or extreme emotional or health problems. The subjects had been evaluated by a psychologist, and all parents had been counseled before signing permission slips for their child to be placed in the program.

II. APPARATUS

The apparatus used in this study included the following items: sixty-five sound-symbol cards gleaned from the

Modification of Reading Behavior phonetic program, developed by Henderson, Clise, and Silverthorn (12). The Gray Oral Reading Tests, forms A, B, C, D (19) were utilized as the measuring devices to denote reading ability and improvement. High interest-low vocabulary readers, library books, newspapers (student and adult) were used for the reading task. A stop watch to determine the subject's reading and phonetic rates, with a pool table and other items such as games and color paints which were reinforcement techniques. Six cycle semi-log graph paper was used for recording the subject's rates.

III. PROCEDURE

The highly structured reading environment contained a phonics station, student stations, and reading station, with a reinforcement area. The phonics station consisted of sixty-five phonetic-symbol cards prearranged daily on a flannel board, used for acceleration of rate. The reading station consisted of the teacher's desk, shelves of available reading materials and the subject's individual phonetic and reading six cycle semi-log graphs. Reading materials consisted of high interest-low vocabulary readers, library books, newspapers and magazines. Three rules

governed the selection of reading materials: (1) It must be of interest to the student, (2) it must be appropriate in a classroom environment and (3) both the teacher and students must agree that the material is functional at the student's individual grade level and yet provide a challenge.

The reinforcement area consisted of a student size pool table and large table with individual chairs around it. Several types of reinforcement activities were available to the subjects. These included checkers, card games, puzzles, clay, paints, and drawing materials.

The Gray Oral Reading Tests were used as measuring devices in the investigations. Four equivalent forms of the test, A, B, C, and D were utilized. A stop watch was used to determine each subject's phonetic and reading rate.

IV. METHODS AND PROCEDURES

The four periods of the design of the study included: (1) an observation baseline period, (2) an initial learning of the sixty-five phonetic symbols (Phase I), (3) application of contingency management through a graphing of both oral phonetic and reading rates with reinforcement (Phase II), and (4) a graphing of both oral phonetic and reading rates after previous reinforcement was withdrawn (Phase III).

An attempt to limit the Hawthorne Effect was made by avoiding discussion of the testing during the study. At no time were the subjects told they were participating in an experiment.

The subjects served as their own control. They had academic histories exhibiting low rates of performance in reading.

Form A of the Gray Oral Reading Tests was administered after the observation baseline period during which time the deficiency in the area of reading was observed by the recording of oral reading rate by the experimenter.

Phase I, each subject was presented with his or her individual packet of the sixty-five printed phonetic symbols. The fading process of the Modification of Reading Behavior (12) program was eliminated because of the short amount of time the experiment was to be continued. The sixty-five cards were then presented to each subject individually one at a time and sorted into stacks, one representing the correct responses, the other representing the incorrect responses. The subject then practiced reading orally the sounds from the "correct" stack. The sounds originally not known were added one at a time until all the sounds were included. Oral sound reading rate was charted daily.

Form B of the Gray Oral Reading Test was administered at the end of Phase I. Each subject had attained the sixty-five phonetic sound symbols during this time.

Phase II, each subject was told that by increasing his phonetic rate or reading rate or both, free time could be earned. Free time had been defined as time when the subjects may engage in a number of activities provided in the classroom. Each subject who increased his or her phonetic rate over the previous day's rate received fifteen minutes free time. A maximum of thirty minutes per day could be earned by each subject.

Phase III, each subject's oral phonetic and reading rate were charted daily. The reinforcement that was used in Phase II was discontinued, which meant that the subjects could no longer earn free time for personal activities.

CHAPTER III

RESULTS AND DISCUSSION

I. RESULTS

An analysis of the test data disclosed there were no significant differences in the areas compared using the Gray Oral Reading Tests as measuring devices. The investigator used a single group of subjects tested first under one condition, the initial learning of sixty-five phonetic symbols, and then again under another condition, the application of contingency management to oral phonetic and reading rates, concluding that these pairs of observations would not be independent. A t test for correlated observations was used to determine any significance of change in test scores (16:136).

Gray Oral Reading Test Result

The first operative hypothesis of a statistically significant difference in grade level reading achievement during observation baseline and the initial learning of sixty-five phonetic symbols, as measured by equivalent forms of the Gray Oral Reading Tests was rejected. The t test analysis of the data on grade level reading achievement did not show significant difference as can be observed in Table I.

The second operative hypothesis of a statistically significant difference in grade level reading achievement during observation baseline and the application of contingency management to oral phonetic and reading rate with reinforcement as measured by equivalent forms of the Gray Oral Reading Tests was rejected. The t test analysis of the data on grade level reading achievement did not show significant difference also shown on Table I.

The third operative hypothesis of a statistically significant difference in grade level reading achievement during observation baseline and the application of contingency management to oral phonetic and reading rate after previous reinforcement was withdrawn, as measured by equivalent forms of the Gray Oral Reading Tests was rejected. The t test analysis of the data on grade level reading achievement did not show significant differences (Table I).

The fourth hypothesis of the statistically significant difference in grade level reading achievement during the initial learning of sixty-five phonetic symbols and the application of contingency management of oral phonetic and reading rate with reinforcement, as measured by equivalent

TABLE I
 COMPARISON OF READING ACHIEVEMENT ON FORMS
 A, B, C, AND D OF GRAY ORAL READING TESTS

	Mean	Mean	Dif	SEMD	t	Significance Level
	Grade Equivalent	Grade Equivalent				
AXB	1.57	1.75	.18	1.00	.18	*not significant
AXC	1.57	1.95	.38	.21	.46	*not significant
AXD	1.57	2.23	.66	.74	.69	*not significant
BXC	----	----	---	----	---	not significant by inspection
BXD	----	----	---	----	---	not significant by inspection
CXD	----	----	---	----	---	not significant by inspection

* Not significant at the .05 level.

A Observation baseline.

B Initial learning of sixty-five phonetic symbols.

C Contingency management of oral phonetic and reading rate with reinforcement.

D Oral phonetic and reading rates after previous reinforcement was withdrawn.

forms of the Gray Oral Reading Tests was rejected by inspection of the outcome of the means and standard deviations from the first three hypotheses as can be observed in Table I.

The fifth operative hypothesis of a statistically significant difference in grade level reading achievement, as measured by equivalent forms of the Gray Oral Reading Test during the initial learning of the sixty-five phonetic symbols and the application of contingency management of both oral phonetic and reading rates after previous reinforcement was withdrawn was rejected. This was done by inspection of the outcome on the first three hypotheses as can be observed in Table I.

The sixth operative hypothesis of a statistically significant difference in grade level reading achievement, as measured by equivalent forms of the Gray Oral Reading Test during application of contingency management of both oral phonetic and reading rates with reinforcement and after previous reinforcement was withdrawn was rejected by inspection of the outcome from the first three hypotheses as can be observed in Table I.

Oral Reading Rate

By inspection of the individual graphs, the student making the least significant amount of apparent growth and the student making an average amount of apparent growth were selected for additional t test analysis. The number of daily rates varied from testing period to testing period making it necessary to use the uncorrelated t test and difference between two means when variances differ significantly (16:131).

By inspection an analysis of the graph data disclosed there were differences in the areas compared. Thus a check on significance of growth in the learning of reading rate was decided upon.

The t test of analysis of the graph data show a significant difference during: (1) the observation baseline and the initial learning of sixty-five phonetic symbols, as can be observed in Table II, (2) observation baseline and the application of contingency management to oral phonetic and reading rate with reinforcement, as observed in Table II, (3) observation and baseline and the graphing of oral phonetic and reading rate after previous reinforcement was withdrawn as observed in Table II, (4) initial learning of sixty-five phonetic symbols and the application of contingency

TABLE II
 READING RATES OF STUDENTS TWO AND SIX

Student		Mean Response Rate	Mean Response Rate	Dif.	SEMD	t	Significance Level
AXB	2	3.17	6.00	2.83	.16	7.14	.01*
	6	15.17	24.86	9.69	.42	15.04	.01*
AXC	2	3.17	15.76	12.59	.38	20.59	.01*
	6	15.17	50.73	35.56	1.13	31.37	.01*
AXD	2	3.17	33.29	30.22	1.24	27.10	.01*
	6	15.17	87.46	72.29	3.53	38.66	.01*
BXC	2	6.00	15.76	9.76	.46	14.36	.01*
	6	24.86	50.73	25.87	6.26	13.39	.01*
BXD	2	6.00	33.29	27.29	1.32	23.73	.01*
	6	24.86	87.46	62.60	3.63	32.89	.01*
CXD	2	15.76	33.29	17.53	1.54	13.32	.01*
	6	50.73	87.46	36.73	4.50	17.45	.01*

* Significant at the .01 level.

A Observation baseline.

B Initial learning of sixty-five phonetic symbols.

C Contingency management of oral phonetic and reading rates with reinforcement

D Graphing of oral phonetic and reading rates after previous reinforcement was withdrawn.

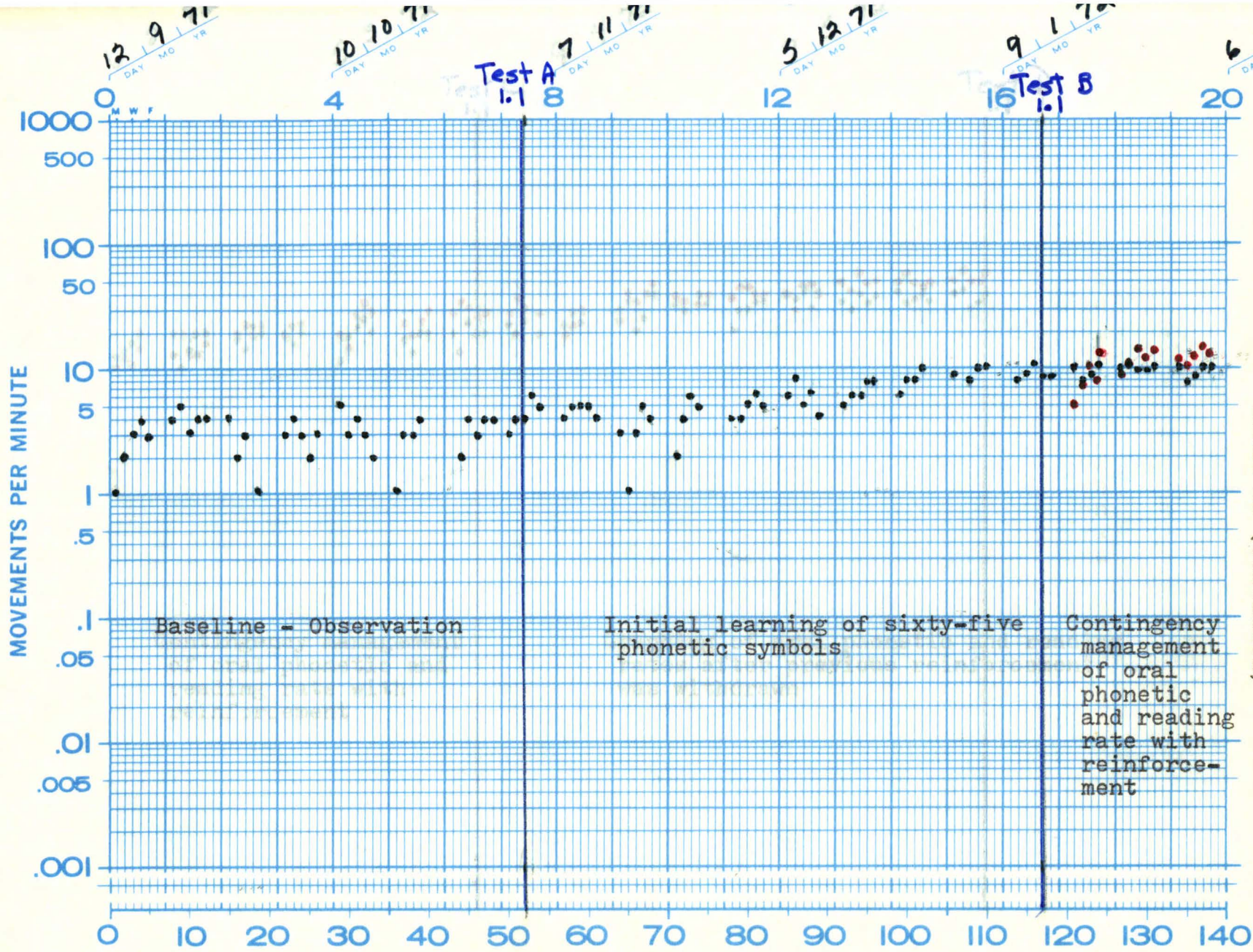


TABLE II (continued)

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

2 13

BEHAVIOR AGE LABEL MOVEMENT

CHARTER

SUPERVISOR ADVISER MANAGER

DEPOSITOR AGENCY

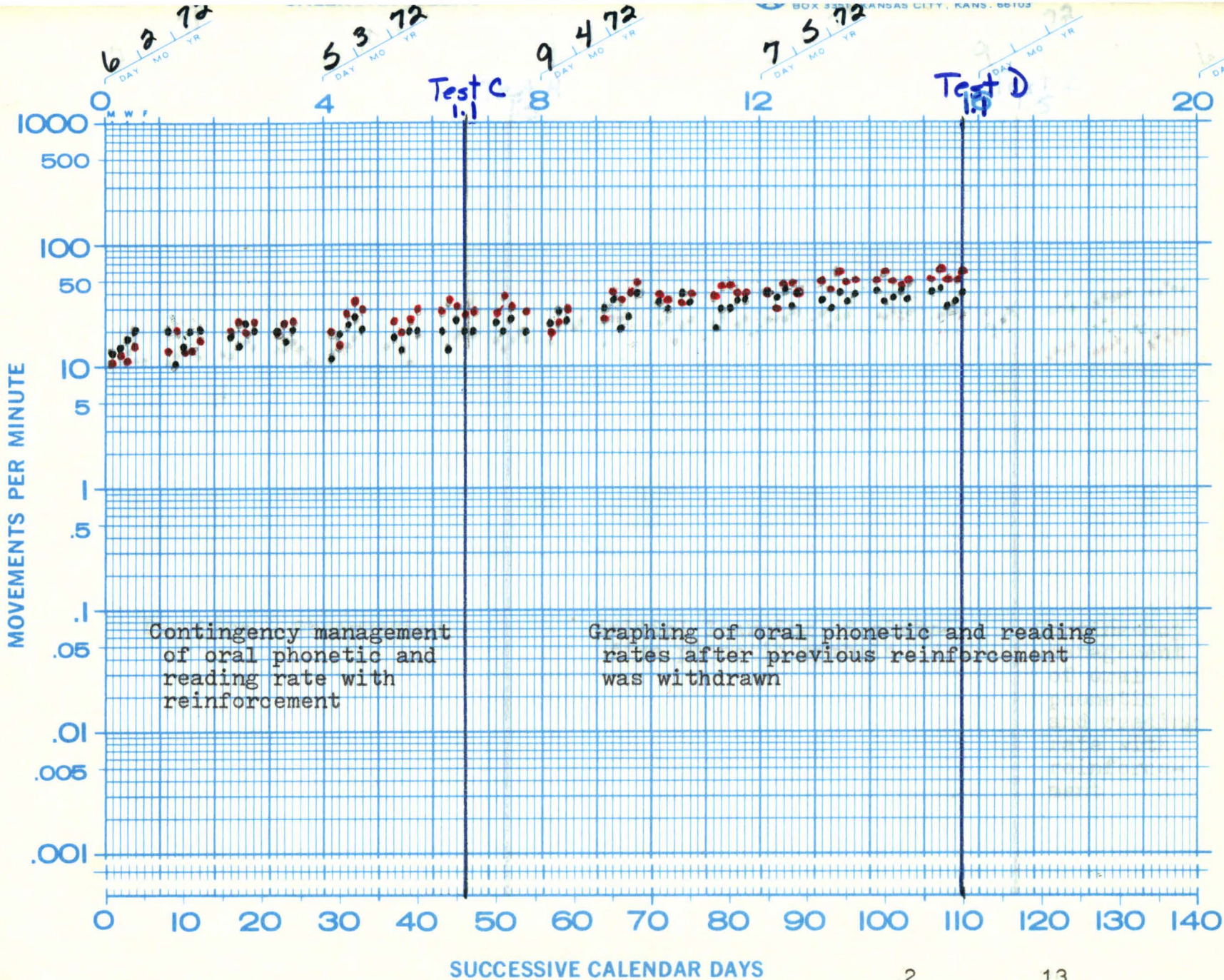


TABLE II (continued)

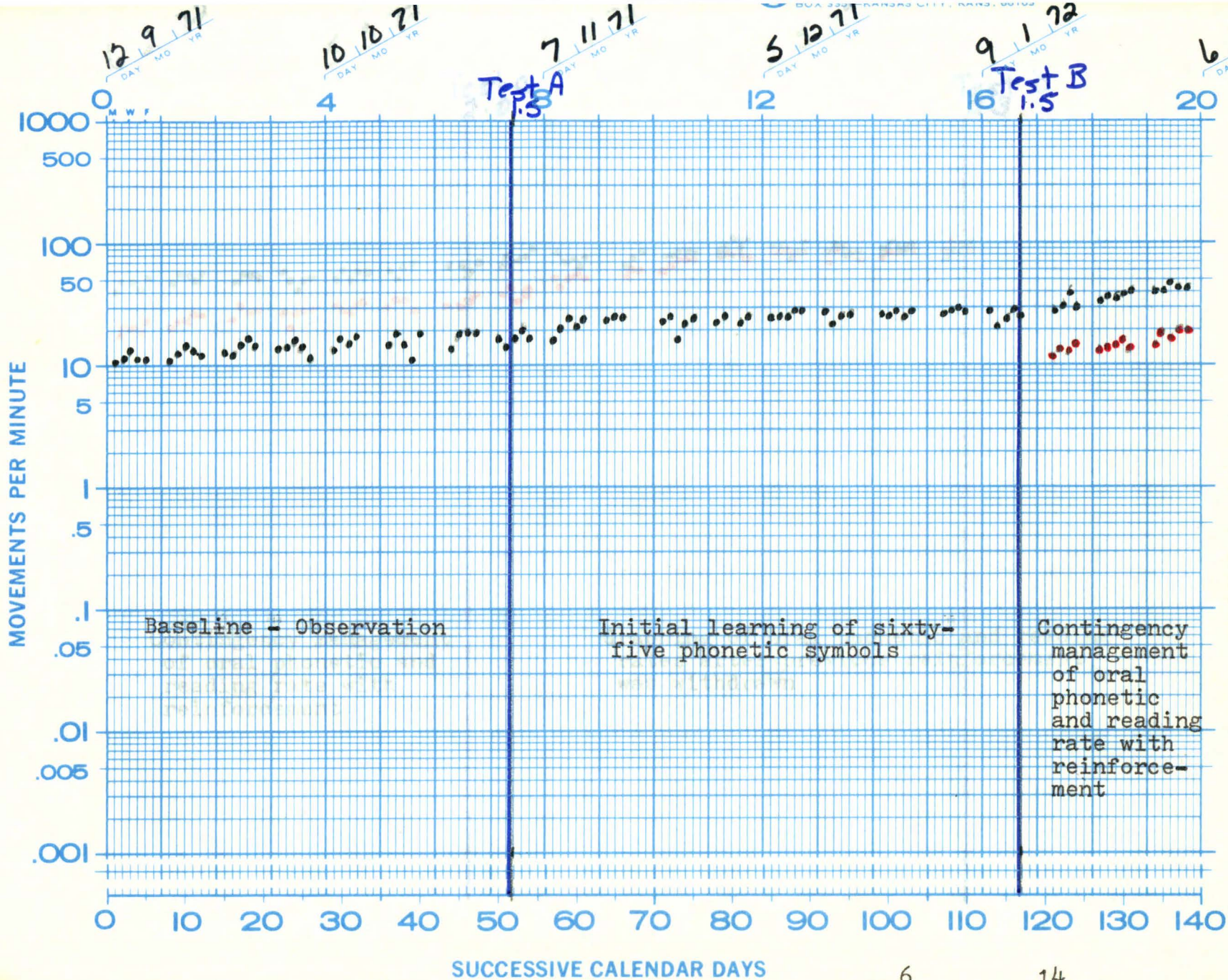


TABLE II (continued)

SUPERVISOR	ADVISER	MANAGER
DEPOSITOR	AGENCY	

SUCCESSIVE CALENDAR DAYS

• oral reading rate

• oral phonetic rate

6	14		
BEHAVIOR	AGE	LABEL	MOVEMENT
CHARTER			

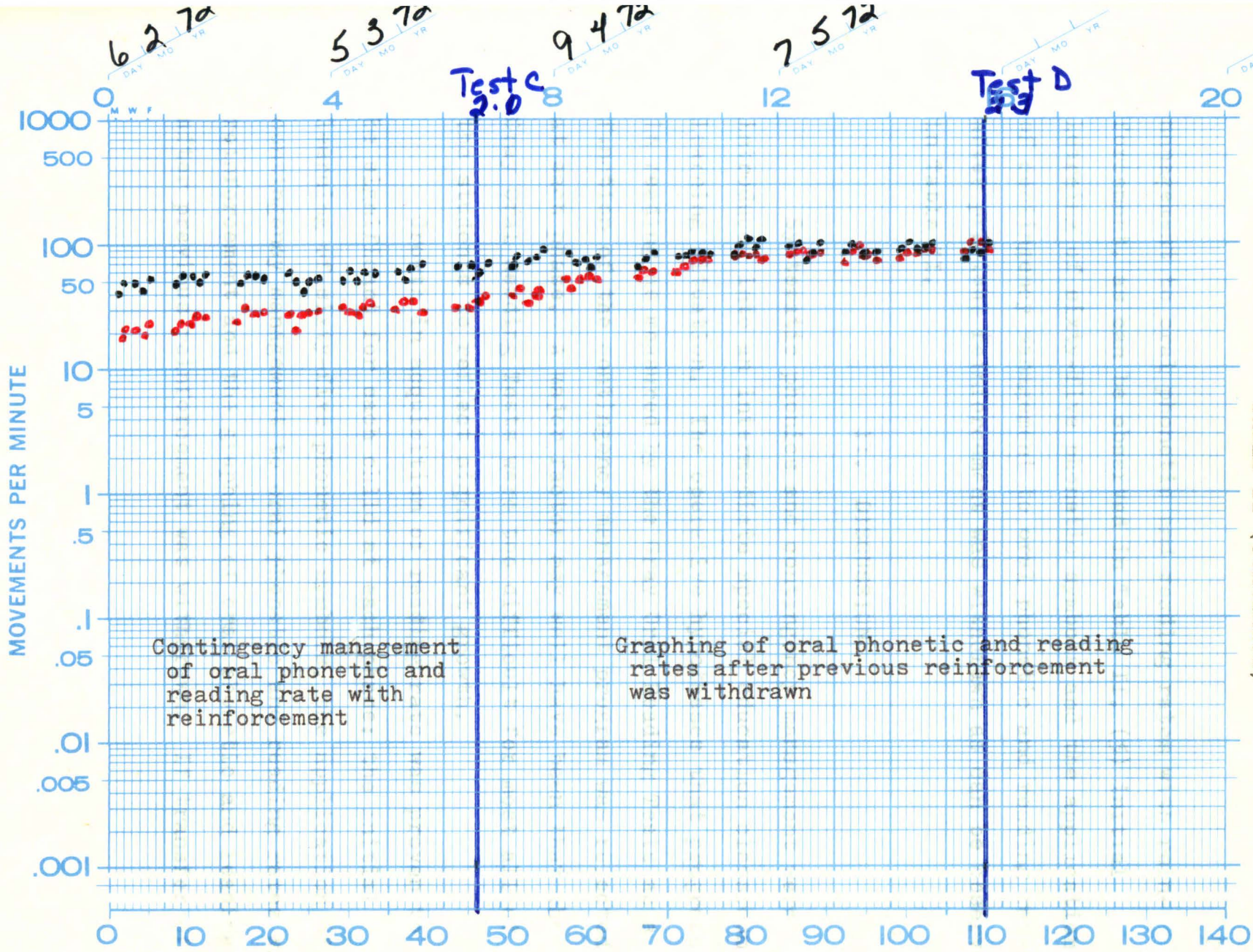


TABLE II (continued)

SUCCESSIVE CALENDAR DAYS

SUPERVISOR	ADVISER	MANAGER
DEPOSITOR	AGENCY	

6	14		
BEHAVIOR	AGE	LABEL	MOVEMENT
CHARTER			

management to oral phonetic and reading rates with reinforcement, as can be observed in Table II, (5) initial learning of sixty-five phonetic symbols and the application of contingency management to oral phonetic and reading rates after previous reinforcement was withdrawn as can be observed in Table II.

II. DISCUSSION

Systematic phonics and contingency management were introduced into an intermediate special education classroom learning situation. The operative hypotheses that progress in reading as measured by the Gray Oral Reading Tests as a function of the contingency management program was rejected at each phase. A major factor may well have been that the Gray Oral Reading Tests were too difficult for most all of the students to reflect significant growth.

Growth in acquisition of reading rate was proven to be significant for each child at each phase; the initial learning of sixty-five phonetic symbols, the application of contingency management to oral phonetic and reading rates with reinforcement and the graphing of oral phonetic and reading rates after previous reinforcement was withdrawn. If transfer of

benefits from acquisition of phonetic sounds to oral reading of sentences and paragraphs is to be shown for students of the ability in this study either: (1) less difficult reading material than the Gray Oral Reading Tests or (2) longer training periods than thirty-six weeks would appear to be needed.

CHAPTER IV

SUMMARY AND CONCLUSIONS

I. SUMMARY

The investigation of this study was carried out at Roosevelt Elementary School, Granger, Washington. There were fifteen intermediate special education subjects involved in the study; four girls and eleven boys.

The study compared the effects of systematic phonics and contingency management on reading. There were four periods of design in the study: (1) a baseline observation period, (2) an initial learning of sixty-five phonetic symbols, (3) application of contingency management to oral phonetic and reading rates with reinforcement, and (4) the graphing of oral phonetic and reading rates after previous reinforcement was withdrawn.

The instruments used in this investigation were the Gray Oral Reading Tests. Four equivalent forms of this test A, B, C, and D were administered at the end of each of the four periods of study. Daily reading rates were also used in the evaluation.

When comparing the effects of systematic phonics and contingency management on grade level reading achievement

it was found that there was no statistically significant gain in reading achievement, as measured by the Gray Oral Reading Tests. By considering the results of the analysis data, there was basis to reject the six operative hypotheses as not statistically significant different as shown through testing procedures. Significant changes in oral reading rate occurred for all subjects since the student showing least growth made a sufficient amount of change at each phase of the study to show statistically significant growth. Thus from inspection, where each of the other students showed more observed change from phase to phase, statistically significance of change was inferred.

BIBLIOGRAPHY

BIBLIOGRAPHY

1. Agnew, D. C. "The Effect of Varied Amount of Phonetic Training in Primary Reading," Duke University Research Studies in Education No. 5. Durham, D. C.: Duke University Press, 1939.
2. Albertson, E. "Effects of Controlled Reading Reinforcement on Junior High Students." Unpublished Master's thesis, Central Washington State College, Ellensburg, Washington, 1970.
3. Artley, A. S. "Speed Reading; Its Value and Place in a School Program," School and Community, 49:14, 1963.
4. Bear, D. E. "Phonics for First Grade: A Comparison of Two Methods," Elementary School Journal, 59:394-402, April, 1959.
5. Bleismer, E. P., and B. Yarborough. "A Comparison of Ten Different Beginning Reading Programs in First Grade," Phi Delta Kappan, 46:500-504, 1965.
6. Bloomer, R. H. "An Investigation of an Experimental Grade Phonics Program," Journal of Educational Research, 53:5, January, 1960.
7. Brooks, L., Finley, J., Minke, K., and Staata, A. "A Reinforcement System and Experimental Procedure for the Laboratory Study of Reading Acquisition," Child Development, 35:209-231, 1964.
8. Bushell, D., and C. Whitlock. "Some Effects of Back-Up Reinforcers on Reading Behavior," Experimental Psychology, 5:50-57, 1967.
9. Busse, L. "Effects of Contingency Management on Reading Achievement of Junior High Special Education Students." Unpublished Master's thesis, Central Washington State College, Ellensburg, Washington, 1969.

10. Butterfield, W. A. and A. W. Staats. "Treatment of Nonreading in a Culturally Juvenile Delinquent: an Application of Reinforcement Principles," Child Development, 36:925-942, 1965.
11. Chall, J. Learning to Read: The Great Debate. New York: McGraw - Hill Book Company, 1967.
12. Clise, M., H. S. Henderson, B. Silverthorn. Modification of Reading Behavior. Central Washington State College, Ellensburg, Washington, Selah Public Schools, Selah, Washington, 1971.
13. Criscuolo, N., "Motivating the Problem Reader," Education, 87:233-235, 1966.
14. Duncan, R. L. "A Comparative Study: Two Methods of Teaching Reading," Tulsa School Review, XXI:4-5, September, 1964.
15. Dyrud, J. E. and I. Goldiamond. "Reading as Operant Behavior in Money," The Disabled Reader, 1966.
16. Edwards, A. L. Statistical Analysis. New York: Rinehart and Company, Inc., 1958.
17. Englehardt, R. M. "Speed is Not A Naughty Word," Journal of Reading, 8:330-331, April, 1965.
18. Fry, E. "A Frequency Approach to Phonics," Elementary English, XXXXI:759-765, November, 1964.
19. Gray Oral Reading Tests. Edited by Helen M. Robinson and William S. Gray. Bobbs - Merrill Company, Inc., 1963.
20. Grob, J. A. "Forcing Speed in Oral Reading," Journal of Reading, II:621-624, May, 1968.

21. Gurren, L. and A. Hughes. "Intensive Phonics vs. Gradual Phonics in Beginning Reading," Journal of Educational Research, 58:339-347, April, 1965.
22. Haring, N. and M. A. Hauck. "Improved Learning Conditions in Establishment of Reading Skills With Disabled Readers," Exceptional Children, January, 1969.
23. Heilman, A. W. Phonics in Proper Perspective. Columbus, Ohio: Charles E. Merrill Books, Inc., 1964.
24. Hertlein, A. "The Effects of Contingency Management on Reading Achievement of Institutionalized Offenders." Unpublished Master's thesis, Central Washington State College, Ellensburg, Washington, 1971.
25. Hewett, F. "Teaching Reading to an Autistic Boy Through Operant Conditioning," Reading Teacher, 17:613-618, May, 1964.
26. Holt, G. L. "Effect of Reinforcement Contingencies in Increasing Programmed Reading and Mathematics Behaviors in First-Grade Children," Journal of Experimental Child Psychology, 12:362-369, 1971.
27. Homme, L. E. and D. Tost. "Contingency Management and Motivation," National Society for Programmed Instruction Journal, 4:14-16, 1965.
28. McDowell, J. B. "A Report on the Phonetic Method of Teaching Children to Read," Catholic Education Review, LI:506-519, October, 1953.
29. McNeil, J. D. and J. Stone. "Note on Teaching Children to Hear Separate Sounds in Spoken Words," Journal of Educational Research, 56:13-15, 1965.
30. Rankin, E. F. "Sequential Emphasis Upon Speed and Comprehension in a College Reading Improvement Program," Journal of Developmental Reading, 7:46-54, 1963.

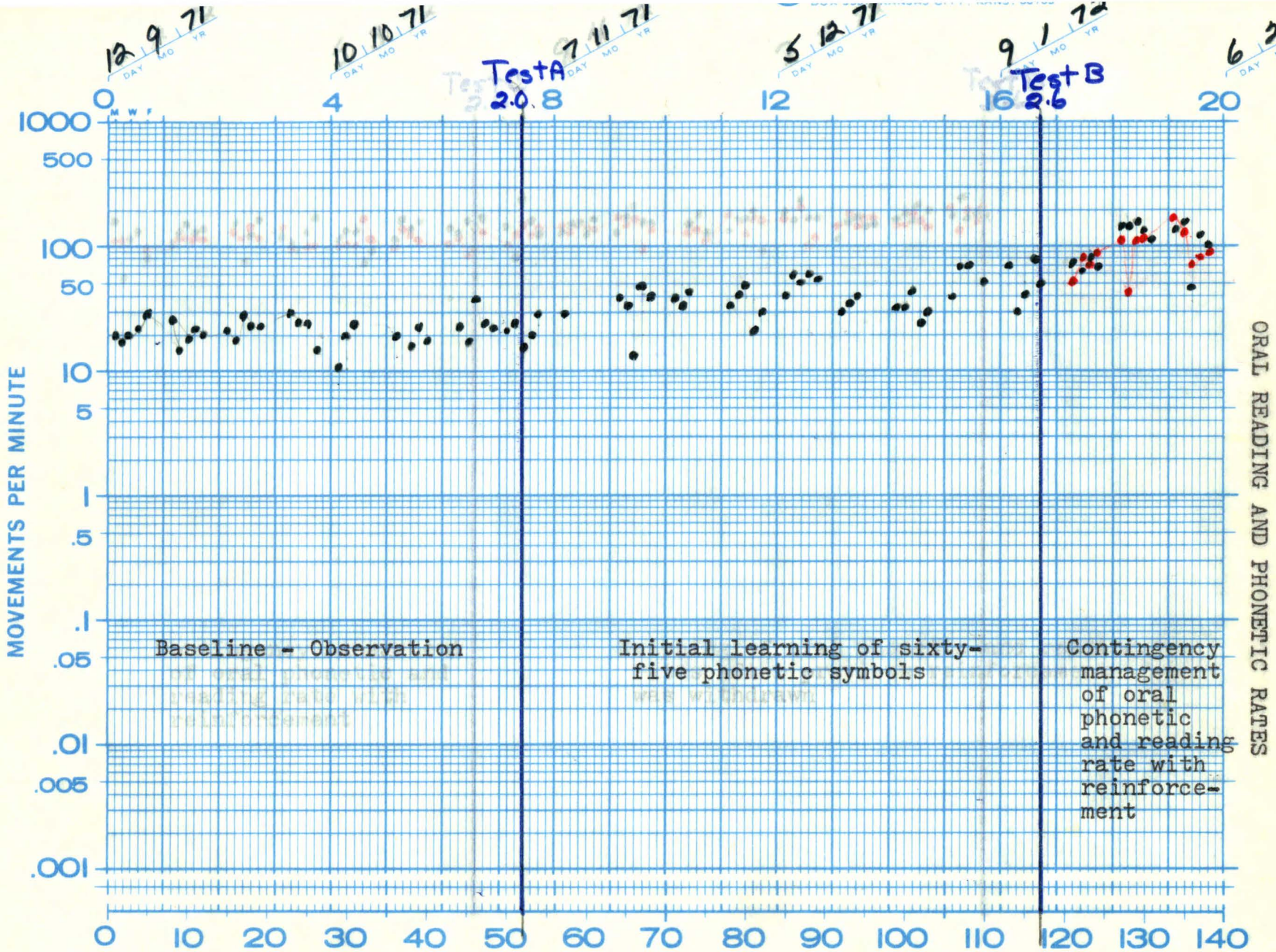
31. Raygor, A. L., D. Wark, and A. Warren. "Operant Conditioning of Reading Rate: The Effect of a Secondary Reinforcer," Journal of Reading, 9:147-156, 1966.
32. Robinson, H. M. and H. K. Smith. "Rate Problems in the Reading Clinic," Reading Teacher, 15:421-426, May, 1962.
33. Skinner, B. F. "The Science of Learning and the Art of Teaching," Harvard Education Review, 24:86:97, 1954.
34. Sparks, P. E. "An Evaluation of Two Methods of Teaching Reading." Unpublished Doctor's dissertation, Indiana University, August, 1956.
35. Staiger, R. E. "Agreements About Phonics," Elementary English, 1:204-207, 1962.
36. Tuckey, T. S. "Seven Years of Acceleration," Journal of Developmental Reading, 3:221-231, 1960.

APPENDIX A

TABLE III
 GRADE PLACEMENT ON ORAL READING AS DERIVED
 FROM FORMS A, B, C AND D OF THE
 GRAY ORAL READING TESTS

Subject	Form A	Form B	Form C	Form D
1.	1.9	2.3	2.2	2.4
2.	1.1	1.1	1.1	1.1
3.	1.5	1.5	1.6	1.8
4.	1.1	1.1	1.1	1.1
5.	2.0	2.6	2.6	3.6
6.	1.5	1.5	2.0	2.3
7.	1.9	1.9	2.5	2.8
8.	1.9	1.9	2.3	2.6
9.	1.6	1.8	1.9	1.9
10.	1.7	2.0	2.3	3.0
11.	2.1	3.4	3.1	3.5
12.	1.2	1.3	1.8	1.9
13.	1.2	1.4	1.3	1.6
14.	1.8	1.4	1.9	2.3
15.	1.1	1.1	1.6	1.6
Sum	23.6	26.3	29.3	33.5
Mean	1.57	1.75	1.95	2.23
S. D.	.36	.64	.57	.77

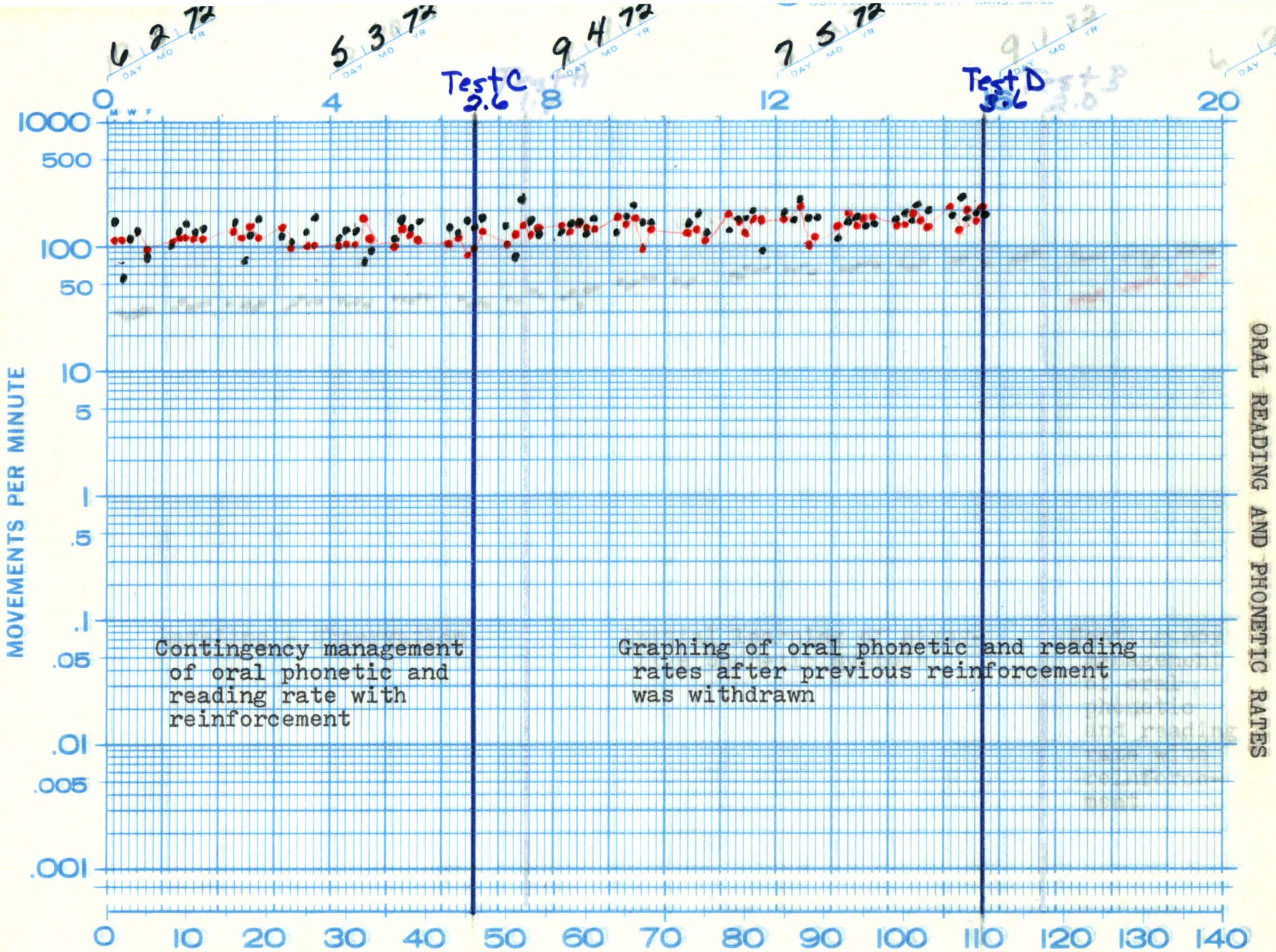
APPENDIX B



SUPERVISOR	ADVISER	MANAGER
DEPOSITOR	AGENCY	

● oral reading rate
 ● oral phonetic rate

5	12		
BEHAVIOR	AGE	LABEL	MOVEMENT
CHARTER			



SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

50

12

SUPERVISOR

ADVISER

MANAGER

BEHAVIOR

AGE

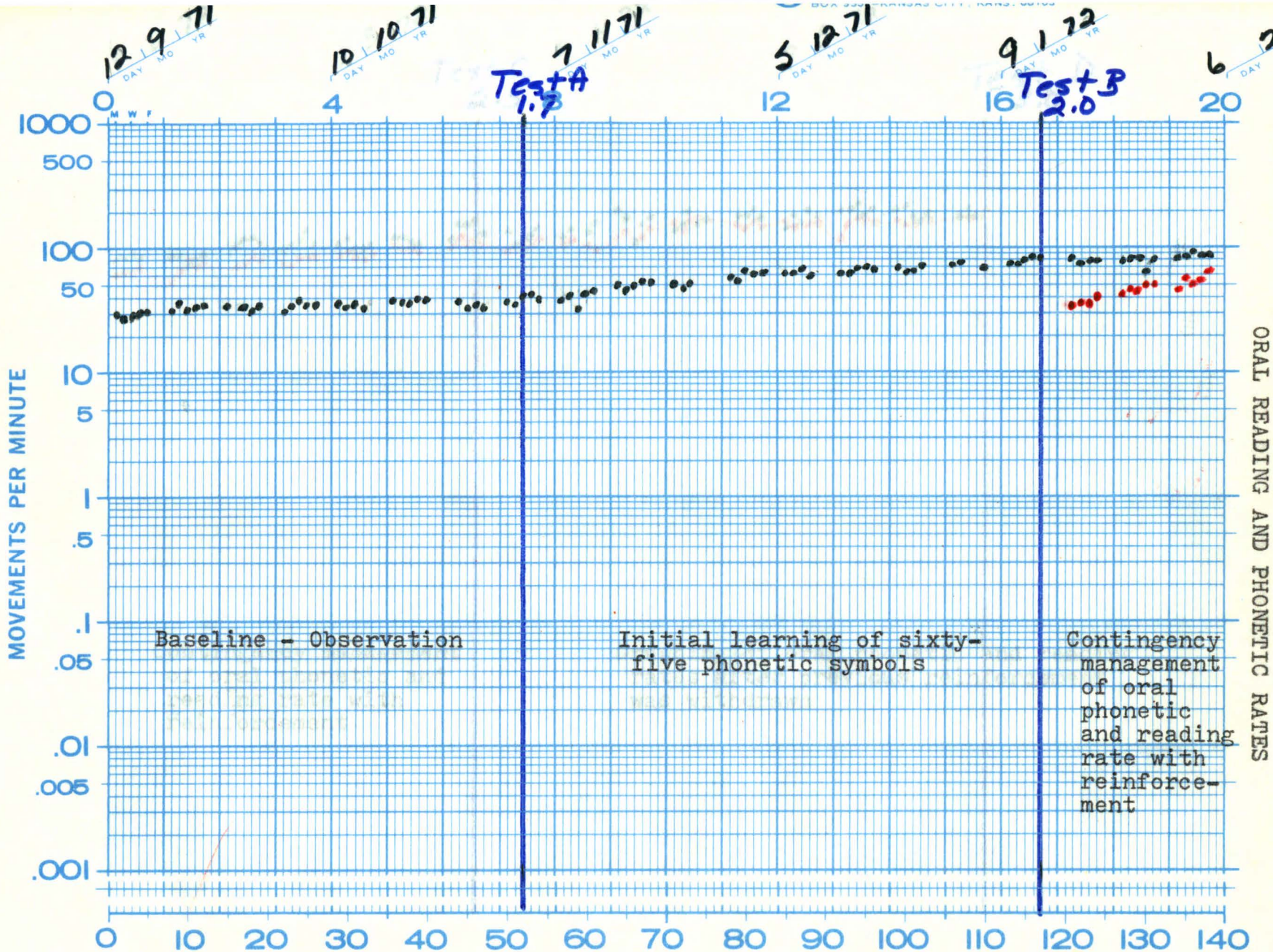
LABEL

MOVEMENT

DEPOSITOR

AGENCY

CHARTER

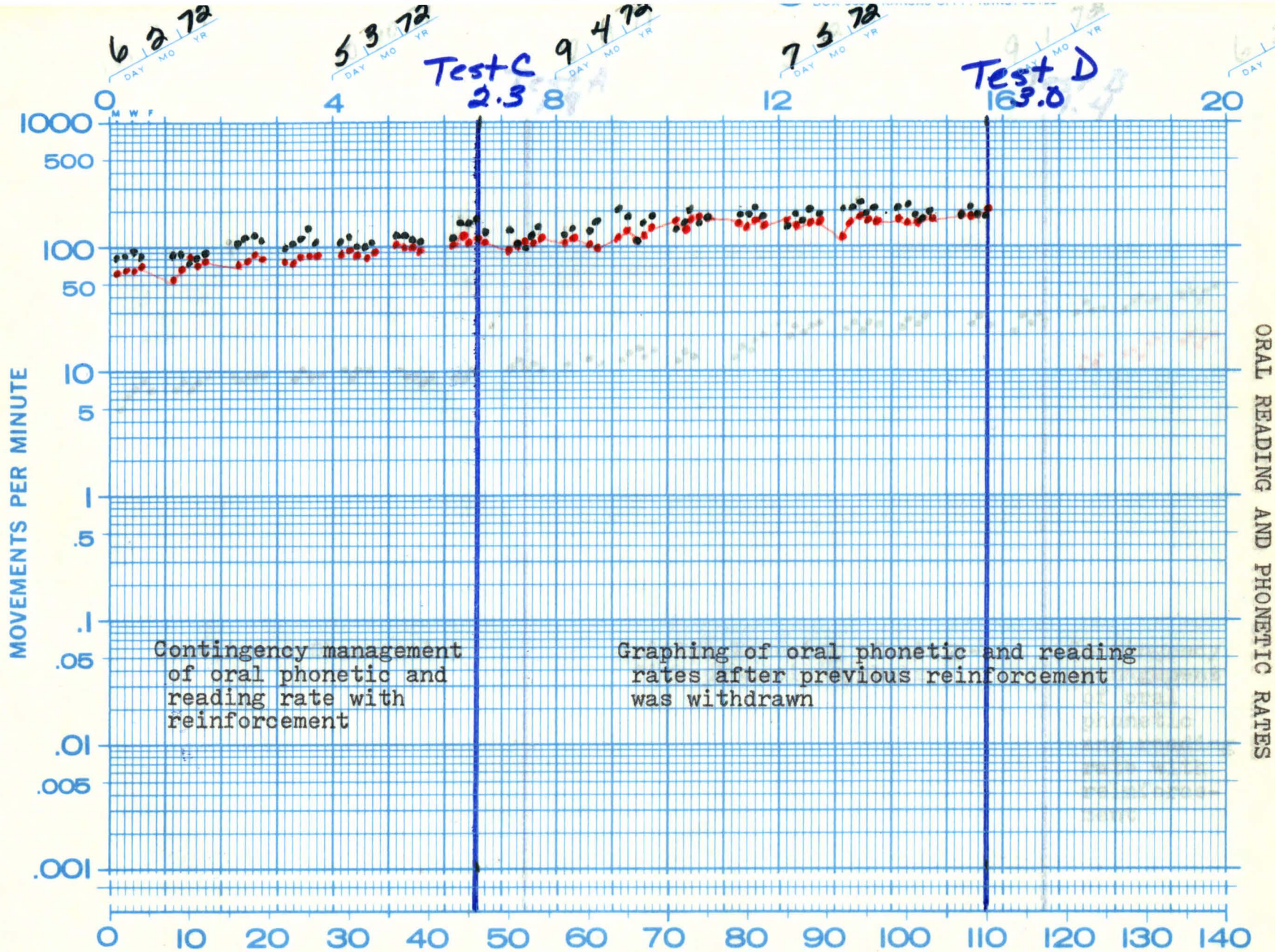


SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

10	13		
BEHAVIOR	AGE	LABEL	MOVEMENT
CHARTER			

SUPERVISOR	ADVISER	MANAGER
DEPOSITOR	AGENCY	



SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

104
BEHAVIOR

13
AGE

LABEL

MOVEMENT

CHARTER

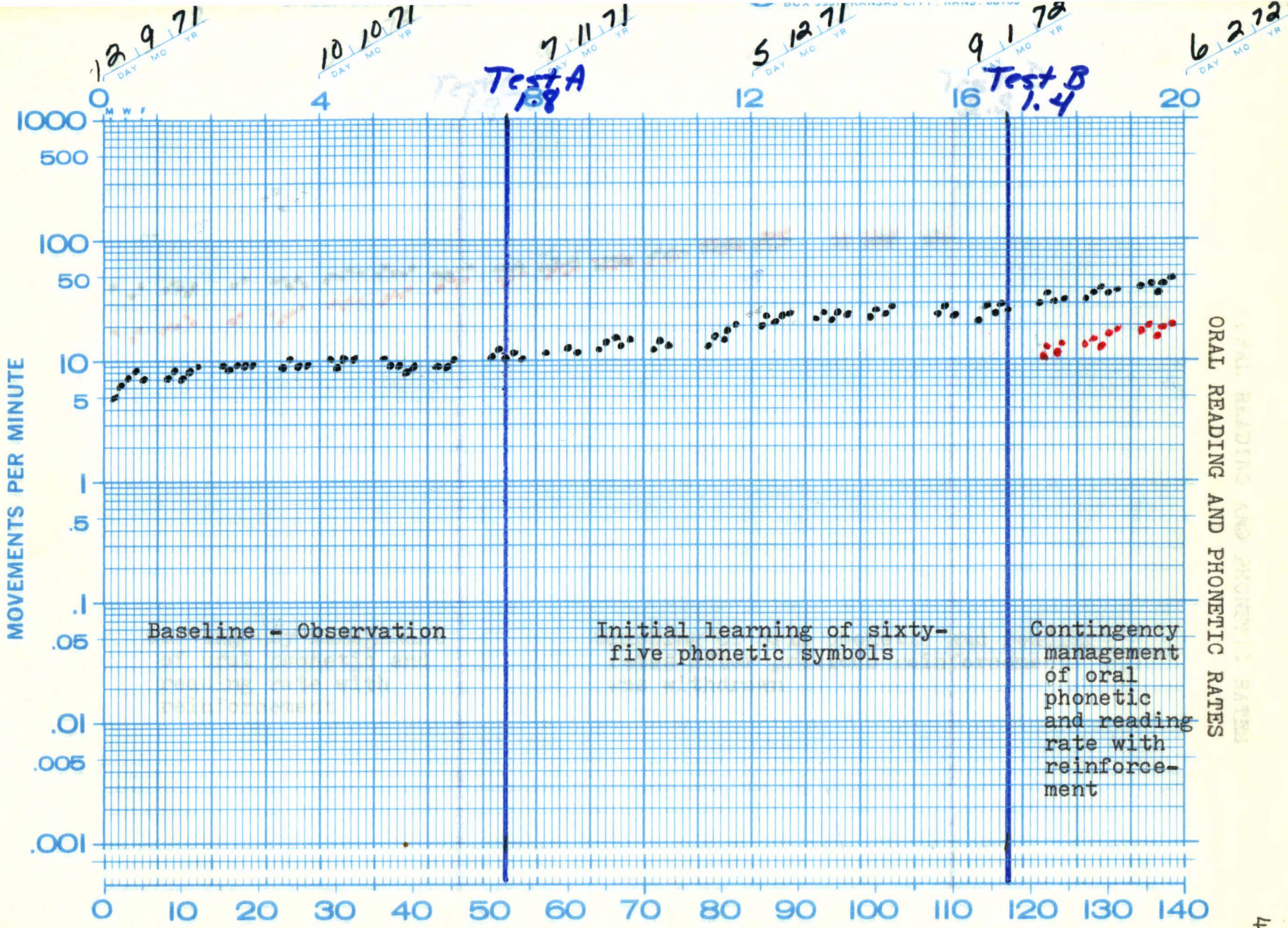
SUPERVISOR

ADVISER

MANAGER

DEPOSITOR

AGENCY



SUPERVISOR _____ ADVISER _____ MANAGER _____

DEPOSITOR _____ AGENCY _____

SUCCESSIVE CALENDAR DAYS

- Oral reading rate
- Oral phonetic rate

14 13

BEHAVIOR _____ AGE _____ LABEL _____ MOVEMENT _____

CHARTER _____

6 2 72
DAY MO YR

5 3 72
DAY MO YR

9 4 72
DAY MO YR

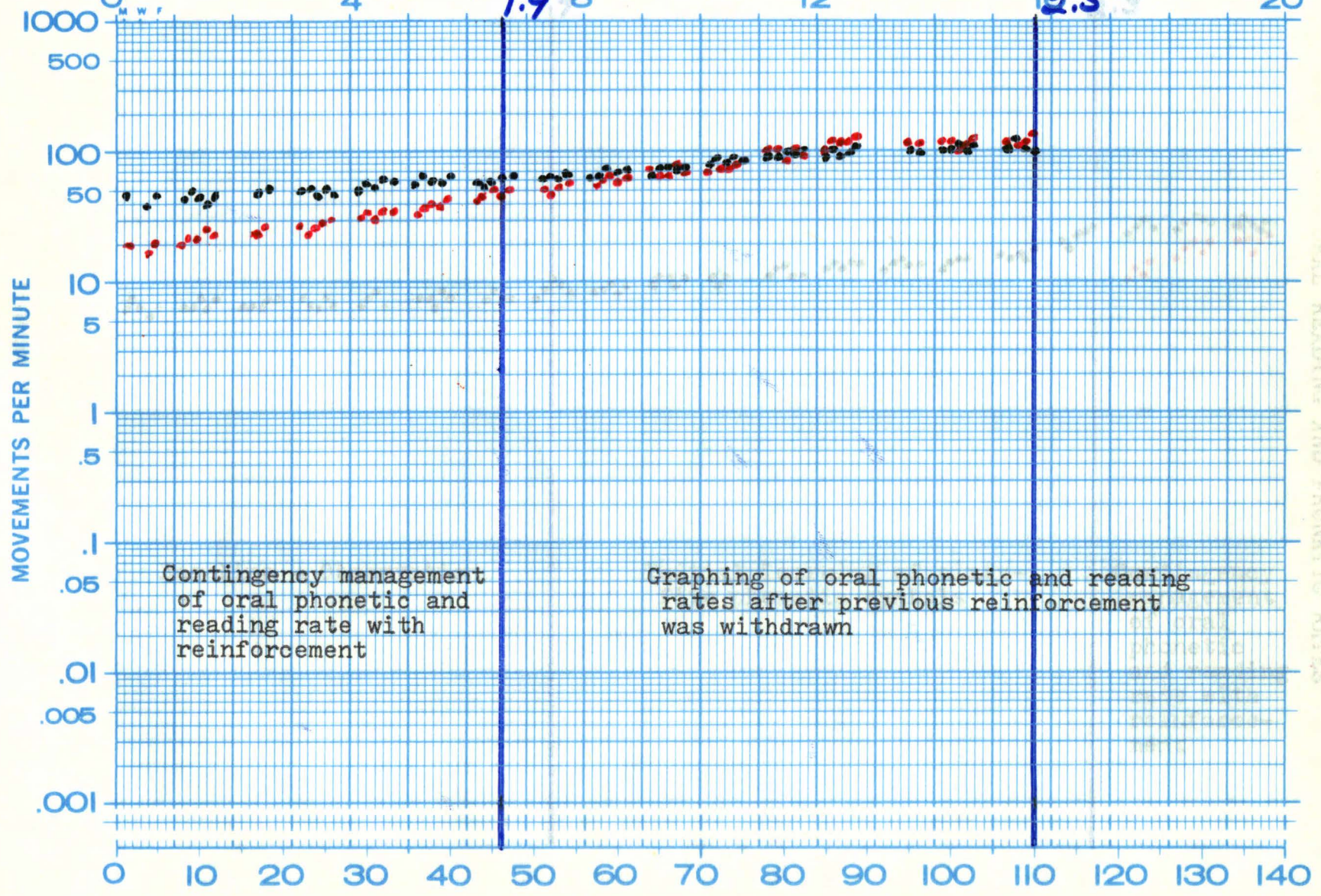
7 5 72
DAY MO YR

9 1 72
DAY MO YR

6 2 72
DAY MO YR

Test C
1.9 8

Test D
2.5



Contingency management of oral phonetic and reading rate with reinforcement

Graphing of oral phonetic and reading rates after previous reinforcement was withdrawn

ORAL READING AND PHONETIC RATES

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

14

13

SUPERVISOR

ADVISER

MANAGER

BEHAVIOR

AGE

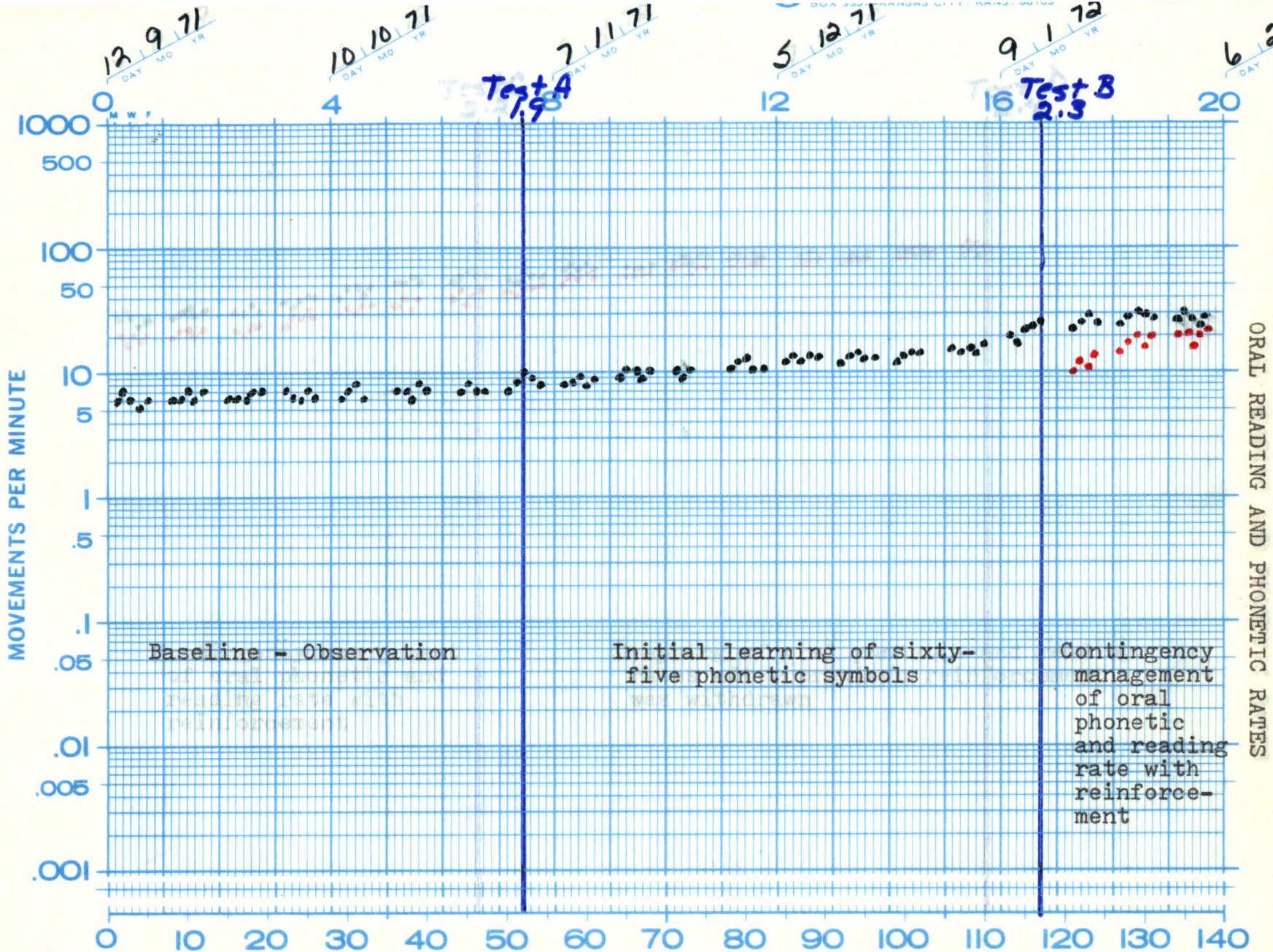
LABEL

MOVEMENT

DEPOSITOR

AGENCY

CHARTER



45

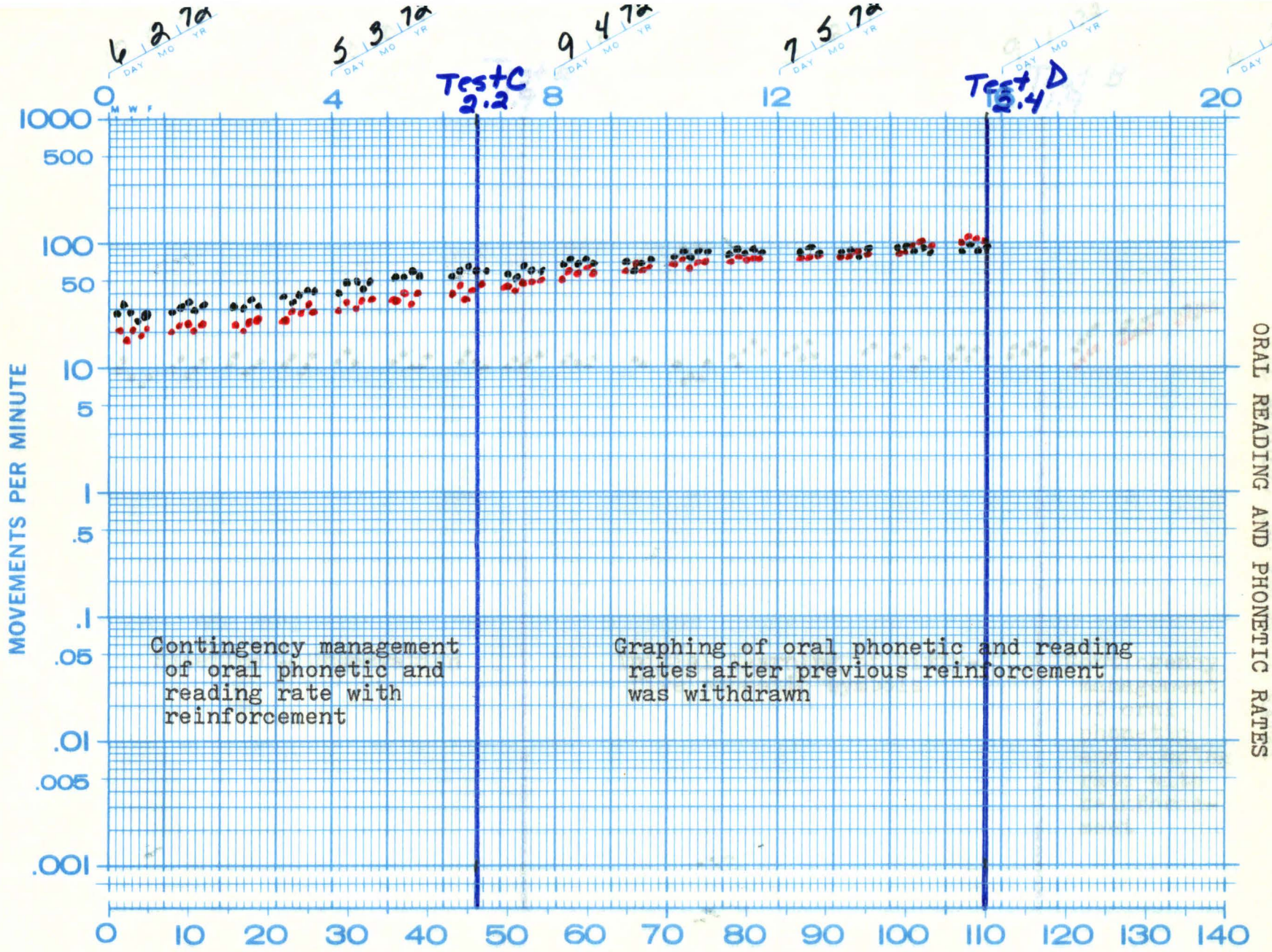
SUPERVISOR _____ ADVISER _____ MANAGER _____
 DEPOSITOR _____ AGENCY _____

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

1 / 14

BEHAVIOR _____ AGE _____ LABEL _____ MOVEMENT _____
 CHARTER _____

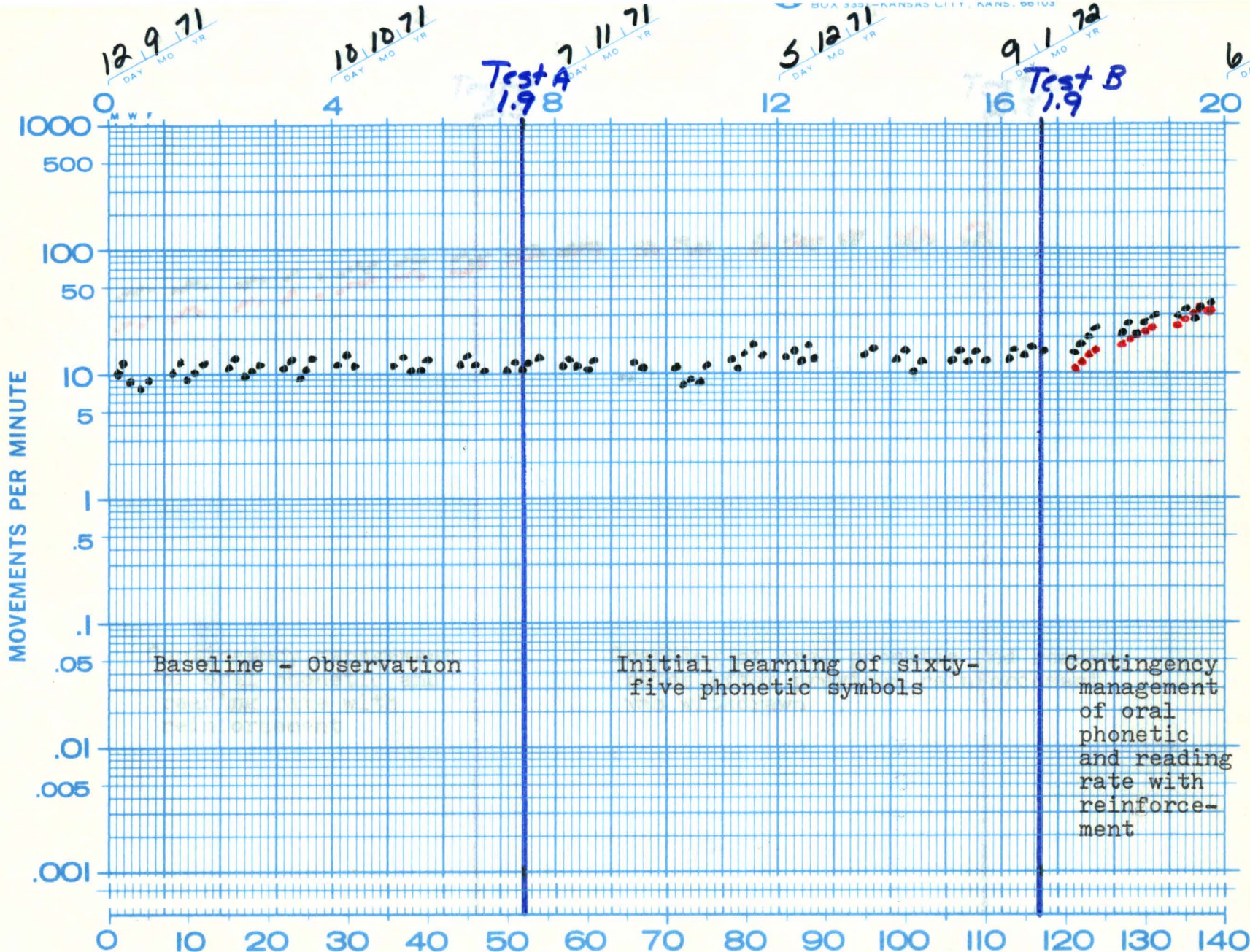


SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

71 14
BEHAVIOR AGE LABEL MOVEMENT
CHARTER

SUPERVISOR ADVISER MANAGER
DEPOSITOR AGENCY



SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

SUPERVISOR ADVISER MANAGER

DEPOSITOR AGENCY

7 14

BEHAVIOR AGE LABEL MOVEMENT

CHARTER

6 2 72
DAY MO YR

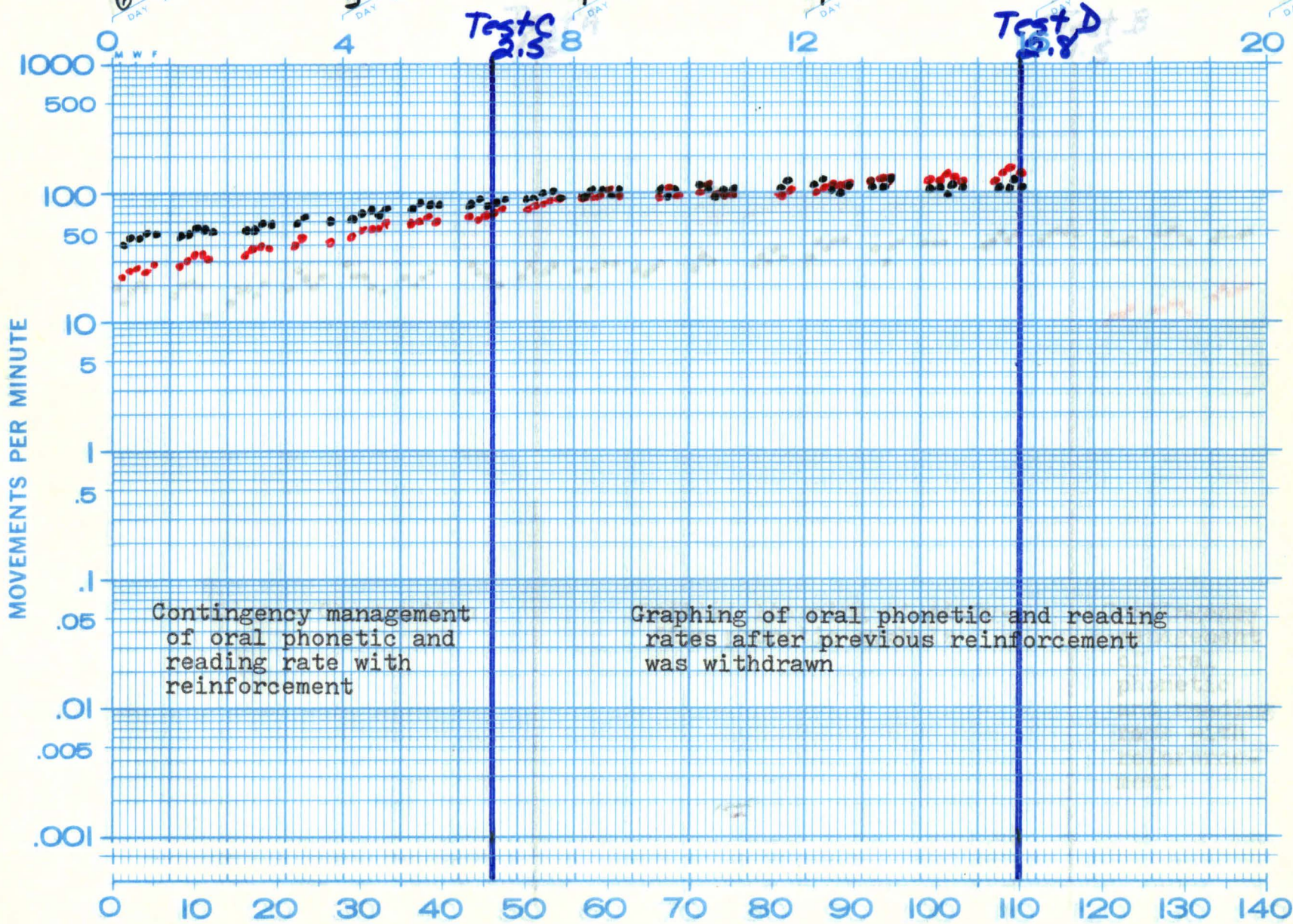
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DAY MO YR

9 4 72
DAY MO YR

7 5 72
DAY MO YR

7 5 72
DAY MO YR

6 5 72
DAY MO YR



SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

7

14

SUPERVISOR

ADVISER

MANAGER

BEHAVIOR

AGE

LABEL

MOVEMENT

DEPOSITOR

AGENCY

CHARTER

12 9 71
DAY MO YR

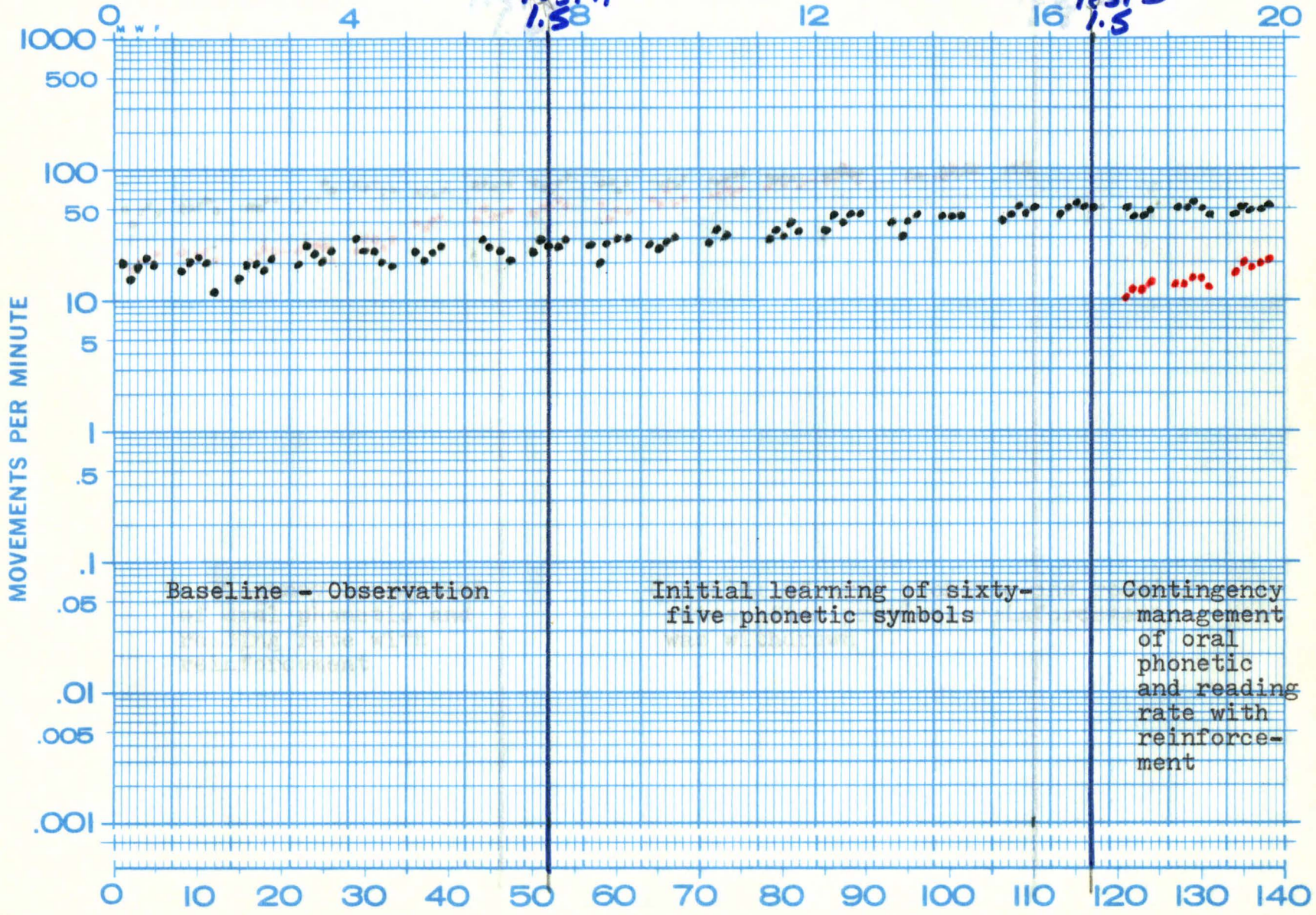
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DAY MO YR

Test A
1.58
7 11 71
DAY MO YR

5 12 71
DAY MO YR

Test B
1.5
9 1 72
DAY MO YR

6 2 72
DAY MO YR



ORAL READING AND PHONETIC RATES

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

3

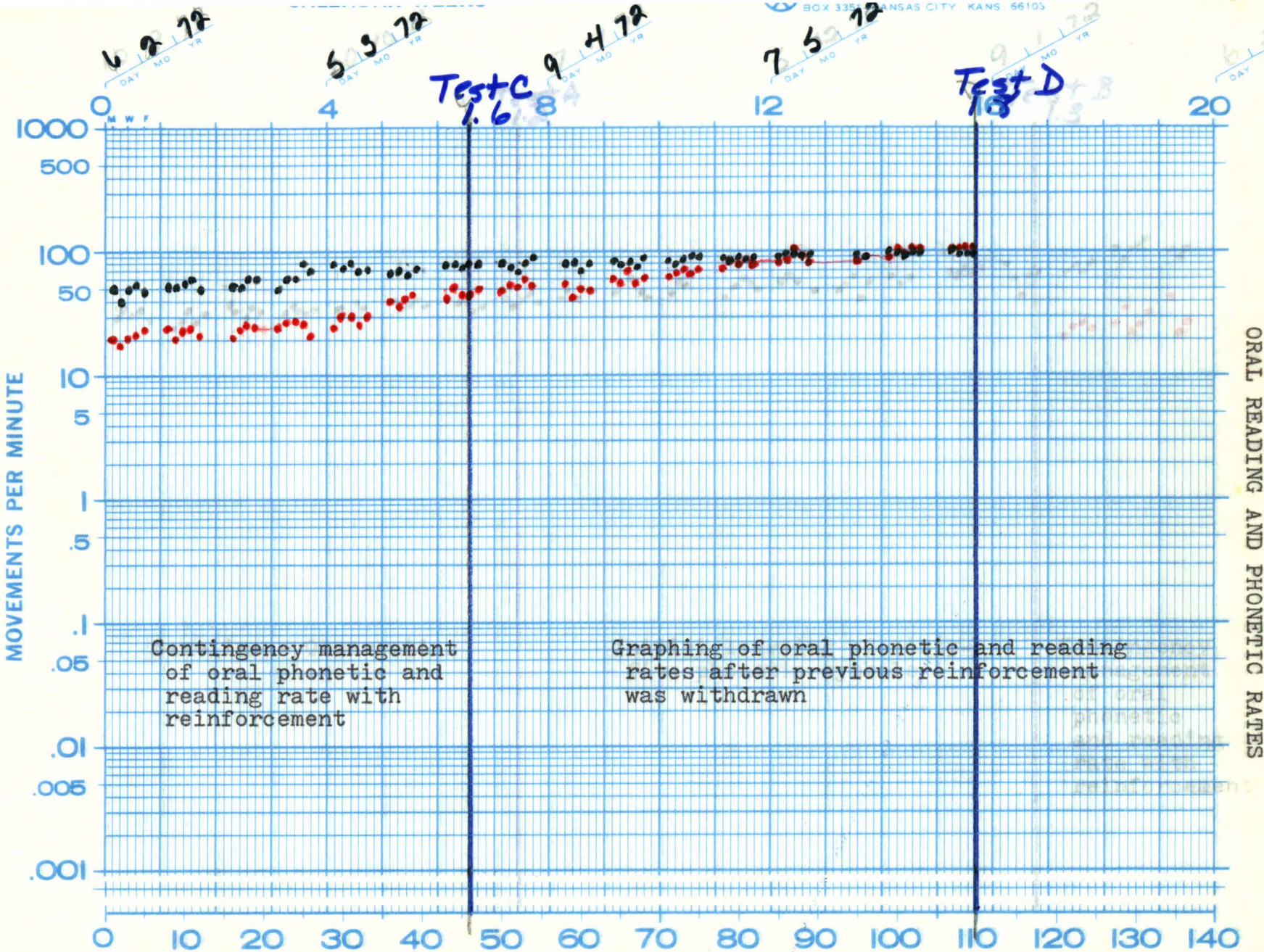
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SUPERVISOR ADVISER MANAGER

BEHAVIOR AGE LABEL MOVEMENT

DEPOSITOR AGENCY

CHARTER



SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

3 14

SUPERVISOR	ADVISER	MANAGER	BEHAVIOR	AGE	LABEL	MOVEMENT
DEPOSITOR	AGENCY		CHARTER			

12 9 71
DAY MO YR

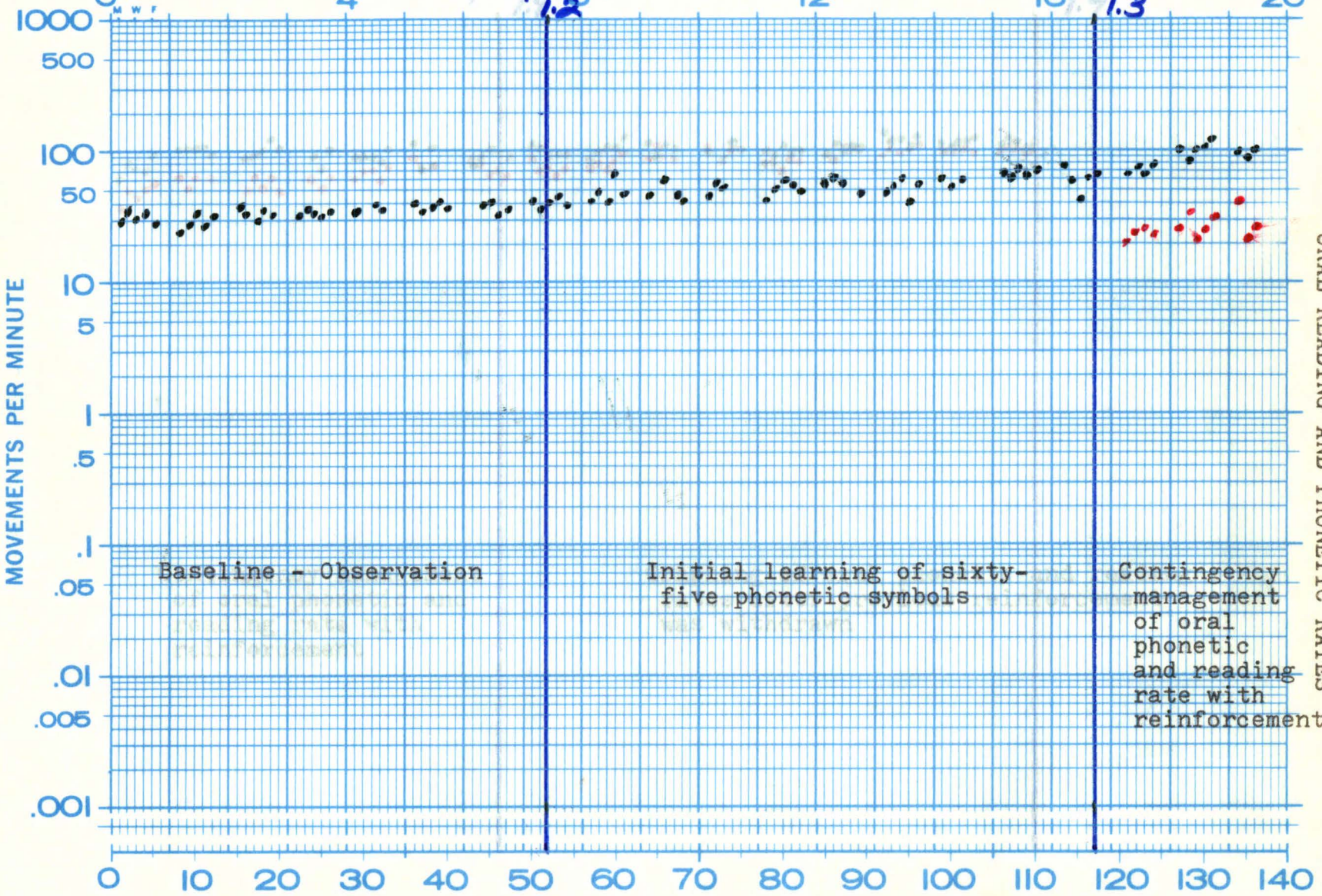
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DAY MO YR

7 11 71
DAY MO YR

5 12 71
DAY MO YR

9 1 72
DAY MO YR

6 2 72
DAY MO YR



ORAL READING AND PHONETIC RATES

SUCCESSIVE CALENDAR DAYS

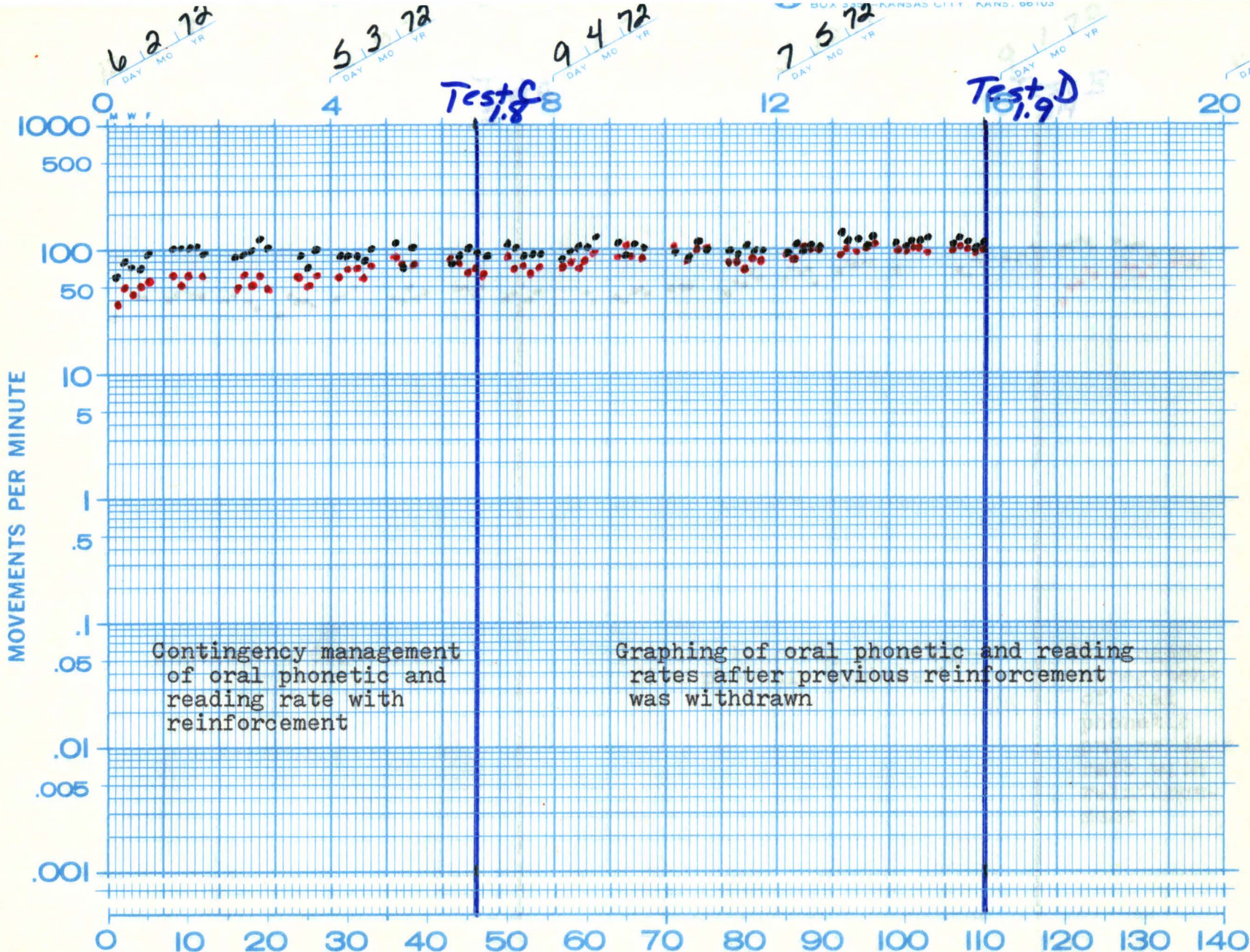
- oral reading rate
- oral phonetic rate

SUPERVISOR _____ ADVISER _____ MANAGER _____

DEPOSITOR _____ AGENCY _____

12 BEHAVIOR 13 AGE LABEL MOVEMENT

CHARTER



ORAL READING AND PHONETIC RATES

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

12

13

SUPERVISOR

ADVISER

MANAGER

BEHAVIOR

AGE

LABEL

MOVEMENT

DEPOSITOR

AGENCY

CHARTER

12 9 71
DAY MO YR

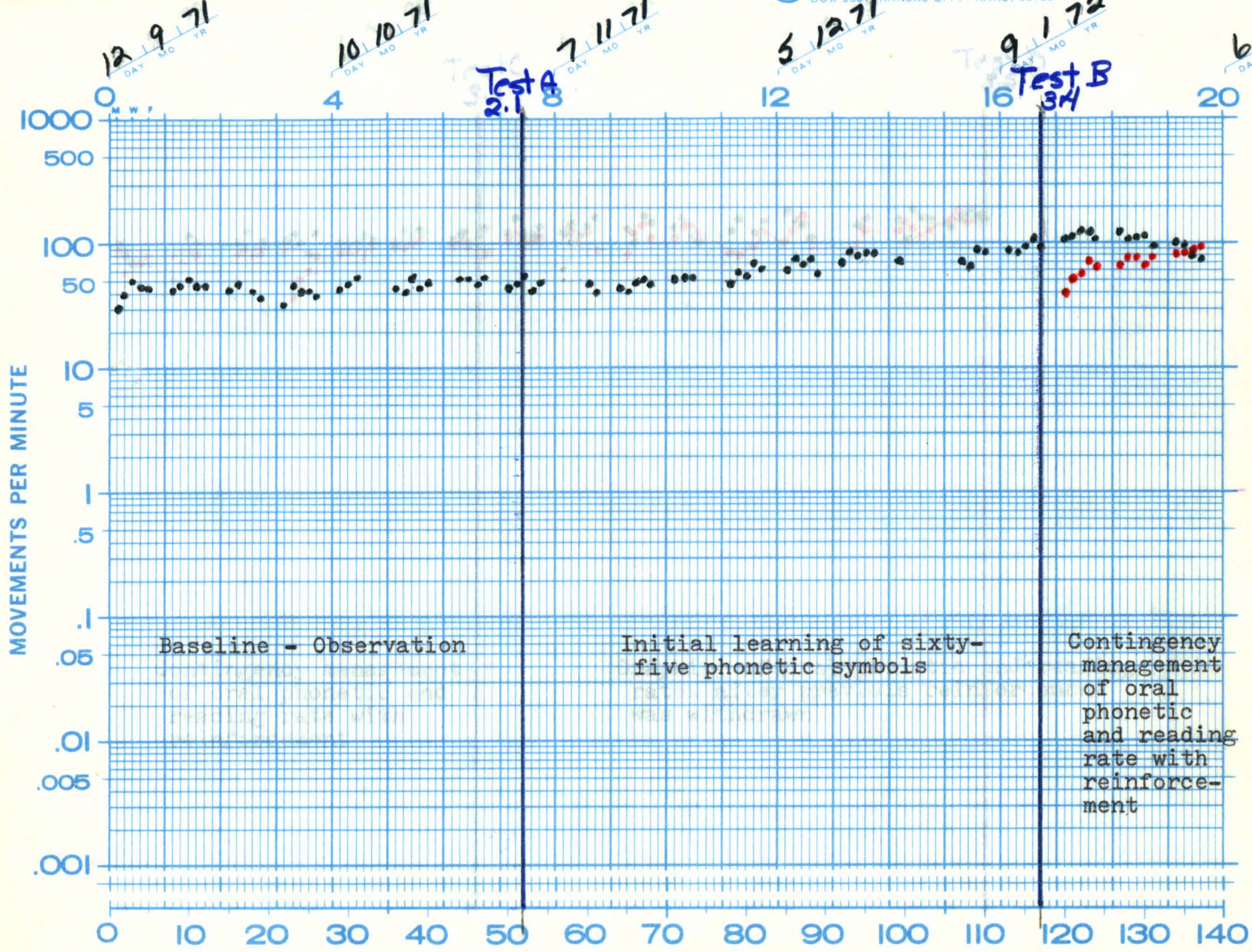
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DAY MO YR

7 11 71
DAY MO YR

5 12 71
DAY MO YR

9 1 72
DAY MO YR

6 2 72
DAY MO YR



ORAL READING AND PHONETIC RATES

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

11 BEHAVIOR 12 AGE LABEL MOVEMENT

SUPERVISOR ADVISER MANAGER

DEPOSITOR AGENCY

6 2 72
DAY MO YR

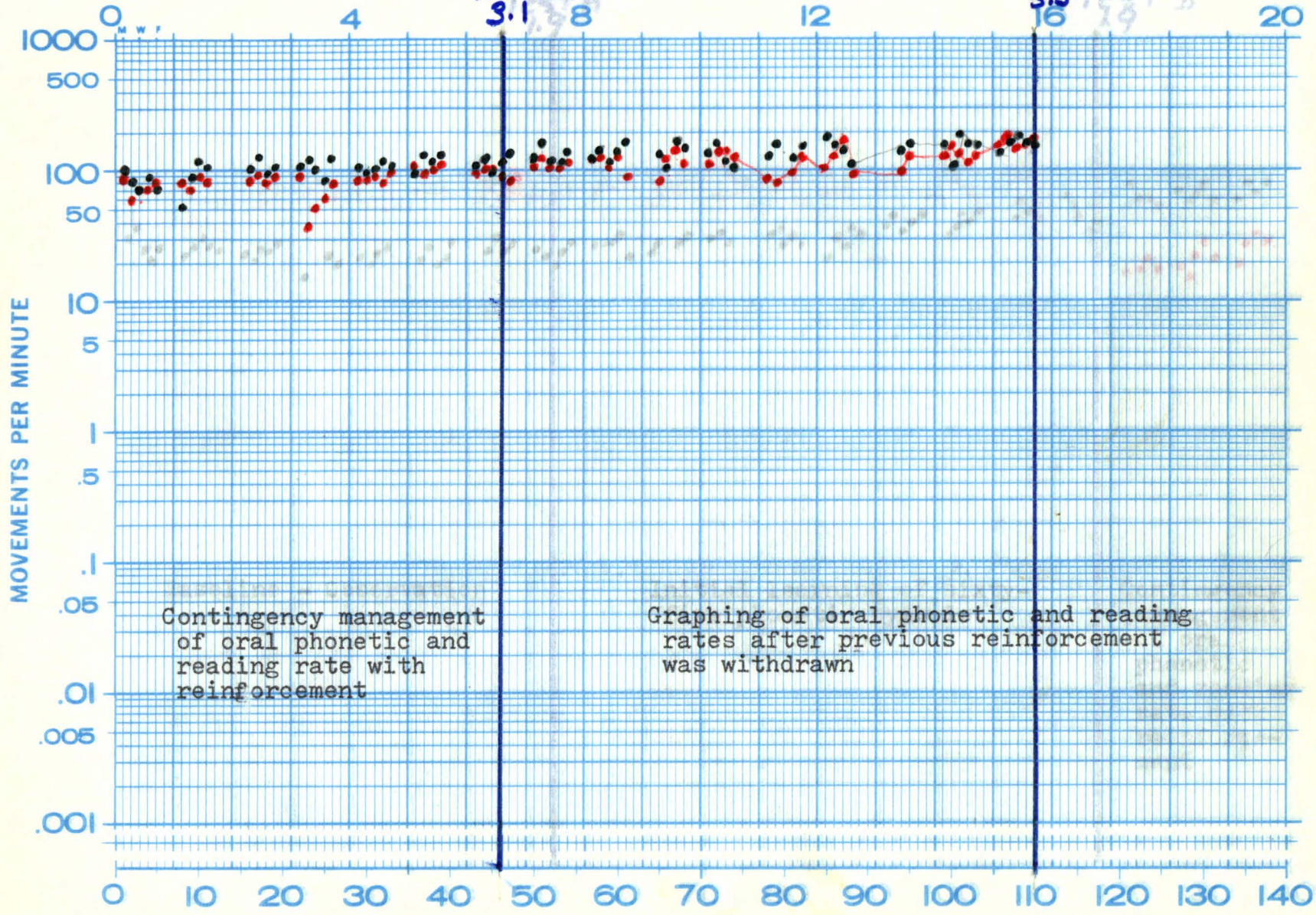
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DAY MO YR

9 4 72
DAY MO YR

7 5 72
DAY MO YR

Test D
3 5 72
DAY MO YR

6 2 72
DAY MO YR



Contingency management of oral phonetic and reading rate with reinforcement

Graphing of oral phonetic and reading rates after previous reinforcement was withdrawn

ORAL READING AND PHONETIC RATES

SUCCESSIVE CALENDAR DAYS

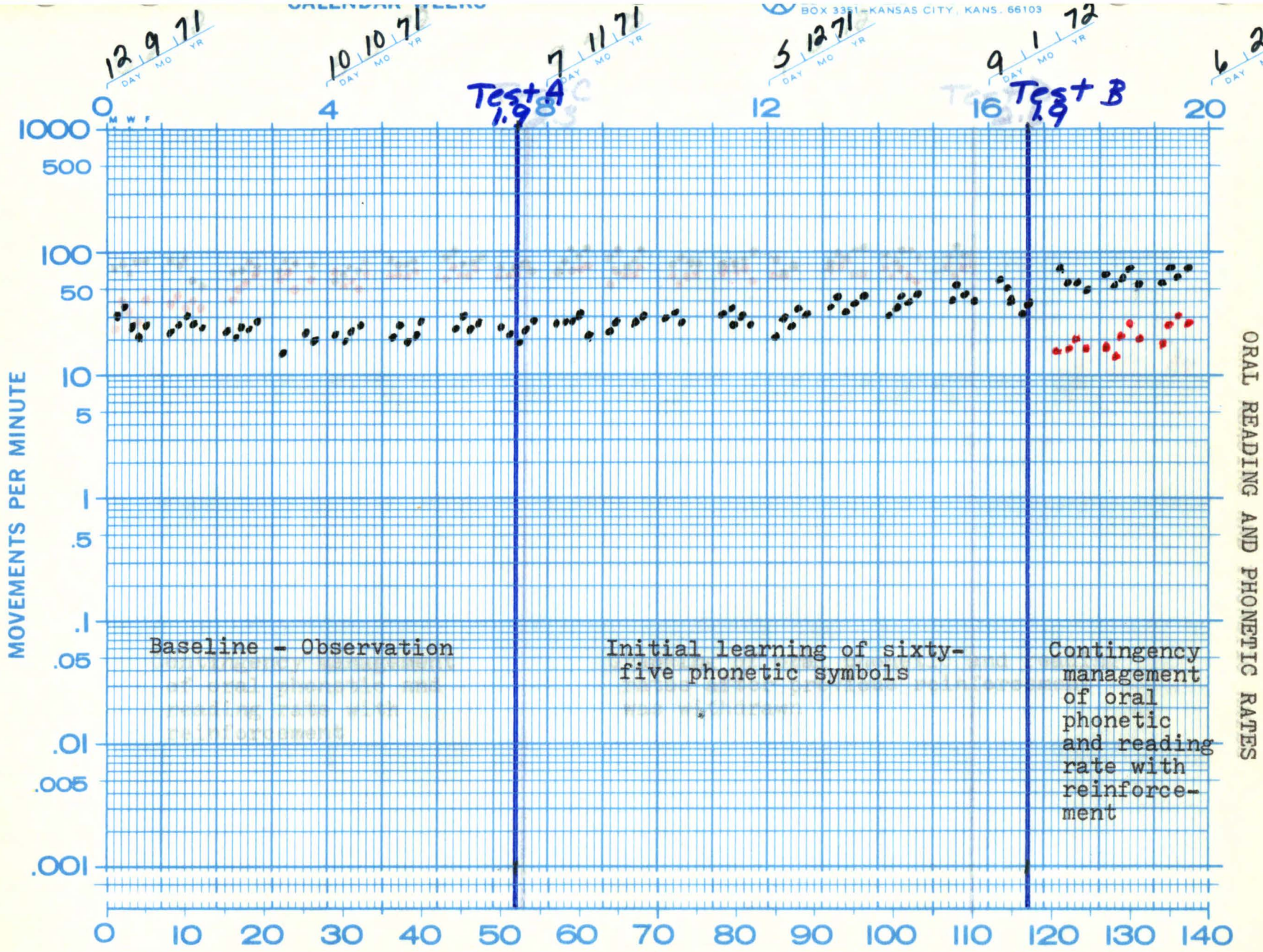
- oral reading rate
- oral phonetic rate

SUPERVISOR ADVISER MANAGER

DEPOSITOR AGENCY

11 12
BEHAVIOR AGE LABEL MOVEMENT

CHARTER



ORAL READING AND PHONETIC RATES

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

SUPERVISOR ADVISER MANAGER

DEPOSITOR AGENCY

8 12

BEHAVIOR AGE LABEL MOVEMENT

CHARTER

6 2 72
DAY MO YR

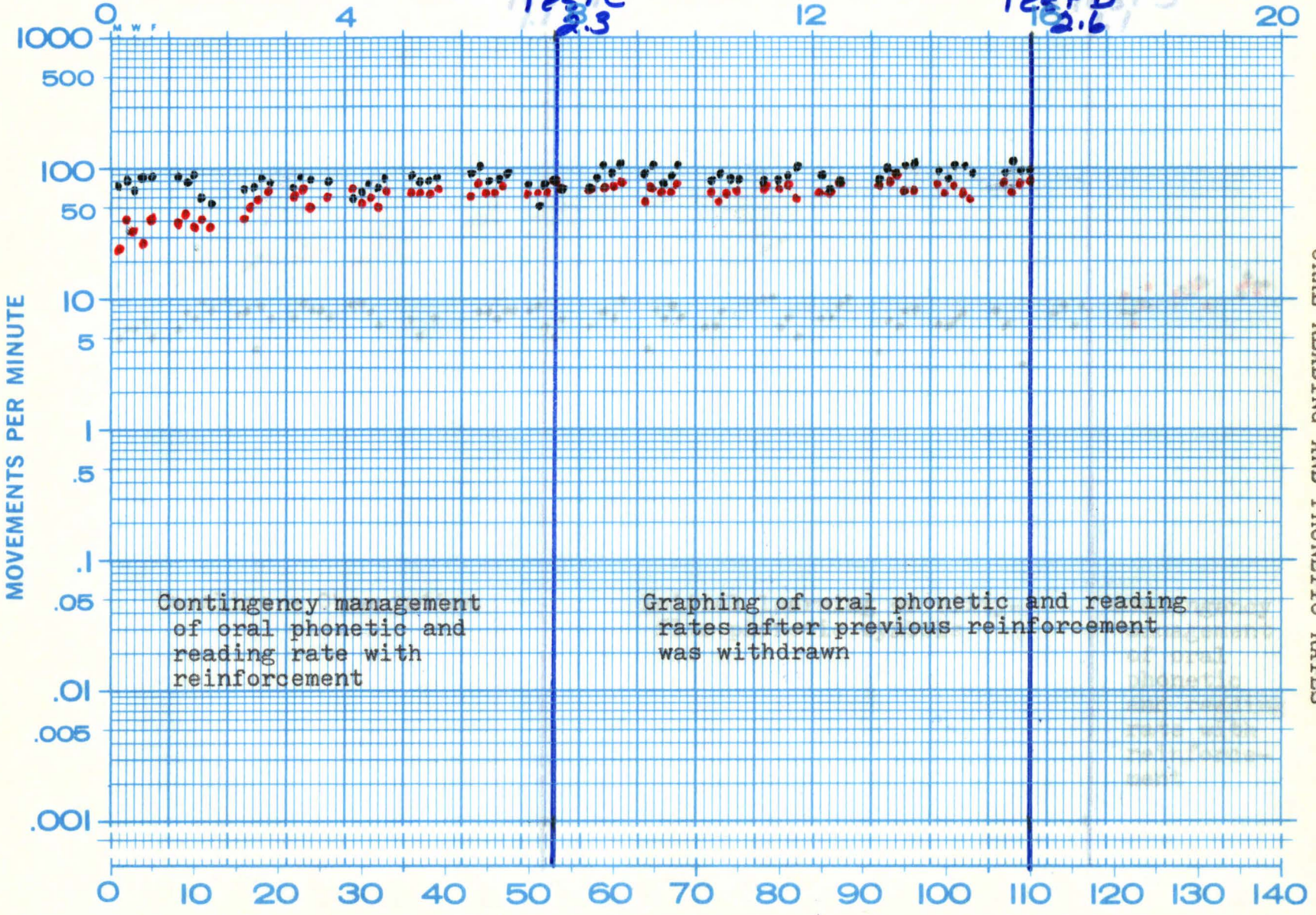
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DAY MO YR

9 4 72
DAY MO YR

7 5 72
DAY MO YR

9 1 72
DAY MO YR

6 2 72
DAY MO YR



SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

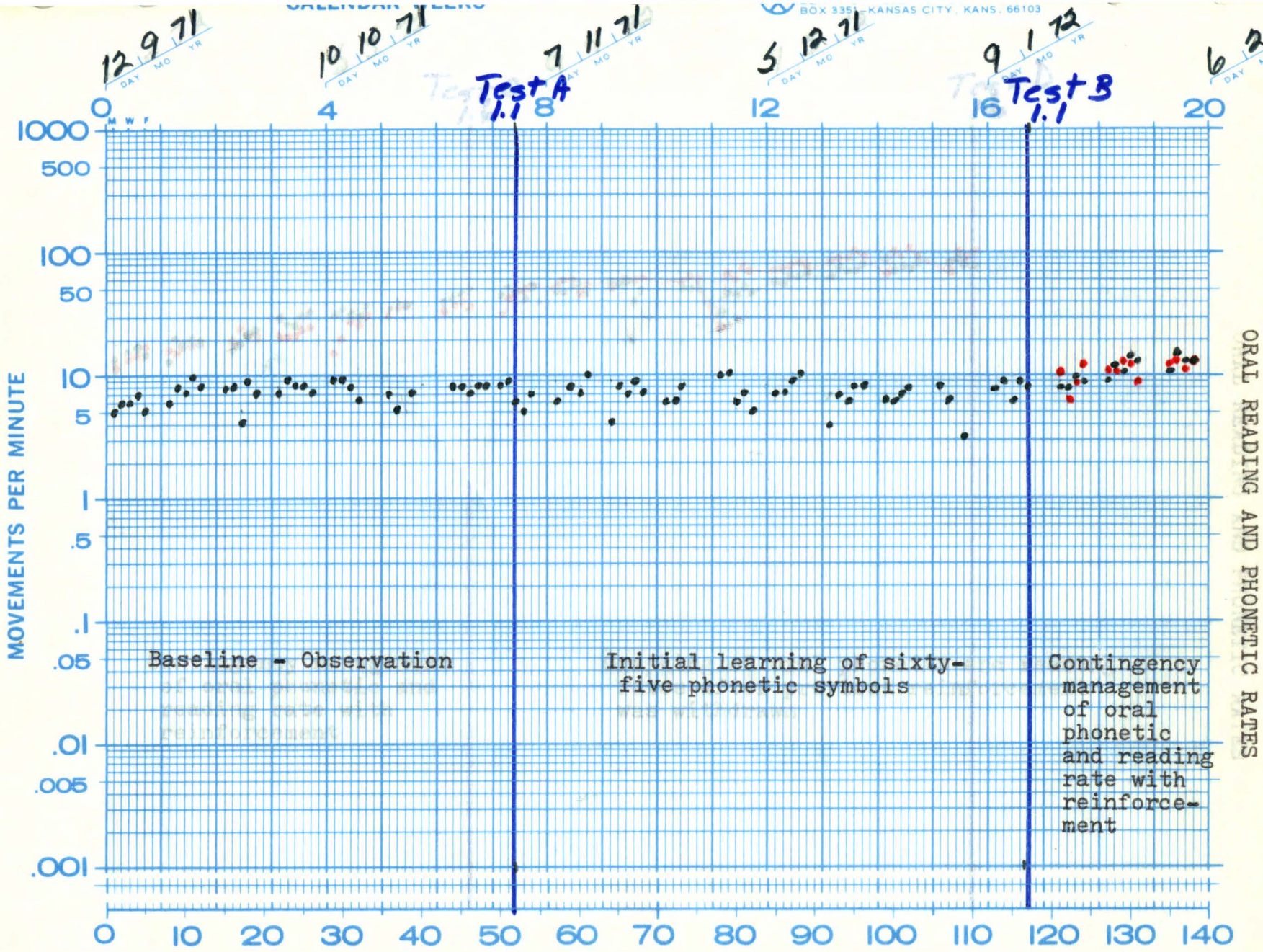
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BEHAVIOR AGE LABEL MOVEMENT

SUPERVISOR ADVISER MANAGER

DEPOSITOR AGENCY

CHARTER



ORAL READING AND PHONETIC RATES

SUPERVISOR			ADVISER			MANAGER			SUCCESSIVE CALENDAR DAYS			15		12						
DEPOSITOR			AGENCY			<ul style="list-style-type: none"> ● oral reading rate ● oral phonetic rate 			BEHAVIOR		AGE		LABEL		MOVEMENT					
									CHARTER											

6 2 72
DAY MO YR

5 3 72
DAY MO YR

9 4 72
DAY MO YR

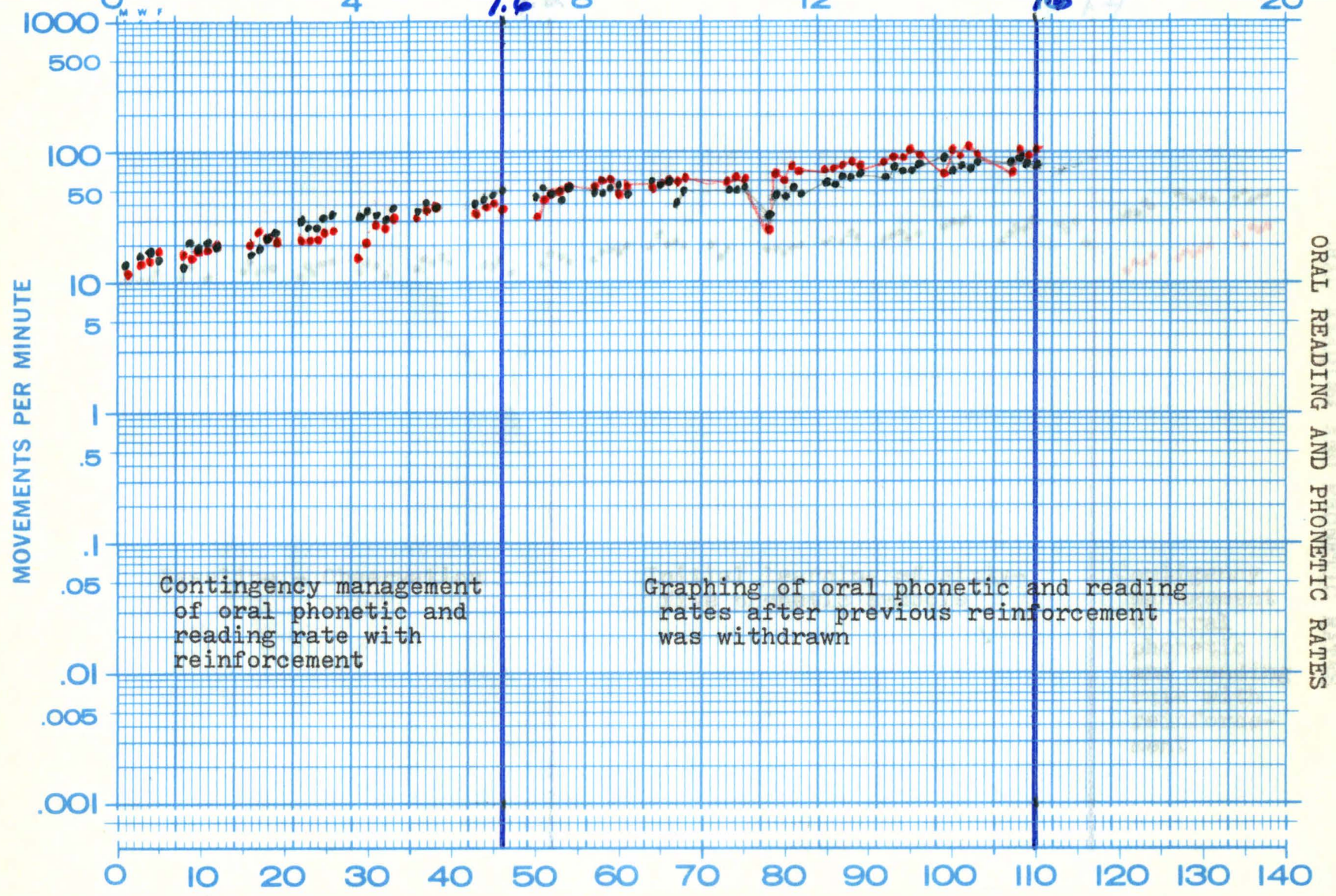
7 5 72
DAY MO YR

8 10 72
DAY MO YR

12 2 72
DAY MO YR

Test C
1.6

Test D
1.6



Contingency management of oral phonetic and reading rate with reinforcement

Graphing of oral phonetic and reading rates after previous reinforcement was withdrawn

ORAL READING AND PHONETIC RATES

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

15

12

SUPERVISOR

ADVISER

MANAGER

BEHAVIOR

AGE

LABEL

MOVEMENT

DEPOSITOR

AGENCY

CHARTER

12 9 71
DAY MO YR

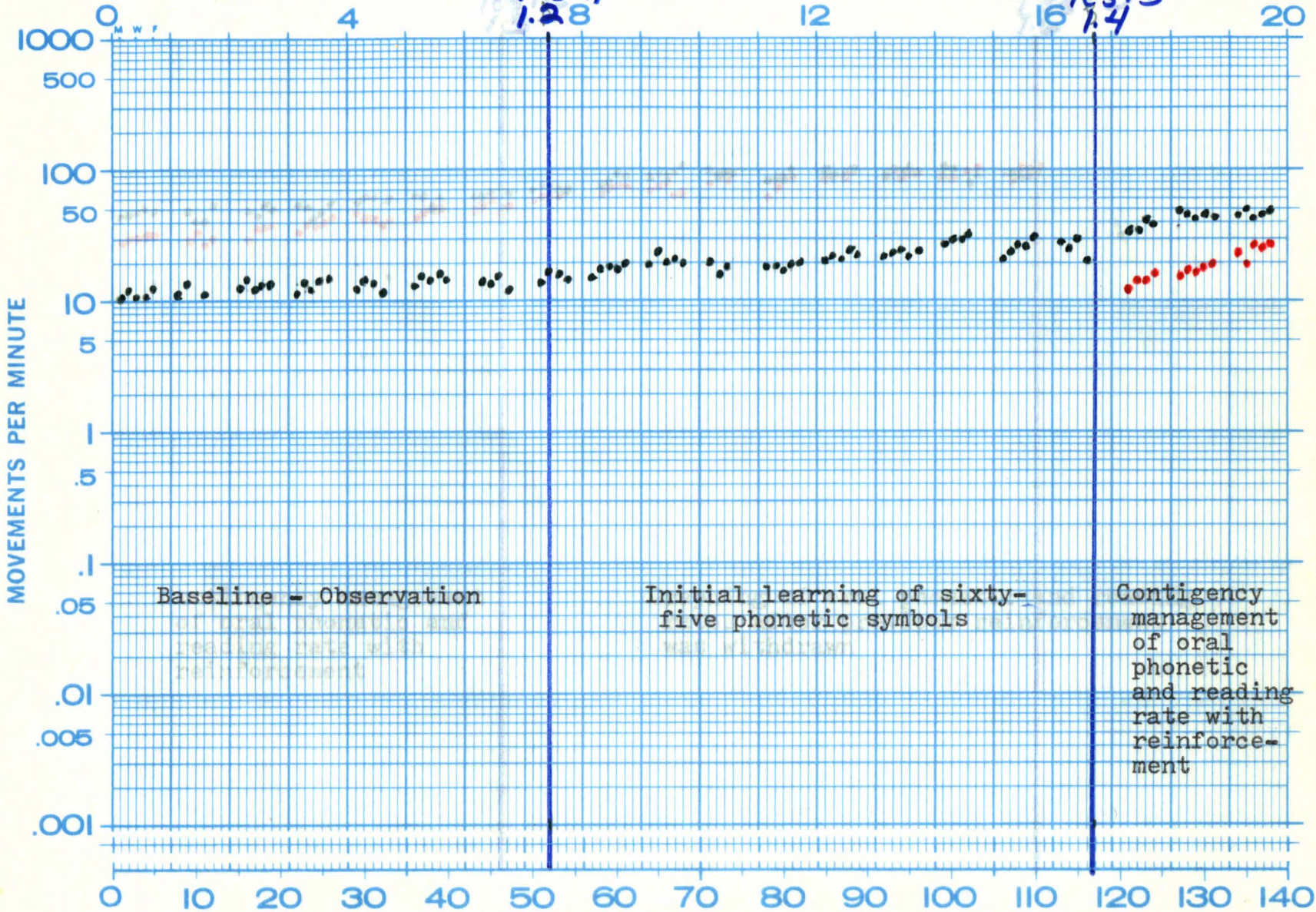
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DAY MO YR

7 11 71
DAY MO YR

5 12 71
DAY MO YR

9 1 72
DAY MO YR

6 2 72
DAY MO YR



ORAL READING AND PHONETIC RATES

Baseline - Observation

Initial learning of sixty-five phonetic symbols

Contingency management of oral phonetic and reading rate with reinforcement

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

13

15

SUPERVISOR

ADVISER

MANAGER

BEHAVIOR

AGE

LABEL

MOVEMENT

DEPOSITOR

AGENCY

CHARTER

6 2 72
DAY MO YR

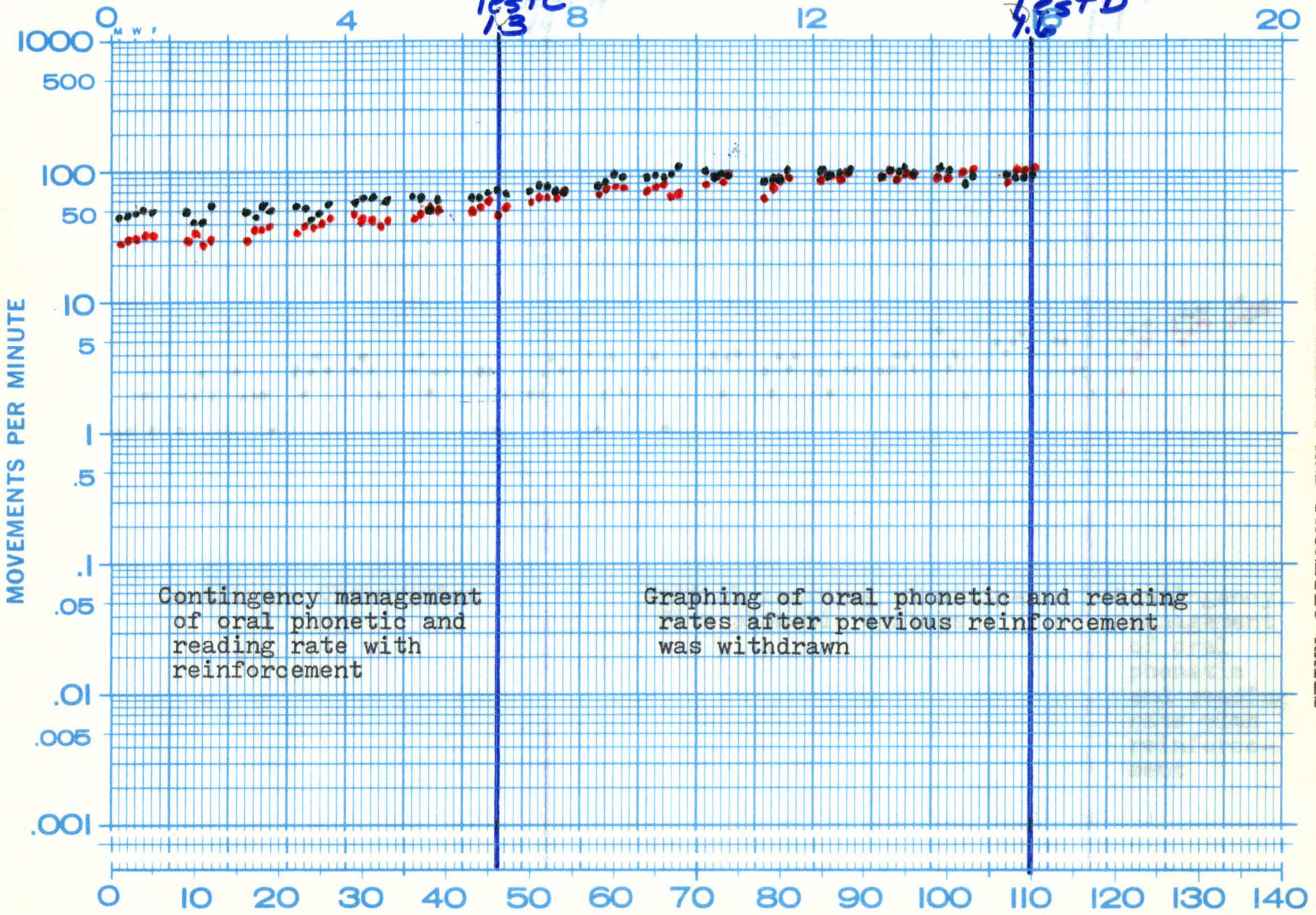
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DAY MO YR

9 4 72
DAY MO YR

7 5 72
DAY MO YR

DAY MO YR

DAY MO YR



Contingency management of oral phonetic and reading rate with reinforcement

Graphing of oral phonetic and reading rates after previous reinforcement was withdrawn

ORAL READING AND PHONETIC RATES

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

13

15

SUPERVISOR

ADVISER

MANAGER

BEHAVIOR

AGE

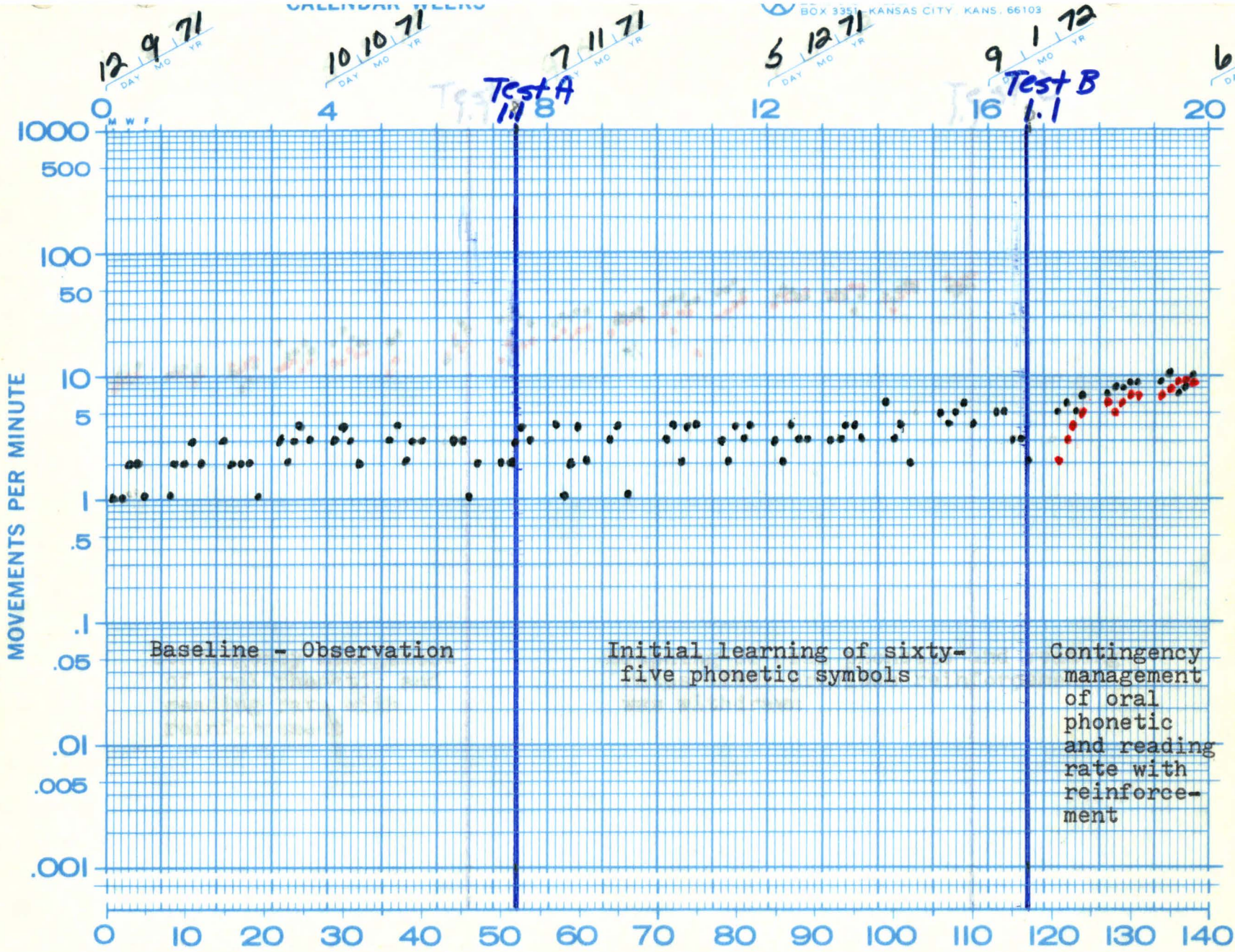
LABEL

MOVEMENT

DEPOSITOR

AGENCY

CHARTER



SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

SUPERVISOR _____ ADVISER _____ MANAGER _____

DEPOSITOR _____ AGENCY _____

44 BEHAVIOR

10 AGE

_____ LABEL

_____ MOVEMENT

CHARTER _____

6 2 72
DAY MO YR

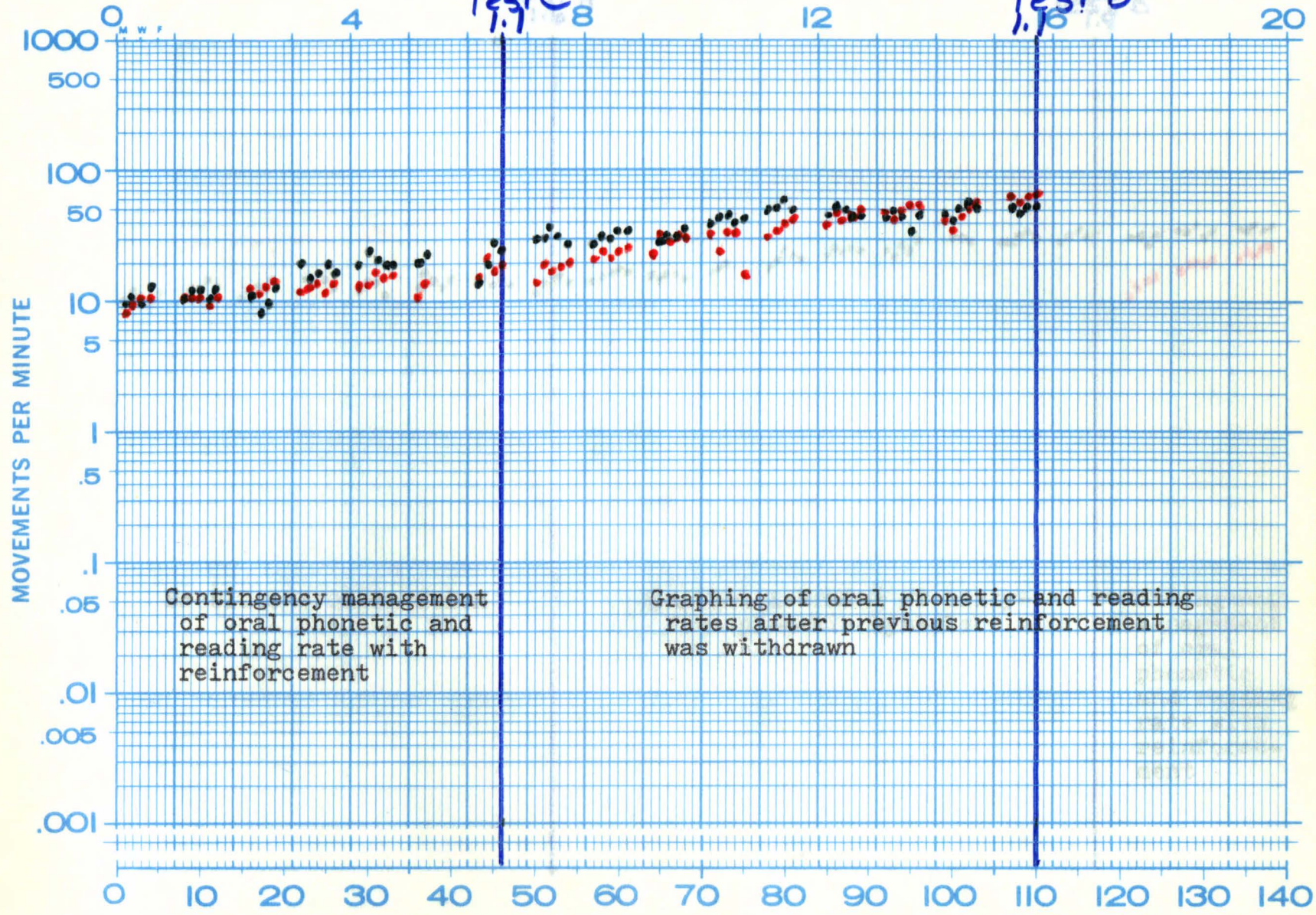
5 3 72
DAY MO YR

Test C 9 4 72
DAY MO YR

7 5 72
DAY MO YR

Test D 1 2 72
DAY MO YR

1 2 72
DAY MO YR



Contingency management of oral phonetic and reading rate with reinforcement

Graphing of oral phonetic and reading rates after previous reinforcement was withdrawn

ORAL READING AND PHONETIC RATES

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

4

10

SUPERVISOR

ADVISER

MANAGER

BEHAVIOR

AGE

LABEL

MOVEMENT

DEPOSITOR

AGENCY

CHARTER

12 9 71
DAY MO YR

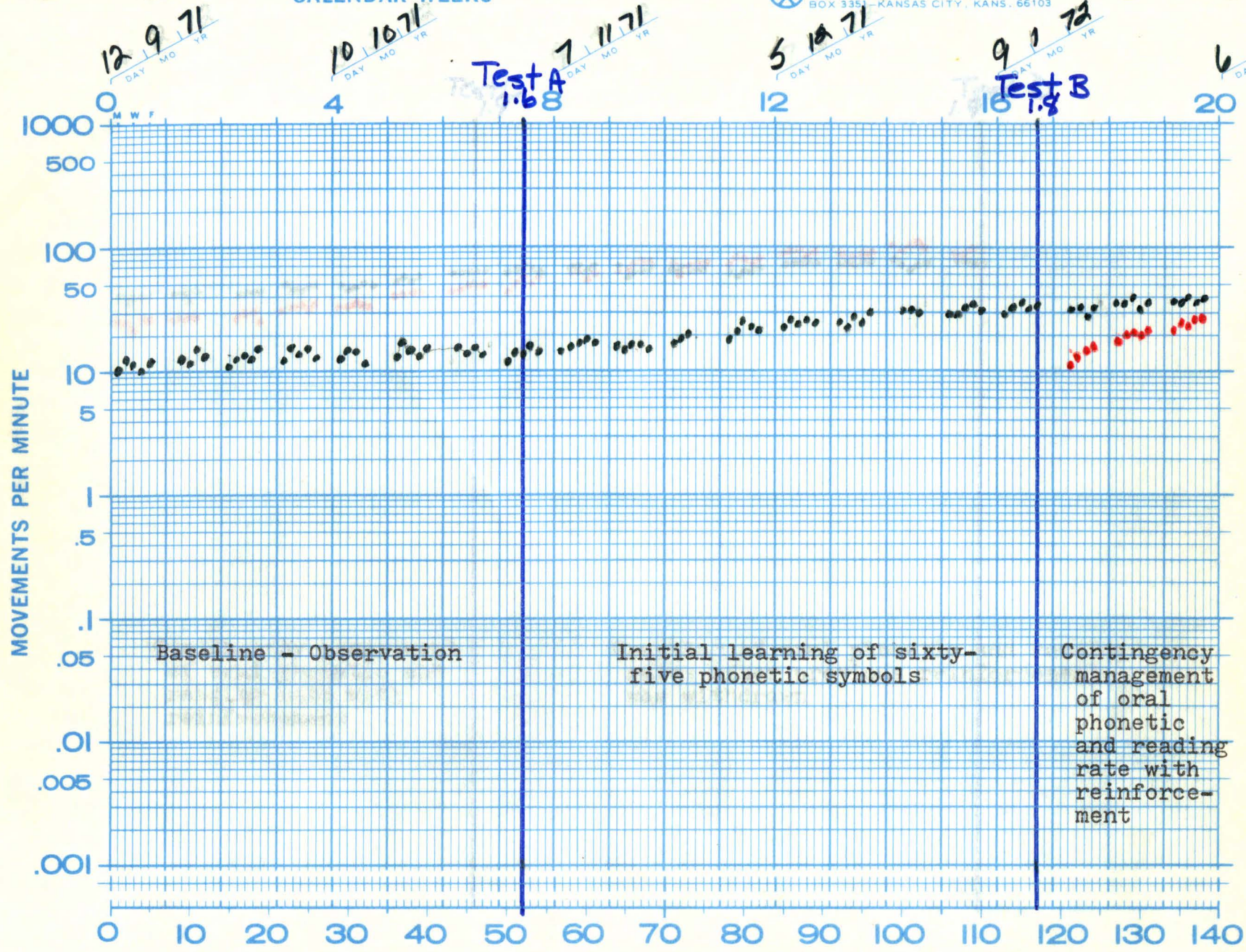
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DAY MO YR

Test A
1.68
7 11 71
DAY MO YR

5 10 71
DAY MO YR

Test B
1.9
9 1 72
DAY MO YR

6 2 72
DAY MO YR



ORAL READING AND PHONETIC RATES

SUCCESSIVE CALENDAR DAYS

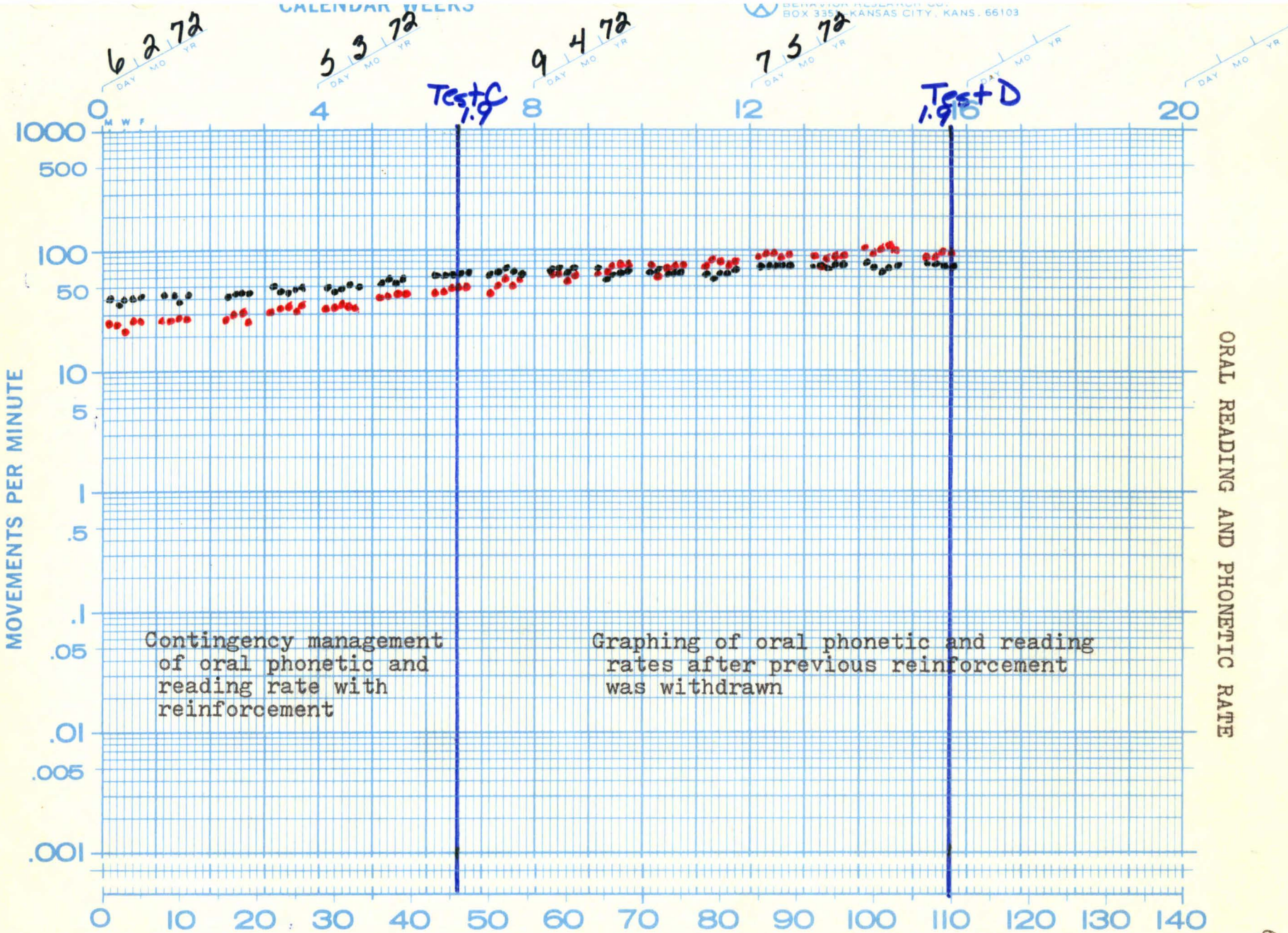
- oral reading rate
- oral phonetic rate

9 13
BEHAVIOR AGE LABEL MOVEMENT

SUPERVISOR ADVISER MANAGER

DEPOSITOR AGENCY

CHARTER



SUPERVISOR _____ ADVISER _____ MANAGER _____

DEPOSITOR _____ AGENCY _____

SUCCESSIVE CALENDAR DAYS

- oral reading rate
- oral phonetic rate

9 13
BEHAVIOR AGE LABEL MOVEMENT

CHARTER _____