R E P O R T R E S U M E S

ED 010 573 56

BUENA VISTA HIGH SCHOOL--SYSTEMS ANALYSIS

BY- EGBERT, ROBERT L.
SYSTEM DEVELOPMENT CORP., SANTA MONICA, CALIF.

REPORT NUMBER NDEA-VIIA-1130-16 PUB DATE 3 FEB 66
REPORT NUMBER BR-5-0738-16
REPORT NUMBER TM-1493-152-00
GRANT OEG-7-14-9120-217
EDRS PRICE MF-$0.09 HC-$1.96 49P.

DESCRIPTORS- *INSTRUCTIONAL INNOVATION, *SCHOOL ORGANIZATION, *EDUCATIONAL PLANNING, *CLOSED CIRCUIT TELEVISION, SYSTEMS ANALYSIS, *GRADE 11, *ENGLISH INSTRUCTION, SAGINAW, MICHIGAN, SANTA MONICA, CALIFORNIA

THE OPERATION OF BUENA VISTA HIGH SCHOOL IN SAGINAW, MICHIGAN, AND SUGGESTIONS FOR SYSTEM CHANGES WERE DESCRIBED IN THE THIRD OF A SERIES OF THREE REPORTS. OF GENERAL CONCERN WAS THE USE OF CLOSED-CIRCUIT TELEVISION IN GRADE 11 ENGLISH INSTRUCTION. THE STUDY WAS PART OF A GENERAL INVESTIGATION, USING SYSTEMS ANALYSIS AND COMPUTER SIMULATION TECHNIQUES, OF ORGANIZATIONAL MODIFICATIONS IN EDUCATION THAT SUPPORT THE USE OF INSTRUCTIONAL INNOVATIONS. SOME OF THE PROPOSED MODIFICATIONS FOR IMPROVEMENT OF THE SYSTEM WERE (1) ELIMINATION OF HALF GROUPS, (2) SIMPLIFICATION OF ATTENDANCE CHECKING PROCEDURES, (3) PROVISION FOR SMALLER DISCUSSION GROUPS, (4) MODIFICATION OF THE PRESENT SYSTEM TO PERMIT GROUPS TO BE RECONSTITUTED MORE READILY, AND (5) PROVISION FOR STUDENTS TO SPEND MORE TIME IN DIRECTED STUDY. TWO HYPOTHETICAL PROGRAMS WERE DEVELOPED WHICH REPRESENTED MAJOR CHANGES IN THE CURRENT PROGRAM. SIMULATIONS OF THE OPERATION OF THE PROPOSED PROGRAMS BY THE COMPUTER MODEL PROVIDED A MEANS TO EVALUATE THE POWER OF THE MODEL AND ITS POTENTIAL AS A TOOL. FLOWCHARTS AND TABLES WERE INCLUDED. THE GENERAL DESCRIPTION OF THE HIGH SCHOOL (ED 010 571) AND A DETAILED ANALYSIS OF THE TELEVISION SYSTEM (ED 010 572) WERE THE OTHER REPORTS OF THE SERIES. (RS)

The research reported herein was conducted under SDC's independent research program and supported in part by Grant 7-14-9120-217 from the Office of Education, U. S. Department of Health, Education, and Welfare.

TECH MEMO
a working paper
System Development Corporation / 2500 Colorado Ave. / Santa Monica, California

TM-1493/152/00

AUTHOR Robert L. Egbert
TECHNICAL
RELEASE Harry F. Silberman
for Jules Schwartz

DATE 2/3/66 PAGE 1 OF 44 PAGES

Buena Vista High School: Systems Analysis

ABSTRACT

This document is the third in a series reporting work done with Buena Vista High School in connection with the study New Solutions to Implementing Instructional Media Through Analysis and Simulation of School Organizations. This document presents a detailed analysis of the instructional plan in use at Buena Vista High School and suggests design ideas for possible changes to the system.

* * * * * *

I. INTRODUCTION

In an SDC document (Reference 4), project personnel stated their intention of using system analysis and computer simulation techniques to investigate organizational modifications in education that support the use of instructional innovations. This 2 1/2 year study began with a nationwide survey of high schools to identify a select few that are demonstrating creative approaches in organizing their resources to use innovation. As a result of this survey, six specific schools, including Buena Vista High School in Saginaw, Michigan, were chosen for intensive study.

The present document is the third in a series of three dealing with Buena Vista High School. Extensive use of closed circuit television as an instructional tool prompted selection of this school for analysis in the School Simulation Study. The first document in this series (Reference 6), comprises a general description of Buena Vista High School. The second document (Reference 7), describes the closed circuit television system and how it is used in the eleventh grade English course. This document (Reference 8) analyzes the operation of Buena Vista High School and presents suggestions for possible changes in the system.

These suggestions should not be interpreted as criticism of the Buena Vista program. This project is devoted to studying educational changes and ways of introducing such changes. Only as suggested changes are tested in the model can we determine the model's power as a tool.

II. TECHNICAL DISCUSSION

At the present time, two organizational trends are clearly apparent in attempts to improve secondary education. One trend, exemplified by the continuous progress plan and related ideas (References 1, 2, 3, 5, 9, 10, 11), attempts to free the individual to move in directions and at rates commensurate with his interests and abilities. These programs emphasize student initiative with the teacher playing the role of a resource person to whom the student can turn for help and guidance as needed. The second trend, exemplified by such schools as Buena Vista, attempts to place teachers in "stimulator" and "dispenser of information" roles. These schools adopt the position that some teachers are much better qualified than others to stimulate students and to impart information. Furthermore, they suggest that if the teacher is going to lecture anyway (and much of secondary school instruction does consist of lectures), he may as well lecture to a large group as to a small one. Therefore, teams have been formed in which the roles of the various members differ considerably, with the lecturing being done primarily by one member of the team. In the eleventh-grade English course at Buena Vista, Mr. Tuck, an excellent stimulator and dispenser of information, does most of the lecturing. The other two members of the team take roll and serve as proctors during the lectures. They also conduct discussions when the total group is divided into smaller groups.

A. SCHOOL ORGANIZATION

Cursory consideration was given to the general organization plan of Buena Vista High School in previous documents of this series (References 6, 7). The plan is apparently structured much as most other secondary schools. Buena Vista is administered by a principal and a vice principal whose duties and responsibilities appear to be appropriately separated and defined. A teacher may be a team member in all courses he teaches, a nonteam member in all courses, or a team member for some courses and a nonteam member for others. Where an instructor is a nonteam

member, the teacher is responsible, via the department chairman, to the central school administration. As a team member, the teacher is responsible to the team leader as an added intermediate step.

The television director is responsible to the central administration; the technician and the artist report to him.

The television crew and the various instructional teams utilizing television work cooperatively under certain rather well-defined rules. When a major departure from the rules is desired, the variation from the norm is taken to the principal.

As has been suggested, this organizational structure appears sound and seems to be operating efficiently and effectively.

B. GENERAL PROCEDURES

Operation of eleventh-grade English is described in Figure 1. Basically, this figure shows that class begins with a telelesson on Mondays, Wednesdays, and Fridays, or with five minutes of roll taking and assignment making on Tuesdays and Thursdays. Following either of these two activities, the class may remain as a large group or it may be split into two or three groups. Although the plan is that each Monday, Wednesday, and Friday class begins with a telelesson, 14 percent of the time this does not occur. This small percentage of exception to the rule appears to permit appropriate flexibility in the program.

Telelessons are supposed to be approximately half of the period (25 minutes) in length. In actual practice the telelesson may run from 10 minutes to, with special permission, 50 minutes. This flexible variability in the length of the telelesson appears to be desirable.

While in general, the course operating procedures appear sound and in keeping with good educational practice; we believe consideration might be given to changing four aspects of the general procedures:

- The use of half groups.
- The roll taking and assignment making portion of days that have no telelesson.
- The size of discussion groups.
- The relative inflexibility of groupings.

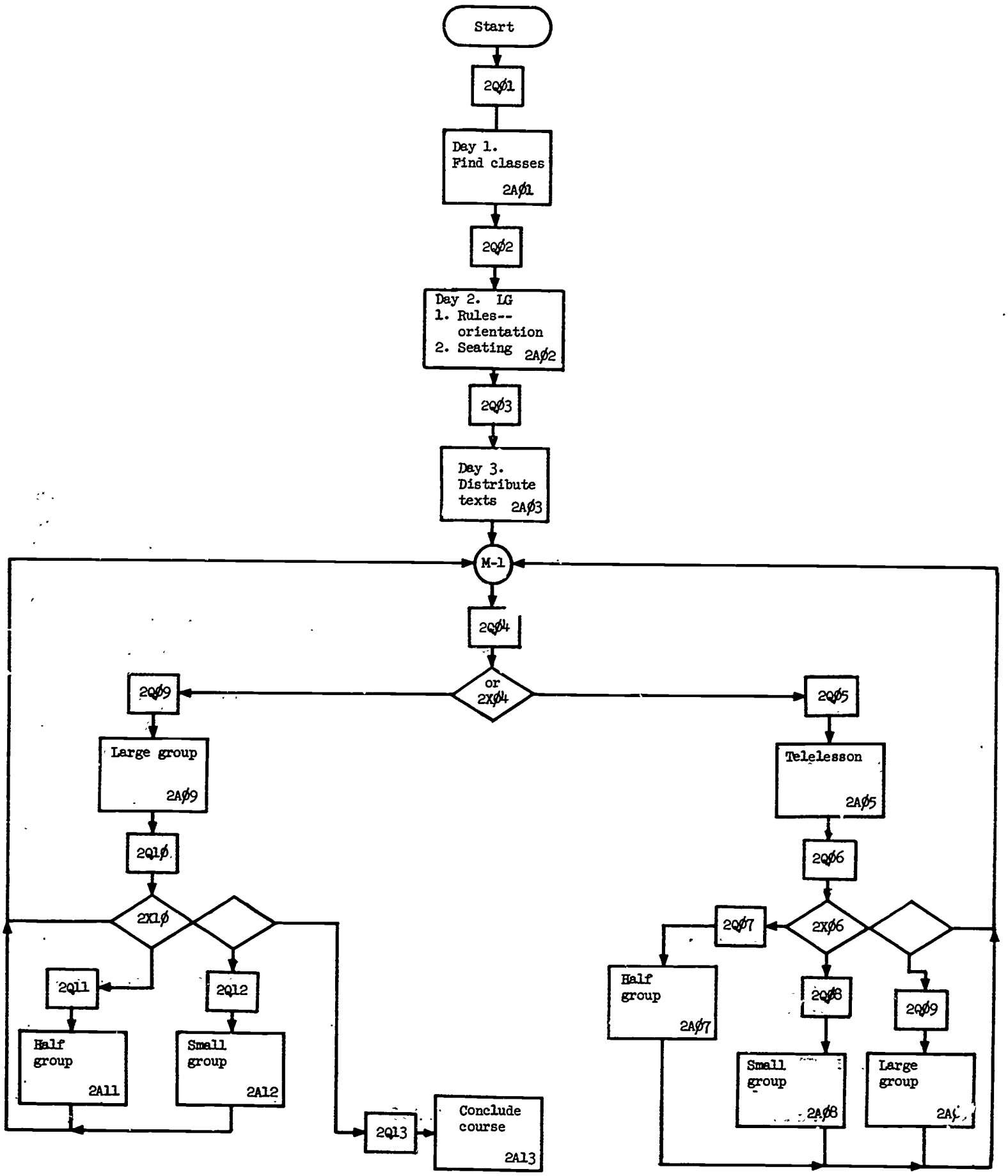


Figure 1. Operating Procedures for 11th Grade English at Buena Vista High School

1. Half-Groups

The so-called half-group structuring of the class, which occurs very infrequently, appears to have little to recommend it. Essentially, this procedure provides for two groups of 75 rather than one group of 150. Few, if any, activities can be conducted in a more desirable manner with 75 students than with 150. We suggest considering the complete elimination of this grouping.

2. Roll Taking and Assignment Making

On those days that a telelesson is not given, the eleventh-grade English class meets as an entire group for approximately five to ten minutes to permit taking roll and making assignments. The major purpose for this initial assembly appears to be taking the roll with the making of assignments having secondary importance. If this is the case, consideration probably should be given to developing simplified roll taking procedures which would permit the class to meet immediately in the desired groupings. This in turn would require other ways for making assignments; however, doing so could save a great deal of class time during the school year.

3. Size of Discussion Groups

At the present time much emphasis is placed on splitting larger groups into smaller ones to permit holding discussions in which all students can and will participate. While such action certainly appears desirable, evidence for the utility and effectiveness of small groups is not clear cut. However, like most other schools in which large lecture sections are used, Buena Vista personnel have elected, for discussion purposes, to divide the large classes into smaller groups. As indicated (Reference 6), approximately 28 percent of the total class time in eleventh-grade English is spent in the three group mode and most of this time is used for discussion purposes. In the three group mode Mr. Tuck has approximately half of the class (70 to 80 students), and the other half is divided between the teacher and the intern. Groupings alternate so that in a four-day period each student will be with Mr. Tuck twice, with the teacher once, and with the intern once. While the discussions conducted are about as effective as can be expected with the size of group used, one must recognize that, of necessity, the activity involved is primarily recitation rather than discussion. If Buena Vista personnel should feel a need for involving a large majority of students in the active give-and-take of an open discussion, aggressive steps should be taken to develop smaller groupings. The current numbers are simply too large to permit such an exchange.

4. Flexibility of Groupings

Grouping should be flexible to allow for two conditions--the optimum size of the group and the type of student within the group. Grouping flexibility at Buena Vista is very limited in both respects. Even if a general allowance for small groups is not made, at least some consideration might be given to forming one or more small groups for such specific purposes as remedial work, make-up work for students who have been absent, and special project work for students prepared to learn somewhat on their own. In sections as large as those at Buena Vista, the student needing special attention tends to get lost. A limited number of small groups, in which the membership could be very flexible, might contribute materially to the success of Buena Vista High School.

C. TIME DIVISION

The typical classroom teacher would be hard-pressed to report accurately the time which he spends in various activities. Fortunately, the program at Buena Vista encourages accurate planning and accounting of time; Mr. Tuck was able to report, by day, the class time spent in the different sized groups in various types of activities (Table 1). An explanation of the table is presented in SDC document TM-1493/151/00, Section II. Since we do not really know the amount of time a typical teacher spends in the various activities listed in Table 1, the immediate reaction is to wonder whether the percents of time, as listed in the right hand column, are appropriate. Should a secondary school teacher spend 23 percent of the class time in lecture? Should he devote 26 percent of his time to recitation-discussion? Is 13 percent an appropriate amount of the class period to spend in testing? The answer to these and the myriad similar questions which might be raised is that we do not know. Each person who views Table 1 may rationalize the appropriateness of these times. Our own estimate is that the percentages indicated are reasonable and could be justified. Our only serious reservation is whether, with new materials now becoming available, more time should be spent in directed study. Directed time using programmed materials and study guides might well lift some teaching burden, particularly in lecturing and recitation.

The availability of the basic data is most unusual and these data should prove of value to anyone wanting to plan a secondary school teaching program.

D. TELEVISION PROCEDURES

Detailed procedures for the control and use of the Buena Vista closed circuit television have been carefully worked out. These procedures are presented and described (Reference 6). Figure 2 presents a flow diagram of a telelesson preparation and presentation.

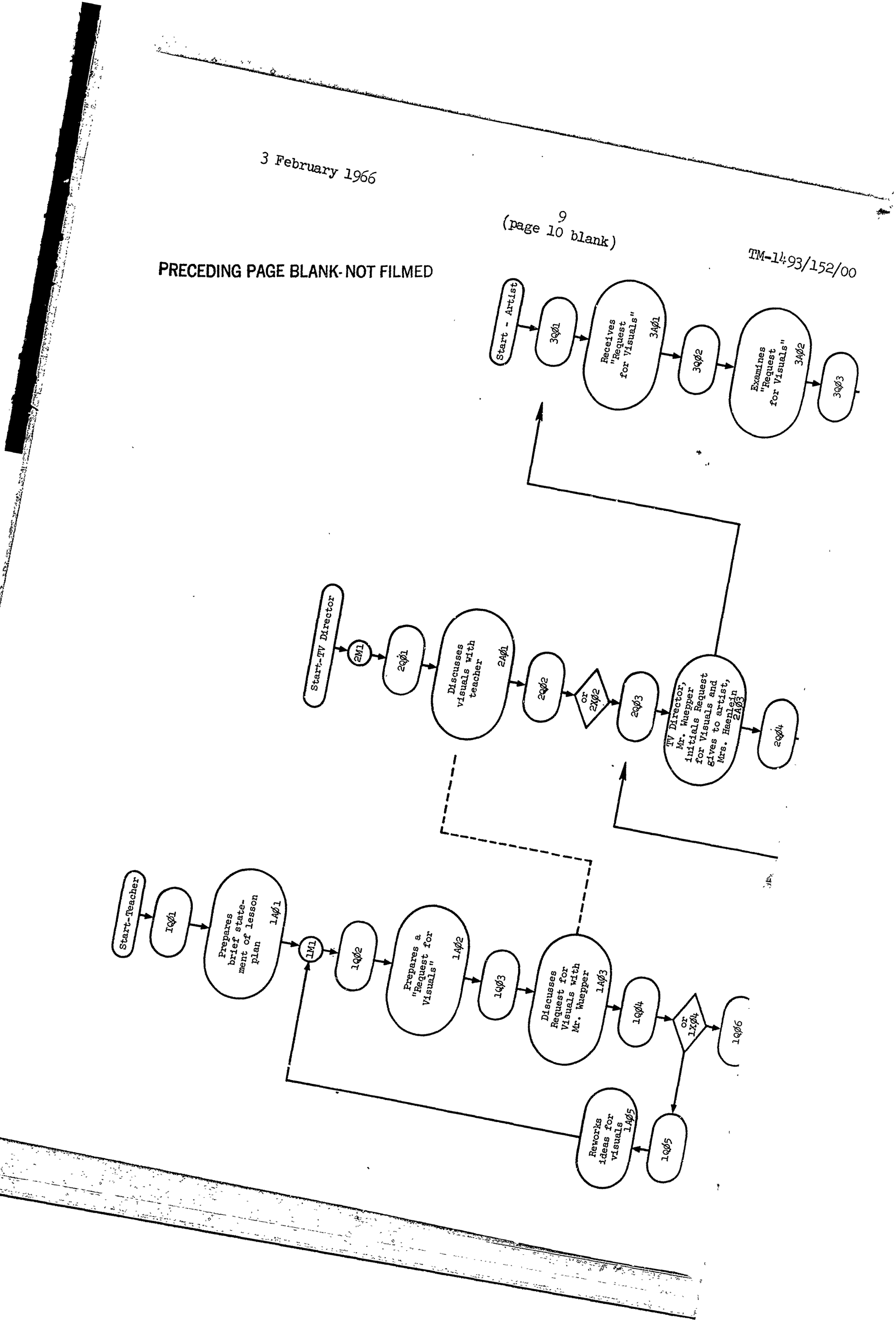
Table 1

Time and Percent of Time Spent in Different Activities in Various Types of Groups

	TYPE OF GROUP														
	Telelesson			Large Group, No Aids			Half Group			Small Group			Total		
Activity	Time	% of Total Time	% of Telelesson Time	Time	% of Total Time	% of Telelesson Time	Time	% of Total Time	% of Telelesson Time	Time	% of Total Time	% of Telelesson Time	Time	% of Total Time	
Lecture	1645	18.4	78.1	410	4.6	9.9							2055	23.0	
Discussion				25	.3	.6	150	1.7	76.9	2140	23.9	85.2	2315	25.9	
Test	10	.1	.5	1175	13.1	28.4							1185	13.2	
Assignments	10	.1	.5	435	4.9	10.5							445	5.0	
Correct	20	.2	1.0	405	4.5	9.8	25	.3	12.8	70	.8	2.8	520	5.8	
Study				795	8.9	19.2	20	.2	10.3	45	.5	1.8	860	9.6	
Panel	390	4.4	18.5	30	.3	.7							420	4.7	
Audio				305	3.4	7.4							305	3.4	
Miscellaneous	30	.3	1.4	560	6.3	13.5				255	2.8	10.2	845	9.4	
TOTAL	2105	23.5	100.0	4140	46.3	100.0	195	2.2	100.0	2510	28.0	100.0	8950	100.0	

(page 8 blank)

(page 10 blank)



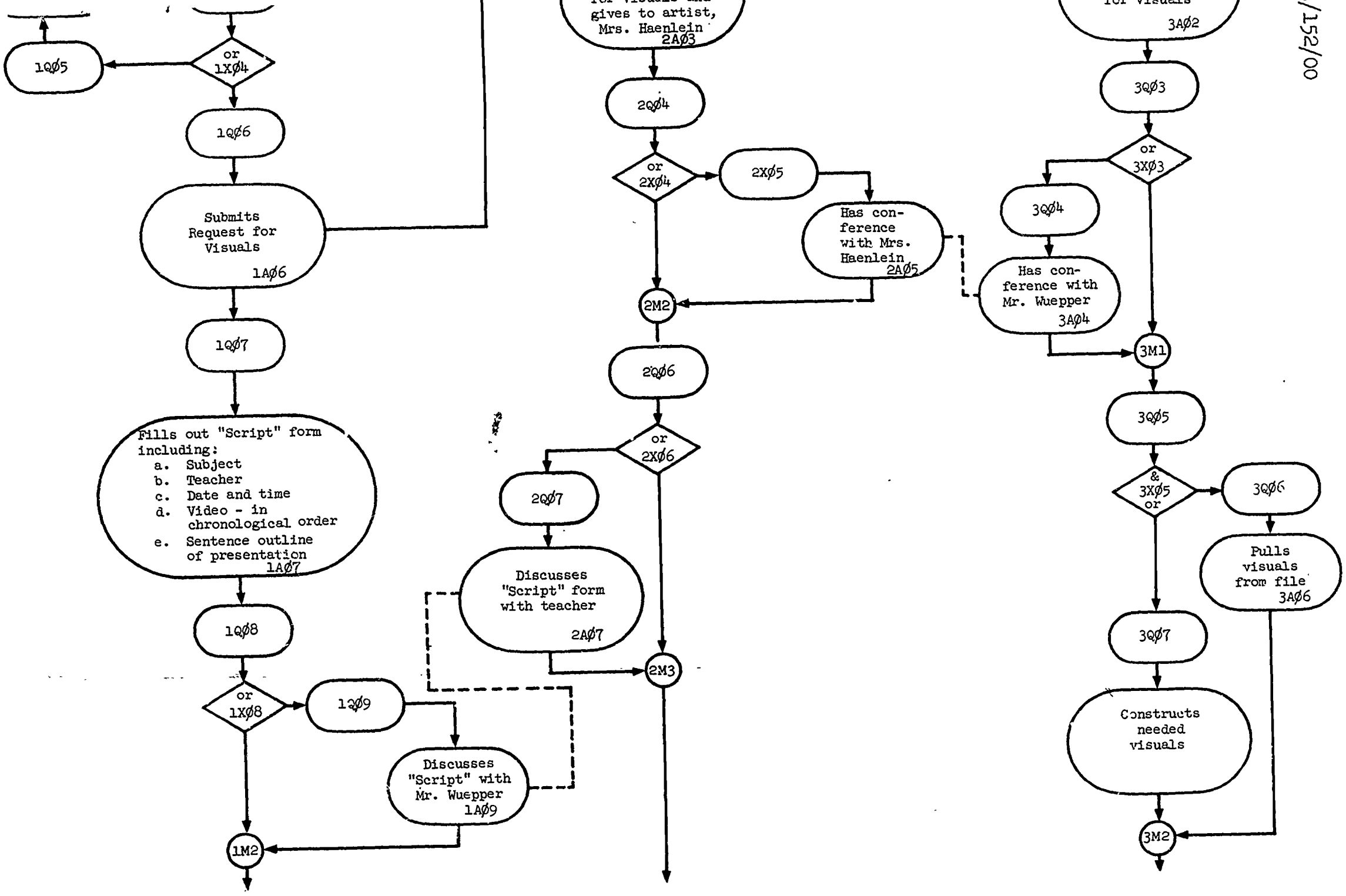
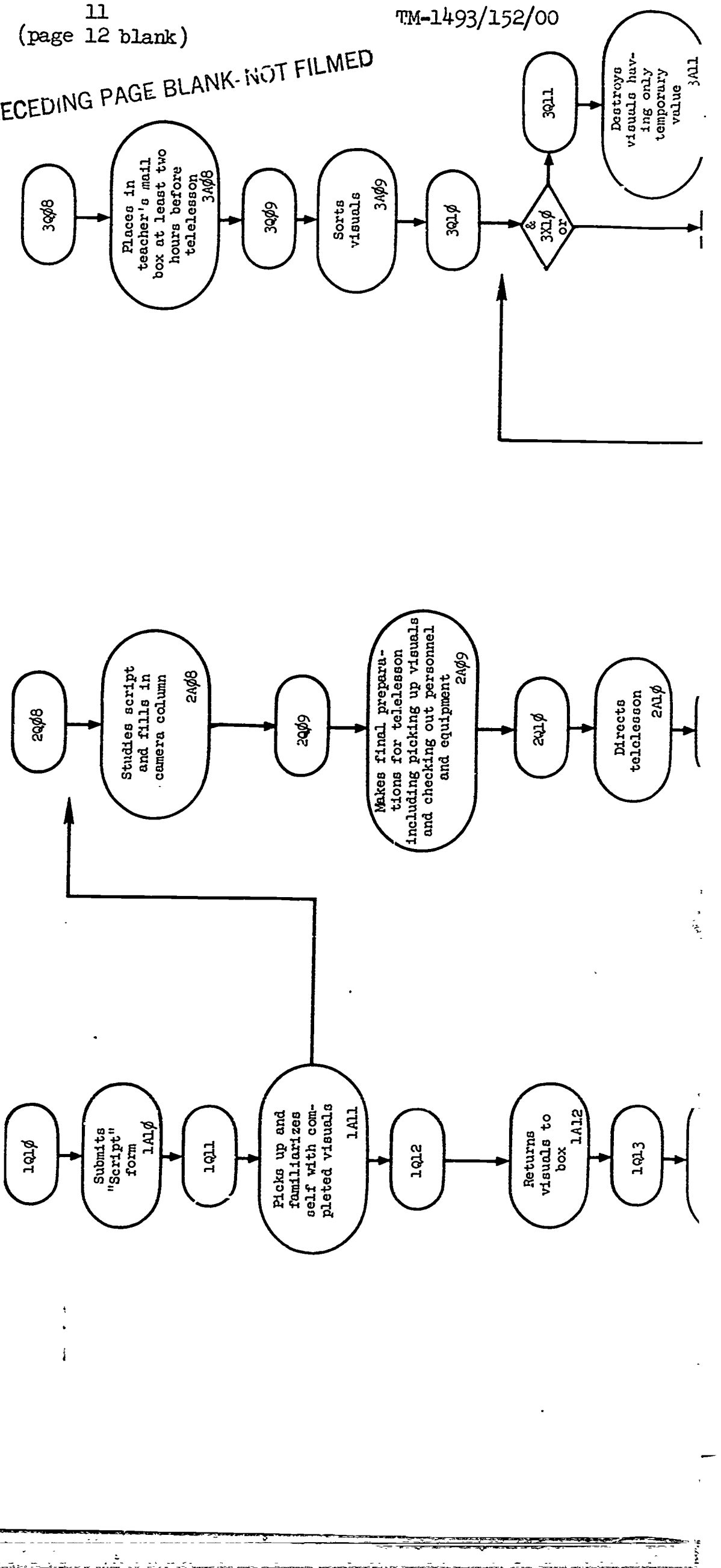


Figure 2. Preparation and Presentation of Telelesson

PRECEDING PAGE BLANK-NOT FILMED



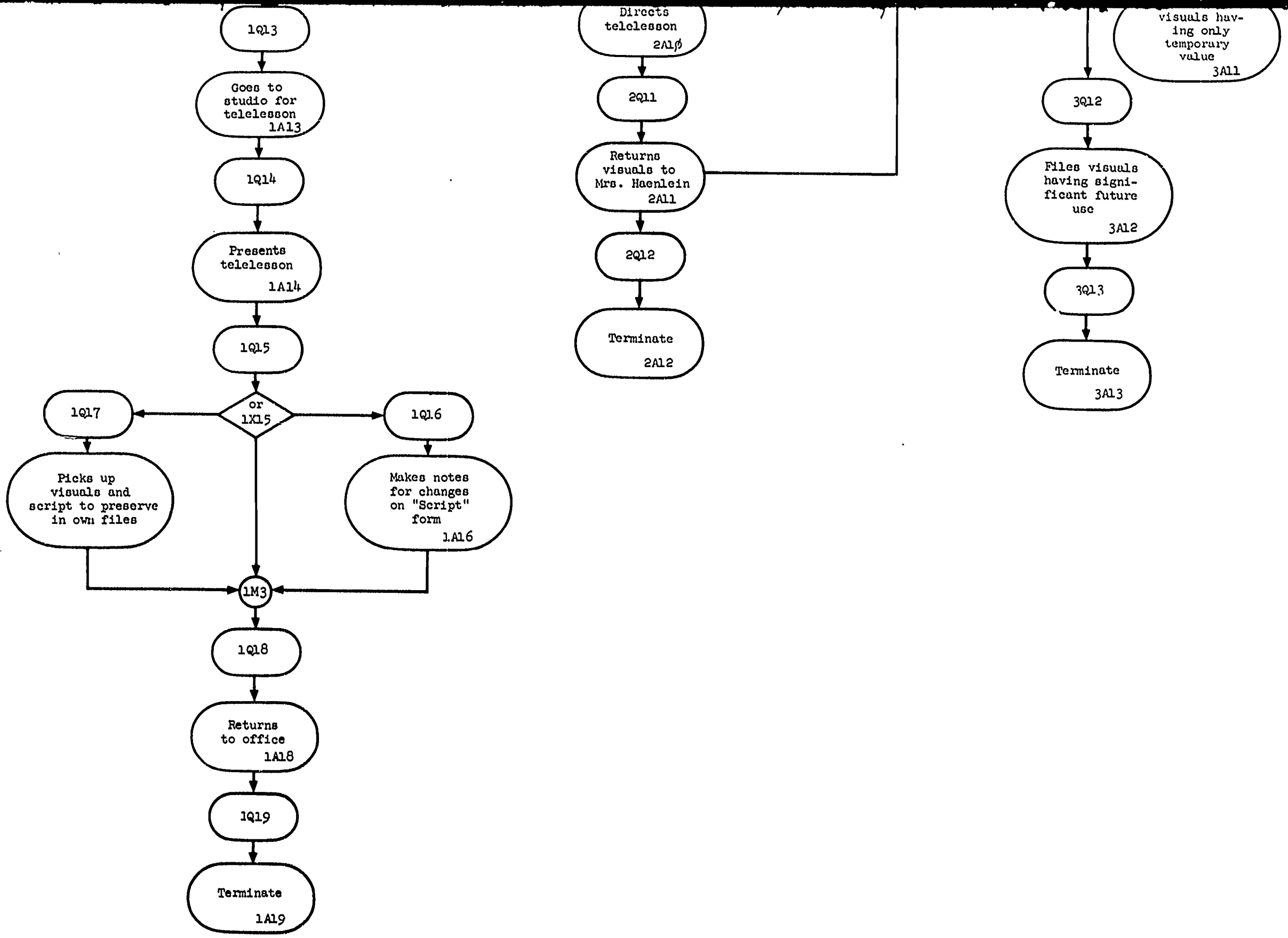


Figure 2. Preparation and Presentation of Telelesson (Cont'd.)

Television procedures appear to be as simple as possible and yet completely explicated. Experience has permitted some deviation from the rules as originally stated, but these rules have been retained as guidelines to prevent an undesired laxity from creeping into the procedures.

To the best of our knowledge, the relationship between the television staff and the teaching staff is excellent. Few, if any, problems requiring administrative action have developed. This type of close, cooperative relationship in which difficulties are solved expeditiously and without reference to authority is one of the best indicators that the system is properly established and operated. Another major indication that the system is efficiently conceived is the number of programs run each week (essentially one 25-minute program every hour of every school day) without interruption due to technical difficulties. So far as we can determine, the closed circuit television operation functions with as great efficiency as could reasonably be expected. We have no suggestions for modification.

E. ATTENDANCE CHECKING AND REPORTING PROCEDURES

Procedures for attendance checking and reporting are shown graphically (Reference 7, Figure 5). Basically, these procedures consist of a professional person (usually the intern) noting, recording, and reporting absent students and also noting students who have returned to school and checking and recording the nature of each student's absence--whether it is excused or unexcused.

If certain premises are granted, Buena Vista attendance checking and reporting procedures are very good. These premises are:

- While the teacher or the intern is checking the roll during the telelesson, he is needed as a proctor and he is also proctoring just about as efficiently as he would do otherwise.
- The telelesson proctor must be a professional level person.
- The activities which take place on Tuesday and Thursday during the roll taking period are important and are being handled in an efficient manner.

Should one or more of these premises prove false, consideration should be given to changing the procedures either through the use of subprofessional workers or through more extensive use of equipment and materials designed to automate the attendance taking and reporting process.

III. SUMMARY

Despite our acceptance of Buena Vista High School as a well designed, effectively operating system, we recognize that any system, Buena Vista included, can be

improved. For this reason, we have deliberatedly attempted to find possible weaknesses in the system, or at least to find operations which could possibly be improved. Our report of such proposed improvements is presented in Section V, below.

In summary, the following modifications might improve operation of the system:

- Eliminate the so-called half groups.
- Simplify and/or partially automate attendance checking procedures.
- Provide for smaller discussion groups.
- Permit groups to be reconstituted more readily.
- Have students spend more time in directed study.

IV. OPERATIONAL CHANGES PLANNED FOR 1965-1966

Since its inception in 1959, personnel responsible for the operation of Buena Vista High School have been dedicated to the improvement of instruction. Furthermore, these leaders have recognized that, while change is not always good, without change improvement is impossible. Thus, even though the initial Buena Vista program departed materially from traditional high school programs, continued efforts have been made to develop new ideas which would further improve the offering. In accordance with this policy of developing and introducing new ideas, the Buena Vista High School program is undergoing a major change in the 1965-1966 school year.

Until the 1965-1966 school year, one large section and one or more small sections have sufficed to handle all the students in a given course at Buena Vista High School; however, as the school enrollment increases, the television sections will eventually become so large as to require splitting into two sections. Perhaps the exact size at which this should occur is debatable, but Buena Vista personnel determined that the first such split should take place in the 1965-1966 school year.

Since the grade levels differ in size, and since not all students are required to take some of the televised courses, the various courses are affected differently. Table 2 depicts the manner in which the televised courses are sectioned for the 1965-1966 school year.

As is shown in Table 2, four special classes are offered at Buena Vista in 1965-1966. Two of these classes are in English and two in mathematics. Ten regular-sized classes are offered in courses containing televised sections. These regular-sized classes help solve scheduling conflicts, accommodate student overflow from large sections, and provide an opportunity for some of the less able students to receive more individual attention.

Table 2

1965-1966 Sectioning of Televised Classes
at Buena Vista High School

Grade Level	Content Area	Special Class	Number of Students Small Class	Televised Class
9	English	15	25	125(2)*
10	English	15	25	105(2)*
11	English			108(2)*
12	English		22	150
9	General Mathematics	15	25	120
9	Algebra			130
10	Plane Geometry			85
10	Commercial Arithmetic	15	25	123
11	Solid Geometry-Algebra			70
11	Business Law			145
9	Civics		25	132(2)*
10	World History		25	112(2)*
11	American History		30(2)*	155
9	General Science		25	132(2)*

*The "2" in parentheses indicates two sections this size

Twenty televised sections of 14 courses are being given at Buena Vista in 1965-1966. In only six of the courses, two sections are offered. Three of these courses are in English, two in history and civics, and one in general science. Courses in which two televised sections are offered have as many as 132 students per section and as few as 105. Single section courses range from 70 to 155 in the televised sections.

Since teaching two televised sections (rather than a single one) of each of six courses would imposed an almost impossible instructional burden on the faculty, a video tape machine has been installed to permit taping the initial presentation of each telelesson and playing it back to the second group. Thus, since Mr. Tuck has two sections of eleventh-grade English, his live presentation to the first section is video taped for play back to the second group. In some instances, he may video tape the lesson in advance and neither section will view a live presentation.

The new grouping procedure being introduced for 1965-1966 has some apparent strengths as well as some weaknesses. This procedure permits retaining a reasonable sized group for televised instruction without unduly increasing the teaching load. Also on the positive side, discussion sections may be reduced in size, thus permitting a freer and more complete exchange of ideas. Teachers will be able to see themselves on television and, through the insight thus gained, may materially improve their presentations. Furthermore, just the thought of being taped and thus having their performance even temporarily preserved undoubtedly will stimulate teachers to give improved presentations.

While the new procedure possesses strengths such as those just mentioned, it also presents certain problems. Except for the telelesson, which comprises less than one-fourth of the instructional time, the teaching staff will be as completely involved for two hours of instruction with the same total number of students as they formerly were for one hour. The large lecture rooms, built to accommodate in excess of 250 students in most instances, will contain well under half that number. Attendance taking, reporting, and accounting will have to be completed for twice as many large sections. In some respects, scheduling will be more difficult than formerly.

Although the balance of the new program's advantages and disadvantages is difficult to evaluate at this time, the plan certainly appears to possess sufficient merit to justify its being tested.

V. PROGRAMS FOR POSSIBLE CHANGES AT BUENA VISTA HIGH SCHOOL

This section contains descriptions of two possible programs that, while they would retain the basic structure of Buena Vista's telelesson and team teaching approach, represent major changes in the current program. As indicated in the preface, advancement of these two possibilities, or any others that might be suggested, should not be interpreted as criticism of the current program.

Only as changes are introduced into the model can we evaluate its power and potential as a tool. For this reason we have tried to conceptualize some major changes which could be introduced. (Usually, educators will try only minor modifications. While little danger is involved in such an undertaking, only small benefits can be derived from success. We prefer a bolder approach --such as the one in use at Buena Vista--in which the risk is great, but so is the possible payoff.)

The first change proposed consists essentially of adding small discussion groups and decreasing the proctoring load in the large group mode. The second change involves an attempt to effect a rapprochement between the large group instruction characteristic of Buena Vista and the individual advancement provided by various continuous progress plans.

A. BUENA VISTA PLAN WITH SMALL GROUPS ADDED

The evidence favoring extensive use of small group discussion is not overwhelming, however, for our current purposes we concede that small group discussions are very popular and that possibly they serve an important purpose in education. Having granted the possible value of small groups, we are now faced with the problem of forming, housing, and supervising them. We believe that such groups should be flexible and should be formed by using a combination of random and homogenous selection. We believe they can be housed in current facilities, and that they can be properly led and supervised through judicious scheduling and through appropriate use of available personnel.

Our plan for adding small group instruction would include the following changes:

- Schedule two classes of the same subject matter at the same hour, e.g., ninth- and eleventh-grade English.

- Alternate television days so that one class has telelessons Monday, Wednesday, and every other Friday. (If, under this proposed system, television were used every available day, only a very small reduction in telelessons would result since at the present time television is used only 86 percent of the days scheduled.)

- Permit the classes to increase in size to a maximum of 180 to 200 students (360 to 400 students when the two classes scheduled at the same hour are combined).

- Schedule eight professional personnel and one roll-taking proctor for each class period.

- Eliminate the assignment-making, roll-taking portion of the nontelelesson days either by making the assignments for two days ahead on telelesson days or by using mimeographed handouts. The proctor will take roll in the large group on telelesson days and in the small groups on nontelelesson days.

- Balance staff utilization by having one teacher and the roll-taking proctor supervise the large group of students in one course during the telelesson while the other six teachers work with small groups of students in the other course. Each of the teachers working with small groups will have 30 students divided into two groups of 15. (Table 3 presents the activities in a ten-day cycle.)

- Permit the television instructor two free periods for each telelesson. Since he would give five telelessons in two weeks, he should also have ten free class periods in the same length of time (see Table 4).

- Borrow discussion-leader teachers, as needed, from such related fields as foreign languages. However, such borrowed teachers should have English minors.

- Schedule the students into a large classroom on telelesson days and into regular sized rooms on nontelelesson days.

- Give special training to all teachers who will be conducting and supervising small group discussion. (Without such training, many teachers will simply hold question and answer sessions.)

While the suggested program would result in a material change in the nature of the small group discussions and the amount of time spent in them, it would not have any other great effect on the program. Table 5 gives a breakdown of the time both in minutes and percent of time for the suggested ten-day cycle shown in Table 3. Table 5 also shows a comparison, in percents, of the suggested program with the 1964-1965 program.

As is indicated in Table 5, the large differences in activities between the suggested program and the 1964-1965 program are (a) more time would be spent in supervised study and in discussion groups, and (b) less time would be spent in correcting papers and in miscellaneous activities. Since this latter category is a catchall and hence is hard to avoid, perhaps we would find considerable time "sliding" into this position even in the proposed program.

One time of particular interest in any new plan is the student/teacher ratio. In the suggested program, six teachers would spend two hours each day and hence would spend a total of 60 hours in a one-week period. Two additional teachers would spend five periods in directing discussion groups (ten hours for the two teachers) and five periods in telelessons (ten hours for the two teachers). These telelecturers would also be released two periods for each one spent in telelecturing (twenty hours for two teachers). Summing across these figures, we arrive at a total of 100 teacher hours over the two-week cycle. Assuming 360 students in the two courses spend ten periods in the two-week cycle, we arrive at a total of 3,600 student hours. This would result in a student/teacher ratio of 36:1.

Table 3

Class Activities for a 10-Day Cycle

10-Day Cycle	Activity	Time (min)	Personnel	Size of Group	Comments
Day 1 Monday	A. Telelesson	25	Lecture-teacher Roll-taking proctor Teacher	180 - 200	
	B. Make assignments for 2 days	5	Lecture-teacher Teacher	180 - 200	
	C. Supervised study	20	Lecture-teacher Teacher	180 - 200	
Day 2 Tuesday	Small discussion groups	50	Teacher Teacher	2 groups of 15 2 groups of 15	
			Teacher Teacher Teacher	2 groups of 15 2 groups of 15 2 groups of 15	
		25	Roll-taking proctor	180 - 200	
Day 3 Wednesday	A. Telelesson	25	Lecture-teacher Roll-taking proctor Teacher	180 - 200	
	B. Make assignments for 2 days	5	Lecture-teacher Teacher	180 - 200	
	C. Supervised study	20	Lecture-teacher Teacher	180 - 200	

Table 3

Class Activities for a 10-Day Cycle (Cont'd)

10-Day Cycle	Activity	Time (min)	Personnel	Size of Group	Comments
	Small discussion groups	50	Teacher Teacher Teacher	2 groups of 15 2 groups of 15 2 groups of 15	
Day 4 Thursday			Teacher Teacher Teacher	2 groups of 15 2 groups of 15 2 groups of 15	
		25	Roll-taking proctor	180 - 200	
	A. Telelesson	25	Lecture-teacher Roll-taking proctor Teacher	180 - 200	
Day 5 Friday	B. Make assignments for 2 days	5	Lecture-teacher Teacher	180 - 200	
	C. Quiz	20	Lecture-teacher Teacher	180 - 200	
	Small discussion groups	50	Teacher Teacher Teacher	2 groups of 15 2 groups of 15 2 groups of 15	
Day 6 Monday			Teacher Teacher Teacher	2 groups of 15 2 groups of 15 2 groups of 15	
		25	Roll-taking proctor	180 - 200	

Table 3

Class Activities for a 10-Day Cycle (Cont'd)

10-Day Cycle	Activity	Time (min)	Personnel	Size of Group	Comments
Day 7 Tuesday	A. Telelesson	25	Lecture-teacher Roll-taking proctor Teacher	180 - 200	
	B. Make assignments for 2 days	5	Lecture-teacher Teacher	180 - 200	
	C. Supervised study	20	Lecture-teacher Teacher	180 - 200	
Day 8 Wednesday	Small discussion groups	50	Teacher Teacher Teacher	2 groups of 15 2 groups of 15 2 groups of 15	
			Teacher Teacher Teacher	2 groups of 15 2 groups of 15 2 groups of 15	
		25	Roll-taking proctor	180 - 200	
Day 9 Thursday	A. Telelesson	25	Lecture-teacher Roll-taking proctor Teacher	180 - 200	
	B. Make assignments for 2 days	5	Lecture-teacher Teacher	180 - 200	
	C. Supervised study	20	Lecture-teacher Teacher	180 - 200	

Table 3

Class Activities for a 10-Day Cycle (Cont'd)

10-Day Cycle	Activity	Time (min)	Personnel	Size of Group	Comments
Day 10	Test	50	Teacher Teacher Teacher Roll-taking proctor	180 - 200	

Table 4

Suggested Schedule of Television Instructor

	Period	Monday	Tuesday	Wednesday	Thursday	Friday
1	(8:20-9:28)	Lecture	Small-group	Lecture	Small-group	Small-group*/ Lecture**
2	(9:32-10:20)	Free	Free	Free	Free	Free
3	(10:27-11:20)	Spec. Class	Spec. Class	Spec. Class	Spec. Class	Spec. Class
4	(11:25-12:18)	Lecture	Small-group	Lecture	Small-group	Lecture**/ Small-group*
5	(11:51-12:44)	---	---	---	---	---
6	(12:49-1:42)	Spec. Class	Spec. Class	Spec. Class	Spec. Class	Spec. Class
7	(1:47-2:40)	Free	Free	Free	Free	Free
8	(2:45-3:38)	---	---	---	---	---

*Alternate Fridays with lecture

**Alternate Fridays with small-group discussion

Table 5

Time Comparison for Activities in the
Suggested Program with the 1964-1965 Program

Activity	Suggested Program		1964-1965 Program	
	Time (Minutes)	Percent	Percent	Percent Difference
Telelesson	125	25.0	23.5	1.5
Assignment Making	25	5.0	5.0	0.0
Supervised Study	80	16.0	9.6	6.4
Testing	70	14.0	13.2	.8
Discussion Groups	200	40.0	25.9	14.1
Correcting Papers			5.8	-5.8
Miscellaneous	____	____	17.0	-17.0
TOTAL	500.0	100.0	100.0	0.0

B. TELELESSONS COMBINED WITH CONTINUOUS PROGRESS

Two opposite trends, one moving toward large group instruction and the other toward individual progress, were mentioned in the opening remarks to this section. Each plan possesses distinct advantages; each also has certain disadvantages. The possibility of permitting each student to progress at a rate and in directions commensurate with his ability and his motivation is certainly attractive. At the same time, anyone who has witnessed Mr. Tuck perform on television recognizes that the student who misses this assuredly has something very good subtracted from his education. While we have a strong aversion to ecclesiasticism with its siren song of being all things to all people, we feel that the evidence in this instance favors at least an attempt at unifying these opposing instructional trends under an ecclesiastic umbrella.

The plan which we propose would divide a course into two portions. The plan would permit each student to progress at his own rate, except for a specified minimal standard, through one portion of the course, but would force him to progress at one of three predetermined rates through the other portion.

Courses differ in the potential ways they can be structured. While some courses would be quite amenable to the proposed program, others would certainly be less capable of being split in a meaningful fashion. For example, we think that English, social studies, physical and biological science, and foreign languages all could be adapted readily to this program. Typing and shorthand probably could not be divided into two such portions.

We have selected English as a medium for an initial examination of the possibility of combining large group instruction and individual progress in a single course.

Under this proposed program, eleventh- and twelfth-grade English would be taught as a single, continuing course divided into two parts--one individual progress and the other lockstep but with three alternative time schedules. Students permitted to enter the program would spend the majority of their "individual progress class" time and approximately 35 percent of their "lockstep class" time in directed individual study in a large, study hall type facility. The remainder of their individual progress time would be spent in testing or help sessions, and in viewing films and listening to tapes. The remainder of the lockstep portion of the program would involve telelessons, small group discussions, and testing.

Approximate amounts of time spent in various activities by the typical student during a two-week time block are shown in Table 6. As is indicated in the second column from the right, the total time is 500 minutes--ten 50-minute class periods. This total time is divided into 225 minutes for the lockstep portion and 275 minutes for the individual progress portion. (The division mentioned assumes that the student is in only one lockstep block. If he is in two lockstep blocks, the ratio is changed.)

Table 6

Typical Amounts of Time Spent in a Two-Week Period in Different Activities Under Individual Progress and Large Group Instruction Portions of Experimental Program

Activity	Individual Progress		Large Group Instruction		Total	
	Minutes	Percent	Minutes	Percent	Minutes	Percent
Diagnostic Testing	25	9.0	25	11.0	50	10
Telelesson	--	--	50	22.0	50	10
Individual Study (Programmed Materials)	50	18.0	25	11.0	75	15
Individual Study (Text)	100	36.0	25	11.0	125	25
Individual Study (Supplementary Materials)	50	18.0	25	11.0	75	15
Films, Tapes, and Records	25	9.0	--	--	25	5
Group Discussions	--	--	50	22.0	50	10
Achievement Testing	25	9.0	25	11.0	50	10
TOTAL	275	99.0	225	99.0	500	100

As can be noted in Table 6, the times are all multiples of 25--half a class period in length. Arbitrarily arranging the time in this manner in this first study permits easy manipulation of student schedules.

Figure 3 shows the first day of any lockstep (LS) semester (AØ1) and then indicates that students assemble and are assigned on a daily basis (AØ2). The nature of the student's assignment depends first of all on the week of the semester (XØ3). For assignment purposes, each semester is composed of four different types of weeks: odd-numbered weeks, even-numbered weeks, mid-semester examination week, and the final week in the semester. The program varies depending on which of these four weeks it is.

A second element in determining how the student is assigned is the day of the week. For odd-numbered weeks, the day's influence is shown through XØ4. Four alternative pathways emanate from XØ4. These are Monday (QØ5 to XØ5), Tuesday and Thursday (B to Q11 to X11), Wednesday (QØ7 to XØ7), and Friday (QØ9 to XØ9).

Within each day, a student is assigned according to his semester and group. These assignments are depicted following XØ5, XØ7, and XØ9. To understand the nature of these groupings, the following facts are important:

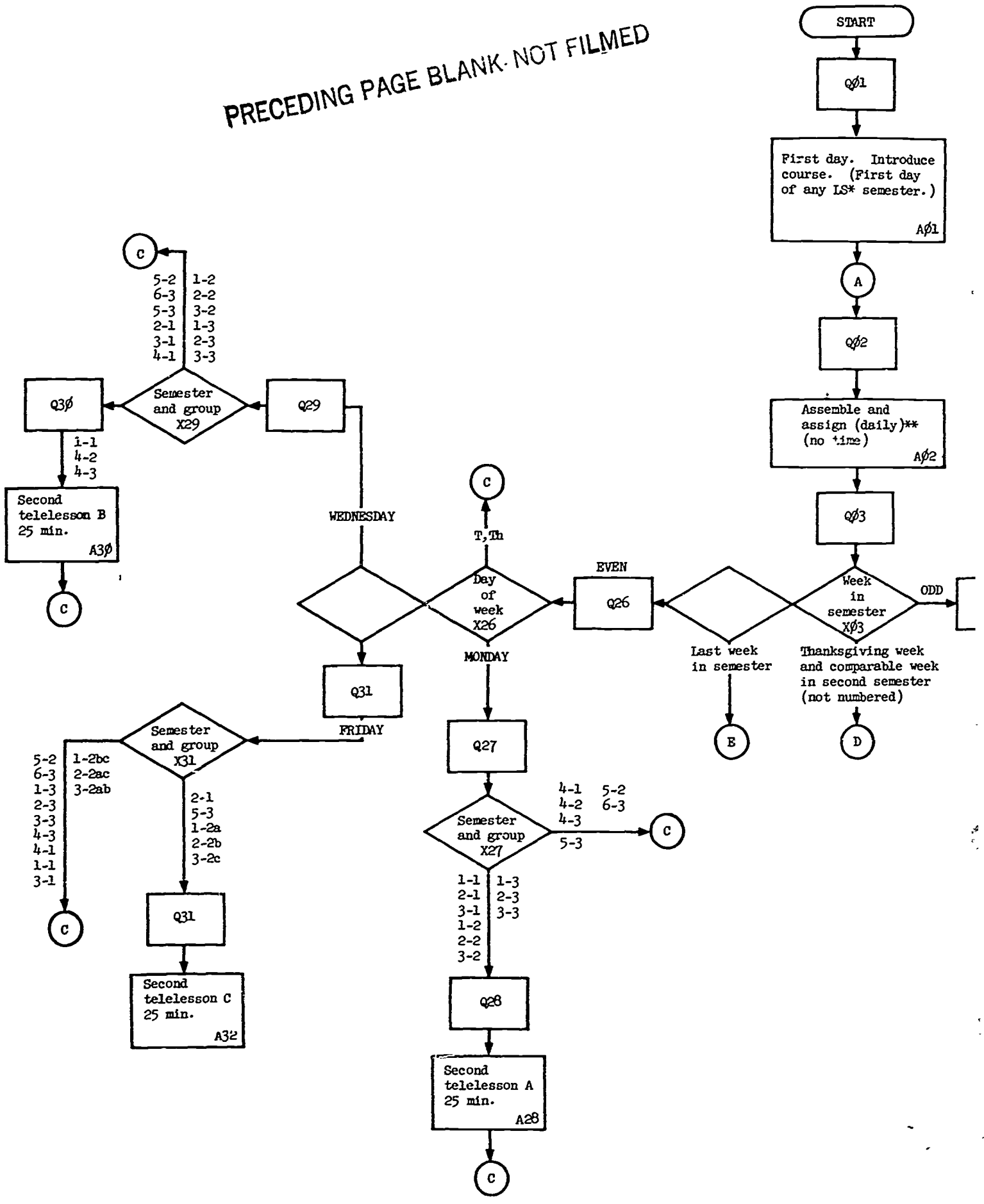
- The group designations consist of two numbers: semester and group. Semesters are numbered one through six. Groups are numbered one through three. Students who are scheduled to complete one program in three semesters comprise group one; those scheduled to finish in four semesters (the normal time) comprise group two; those students scheduled to finish in five semesters comprise group three.

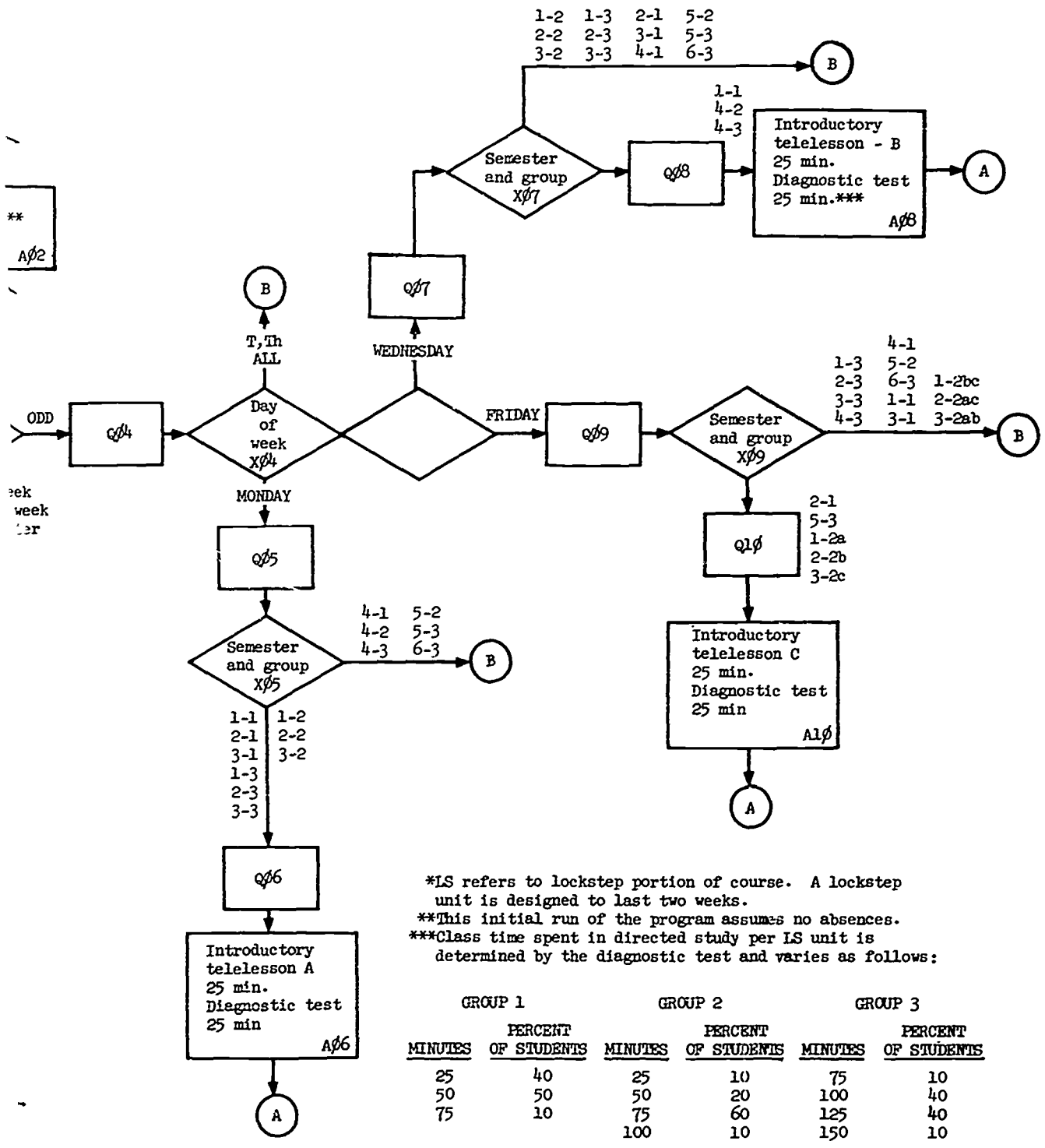
- The lockstep portion of this course is organized into 40 units, eight units in each of five blocks.

- The telelessons for the first three blocks, units one to 24, are given on Monday. Telelessons for the next block, units 25 to 32, are presented on Wednesday. Telelessons for the final block, units 33 to 40, are given on Friday. Giving the fourth block telelessons on Wednesday and the fifth on Friday is necessary to permit group one students to double up their lockstep work two semesters so they can complete their work in three rather than five semesters and to permit group two students to double up their lockstep work so they can finish in four semesters. This group and semester organization is shown in Table 7.

- Each lockstep unit consists of (a) a diagnostic test; (b) two telelessons (the first telelesson is presented during an odd-numbered week and the second is presented during an even-numbered week); (c) two small-group discussions; (d) directed study; and (e) a unit test.

(page 30 blank)



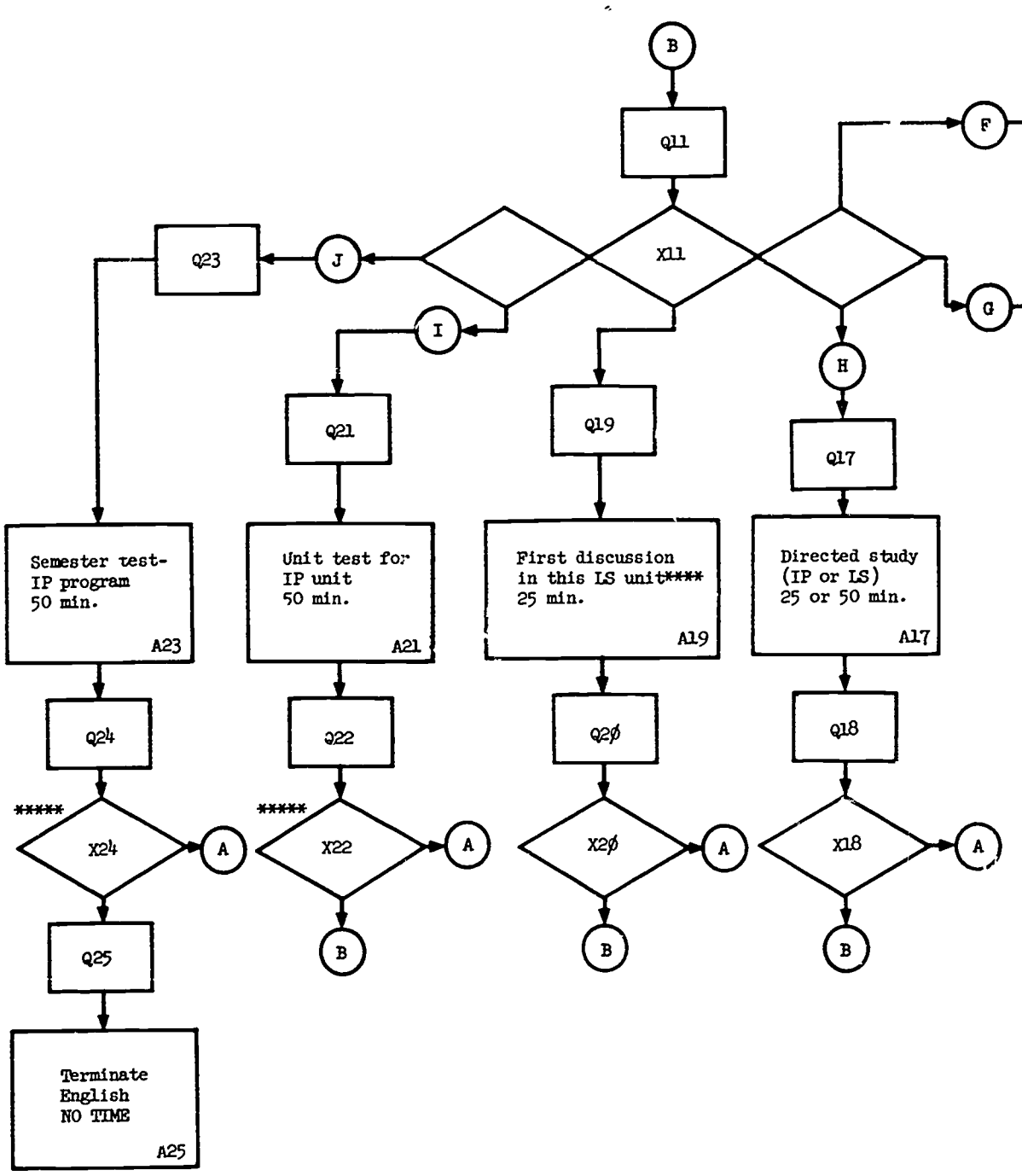


*LS refers to lockstep portion of course. A lockstep unit is designed to last two weeks.
**This initial run of the program assumes no absences.
***Class time spent in directed study per LS unit is determined by the diagnostic test and varies as follows:

GROUP 1		GROUP 2		GROUP 3	
MINUTES	PERCENT OF STUDENTS	MINUTES	PERCENT OF STUDENTS	MINUTES	PERCENT OF STUDENTS
25	40	25	10	75	10
50	50	50	20	100	40
75	10	75	60	125	40
		100	10	150	10

Figure 3. Flow Diagram Showing Progress Through Combined Continuous Progress--Large Group Instruction Course (Sheet 1 of 5)

(page 32 blank)



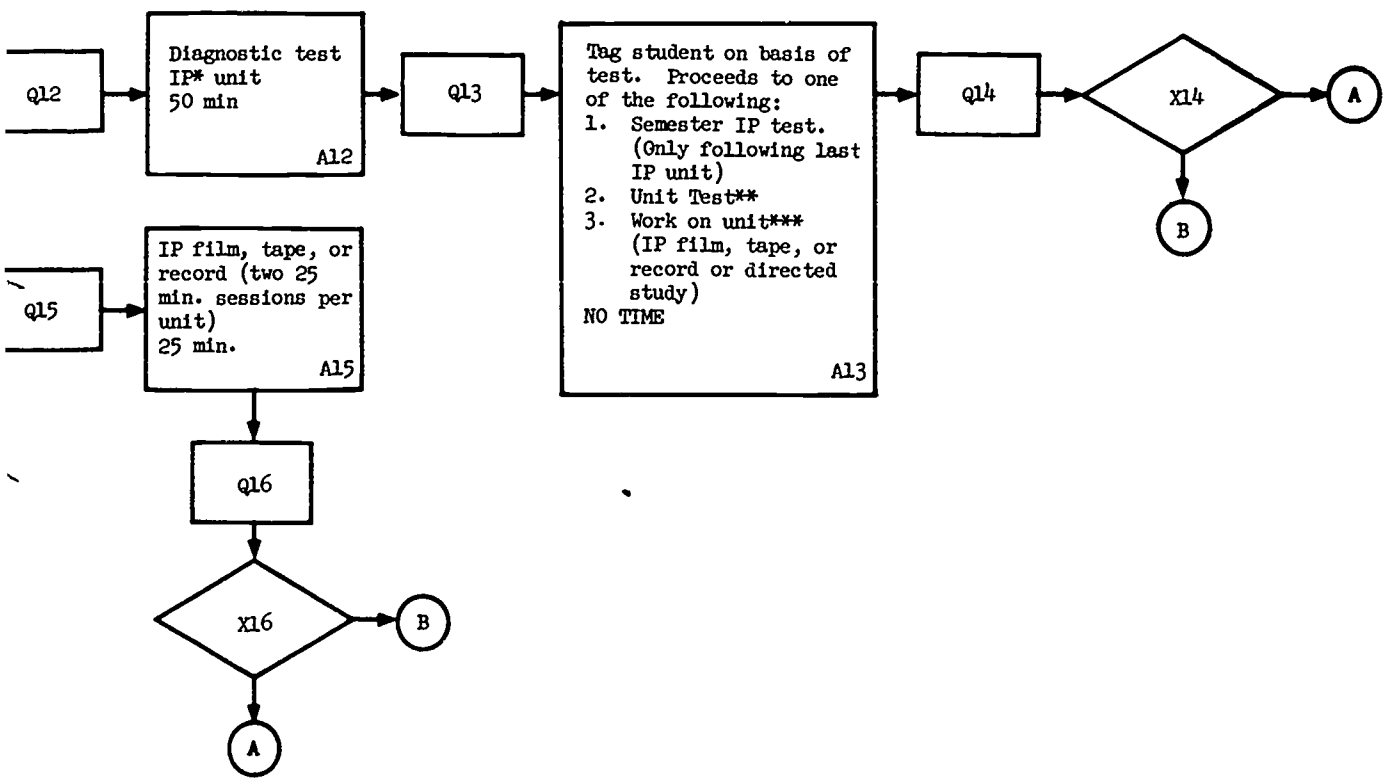
*IP refers to indi
weeks for the c
**Percentage of stu
unit, proceeding
Group 1. 50%
***Class time spent
chosen randomly b

GROUP 1

MINUTES	PERC… OF STU…
150	20
200	20
250	50
300	10

****Each student mus
odd numbered weel
this semester, he
English "classes'
*****To simplify simul
an IP test, eithe
work in that uni

Figu



*IP refers to individual progress. An IP unit is designed to last four weeks for the average student.

**Percentage of students with individual students chosen randomly within each unit, proceeding directly from diagnostic test to unit test are as follows:
Group 1. 50% Group 2. 20% Group 3. 0%

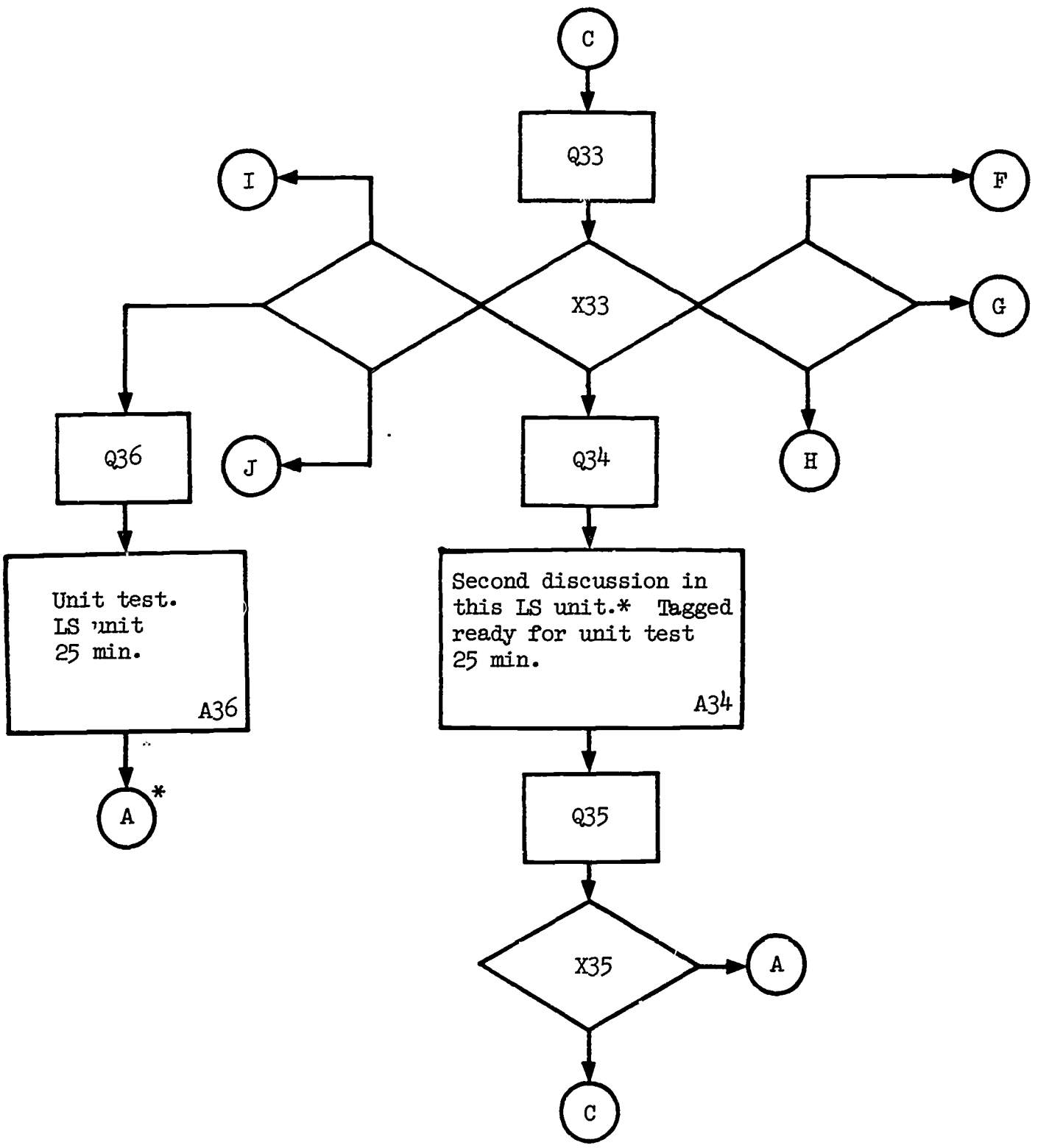
***Class time spent in directed study per IP unit varies as follows (individuals chosen randomly by unit for various work times):

GROUP 1		GROUP 2		GROUP 3	
MINUTES	PERCENT OF STUDENTS	MINUTES	PERCENT OF STUDENTS	MINUTES	PERCENT OF STUDENTS
150	20	350	20	500	20
200	20	400	20	600	20
250	50	450	50	650	50
300	10	500	10	750	10

****Each student must participate in one "initial" discussion in each unit in each odd numbered week. Thus, if the student is registered in only one English "class" this semester, he participates in one discussion. If he is registered in two English "classes", he participates in two discussions.

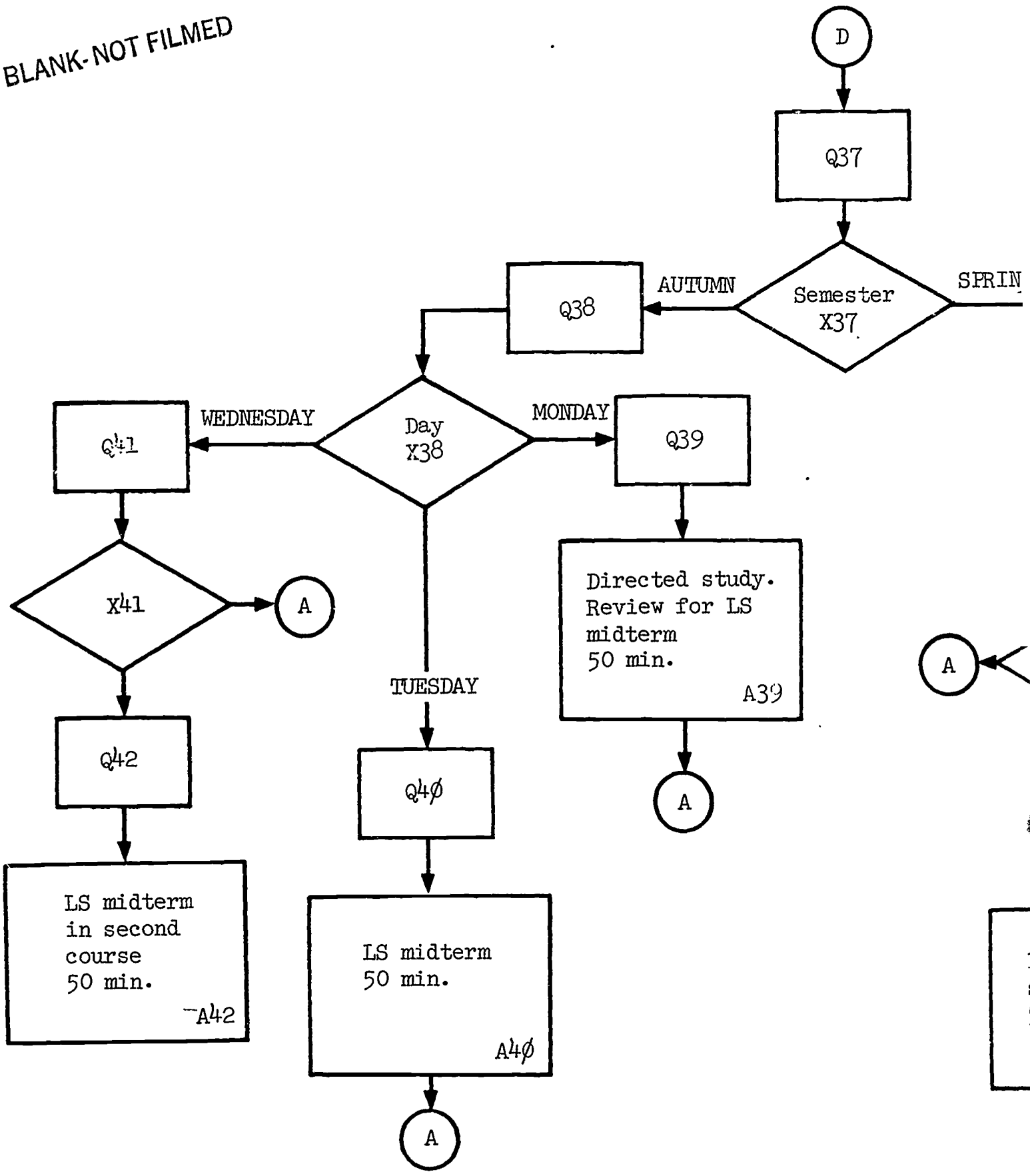
*****To simplify simulation procedures no provision has been made for students to fail an IP test, either unit or semester, and thus be required to repeat some of the work in that unit or semester.

Figure 3. Flow Diagram Showing Progress Through Combined Continuous Progress--Large Group Instruction Course (Sheet 2 of 5)



*To simplify simulation procedures no provision has been made for students to fail an LS test, either unit or semester, and thus be required to repeat some of the work in that unit or semester.

Figure 3. Flow Diagram Showing Progress Through Combined Continuous Progress--Large Group Instruction Course
(Sheet 3 of 5)



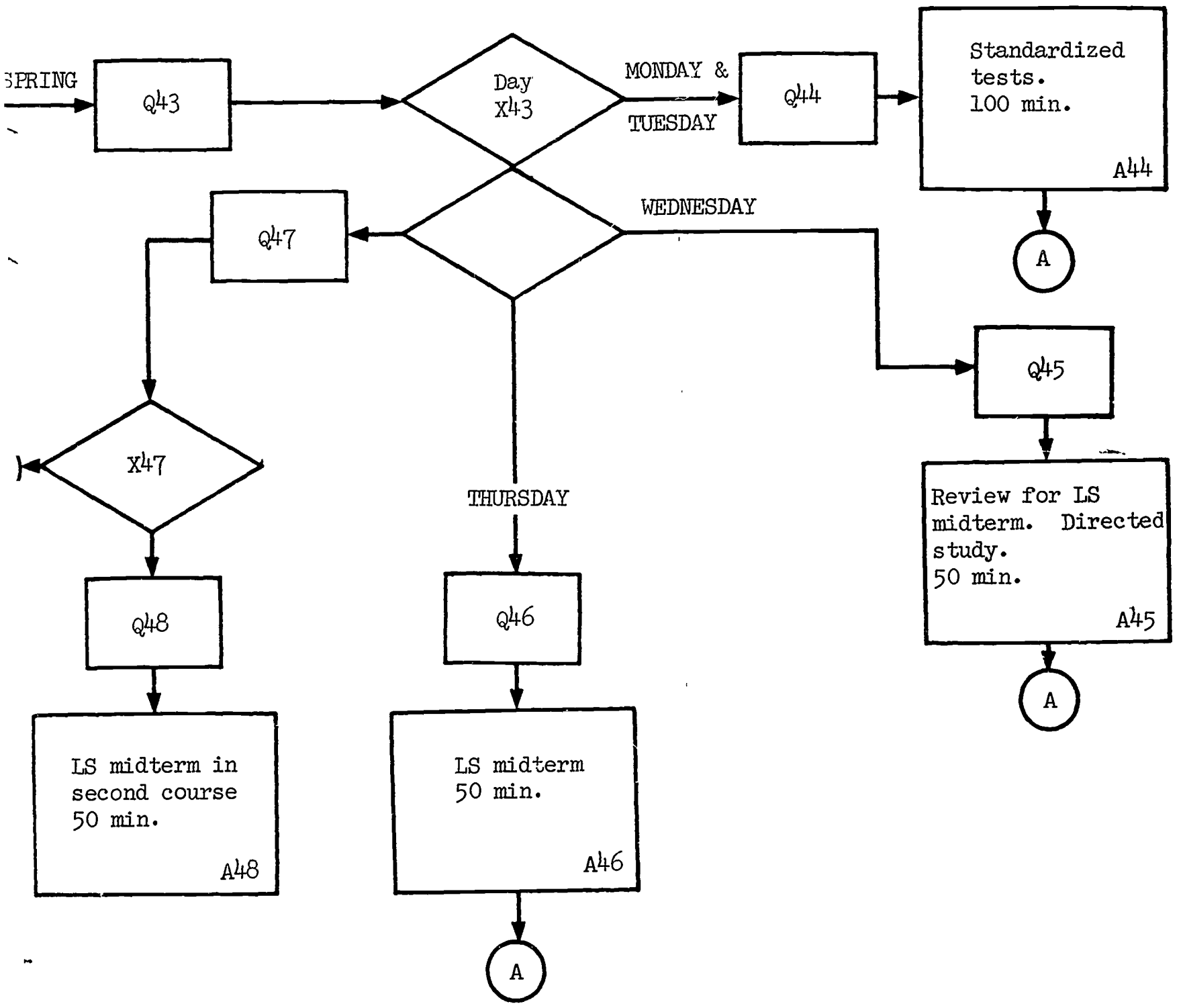


Figure 3. Flow Diagram Showing Progress Through Combined Continuous Progress--Large Group Instruction Course
(Sheet 4 of 5)

(page 38 blank)

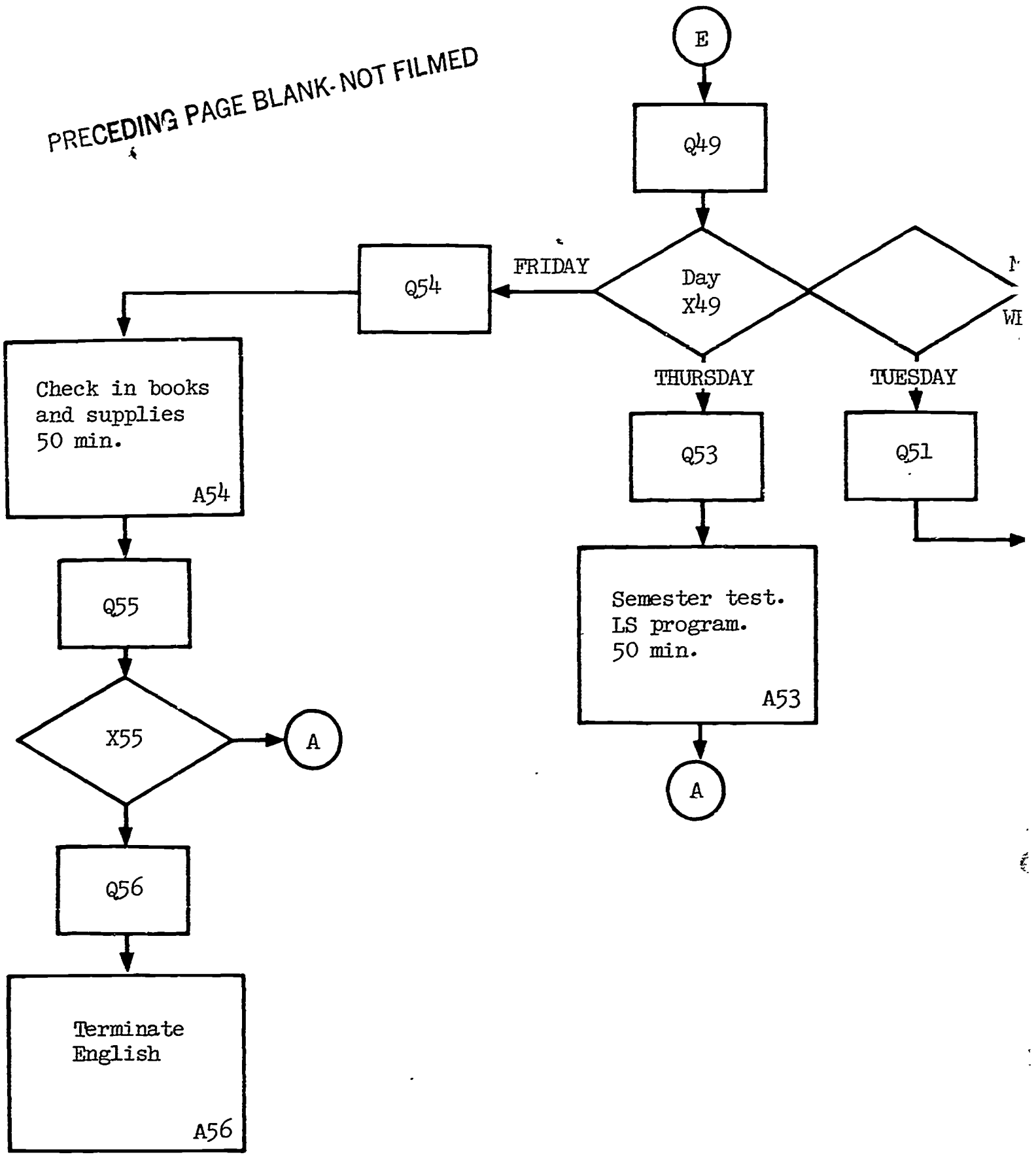
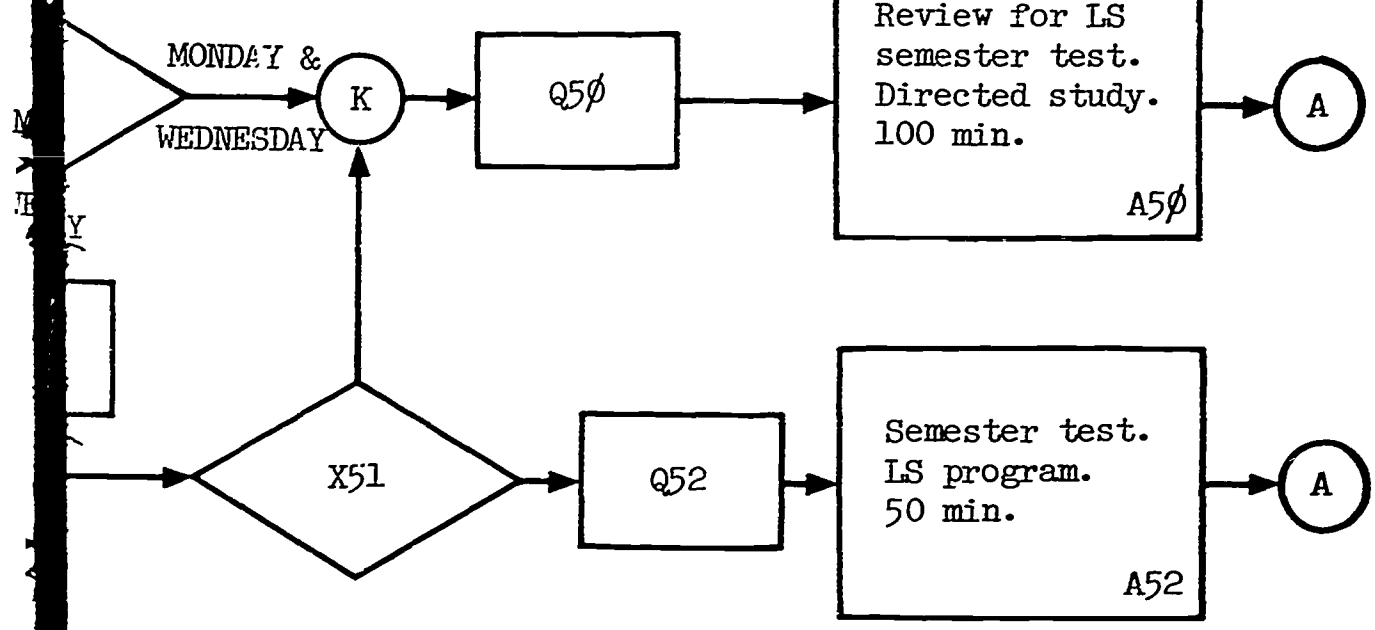


Figure 3. Fl
Cc

2/00



3. Flow Diagram Showing Progress Through Combined Continuous Progress--Large Group Instruction Course
(Sheet 5 of 5)

Table 7

Telelesson and Non-telelesson Assignments for Groups One, Two, and Three During Semesters One Through Five*

		Monday (Units 1-24)	Wednesday (Units 25-32)	Friday (Units 33-40)
Telelessons	Group 1	1-1 2-1 3-1	1-1	2-1
	Group 2	1-2 2-2 3-2	4-2	1-2a 2-2b 3-2c
	Group 3	1-3 2-3 3-3	4-3	5-3
Non-telelessons	Group 1		2-1 3-1	1-1 3-1
	Group 2	4-2	1-2 2-2 3-2	1-2bc 2-2ac 3-2ab
	Group 3	4-3 5-3	1-3 2-3 3-3 5-3	1-3 2-3 3-3 4-3

*The first digit in each pair is the semester. The second digit is the group. Thus, in the upper left-hand corner of this table, Group One is shown as having telelessons on units 1-24 on Monday during the first three semesters.

- Each individual progress unit consists of (a) a diagnostic test; (b) two 25-minute films, tapes, or records; (c) directed study; and (d) a unit test. In an individual progress (IP) unit, the student may skip directly from the diagnostic test to the unit test or he may be permitted to eliminate some of the directed study materials, based on the results of his diagnostic test.

- The student will complete the first three lockstep semester in a different sequence depending on when he enters the program. Thus, a student may begin with unit one, unit nine, or unit seventeen. The content blocks are not graded for difficulty; however, within a given block the work is graded for difficulty. For example, block one may be a general introduction to literature and block two may deal with poetry. Units one and nine, the first units of block one and block two, respectively, are relatively elementary and serve to introduce the student to the content block. In each block the work proceeds from the elementary and concrete to the difficult, complex, and abstract. Thus, while units one and nine are quite simple, units eight and sixteen both are difficult, but learning unit sixteen does not depend on familiarity with unit eight. This is because the content of the different blocks is quite independent.

- For purposes of our initial study we are arbitrarily assigning 20 percent of the students to group one, 60 percent to group two, and 20 percent to group three. These percentages would vary greatly in actual practice depending on the abilities and the desires of the students involved, since a student should have maximal opportunity, within reason, to select his own rate of progress.

- The number of students in a given telelesson situation will vary widely from semester to semester. In general, many more students will attend telelessons on Monday than on Wednesday or Friday because three of the five content blocks are offered on Monday and only one of the three Monday content blocks is offered each semester. An approximation of the number of students in each situation can be obtained by considering the groupings listed in Table 7. (These listings also appear on Figure 3.) As indicated before, any group one or group three contains 20 percent of the total. A group two contains 60 percent of the total, unless it carries a letter suffix. The letter suffix indicates that the group two has been further subdivided with each subgroup (a, b, or c) containing one-third of the group two students or 20 percent of the total.

Now we shall return to the details of the flow diagram. If a student is in an odd-numbered week and has been assigned a telelesson (Q06, Q08, or Q10), he observes that telelesson the first half of the hour and takes a diagnostic test on the content of the unit the second half of the hour (A06, A08, or A10). He then proceeds the next day, via merge A and Q02, to be reassigned (A02).

If the day in question is not a telelesson day for a given student, he goes from X04, X05, X07, or X09, via merge B, to X11 where he may: (a) take a diagnostic test, and be tagged to move through one of three programs, and then return to either assemble and assign (A02) or to reassign (X11) (whether a student takes the A or B path from X14, X16, X18, X20, or X22 is determined by whether the activity just performed was during the first half of the period or the second half); (b) observe an IP film or listen to an IP tape or record (A14); (c) proceed to directed study (A17); (d) participate in the first discussion in this lockstep unit (A19); (e) take the unit test for an IP unit (A21); or take the semester test for the IP program (A23).

If the student is in an even-numbered week and has been assigned a telelesson (Q28, Q30, Q32), he observes that telelesson the first half of the hour and is then available for reassignment (merge C to X33).

If the day is not a telelesson day for the student, he goes directly via merge C to X33. From X33 the student has all of the alternatives possible from X11 except the first discussion in an LS unit. In place of the first discussion, he does have the second discussion. In addition, he now takes the unit test on lockstep unit. This test is given the second half of last day of the second week of the unit--in other words, the second half of the day just preceding the first telelesson in the next unit.

When Thanksgiving week, or the comparable week in Spring Semester arrives, the student is assigned from X03 by way of merge D and X37. If it is Autumn Semester, on Monday the student reviews for his lockstep midterm (A39) and on Tuesday he takes it (A40). On Wednesday, if he is taking two lockstep courses, the student takes his midterm in the second course (X41 to A42). If he is taking only one lockstep course, the student is available for reassignment on Wednesday (X41 to A02).

If it is Spring Semester, on Monday and Tuesday the student takes standardized tests (A44); on Wednesday he reviews for his lockstep midterm (A45); Thursday he takes this midterm (A46); Friday, if he is taking two lockstep courses, the student takes the midterm in his other course (A48). If he is taking only one lockstep course, the student is available for reassignment on Friday (X47 to merge A).

The last week in each semester is spent in reviewing and taking semester tests in the lockstep program (X03 via merge E to X49). Monday and Wednesday of this week are spent in review (A50). If the student is taking two lockstep courses, he receives his semester test in one of them on Tuesday (A52). Otherwise he

either reviews (X51 to K to A5Ø), or he goes to reassignment (A). On Thursday, the student takes his semester step in a lockstep course (A53). On Friday, he checks in his books and materials (A54) at which time he is either finished with English (A56) or returns to be reassigned (A to AØ2).

C. SUMMARY AND DISCUSSION

In this section we have described two hypothetical programs which conceivably could be superimposed on the operating Buena Vista system. We are not urging adoption of either of these programs; rather, we are proposing that they might be worthy of consideration by a school adopting large group instruction via television.

Although relatively simple, the first of the two plans presented poses certain implementation problems. For example, with as many teachers as would be involved, much more time than usual would be required for both course planning and planning for the group discussions. No time allotment has been made for this activity. Although careful attention to scheduling and to use of all the "corners" of the available space might permit scheduling the various small group discussions, facilities for this are far from ideal and would inhibit the type of discussion desired.

The second plan presented is almost infinitely more complex and is fraught with much more difficult problems. Mr. Robert Blue, principal of Buena Vista High School, and Mr. James Tuck, team leader for eleventh-grade English, participated in the formulation of this plan and both have indicated that, mechanically, they think it can work; in addition, they think that it should certainly be simulated to assess its feasibility, and that it is worthy of testing in a school setting. In fact, they indicated a willingness to consider such a plan for Buena Vista if the time comes that the Buena Vista facilities must be enlarged, thus permitting modifications desirable for use with this plan. However, both Mr. Blue and Mr. Tuck suggested problems which may be encountered.

Motivation may well be a significant problem in the suggested program; however, the degree to which this becomes a problem could be influenced by the nature of the student admitted. (Most individual progress programs now admit only a portion of the available students. Others remain in traditional classes.)

It is suggested that a real increase will be experienced in the need for the counseling function. Some of this increased need can be handled by the teachers; however, additional counselors will also be required.

Prior to adopting a program such as this, extensive remodeling would be required in almost any secondary school building now in existence--even one such as Buena Vista. A learning resources center is needed near the central area of operation and discussion spaces must also be available.

Teachers who can operate effectively in a program such as the one described will be difficult to locate. Even when a single new program--be it either large group instruction or individual progress--is introduced, difficulties are usually experienced in securing teachers who will adhere to the planned program. When a combination of two apparently antithetical programs is introduced, more problems will likely appear.

Despite the problems recognized, we believe that the suggested program is worth further study and perhaps even implementation.

REFERENCES

1. Bratten, J. E. SDC document TM-1493/110/00. The organization of a biology course for individual progress at Theodore High School: An introduction. Dated 7 December 1965.

2. Bratten, J. E. SDC document TM-1493/111/00. The organization of a biology course for individual progress at Theodore High School: Descriptive analysis. Dated 9 December 1965.

3. Bratten, J. E. SDC document TM-1493/112/00. The organization of a biology course for individual progress at Theodore High School: Systems analysis. (In press)

4. Cogswell, J. F., Egbert, R. L., Marsh, D. G., and Yett, F. A. SDC document TM-1493/101/00. Special report - Purpose and strategy of the school simulation project. Dated 19 December 1963.

5. Cogswell, J. F., Marsh, D. G., and Yett, F. A. SDC document TM-1493/106/00. System design for a continuous progress school--computer simulation of autonomous scheduling procedures. Dated 14 January 1966.

6. Egbert, R. L. SDC document TM-1493/150/00. Buena Vista High School: An introduction. Dated 1 February 1966.

7. Egbert, R. L. SDC document TM-1493/151/00. Buena Vista High School: Descriptive analysis. Dated 2 February 1966.

8. Egbert, R. L. SDC document TM-1493/152/00. Buena Vista High School: Systems analysis. Dated 3 February 1966.

9. Egbert, R. L., and Cogswell, J. F. SDC document TM-1493/103/00. System design for a continuous progress school: Part I. Dated 28 February 1964.

10. Egbert, R. L., and Cogswell, J. F. SDC document TM-1493/104/00. System design for a continuous progress school: Part II. Surveillance and detection system. Dated 13 March 1964.

11. Egbert, R. L., and Cogswell, J. F. SDC document TM-1493/105/00. System design for a continuous progress school: Part III. The instructional materials center. Dated 1 August 1964.