

AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON, D. C. 20523  
BIBLIOGRAPHIC INPUT SHEET

FOR AID USE ONLY  
*Batch 1*

1. SUBJECT CLASSIFICATION	2. SUMMARY	TEMPORARY
	3. SYNOPSIS	

2. TITLE AND SUBJECT  
Modern Aids to Education; final report

3. AUTHOR(S)  
(101) Washington County, Md. Board of Education

4. DOCUMENT DATE 1969	5. NUMBER OF PAGES 129p.	6. AID NUMBER AFC
--------------------------	-----------------------------	----------------------

7. REFERENCE ORGANIZATION NAME AND ADDRESS  
Wash. County, Md.

8. SUPPLEMENTARY NOTES (Sponsor, Organization, Publisher, availability)  
(Final research summary, 1963-1969)

9. ABSTRACT  
(EDUCATION R&D)  
(COMMUNICATION R&D)

10. CONTROL NUMBER <i>PN-AAD-254</i>	11. PRICE OF DOCUMENT
12. DESCRIPTIONS	13. PROJECT NUMBER
	14. CONTRACT NUMBER <i>AID/afr-367 GTS</i>
	15. TYPE OF DOCUMENT

**FINAL REPORT**  
**of the**  
**MODERN AIDS TO EDUCATION**  
**Project 620-11-690-208**

**USAID/Nigerian Ministries of Education/Washington County, Maryland**

**Board of Education of Washington County  
Hagerstown, Maryland**

**The project helped the Ministries of Education  
to expand and evaluate the use of radio and  
television in the schools of Nigeria.**



ONLY EDUCATION CAN BRING UNITY TO NIGERIA!

NOT JUST ANY KIND OF EDUCATION,

BUT A UNIQUE EDUCATION!

BASED ON THE NEEDS AND RESOURCES OF NIGERIA  
AND DETERMINED BY WHAT IS  
BEST FOR THE BOYS AND GIRLS OF NIGERIA.

MODERN TECHNOLOGY CAN HELP BRING THIS  
EDUCATIONAL PROGRAM AND THIS UNITY MORE  
QUICKLY AND ADEQUATELY.

THESE IDEAS ARE REINFORCED AND SUGGESTIONS  
ARE MADE TO IMPLEMENT THEM IN THIS FINAL  
REPORT OF THE

MODERN AIDS TO EDUCATION  
PROJECT

1963 - 1968



## DEDICATION

This Final Report of the Modern Aids to Education Project is dedicated to the memory of C. Paul Barnhart, first Chief of Party (1963-1967).

During the four years he was stationed in Lagos, Mr. Barnhart won the affection of his staff and the endearment of the many Nigerians whose fellowship he so much enjoyed.

A tireless worker ever concerned about the welfare of his staff, Paul Barnhart was completely committed to the success of the MATE undertaking.

His sudden death in March, 1968, denied him the opportunity to participate in the culmination of the project which he helped initiate.

# Final Report of the Modern Aids to Education Project

Education is the key to the future, for it  
guides the spirit of the nation's youth.

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The Contractor gratefully acknowledges the cooperation of Griff Davis, AID/Lagos; and Mary Ann Cusak, AID/Washington; for their guidance in the preparation of the Final Report. The Contractor further extends appreciation to John Waters, AID/Washington; and Phoebe Lansdale, AID/Washington; for the many ways in which they rendered assistance during the course of the project.

This Report was prepared by the following members of the staff of the Contractor, the Board of Education of Washington County:

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February 6, 1969  
Hagerstown, Maryland

## Part I

### OVERVIEW

#### THE USE OF MODERN AIDS TO EDUCATION IN NIGERIA

##### BACKGROUND

A visitor to Nigeria during the early 1960's would have encountered among the adult and youth population an almost universal feeling that education was the key to the future of the nation. He would have discovered that the local, regional, and federal governments were conscious of the importance of education, and were placing high priority on efforts to improve the school program from primary school through the universities. He would have noted that the educational problems that faced the new nation, while more intense, were basically the same problems that existed throughout the world - the lack of adequate facilities, equipment, and materials; increasing enrollments; an insufficient number of qualified teachers; inadequate funds to pay the costs of the expanding program; and the need to modernize the curriculum.

The visitor might also have sensed that the demands on education were slowly but surely creating a desire among educators for the development of a new educational program designed to better meet Nigerian needs, resources, and aspirations.

Here and there, the visitor would have heard a few voices being raised suggesting that consideration be given to the part modern technology might play in meeting school problems and in improving education.

As a matter of fact, it would have been possible to actually visit a few locations in Nigeria where some of these new technologies were being tried - sometimes regularly, sometimes as pilot projects. Among the activities were programs involving the use of radio and television for educational broadcasts to schools, and the development of centers to provide audio-visual aids for the classroom.

As a result of the growing interest in using modern technology in education, the Nigerian Federal Economic Ministry and the United States International Cooperation Administration (later to be known as USAID) decided in 1962 to jointly sponsor a project to supply consultants from the United States to assist the Regional and Federal Ministries of Education with the existing schools broadcasting programs.

The Washington County School System (Maryland, USA) was selected to provide this service, and the first group of staff members arrived in Nigeria in September, 1963. The project, initially called "The Radio and Television Education Project," became known as "Modern Aids to Education" (MATE). The staff worked with the Schools Broadcasting Units (SBU's) of the North, West, East, and the Federal Ministries of Education.

The members of the SBU's and the MATE staff operated as teams. Together they planned, organized, and produced radio and television broadcasts for schools; prepared teachers' notes and support material for use in the classroom; developed helpful procedures for utilizing the broadcasts in the schools; and evaluated the results.

Now, five years later, the project has ended. The last member of the MATE staff left Nigeria in November, 1968, and the staff members are studying and evaluating the project activities as they prepare this final report.

The staff feel that the project was indeed worthwhile and that some very practical and significant contributions have resulted from the broadcast program that was developed by the Schools Broadcasting Units of the Regional and Federal Ministries of Education.

As the project program evolved, the MATE staff developed increased enthusiasm for their work and a real respect for the Nigerian counterparts and colleagues with whom they established warm, lasting, personal friendships. As consultants, the MATE staff were also gratified with the opportunities to participate in the development of the broadcasting program and with the serious way the Nigerian SBU members carried out their professional responsibilities and grew in their ability to perform the various activities involved in schools broadcasting.

The results of this cooperative effort were not one-sided. The consultants soon realized that they also learned from their Nigerian friends. Together they examined many professional and technical aspects of the broadcast program. This attitude made the MATE staff better consultants. How important was the mutual feeling that everyone was learning? -- One of the staff members, after returning home, used his Nigerian experience as a basis for a doctoral thesis entitled, A Study to Determine if Educational Materials Designed Specifically for a Developing Nation (Nigeria) Are Equally Effective in a Developed Nation (USA). He proposed the hypothesis that the materials could be equally effective and found evidence of statistical significance in the comparison of results.

As the staff members studied the project contracts, documents, work plans, and reports; reviewed their personal notes; and discussed their experiences with the home office staff; they realized they had independently reached similar and emphatic opinions. Their first general reaction, therefore, is to express the belief that Nigeria should not only continue, but should also broaden the program of school broadcasts that has developed during the last decade. They base this belief on the following:

The broadcasting program has been successful.

It has shown steady growth.

Teachers, headmasters, and pupils are interested and enthusiastic.

Competent, functioning Nigerian SBU staff personnel have been trained and are available to continue and broaden the program.

A substantial financial investment has been made in the largest population centers of the country.

Much equipment supplied at Ministry expense, plus contributions by outside independent sources, has been accumulated.

Procedures for maintaining and repairing the equipment, especially the radio and television receivers, have been established and are in operation.

Valuable support material for broadcasts has been prepared and used in the classrooms.

Efficient procedures for carrying out the broadcasts have been established and used.

Evaluation of tests shows that Nigerian pupils learned from the broadcasts.

THESE EFFORTS SHOULD NOT BE DISCARDED NOR SHOULD TRAINED PERSONNEL BE LOST.

In addition, even though Nigeria may find it difficult to provide a minimum program of education, the MATE staff suggests that the nation cannot afford to overlook significant developments of the 20th Century which can help it attain its goals.

Traditional methods and procedures have not been adequate in helping Nigeria meet past needs. Is there a place for a bold comprehensive attack on the problem that makes good use of modern technology? Severe problems often require a new look at possibilities, realities, and resources.

Nigeria has a greater need than ever for an expanded educational program; yet, she now has:

Fewer teachers than ever

Fewer facilities

Less money for schools

Less equipment and fewer supplies

More workers in need of re-training in modern technical skills

Returning troops who will require an educational rehabilitation program

The nation also has a greater responsibility than ever to provide activities that will stress national unity and reduce emotional tensions.

Modern technology is geared to meet such problems. For example, modern communication devices:

Expand the use of the individual teacher

One trained teacher can instruct many pupils in many different places at the same time.

Help untrained teachers improve techniques by hearing and watching competent teachers teach

Provide a way to better utilize school facilities, equipment, and teacher time

Supply badly needed teaching aids and instructional resources to a classroom

Provide unifying experiences for the citizens of the various states to see and hear each other

Ideas such as these will be discussed in detail in this report.

The MATE staff are convinced that modern technology, especially electronic communication media, can help Nigeria better resolve some of the more pressing educational problems. They encourage Nigeria to capitalize on the feeling that exists throughout the nation that education is important and that it should be a primary concern.

While the project was specifically concerned with the use of broadcasting as an educational resource and not with the total educational program, the MATE staff believe that activities using such resources cannot be developed in isolation from the total educational program.

Broadcast lessons do not exist in a vacuum, or as self-sufficient entities. To be effective, they must relate in definite ways to the objectives and procedures of the over-all educational program. What this program is determines what school broadcasts can be. This fact cannot be over-emphasized.

It seems pertinent, therefore, for the MATE staff to express the hope that attention will be directed anew to the development of a general educational program that is uniquely Nigerian in concept and design and that will identify the long-range goals on which year-to-year activities can be based.

The time is certainly ripe for Nigerian educators together with the national and local leaders to formulate new agreements about what the school program should be, and to determine not only the commitments that are needed, but to plan how to make the program a reality.

**SUCH A PROGRAM MUST BE DEVELOPED BY NIGERIANS. OTHERS - NO MATTER HOW LEARNED, CAPABLE, OR WILLING - CANNOT DO IT ADEQUATELY.**

The responsibility rests with Nigerians. They alone can take proper advantage of the unique capabilities, needs, resources, and problems of the Nigerian heritage and of the dreams of the future. Just as each man must dream his own dreams and not depend on the dreams others may have for him, so Nigeria must tackle the task of creating the unique educational program it requires.

Yes, Nigeria herself must build the needed understandings, organize the basic activities, and secure the necessary loyalties through the active involvement of her own people.

This means that Nigeria must try out many things to produce a practical education. Each Nigerian must understand himself and his world; acquire mastery of the skills of communication and of living with one another; develop job competency; achieve healthy and happy living; and a personally satisfying philosophy of life. All of these skills, attitudes, ideas, and ways of living are outcomes of the educational program.

What resources does Nigeria have with which to develop a new educational program? What investments has she made that can now be used anew? On what experiences can she draw to

meet the pressing problems of the day? What are some of the ideas that should be considered and discussed to determine if modern aids to education are to have a place in the Nigerian educational program?

Over the years, Nigerian teachers, headmasters, college and university professors, and Ministry of Education officials have accumulated a vast amount of practical experience in teaching, and in organizing and operating schools. These activities provide a valuable background for discussing the questions raised in the previous paragraph, and for the building of a new, comprehensive Nigerian educational program.

A study of educational trends and procedures used in other countries is also of great value to determine if there are programs already in operation that can be applied to Nigerian education. It should not be necessary for each nation to re-invent the wheel. In addition, special attention can be directed to educational experiments conducted in Nigeria by educators from abroad.

The MATE project was an example of a program conducted as a joint enterprise between the Nigerian Regional Ministries of Education, the Nigerian Federal Ministry of Education, and USAID. The summary of the activities and recommendations of the project reported in the following pages of this final report is an example of the kinds of information and applied research that can be studied by Nigerian leaders as they determine the educational experiences, procedures, and the amount of support needed for a quality program of education for the nation.

The suggestions and recommendations in the report are not prescriptions for Nigeria to adopt. The MATE staff serving Nigeria during the five years of the project were not all-knowing experts able to explain exactly what must be done, or how it must be accomplished. The staff members, however, do feel they have had experiences that qualify them to relate their background of education and technical know-how to Nigeria and to Nigerian education, philosophy, procedures, and methodology.

This report, then, makes available for consideration by Nigerians the interpretations, reactions, suggestions, and conclusions of the members of the MATE staff as they worked during the project with their Nigerian counterparts and colleagues.

In order to immediately bring the experiences of the staff to bear on some of the questions that are concerned with the developing Nigerian educational program, this Overview includes summaries of important considerations that normally would be placed farther along, at the end of the report. These ideas will be expanded and documented as the story of the project is related. They are placed here to stress the feeling of the MATE staff about the importance of using school broadcasts and other modern aids to education in Nigeria.

The summaries are developed in the three sections that follow:

1. Schools Broadcasts Can Make a Significant Contribution to the Nigerian Educational Program.
2. What Kinds of Questions Do Nigerians Need to Ask Themselves About the Value of School Broadcasts and the Desirability of Developing a Broadcast Program for Schools?
3. The Relation of the MATE Project to the Future Use of School Broadcasts in Nigeria Should Be Seriously Considered.

## Summary 1

### SCHOOLS BROADCASTS CAN MAKE A SIGNIFICANT CONTRIBUTION TO THE NIGERIAN EDUCATIONAL PROGRAM

The following statements are intended to direct the attention of the reader to the use of broadcasts for instructional purposes. Most of the ideas are general in nature, but they refer specifically to Nigeria. The reactions by staff members are the result of experiences acquired both in the United States and in Nigeria. These reactions should be read and studied with the knowledge that Nigerian SBU's have successfully developed and produced broadcast lessons that have been used in some of the schools in the most densely populated areas of the nation. The broadcast lessons have resulted in improved instruction with beneficial side effects that provide experiences not otherwise possible. If used in a more consistent way and made an integral part of the educational program, the results could be impressive.

1. Radio and television are realities. They are important, effective, efficient, and powerful instruments of communication. They are world-wide in scope and are among the significant forces that have created and are expanding modern world civilization.

Education is dependent on communication. Radio provides instant voice communication and television combines both sight and sound. Radio and television have been successfully used for instructional purposes for more than two decades. They are making significant contributions to school programs all over the world. They have been used in a limited way in Nigeria with limited success. But they have stirred the imagination and the creative impulse of teachers. In seeking the opportunity to continue, expand, and improve the service, Nigerians deservedly point with pride to the fact that they have successfully developed, produced, transmitted, and used these media.

2. Modern technology, however, is not the determining factor at this stage of the consideration of needs. The important aspect is not the technical system, the equipment, its maintenance and operation; but what is done with the media.

How radio, television, language laboratories, and other modern media are to be used determines the value of the contribution of the media and becomes an overriding consideration.

**IF THE EDUCATION PROGRAM IS NOT ADEQUATE FOR THE NEEDS OF NIGERIA OR DOES NOT INCLUDE FUNCTIONAL EXPERIENCES, THE NEW MEDIA WILL NOT MAGICALLY TRANSFORM IT INTO AN EFFECTIVE AND WORTHWHILE PROGRAM.**

It should, therefore, be stressed that determining the nature, content, scope, and organization of the educational program is the first priority. A radio or television receiver is a piece of equipment, not a teacher. A lesson does not automatically become better, more forceful, or challenging because it is taught with the help of radio or television. But given a pertinent, well-developed educational program, the new media can provide opportunities for using techniques that make a difference in the learning experiences of students.

THE NEW MEDIA SHOULD NOT BE USED TO DO SOMETHING THAT IS NOT WORTH THE EFFORT.

3. Present conditions in Nigeria have intensified the problems that face the nation and call for a new, more adequate program of education.

These problems have existed for a long time and include ethnic misunderstandings, as well as the lack of school facilities, trained teachers, and funds to finance the educational program. Conditions have become more critical and serious because of the civil conflict and the drain on available finances. Not only future progress, but actual survival of today's level of attainment may depend on how these problems are viewed and on the action that is taken to resolve them.

Does Nigeria feel that the current situation calls for a comprehensive re-analysis of major aspects of Nigerian life? Will there be a reassessment of resources to enable the nation to make the needed effort? Can the activities that are developed be based on a determination to make the effort successful?

Education must receive high priority in any program for national unity. The entire educational potential is involved including curriculum, administrative and supervisory organization, evaluation, training of teachers, and use of the funds that can be made available. MODERN TECHNOLOGY HAS A SIGNIFICANT PART TO PLAY IN BUILDING A NEW AND UNITED NIGERIA.

The need that now exists for the development of a unique program of education for Nigeria provides the opportunity for a comprehensive, nation-wide activity. The experience of evolving a more functional school program can be a nationally unifying experience if the educators of Nigeria are involved in its creation. EDUCATIONAL DECISIONS SHOULD BE BASED PRIMARILY ON WHAT IS BEST FOR THE SCHOOL CHILDREN OF NIGERIA. Discussions could include reorganizing and planning the entire educational structure.

4. If radio and television stations are operated within the boundaries of Nigeria at all, a part of the station's on-the-air time should be made available for instructional broadcasts to schools.

Can Nigeria afford to use modern aids to education such as radio and television broadcasts?

One is tempted to counter - Can Nigeria afford not to use such techniques?

The real question is - Can Nigeria afford radio and television?

The answer is not too complicated. Both radio and television stations have been successfully established in Nigeria. They provide important information, social, recreational, and educational services. They contribute to the business life and economy of the country. They could be used to much greater advantage to inform, enlighten, and educate the entire population. They add prestige, opportunities for jobs, and place the nation in the stream of world events.

It is highly unlikely that Nigeria will abandon its radio and television stations. They should, therefore, be recognized as potential resources for the schools.

Since Nigeria operates radio and television stations, schools should use the services. The additional costs will be very low for this purpose and the gains very great. The cost of schools broadcasting is so small in comparison with educational budgets that its discontinuance would only modestly affect the total cost of commercial or government subsidized radio and television stations.

A recent, annual budget of the former Northern Nigerian Ministry of Education allocated ₦14,200 for schools broadcasting. This was less than one-fourth of one per cent of the total educational budget. Included in the amount above was ₦3640 for increased broadcast time above and beyond the eight hours per week provided by the Broadcasting Corporation of Northern Nigeria.

The expenditures for broadcasting to schools can be justified if radio and television are used effectively and if the broadcasts provide more services than could be rendered if the money were spent in the traditional way.

If, however, education must build, operate, and maintain separate radio and/or television studios and transmitters and employ the technicians needed for operation and maintenance, the entire costs may well exceed the amount that can be allocated in the Ministry of Education budgets. If the total costs are based on the amount of school usage, it becomes practical to include funds in the educational budget to share the costs with other agencies. If cooperative arrangements cannot be achieved between commercial and educational broadcasters, then it may be necessary to establish production facilities for instructional use.

5. Costs are one of the most important factors in determining the kinds of educational procedures, methods, equipment, materials, facilities, and resources that will be provided in the school program.

It is evident that the use of modern technology in education involves considerable costs.

If the costs, however, produce better and quicker results that have additional applications for the adult population, they are warranted. If funds are spent for broadcasts instead of for some other procedure, the major consideration involves decisions about the best way to use existing money rather than the seeking of additional funds.

Radio and television broadcasts can be justified if they provide more services than the same amount of money could if spent in the traditional way. To accomplish this, the broadcasts must perform specific tasks that are important aspects of the total educational program. A part of the school program is thus assigned to radio and television, and instruction is provided by broadcasts rather than by the usual classroom method. Costs are then recognized as being "in place of," rather than "in addition to," and the emphasis shifts to making the money that

is available go as far as possible. This is a situation not unique to Nigeria. Educators and governments everywhere face the identical problem - to make the same amount of money, or unfortunately even less money, go farther than ever before.

6. Modern communication media must be understood, used intelligently, and coordinate with the other experiences of the school day. They provide different and additional ways of learning from the usual classroom situation.

Everyone - headmasters, teachers, pupils, parents, ministry officials - should understand that broadcast lessons are different kinds of learning experiences from classroom recitations.

The school has developed an effective procedure with classroom groups which provide a face-to-face, teacher-pupils learning situation. Class discussions under the guidance of the teacher have proved to be a practical and very effective way to organize and carry on the learning process. It is one of the best procedures now in use. But, it is not the only way to learn; and pupils can profit greatly from other kinds of experiences during a part of the school day.

The broadcast lesson does not attempt to handle learning experiences the way a teacher does with a classroom group.

In the usual classroom situation, it is possible for questions to be asked and answered; opinions are discussed; reports are given; the techniques of group learning are used. In a broadcast lesson, the major emphasis is not on having pupils respond vocally to a question. A major part of the time is not consumed with pupil recitation and the give and take of classroom discussion. A pupil cannot interrupt to ask a question - he must wait. He gets practice in withholding judgment and is challenged to seek the answer.

During a broadcast lesson, pupils participate in a different way. They think along with the teacher, not as a group, but as individuals. The teacher presents information, raises questions, gives explanations, and suggests activities for individual study. The pupil must listen, observe, take notes, try to figure out some things for himself, and follow up on his own.

No one can learn for a pupil - he must do it himself. Broadcasts provide a learning experience for a part of the school day that gives him practice in developing skills that are not as easily developed in the usual classroom situation.

Pupils learn in many ways. There is no one way to learn. Pupils should acquire skills in many kinds of learning situations.

When pupils listen, observe, take notes, figure out some things for themselves, withhold judgment, and follow up on their own, they are getting effective practices in the development of self-learning skills.

Initially, pupils may not want to accept the responsibility for acquiring these skills. But the people of every nation today must not only have a desire to keep

on learning through life, but must also know how to continue learning on their own after leaving school. The school broadcasts, therefore, provide experiences similar to the ones that will be encountered later in life when there will not be a teacher to guide learning.

Broadcast lessons can be developed in many ways. Decisions about their use should be made by Nigerian educators who cooperatively agree on what the broadcasts are to include, how they are to be produced, how frequently they are to occur, how they are to be used, and the manner in which they are to be coordinated with the other major activities of the school and the classroom. The Nigerian educators, with the technical assistance of the broadcasters, are the only ones who can do this effectively.

THE BROADCAST LESSONS, THEN, PROVIDE OPPORTUNITIES FOR STRESSING AND HELPING PUPILS DEVELOP THE IMPORTANT SKILLS OF SELF-LEARNING.

7. Radio and television broadcasts to schools can contribute most to the improvement of education if they are planned as integral parts of the educational program.

School broadcasts are too expensive to be used only for enrichment experiences that may be interesting but not really a part of the basic syllabi. This requires the broadcasts to be an integral part of the school program. Headmasters and teachers must understand what the broadcasts are to accomplish, and must use them as important educational resources in the classroom.

The contributions of the broadcasts can be very great if they are used for direct instruction on a sustained and regular basis in carefully selected areas of the curriculum. The greatest improvement in pupil achievement will come if the broadcast lessons follow the syllabi, are a regular part of the school schedule, and are prepared and taught by qualified, competent teachers who are interested in the challenges of the media.

The MATE staff believe the contributions of the broadcasts will be very insignificant if the media are used merely to enrich and supplement the school program. The contributions will be even less if the broadcast lessons are not prepared and taught by teachers, and supervised by educators working closely with the production and engineering staffs of the broadcasters. This does not mean that other agencies should not cooperate or be involved in the program. But it does suggest that educators must make sure that the broadcasts are based on the syllabi and contribute to the learning experiences of the students.

8. Broadcast lessons are more than a new way of teaching. They provide classrooms with countless teaching aids and make techniques, procedures, and resources available that could not otherwise be supplied.

The MATE staff are familiar with Nigerian classrooms and the problems of teachers and pupils. They are also aware of the potentials of radio and television broadcasts to schools. They, therefore, feel that the following advantages would result from a broader and more effective use of these media.

Since most Nigerian classrooms have only a limited number of teaching aids available, the single, most noticeable result of placing a television

set in a classroom would be the vast array of resources it would immediately provide.

A television set can be the specific teaching aid that is needed for the learning experiences that are being developed. It can instantly become a map, a picture, a graph, a statue, reading material, any musical instrument, a motion picture projector, a microscope, or any other material or equipment that is needed. These visual aids can always be the newest, most up-to-date materials available. Scarce or expensive apparatus can be made available to many classrooms because of the multiplier effect of television.

Such resources give meaning to instruction and help pupils develop understandings. Effective education requires more than talking, memorizing, or acquiring information. These activities are important, but they are not enough. A well-rounded program is needed that provides actual sights and sounds to interpret the verbalizations of the textbook and the teacher.

Radio and television can bring to the classroom important resource people - experts in government, community problems, business and industry, intellectual leaders, athletes, artists, musicians, or others - who can contribute to the school program.

National and local leaders can speak and be heard and seen by all the pupils receiving a telecast.

The actions and drama of community and world happenings can be viewed in the classroom as the events are taking place.

Activities too dangerous to be handled in the classroom can be presented under controlled conditions in a studio.

Television supplies some unique advantages that give teachers opportunities to use procedures and techniques that would be difficult or impossible to use in a face-to-face situation.

The pupils' attention can be directed on the television screen to the exact point of emphasis, and the superfluous and extraneous are eliminated.

The television camera can greatly magnify a small part of the area to be shown. This is most effective when presenting a close-up of a demonstration, especially when the relationship of moving parts is studied.

All types of audio-visual aids can be coordinated into a smoothly flowing television presentation. Visuals help explain the ideas of the lesson. Developing and using these visuals fosters creativity in teaching. Radio, too, has this advantage when classroom visuals are provided as support materials.

The latest information concerning a subject can be presented

The investment in a television receiver supplies the classroom in which it is placed with a window on the world; it gives each pupil a front row seat; and it provides almost unlimited resources.

9. School broadcasts provide excellent in-service education.

Teachers seldom have the opportunity to see or hear their associates teach a lesson. Even the best teacher can profit from observing another's methods and procedures. Television makes this a daily possibility and provides an effective training experience to improve the quality of instruction. This fact is further documented in the ETS report.

10. The educational program can be greatly enriched and broadened by the broadcasting of learning experiences.

Instruction in some subjects, which otherwise would not be available, is made possible by television or radio. This is especially true when it is impossible to secure enough trained teachers in a specific subject. Transferring a capable, interested teacher from the classroom to the broadcast program would enable him to teach not only his former pupils, but many other pupils who may otherwise have no teacher for the subject area.

The use of radio and television broadcasts makes possible offering advanced courses for gifted students or special help for students who learn slowly. Even if only a few such pupils are enrolled in small schools scattered over a large area, they may receive the instruction. It would be impractical to provide separate teachers for these services or organize enough traveling teachers to visit the schools. Yet, with television or radio, one teacher for a special subject area could teach all the pupils for whom the course is appropriate.

Even more important, since the small and most impoverished school in the area served by the broadcast is linked to the same network as the largest and best equipped school, the pupils in each can be offered lessons of equal quality. The number of subjects offered in the small school need no longer be greatly limited. In a time when a broad educational background appears to be of growing importance, the advantages of broadcast lessons seem especially significant.

11. The use of school broadcasts for direct teaching provides headmasters the opportunity to re-study and reorganize their schedules, staff assignments, facility and equipment needs, and budget.

This can result in desirable changes in schedules, length of class periods, staff utilization, and courses. Such adjustments are especially helpful where teachers and facilities are lacking.

The school organization widely followed in many countries today places pupils in groups of approximately equal size that meet during periods of equal length throughout the school day. There is no reason why schools need to be so rigidly organized. Broadcast lessons provide opportunities for experimentation with class size, the length of the lesson period, and teaching assignments. Studies

indicate that the organization widely followed in many countries today is wasteful of time and efforts of teachers and pupils. Such studies point to the need for more flexibility in the school schedule.

12. School broadcasts provide unifying experiences for all pupils to share.

School broadcasts help to bring all pupils and teachers in scattered schools throughout the broadcast area psychologically closer together, and cause them to feel they are important parts of a larger organization. Lessons are simultaneously being shared by all who are receiving the instruction.

If the area is a state, or all of Nigeria, the opportunities for unifying experiences are unlimited. National broadcasts would offer the same experience for all pupils, regardless of the state in which they live.

IT SEEMS DOUBTFUL THAT ANY OTHER EXPERIENCE COULD PROVIDE SO MANY OPPORTUNITIES FOR HELPING TO UNIFY THE NATION.

Nigerians need many kinds of unifying experiences, and school broadcasts provide an excellent way for pupils from one state to see, hear, and learn about pupils from another area.

Boys and girls can take part in telecasts and explain their ideas or exhibit examples of their accomplishments. Pupils in viewing classes can compare their own work with what has been shown and receive new ideas for developing other projects.

By means of television and radio, a child is no longer merely a pupil in a particular school. He now joins all the pupils of his grade for a part of the school day.

Pupils can share an experience in common, and teachers can use this experience as the basis for developing reading and writing skills.

13. Broadcasts prepared especially for schools can also help the community.

Broadcasts to schools are specifically designed to provide instruction in the classroom, but the transmitted signal does not stop at the classroom door. It simultaneously goes to all the radio or television receivers located in the area. Transmission expenses are the same if broadcasts go to 100 receivers, 1,000 receivers, or 10,000 receivers as long as they are in the range of the transmitter.

Receivers located in homes or in community centers, libraries, clubs, hotels, and museums make possible the use of basic lesson experiences by all. Nigeria should not overlook this opportunity to provide education for its people and to create a climate for unity.

Television and radio can be used to inform parents about the school program and to enable them to share instructional experiences.

The schools could create many programs for adult education in cooperation with other governmental and community agencies.

The thirteen points that have been discussed do not constitute a program for Nigeria. They provide basic interpretations by observers who have helped Nigeria work with a broadcast program. Nigerians should make, without delay, some basic decisions; but preliminary to this, they need to determine the questions they must answer in order to reach decisions. Summary 2 which follows, therefore, suggests examples of such questions.

## Summary 2

### WHAT KINDS OF QUESTIONS DO NIGERIANS NEED TO ASK THEMSELVES ABOUT THE VALUE OF SCHOOL BROADCASTS AND THE DESIRABILITY OF DEVELOPING A BROADCAST PROGRAM FOR SCHOOLS?

Even though Nigerians will raise their own questions, the MATE staff submit some basic questions for consideration:

1. Do Nigerians agree that it is important to develop a new, functional, comprehensive program of education based on Nigerian needs? What do Nigerian leaders want education to do for the children, youth, and adults of the nation?

How will Nigeria organize and develop such a program?

2. Should school broadcasts be continued? Can they be a worthwhile and integral part of the total educational program?

3. How are the broadcasts to be produced?

Can educators coordinate their programs with the facilities and services that already exist, or will it be necessary to duplicate production facilities?

4. How are the broadcasts to be used?

Will plans for using the broadcasts in the classroom go hand-in-hand with the production of the lessons?

5. Does Nigeria want education to foster Nigerian unity? If she does, how will this desire affect the organizational structure of the schools?

Will Nigeria use all the necessary resources to increase pride in and love for the nation?

6. Will broadcasts be used for adult education and for informing the public about the schools?

Can experimental programs be established to teach vocational skills to adults?

7. What fiscal commitments are necessary for an adequate broadcast program?

Are educators willing to use funds for broadcasts with the understanding that these costs cover a part of the regular program and are used "in place of" spending the money for a more traditional program?

3. Can special attention be given to the development of an expanded radio broadcast program?

Can an adequate radio signal be made available through all Nigeria?

9. Should television, which is available in only a few sections of Nigeria, be used for school broadcasts at this time? How far can a local community, state, or nation go in providing services to some citizens and not to others?

Is it unfair to provide this service to the few? If it is not possible to provide an education for all Nigerians now, should education be provided for none?

On the other hand, if an area has good radio and television stations and the resources are available, is it not good practice to take this opportunity to use modern aids to education?

10. What will be the relation of the Federal Ministry of Education to the school broadcasts program?

Should the Federal Ministry of Education take the lead in organizing the broadcast program?

Should broadcasts to schools be made an exclusive Federal service? Is this desirable? What are the alternatives?

What kind of cooperation and sharing is necessary to achieve a level of activity and a quality program that will justify the operation?

11. Will Nigeria use the experiences of the members of the former Regional SBU staffs to develop an improved and comprehensive program?

How can new, talented personnel be discovered?

12. Can a national resource center be developed to assist the production and exchange of broadcast programs?

13. What technical equipment is needed to expand the broadcast service?

Will a program for continuous maintenance and servicing of equipment be adequately staffed and financed?

14. Can transmission of the broadcast radio and television signals be linked with plans to extend other communication facilities?

15. Will special projects be developed to extend electrical service throughout Nigeria?

16. Are there plans to provide on-going evaluation as the broadcast program grows?

Finally, it is important to re-emphasize that the statements about broadcasting to schools, and the questions raised in Summary 2 do not include all the possible topics and questions

that Nigerian leaders should consider. The leaders themselves will, of course, be selective, raise other questions, and seek the necessary information.

The next section of this overview will summarize the activities and outcomes of the Modern Aids to Education project in order to provide specific examples which can be related to the statements that have been advanced and the questions that have been raised.

### Summary 3

#### THE RELATION OF THE MATE PROJECT TO THE FUTURE USE OF SCHOOL BROADCASTS IN NIGERIA SHOULD BE SERIOUSLY CONSIDERED.

When the MATE project activities began in September, 1963, Nigeria had already established itself as one of the leading states of Africa with world-wide recognition and a reputation for vigor, stability, fiscal soundness, and achievement. Thus, the project was off in an atmosphere of high hopes for the development of meaningful outcomes.

In reality, however, the MATE project was not one but four separate projects to assist the Ministries of Education in the North, West, East, and the Federal Territory to improve and further develop their broadcasting programs for schools.

The project activities in each area differed because of somewhat different educational programs, different school schedules, different priorities, and different educational aspirations. The regions also differed widely in their past experience with broadcast media.

Broadcast programs were confined mainly to the region of origin and were only rarely exchanged. NBC provided radio broadcasts for schools throughout Nigeria and used a Ford Foundation grant to finance the production of tapes and teachers' notes. These tapes were broadcast by NBC stations. Evidence is not available concerning how extensively the broadcasts were used outside the region of origin, but there was an indication of some use because schools in each region requested from the various ministries, additional broadcast notes for teachers.

It was assumed that the original workplans for the project as conceived by AID, Federal and Regional Ministries of Education, and the MATE staff could be put into operation promptly when the contract staff arrived in Nigeria in late 1963. This was an unrealistic assumption.

It took several years for MATE, the Ministries of Education, and USAID to arrive at a broader understanding of the problems and to develop working relationships and operational procedures fundamental to the success of the project.

However, the greatest difficulty that prevented Nigeria from meeting some of the terms of the agreement was the serious political conflict that flared into the open when the project

was scarcely three years old. The need to finance the war effort adversely affected the project, causing curtailment in some areas and abandonment in others.

### The Importance of This Final Report

The final MATE report aspires to be more than a summary or an evaluation.

It records successes and failures that run the full range from high achievements to moderate improvements. Some goals, such as the establishment of a National Resource Center, were not realized.

The MATE staff believe that additional evidence of their work in Nigeria, not obvious at this time, will gradually emerge in educational practices as a result of ideas, techniques, and working relationships developed during the course of the project.

The Nigerian SBU's, the Nigerian schools, and the MATE staff encountered many problems and hindrances. The project staff also received assistance and sympathetic understanding from those with whom they worked.

More important than the degree of success of the various activities or the intensities of the problems, is the present opportunity to study the experiences of the project to determine what can guide future action.

To provide a background for such a study, it is appropriate to insert here several specific observations about the MATE project.

Nigeria did not begin radio and television broadcasts to schools because of the MATE project.

Broadcast lessons were already being transmitted from radio stations over a large area and from regional television stations in the largest urban population centers.

Nigeria sought assistance to improve the quality of the broadcasts and to determine if the services should be enlarged.

The MATE project was, therefore, designed to assist the Nigerian ministries in the planning and production of broadcast lessons, to advise, to train Nigerian personnel, to collect data, to evaluate the achievement of the pupils, and to follow up on the things Nigeria wanted done.

The Ministries of Education were in control. They decided on courses to be broadcast, schools to be included in the program, textbooks to be used; and determined what testing was to be done. They selected Nigerian counterparts and SBU personnel.

The specific workplans for project activities were not AID's or MATE's. They were developed by Nigerian representatives of the Ministries of Education in a seminar

held in Hagerstown, Maryland, August - September, 1963. MATE staff, with the help of the staff of the Board of Education of Washington County and a representative of AID/Lagos, made suggestions and assisted as consultants.

The workplans and the general scope of the project were revised from year to year. The semi-annual reports detailed the progress and the problems of the project, and the MATE contract with AID, which was revised each year, listed the annual objectives.

The MATE staff went to Nigeria with the understanding that the lessons broadcast to schools would continue to be developed, taught, produced, and directed by the Nigerians themselves.

The project was a training program to help Nigerians improve production, sense the variety of contributions the broadcasts can make to Nigerian education, utilize the broadcast lessons in the classroom, evaluate the results, and collect data about the effectiveness and costs of the broadcast program.

MATE, therefore, did not initiate a demonstration program to show how they could teach lessons as examples for Nigerians to hear, see, and use.

It was understood from the beginning that no MATE staff member would teach except under rare conditions. However, lack of counterparts and shortages of Nigerian personnel sometimes required the advisors to function as on-camera teachers.

### Conditions Affecting Broadcasts to Schools

A number of situations affected the quality of the broadcasts and hindered the development of the project workplans. Since many of these conditions will in all likelihood continue to exist, the MATE staff feel it is important to list some of the difficulties in order that Nigerian educators responsible for developing future schools broadcasting programs will recognize and, hopefully, take steps to reduce these limitations.

#### Availability of Electric Current

Electronic equipment is dependent upon a reliable and steady source of power. This power must be readily available and inexpensive. Future Nigerian policy will certainly provide for the expansion of the power lines to more adequately serve the growing communities. Increased usage should reduce the cost to the consumer.

The present lack of electric service and the high cost and restricted availability of power both in urban and rural areas hindered the electrification of schools. This greatly reduced the number of schools that could be included in the project program, and deprived many pupils of the opportunities provided by the broadcast lessons.

#### Fluctuation of the Broadcast Signals

Fluctuations in electric current and interruptions of service adversely affected the quality of the broadcast signal. Nigerian radio transmitters often produced a signal that was unintelligible

even a few miles from the transmitter. The installation of additional equipment to better control voltage fluctuations and to stabilize the radio or television signal would greatly improve reception. This must be reinforced with adequate replacement supplies.

### Functioning of Sets

Even though an excellent lesson for broadcast has been prepared, it will be useless if it is not transmitted properly or received in the classroom on equipment that is functioning effectively. Systematic maintenance practices are a necessity. The lack of adequate maintenance was a continuing problem in the origination, transmission, and reception of the broadcast signal. The availability of spare parts also determined the speed with which repairs can be made. There was a severe scarcity of needed replacement equipment during the entire life of the project.

### Broadcast Time

Broadcast time was made available to the SBU's of the Ministries of Education through cooperative arrangements between government and radio and television station officials. In addition, NBC re-broadcast audio tapes that had been prepared for use in previous years.

With the exception of television broadcasts in Eastern Nigeria, the broadcasts were scheduled at times schools were in session. But schools need some flexibility in fitting the broadcasts into the daily timetables of the school. The limited time available for broadcasting prevented many schools from using the lessons. Some broadcasts need to be repeated several times because of variations in the individual school programs. Direct teaching requires several broadcasts each week. More broadcast time is mandatory.

The solution to these problems will require a study to determine the total amount of broadcast time needed, the most appropriate times during the school day for scheduling the broadcasts, and ways of meeting the increased costs.

### Sharing Facilities

Although some of the audio tapes used in the broadcast program were not prepared in the broadcast station studio, all of the television lessons and tapes required the use of stations' production staffs and studios.

Many problems which might otherwise not have occurred developed because of the need to share facilities and personnel for the television broadcasts. Time for rehearsals was quite limited because of the station's other commitments and the shortage of studio staff. In some cases, the schools broadcasts were considered almost a nuisance to be endured; in others, the very best of relationships existed.

A broadcast lesson differs from a regular television program intended to amuse, interest, or inform the viewer. Schools broadcasts require specialized treatment if they are to provide effective learning experiences. Sequential development of concepts must be planned. Logic becomes more important than emotional appeal. Because of this, a number of SBU's initiated plans to install facilities for producing video tapes and enabling studio teachers to rehearse and evaluate the lesson before it is broadcast.

This problem, created by shared usage of facilities, should be studied to determine what can be effectively shared and what facilities, services, and personnel are needed by both the stations and the SBU's.

### Limited Funds

Limited funds prevented the Ministries of Education from providing some of the equipment, personnel, and services they desired to contribute. This situation was a handicap to project progress during the early years, but improved as the activities developed. Selective use of the money available enabled the Ministries to increase personnel, enlarge SBU facilities, and purchase additional radio and television receivers. Funds were not available for the development of an adequate transportation system for maintenance, liaison, and distribution of support material. Electric service was interrupted in some schools because of unpaid bills.

### Availability of Trained Personnel

Broadcasting to schools requires the services of personnel who have basic skills and understanding in their particular field. In addition to this general background, producers, directors, scriptwriters, teachers, engineers, and technicians need specialized training to perform the various tasks required in the broadcast process. Such personnel did not exist in sufficient quantity in Nigeria before the MATE project. Even though some training has now been given, the number in reserve is still inadequate. A program is, therefore, needed to seek personnel with a background in education who demonstrate enthusiasm for the training required to make them proficient in broadcasting to schools.

### Rapid Personnel Changes

Frequent changes in key personnel such as inspectors, headmasters, and teachers, caused delays in the implementation of project activities. Many senior staff members of the Ministries of Education and provincial school officials were reassigned to other positions just as they were able to make positive contributions to the progress of the project. This necessitated the re-establishment of working relationships.

### Conditions That Assisted the Program

All of the conditions that affected the MATE project, however, were not hindrances. Some of them were of great assistance to the program. They are listed to remind the Nigerian educators responsible for developing schools broadcasts to take advantage of the opportunities that are present whenever these situations exist. A representative list is as follows:

The enthusiasm of teachers, pupils, and headmasters to use new methods and techniques

The dedication of the SBU staffs who felt they were making an important contribution

The willingness of provincial inspectors to assemble headmasters and teachers for seminars, often during school vacation periods.

The assistance of some members of the inspectorate staff with evaluation of broadcast lessons as they made their regular tours throughout the region

The freedom given to the MATE staff in visiting school classrooms, headmasters, and teachers

## Operational Procedures

After the MATE staff had gained firsthand experiences in Nigeria working with ministry officials and the SBU's, they analyzed the objectives of the project and restated them as essential demands. They used the following simplified list to concentrate their efforts on important project needs.

1. Nigerian personnel and counterparts must be assigned and trained.
2. Radio and television receivers must be maintained in operating condition.
3. Agreements between the broadcasting stations and the Ministries of Education must be reached and used. Time for broadcasting during school hours must be scheduled and used. The amount of time available for schools broadcasting must be increased.
4. Programs must be taped so they can be studied, evaluated, and exchanged.
5. The SBU's must be adequately staffed and housed.
6. The broadcasts must be an integral part of the instructional program and be transmitted on a regular basis.
7. Support materials must accompany the production of the broadcasts.
8. The program must be evaluated and documented to show the results achieved.

These working objectives should be considered along with the formal project objectives listed in the annual contracts and discussed in Section III of this report. The MATE staff feel that even though the project encountered many problems, it nevertheless succeeded in making some positive contributions to each objective in addition to achieving some outstanding results.

## Project Accomplishments

In retrospect, the successes and failures of the project seem secondary to some very important action taken in the various regions and the Federal Territory. There is positive evidence of the growth of meaningful understandings and attitudes towards schools broadcasts throughout the country.

Decisions and actions of the Ministries of Education and the SBU's showed a growing understanding of the value of the broadcasts in providing effective learning experiences. As a result, they approved requests to expand and improve broadcasting services to schools.

These evidences were not clearly discernable before 1965. In fact, Summary Report No. 2, covering the period December 31, 1964 to June 30, 1965, expressed the concerns of the MATE staff about attitudes and conditions in Nigeria. The following statements are quoted from the report:

"...it was expected that the initial activities of the project would require slow pacing, but progress was even slower than anticipated. The period from September, 1964, to

March, 1965, was particularly trying and frustrating. Little was being accomplished; additional blocks seemed to occur daily.

"The Broadcast Divisions of the Ministries were not staffed as anticipated. Personnel, facilities, and financial problems were so encumbering, the Ministries felt that they were not in a position to move ahead. Far too few schools were using the broadcasts. At times it seemed the objectives of the project were misunderstood and that nothing was being accomplished. There were moments when it looked as though sufficient understanding could not be established to warrant the continuation of the project in some regions or to expand it in others.

"This situation was not improved by the delays which occurred in the arrival of the equipment, especially video taperecorders. It was not understood that slow delivery was caused by the fact that the video taperecorders existed only as prototypes in the U.S. and required some redesigning before they were ready for production. It was also necessary to adapt equipment made primarily for use in the United States (110 v., 60 cycle, 525 line) to standards used in Nigeria (220 v., 50 cycle, 625 line).

"During this period, the project staff continued to establish contacts, correct misunderstandings, demonstrate the sincerity of their belief in ultimate success, and gain the confidence of Ministry officials. Problems had to be discussed, examined, and re-examined. Time was needed for ideas, information, and possible solutions to problems to work themselves into an attainable and desirable program.

"At the moment when things looked the darkest, a close examination revealed evidence of positive signs of improvement. Staff was being added to broadcast sections and facilities were being increased. The feeling grew that the ministries were sincere in their desire to utilize the services of the project. Problems became identifiable. It was realized that project personnel, through their personal relations with ministry and school officials and teachers, not only were accepted, but had established a good rapport and had found ways to contribute ideas and suggestions."

The problems and hindrances that developed, the critical seriousness of Nigeria's current problems, therefore, form a background for analyzing the accomplishments and shortcomings. This evaluation will help Nigeria determine its long-range and short-range educational goals.

#### Project Aspirations That Were Unsuccessful or Were Only Partially Achieved

##### National Resource Center

The establishment of a national resource center was listed as an objective in 1962 when the prospectus for the project was written. The Nigerian Ministries were to take the lead in establishing this service. It was long considered feasible by USAID officials, but because of regional differences, the center never became a reality. A national resource center may function under a federalized program of educational technology and should be given careful  
ly.

### National Advisory Council

The creation of an advisory council has generally been considered essential to the success of new educational ventures that extend beyond local or provincial programs. The National Advisory Council on Educational Broadcasting was intended to serve this need in the areas of educational radio and television broadcasting. Unfortunately, this organization met only twice before being disbanded because of the national emergency. It is encouraging to note that a number of Nigerian educators have suggested that the NACEB be re-established.

### Project Activities in Western Nigeria

The MATE project's activities in the Western Region were very disappointing. No counterparts were ever assigned to the technicians. The MATE staff wrote, produced, and presented lesson series with minimal support from the unit. They were involved in little of the unit's activities and planning. No positions within the unit were provided for the two participant trainees when they returned from the United States. Although radio production equipment was furnished by the project, and TV production equipment was purchased by the Ministry of Education, funds were never provided for the construction and staffing of the planned studio facilities. An organized evaluation program was never initiated.

### Lack of Written Agreements Between Ministries Concerned with Broadcasting

Although this was only an indirect project responsibility, the MATE staff continually advocated the development of written agreements among the various ministries themselves, and between the ministries and the radio and television stations. General broadcasting was a function of the Ministry of Information; school broadcasting was controlled by the Ministry of Education. Procedures were needed to clarify areas of jurisdiction and problems arising over such questions as - If the Ministry of Information provides a television receiver in a school, is the Ministry of Education responsible for its maintenance? Written agreements would have eliminated some of the misunderstandings that occurred, and removed some of the restrictions that prevented the MATE staff from making suggestions about the programs. Agreements were never written.

### A Systematic, Corrective, Emergency, and Preventive Equipment Maintenance Program

The training of maintenance technicians is listed among the successful achievements of the project, nevertheless, it is necessary to point out that a much more effective operation must be established.

The success of schools broadcasting services is adversely affected without genuine commitment to solving the problems of ongoing maintenance of equipment. Inadequate procurement policies, scarcity of replacements, insufficient test equipment, lack of planned equipment replacement, inability to standardize receivers, and too few, trained repairmen are factors which prevented the schools broadcasting units from providing proper, systematic maintenance service to the schools participating in the broadcast program.

### Additional Time for Broadcasting to Schools

The MATE staff continually urged the Ministries to provide more time for broadcasting to schools. The suggestion, however, met with only limited success. In the North, several hours of broadcast time were added to the radio and television schedules of the SBU's.

In Enugu and Aba, the lack of daytime television broadcasting was a great handicap. The only time made available was at 7:00 p.m., once a week. This meant that only boarding schools were able to use the lessons. The broadcasts, however, occurred during the time allocated for games before the dinner hour, greatly reducing the possible opportunities for in-school utilization of the programs.

It should be noted that only one of the above-mentioned aspirations was totally unsuccessful. The National Resource Center was never established. In fact, it did not even reach the planning stage. The other endeavors that have been discussed were at least partially attained.

There were, however, some very important accomplishments which are described in the following section.

### Project Accomplishments

1. The MATE project helped to focus increased attention on schools broadcasts in Nigeria and demonstrated to Ministry of Education officials that the broadcast media could be used more effectively in the educational program.
2. The Ministries of Education became more familiar with the potentials of schools broadcasts and took action that showed they recognized the importance of the broadcast program. They not only gradually increased the size of the schools broadcasting units, reorganized their responsibilities, and consolidated allied services with them; but also contributed additional facilities, provided more supplies, materials, and equipment, and increased budgets. The MATE staff submitted proposals for the reorganization of the units and helped plan the enlargements of facilities and services.

It is particularly interesting to note that during the first half of 1967, a period of severe tension and unrest, the Ministries of Education of the East, North, and Federal Territory, were increasing their contributions to schools broadcasting. The modest support of the Ministries at the beginning of the project had changed to a substantial contribution. Larger budgets were made available to the broadcast division. Personnel were added. Counterparts were assigned and the work of maintenance technicians trained in Hagerstown was funded and made viable. The ministries were making on June 30, 1967, their greatest efforts since the project began. They were doing this at a time when excuses to discontinue the broadcasts were readily available.

3. The SBU staffs succeeded in adapting modern technological developments and media to the Nigerian educational program.

In Kaduna, for example, the MATE project was instrumental in training a Nigerian SBU staff that successfully planned and produced its own programs and assisted classroom teachers in using and evaluating the lessons. This staff, in the space of four years, grew from a few Nigerians directed and organized by four expatriates, to a completely Nigerian staff of twelve. The development of the Kaduna SBU staff is a demonstration of the efficiency and enthusiasm with which Nigerians can develop, operate, and utilize modern technology.

4. The quality of the performance of the trained SBU staff prompts the MATE staff to suggest to the Federal Ministry of Education that one of the greatest investments Nigeria now has in schools broadcasting is not time, money, or equipment - great as these investments may be - but the trained Nigerian personnel that can now use their abilities to enhance and improve the school program.
5. The MATE project convinced the Ministries of Education to use television for direct instruction of an important subject in the prescribed syllabus on a regular, sustained basis with two or three telecasts a week.

Prior to this, schools broadcasts were almost exclusively enrichment experiences not directly related to the work in the classroom and presented on a once-a-week basis.

6. The comprehensive schools broadcasting units developed in the various Ministries of Education provide the coordination needed for a complete and effective broadcast organization.

The bringing together of the personnel needed for audio-visual aids, graphics, publications, script writing, radio and television production, teaching, language labs, and other modern aids into the SBU - or in a modern aids center - was an organizational step that contributed to the development of effective broadcast programs.

7. Radio and television schools broadcasts require support materials in the form of teachers' notes, student worksheets, duplicated materials, charts, maps, supplemental tapes, and many other aids. The SBU staffs developed useful support materials and showed that they understood the importance of this service.

These teaching aids are functional when their development coincides with the broadcast program and provides strong assistance to the classroom teacher.

8. The participant training program was very successful. It provided educational experiences in the United States for eight Nigerians.

Two staff members received liaison training. One became Head of Schools Broadcasts in Kaduna, and the other conducted the utilization program in the schools of the North.

One trainee received instruction in production and script writing.

Five participants took special training in the maintenance and repair of electronic equipment.

These eight men were a credit to themselves and to Nigeria. One technician graduated with a B.S., cum laude, in electronic technology.

9. The nucleus of an effective maintenance and repair department was established at each of the centers of schools broadcasting. Transportation has been provided or promised for carrying out a planned maintenance program. Most centers have some basic tools,

test equipment, and repair departments. Personnel trained under the terms of the MATE contract can, with sufficient replacement parts, satisfy many of the demands for the continuous, systematic maintenance of receivers.

10. The project technicians demonstrated the value of maintaining continuous feedback to SBU personnel of classroom teachers' comments about the quality and usefulness of schools broadcasts. The classroom teachers demonstrated their willingness to provide this information, and welcomed the opportunity to contribute suggestions to improve the program.

Summaries of feedback and evaluation materials, and the detailed ETS study with its item analyses for the Straight for English and Reading 12A tests are available for further study. These are important guides for the study and re-evaluation of schools broadcasting in Kaduna and the instruction of English as a second language at the primary five level, utilizing radio and television broadcasts.

11. The special reports of the short-term consultants provide the Federal Military Government of Nigeria and USAID with documented recommendations concerning the operation, improvement, and future expansion of schools broadcasting in Nigeria.

The John Brugger report summarizes his investigations concerning radio and television transmission and reception. Wilbur Kelley's study discusses the installation and maintenance of video taperecorders in all the regions. Jefferson Eastmond's cost-benefit analysis on operating schools broadcasts in the six northern states of Nigeria criticizes the IIEP study on this topic, and suggests the need for continuing schools broadcast services in spite of the relative high costs of operation.

The Educational Testing Service report, referred to in section IV-C, is a primary source for arriving at conclusions about the effectiveness of teaching by radio and television in a controlled experiment in the Kaduna-Zaria area during 1967.

William Halstead's technical study provides cost estimates and discussions in which he engaged while on a fact-finding tour of the SBU's and P & T installations in Nigeria. His recommendations and proposals for continuing and expanding the SBU's and transmission system for broadcasting services in Nigeria are a part of this final report.

12. As a final activity, the MATE staff compiled a list of recommendations concerning the future of schools broadcasting in Nigeria for consideration by Nigerian Government officials, the Nigerian Ministries of Education, the various Schools Broadcasting Units, and USAID.

These recommendations are summarized as the concluding section of this overview. A detailed statement of the recommendations will be found in Part VI of the report.

### Recommendations

Recommendations are both easy and difficult to make. In a sense, it is always easy to tell someone what to do. It is also always difficult for those who are not the active participants or the decision makers to sense all the forces at play and the difficulties that must be faced.

The MATE staff were in Nigeria for only a short time. They do not have the historical and cultural backgrounds and understandings that have evolved over the years among the people who live in Nigeria.

Nevertheless, they have identified themselves closely with the efforts to broadcast lessons to schools. Schools broadcasting seems to them as much their responsibility as the responsibility of their Nigerian colleagues. They feel personally involved in the outcomes. They endeavor to speak from a viewpoint that is as near Nigerian as is possible. It is in this spirit they make suggestions about education for Nigeria to consider. Only Nigeria can decide. Nigerian educators must evaluate these reactions and make the vital decisions.

The attention of the reader is directed to the full statement of the recommendations in Part VI of this report. A summary of the topic headings which reflect the general tone of the recommendations is as follows:

Nigeria is urged to:

1. Increase Curriculum Building Efforts
2. Analyze the Status of Schools Broadcasts
3. Support the Broadcast Effort
4. Provide Central Leadership
5. Use Broadcasts for Direct Instruction
6. Plan a Phased Program for Expansion
7. Cooperate With Broadcasting Corporations
8. Commit Agreements to Writing
9. Develop Job Descriptions and Personnel Policies for Staff
10. Involve Inspectors, Headmasters, and Principals in the Utilization of Broadcasts
11. Orient and Train Classroom Teachers in Utilization of Broadcasts
12. Establish a Regular Schedule for Classroom Utilization of Broadcasts
13. Maintain Equipment
14. Evaluate Broadcasts
15. Establish Guidelines for the Purchase of Equipment
16. Encourage Counterpart Training Programs
17. Strengthen and Stabilize Broadcast Signals
18. Seek Specialized Assistance When Needed

This overview provides a frame of reference for interpreting the objectives, achievements, problems, and recommendations which are more fully documented in the following sections of this final report of the Modern Aids to Education Project.

## Part II

### CHRONOLOGY

#### ORIGIN OF THE PROJECT

In the autumn of 1962 a group of Nigerian leaders visited Hagerstown, Maryland, to observe the Washington County School System's use of television for instructional purposes. They were impressed when they visited classrooms with the manner in which the broadcasts were used. After they returned to Nigeria, they requested USAID to include the Washington County School System in the list of educational institutions being considered for a contract to provide technical assistance to the Ministries of Education of Nigeria.

These Nigerians were observing broadcasts to schools in the United States because Nigeria was studying and enlarging its program of school broadcasts. Radio broadcasts to schools had started experimentally in Lagos in 1952. By 1961, Schools Broadcast Units had been established in all the Regional Ministries of Education, and a regular program was in operation. By 1962, television broadcasts to schools were being used in Ibadan and Kaduna, and plans for similar programs had been made in Enugu and Lagos.

The interest created among educational and government officials and the public by the schools broadcasts caused the Nigerian Federal Ministry of Economic Planning in behalf of the Ministries of Education of North, West, and East Nigeria to seek the help of the United States in order to further investigate the use of mass media in schools.

In June, 1962, a project agreement for radio and television education was signed between the Nigerian Ministry of Economic Planning and the United States International Cooperation Administration (now USAID). Both governments accepted specific responsibilities to accomplish their mutual aims. The project was to provide assistance in improving and expanding the production, distribution, and use of schools broadcasts and the accompanying supporting materials. USAID agreed to provide a contractor to assist the Nigerian Ministries in the project program, and asked Nigeria to share in the selection. For this reason, Nigerian leaders were observing schools broadcasting programs in the United States.

The Washington County, Maryland, School System was therefore invited to submit a proposal for developing a program of services for the Nigerian Ministries of Education in keeping with the suggested activities and desired outcomes listed in the USAID prospectus that described the scope of the Nigerian-U.S. agreements.

Washington County had for many years been using radio and television at all grade levels for direct instruction and had gained practical experience in the utilization of these media as educational resources. School broadcasts by radio were a regular part of their school program by 1947. An extensive five-year television project sponsored by the Ford Foundation and the Electronic Industry Association began in 1956. By the end of this project in 1961, school broadcasts had become accepted as an integral part of the instructional program and were being operated within the school budget without outside financial assistance.

In January, 1963, the Washington County, Maryland, School System was tentatively selected as the United States contractor to develop a project. A team of four staff members from the

system headed by the Superintendent of Schools visited Nigeria in March to meet with officials, obtain background information about schools, educational programs and problems, examine facilities, and discuss plans to implement the project agreement. The formal contract between USAID and the Board of Education of Washington County was signed in June, 1963.

### DEVELOPING THE PROJECT PROGRAM

Representative officials from the Ministries of Education in Nigeria, the Federal Government of Nigeria, The Nigerian Broadcasting Corporation, USAID/Lagos, and the Washington County School System participated in a seminar in Hagerstown from July 27 to September 16, 1963. It was pointed out at this time that radio and television were not panaceas that could easily solve Nigeria's pressing educational problems. The impracticality of superimposing upon Nigeria a system of educational broadcasting that had evolved under conditions peculiar to the United States was also emphasized. Members of the seminar agreed that there was no desire to have Nigeria copy what had been done in the United States.

The purpose of the project was NOT TO ESTABLISH educational broadcasting in Nigeria. Broadcasting to schools was already underway. The major project objective, therefore, was to assist the several Nigerian Ministries of Education to improve, expand, and evaluate their radio and television schools broadcasting programs and to help them determine if the use of these media could provide effective and practical ways to meet the needs and problems of the school.

participants of the seminar agreed that pursuit of this general objective would involve the following activities:

- demonstrating applications of school broadcasts and other resources to accelerate Nigerian educational development

- assisting local authorities and other educational agencies to acquire, produce, distribute, use and evaluate educational broadcast programs and supporting materials

- supporting the school broadcasting operations of the Regional Ministries of Education and encouraging greater use of broadcasts in an increasing number of Nigerian schools

- developing, on request, experimental series of radio and television broadcasts in selected subject areas in the various regions and in the Federal Territory

- improving classroom utilization of broadcast lessons through in-service training

- cooperating with teacher-training institutions, colleges and universities, in preparing prospective teachers to utilize or produce broadcast lessons

- establishing a national educational resource center in Lagos and encouraging the exchange of educational programs among the regions

- gathering and evaluating appropriate data about the effectiveness of the project to enable the Ministries of Education to make valid decisions about the place of school broadcasts in their educational programs

providing in the United States or in Nigeria, participant or counterpart training in educational broadcasting and support areas for selected Nigerian personnel

assisting the Ministries of Education to analyze logistical, administrative, and financial problems involved in the use of broadcast instruction

### INITIAL EFFORTS IN NIGERIA

At the conclusion of the seminar, the first group of technicians from Washington County accompanied the participants to Nigeria, arriving in Lagos on September 20, 1963. The members of this first group were:

C. Paul Barnhart, Chief of Party, Lagos  
Carl R. Beer, Liaison, Kaduna  
Alva D. Temple, Liaison, Enugu  
Robert D. Kline, Liaison, Ibadan

A chronological listing of technicians' tours of duty is included in the Appendix.

During the period between the original conception of the project and the actual arrival of the first technicians, changes in Nigeria in Ministry officials and in governmental views and policies made it necessary to adjust the initial activities of the MATE staff. The following conditions were found to exist in September, 1963:

The Nigerian Broadcasting Corporation was using audio tapes for broadcasts to schools on a regular schedule, but few schools were using the programs because of poor reception, difficulties of scheduling, inoperative sets, and ethnic differences.

Radio visuals had been developed for several broadcast series, but distribution was very limited.

Notes to teachers concerning the educational broadcasts had been prepared, but distribution was slow and limited.

The SBU in the ministries were not operating with full staffs. However, with the exception of the Federal Ministry of Education, all the regional units had developed and presented radio and television broadcasts for schools.

#### In the North:

Regularly scheduled lessons were presented by radio and television.

The SBU was staffed with basic personnel.

The Ministry backed the schools broadcasting program.

A well conceived workplan was ready to function.

Specific schools in the Kaduna-Zaria-Kano area were designated to participate in the program.

#### In the West:

Scheduled lessons were being broadcast to schools by radio and television.

The Ministry was not convinced of the value of educational broadcasts to schools.  
The Ministry was willing to accept only one MATE technician.  
The SBU was not fully staffed and utilized mainly purchased tapes, CETO programs, and films  
Only a few schools were using the broadcasts.

#### In the East:

Broadcasts to schools were by radio.  
The television station operated only in the evening.  
The SBU consisted of one person.  
Numerous changes occurred in critical ministry positions.  
Some officials in the Ministry of Education and the Ministry of Economic Planning opposed the use of educational television.  
The Ministry was willing to accept only one MATE technician.

#### In the Federal Territory:

Radio programs from the Nigerian Broadcasting Corporation (NBC) were the only schools broadcasts.  
The SBU was not staffed.  
Ministry officials expressed a desire to develop a broadcast program.

Thus, although there had been high level agreement about the need for and the scope of the project, it was evident that additional orientation of officials was needed. It was therefore agreed that the major activities of the MATE staff would focus on the establishment of good working relations with the ministry officials and the development of basic understandings about the current and potential uses of the schools broadcasts.

Project activities moved ahead slowly as the technicians began to establish contacts and rapport with the ministry officials in the regions in which they were assigned. It became evident that the program could not be accomplished as rapidly as originally envisioned. More was involved than a mere lack of knowledge or experience. Mutual understanding needed to be established before progress could be made. Project personnel required time to become familiar with the Nigerian school program, its operation, and its problems. It was necessary for Nigerian teachers and headmasters to work with radio and television over a period of time in order to sense the part these media could play in the school program. Officials of the Ministries of Education and the personnel of the Schools Broadcasting Units had to develop an understanding of the role and potentials of media in the instructional process. Harmonious working relationships had to be developed between project personnel and all those with whom they worked.

The fifth MATE staff member, Edward C. Kercheval, arrived in Kaduna in November and began work on the further development of English language broadcasts. Mr. Beer became ill and was replaced in December, 1963, by M. Eugene Mittel. The East and the West began to move ahead in the development of experimental programs in science and this led to the assignment of J. Allen Martin to Ibadan in July, 1964, and Paul L. Guptill to Enugu in August, 1964. Both of these consultants were experienced science teachers who had successfully taught lessons by television.

## PROJECT EQUIPMENT

The original proposal included the provision by USAID of 350 radio receivers and 10 television receivers. The recommendations of the survey team (April, 1963) resulted in altering the request to 200 radio receivers and 75 television receivers, and added video tape recorders. It was felt that these recorders would contribute greatly to the project by:

- allowing for correction and improvement of lessons prior to transmission
- enabling the SBU staff to see the lessons as they are being broadcast to the schools
- permitting group critiques of the lessons
- easing production schedules and making lessons available for repeat broadcasts
- encouraging the interchange of lessons between regions
- making possible the replay of Enugu video tapes in Aba

The radios selected for distribution were Diamond, a battery powered, transistorized radio assembled in Nigeria. Technically, this was not the best choice as these radios lacked sensitivity, but they were available for immediate delivery. Twenty-three inch Motorola television receivers, modified to Nigerian power standards (220 volt, 50 cycle) were selected. The video tape recorders were Ampex VR 650, helical scan recorders. Four were purchased, one for each SBU center. The number was eventually increased to seven.

## PARTICIPANT TRAINING

The successful operation of the project was dependent on the satisfactory and continuous operation of the receiving equipment in the classrooms. It soon became evident that the maintenance of equipment was a major problem. Mr. Bruce Campbell, an electronic technician consultant for the project, visited Nigeria from May to July, 1964. He surveyed the extent of equipment failure, repaired a number of receivers to determine basic causes of failure, evaluated local repair facilities and personnel, and recommended a planned program for future maintenance. This led to participant training in the technical field for Nigerians.

The participant training program began in September, 1964, when Malam Jibir Dukku (Kaduna) was sent to the United States for training in instructional television writing, production, and utilization. Details of the program will be found in Part IV A of this report.

## PROJECT PROGRESS

The period from September, 1964, to March, 1965, was a difficult time for the MATE staff. The Broadcast Divisions of the Ministries were not staffed as anticipated. Personnel, facilities, and financial problems were so encumbering that Ministries felt they were in no position to move ahead. Objectives of the project seemed to be misunderstood at times. The delay in the arrival of equipment interfered with the development of the program. Progress was made, nevertheless, and Nigeria began adding personnel to the SBU's and enlarging facilities. Gradually, problems became identifiable, and relations with Ministry officials

improved. The Federal Territory (Lagos) initiated educational television broadcasts for its schools and began the installation of receivers.

As a result of the introduction of educational television broadcasts to schools, the Federal Territory requested that another technician, a producer/director consultant, be assigned to Lagos. The Northern and Eastern Regions each requested an additional technician with experience in the field of graphic arts and visual aids. The Western Region Ministry of Education decided that it would construct and equip its own television recording studio for taping all schools broadcasts. Pending the training of its own engineer, a technician consultant with engineering capabilities was requested.

John R. Brugger, a short-term adviser, conducted a survey of Nigerian broadcasting services from October to November, 1964, and reported on reception characteristics of the radios in use and of the reception difficulties throughout the country. Clyde H. Roberts, a short-term graphics consultant, spent three months in early 1965 in Kaduna to provide graphic support for lessons being developed there. He also provided instruction to an indigenous artist who had no experience in television graphics. Wilbur G. Kelley, a short-term electronics engineer, spent April and May of 1965 in Nigeria supervising the installation of the video tape recorders in Enugu, Aba, Kaduna, and Lagos.

The recorder for use in Ibadan was adjusted and aligned by Mr. Kelley, but was not installed at that time. Four recorders had been specified, but the initiation of instructional television broadcasts in Lagos required that a fifth recorder be purchased to serve that area. A sixth recorder was later provided for Lagos to prepare tapes for the anticipated National Resource Center. The final recorder was purchased for Kaduna a few months before the end of the project.

The Stanford Research Institute was appointed to develop an evaluation program for the project. Dr. Phillip H. Sorenson and Edward A. Podesta visited Nigeria during May and June, 1965, to make a preliminary survey. Subsequent developments, however, led to the termination of this subcontract in December, 1965, and the decision to carry out the evaluation by means of a qualified technician assigned to the team. Details of the evaluation study are covered in Part IV-C of this report.

Mr. Marvin L. Bowman arrived in Lagos in July, 1965, to fill the new post of producer/director. Mr. Kline left Ibadan in August at the completion of his two year tour of duty. This post was left vacant as the West had requested that the position be filled by an engineer. In September, Mr. Barnhart and Mr. Temple completed their initial assignments and went on home leave preparatory to returning for second tours of duty. In November, R. Thomas Kincaid and Peter G. Callas replaced the technicians in Kaduna.

Progress in the North and East seemed to be good, in the Federal Territory fairly good, but in the West the project activities were almost at a standstill even though the Ministry of Education had authorized ₦ 3,300 for alterations of building facilities for the Schools Broadcasting Unit. Personnel shortages in Ibadan continued to hamper the program. Only one Nigerian television producer and one Nigerian radio producer were assigned to the staff of the unit; no counterpart for the MATE science specialist was appointed. The unit was continually plagued with maintenance problems. Radio recording equipment, furnished by the project, was ready for installation when the building modifications were completed. Television studio equipment was selected but the purchasing was delayed by the Ministry of Education because of financial reasons. The USAID technician was producing

and presenting the experimental series in science broadcasts without the benefit of a Nigeria counterpart.

In January, 1966, a military coup replaced the existing civil government and established military control. During the period which followed there was considerable uncertainty about government policy; some civil disturbances erupted, and ministry officials were unable to commit themselves to firm policies. Many of the same problems continued to affect the activities of the project. These included technical problems with receiver maintenance and with the operation of the video-tape recorders, difficulty in adhering to a full broadcast schedule due to variations of class schedules in individual receiving schools, lack of counterparts, and budgetary limitations.

Robert D. Smith arrived in Nigeria in June to assume the post of graphics specialist in Enugu. Dr. Albert Klevan, research specialist, arrived in Lagos early in July to assume leadership in the evaluation of the project activities. Mr. Martin (Ibadan) and Mr. Guptill (Enugu) completed their tours of duty and returned to the United States in July.

In mid-July the Ironsi regime, which had taken power in January, was replaced. An immediate act of the new government reversed the policy of emphasizing a strong federal government and returned to stronger regional controls. The movement of Nigerians back to their regions of origin created the problem of refugees, job displacement, financial strain, and interfered with the processes of education. The displacement of teachers and students in the North had great impact on the planning for, and results of, the evaluation of the broadcast lessons.

In August, 1966, Blair L. MacKenzie assumed the post vacated by Mr. Martin in Ibadan, and in October, Donald C. Taylor arrived in Ibadan to fill the post of engineer consultant which had been requested by the Ministry of Education. Mr. Taylor's primary duty was to install the television studio equipment and to develop a program for continued operation and maintenance. At this time it was understood that the equipment had been ordered, but it had not been delivered and a studio had not been constructed. Because of this, Mr. Taylor could not perform engineering duties in Ibadan. He was, however, able to assist in the maintenance of receivers and video tape recorders in all the Nigerian project centers. It was again recommended by the MATE staff that the project technicians in the West be re-assigned to needed positions in other regions if the Ministry were not prepared to support the program.

In November and December of 1966, Mr. Mittel returned to Nigeria as a special, short-term consultant. He visited all the SBU's, but spent the greater part of his time assisting with the development of a science curriculum being developed by the Peace Corps with the assistance of the Eastern Ministry of Education.

By the end of 1966, the project staff felt there was definite need for a high level study and discussion by USAID, Nigerian, and Washington County personnel to consider the status of the project. This need was occasioned by changes in personnel in USAID/Washington/Lagos and in the Nigerian Ministries and Schools Broadcasting Units; by the political crisis in Nigeria; and by modifications in the developing Nigerian education program. The results of such a study were considered essential to any later discussions on the continuation or phase out of project activities.

Because of worsening conditions in Nigeria, there was no adequate response, appraisal or

reaction to MATE Project Report #5 which emphasized the need for discussions. It was decided, however, that the MATE staff would prepare an Interim Report with special attention directed to the SBU of the North, to the Ministry of Education of the North, to the Federal Ministry of Education and to USAID.

As the political struggle in Nigeria moved from ethnic misunderstandings and rivalries to open warfare, the movement of people back to their home regions resulted in an extremely high turnover of teachers, particularly in the North.

New teachers, when they could be found, had no experience with radio and television broadcasts. School attendance dropped, and schools closed in some areas. Civil strife and military requirements taxed government funds severely. These conditions hampered broadcasting, evaluation, and all project activities. They also made it difficult for the ministries to fill vacancies in the SBU's and for MATE to secure recruits for staff vacancies.

During December, 1966, and early January, 1967, MATE staff in Lagos and in Kaduna devoted much time to the establishment of guidelines for the evaluation which was to be initiated in the North at the beginning of the first school term of 1967. In order to gain the support of ministry and local education officials, pre-planning meetings were conducted by the technicians. USAID/Lagos/Kaduna education officers attended several of these meetings. Ministry and USAID officials observed the development of the evaluation, and made contributions when and where they felt it would enhance the general evaluation scheme.

To assist with the preparation of Primary Five English scripts and support materials during a critical time in the development of the evaluation program, Mr. Kercheval returned to Nigeria in March of 1967. He spent approximately two months with the SBU, Kaduna, departing Nigeria in May after the end of the school term.

In May, 1967, Robert E. Preszler, of the staff of the Washington County Schools, arrived in Kaduna to fill the post of advisor in graphic arts. Mr. Preszler's appointment was recommended in August, 1966, but approval was delayed by USAID until the following May. Because the Ministry of Education was unable to appoint a counterpart at that time, Mr. Preszler prepared all graphic and support materials personally. The ministry was finally able to provide a trainee in graphic arts. This counterpart, however, received only two weeks' assistance because USAID required the termination of Mr. Preszler's two-year contract six months early to coincide with the phase-out of the project. This action was taken despite requests of the ministry to continue his services.

Dissatisfaction of the project staff and AID/Lagos and Washington with the evaluation program, and with the activities and leadership of the research technician led to the request by USAID that Dr. Klevan's contract be terminated. He was given notice of this action on May 4, 1967, and told to bring his work to a close. The evaluation program was continued through the assistance of project staff members and USAID personnel. Educational Testing Service, Princeton, New Jersey, was asked to analyze the data and to assist with the completion of the evaluation.

In the meantime, the Federal Military Government had been working on a plan for the re-organization of the Nigerian governmental structure. On May 27, 1967, a state of emergency

was declared throughout Nigeria by the head of the Federal Military Government, Lt. Col. Yakubu Gowon. The Regional Governments were to be reorganized into twelve states. The Eastern Region would be divided into three states, the Northern Region into six states, the Midwest was to remain as it was, and some territory would be transferred from the Western Region to create a new Lagos State and a somewhat smaller Western State.

On May 30, 1967, the Military Governor of the East proclaimed the independence of that region. In response, the Federal Military Government implemented a succession of political, economic, and military measures against the East. All USAID operations there ceased. Consequently, in July, Mr. Temple and Mr. Smith were evacuated from Enugu and temporarily assigned to the schools broadcasting division of the Federal Ministry of Education in Lagos.

These events greatly affected project activities and created anxieties among SBU personnel because of the uncertainties about the effect the reorganization would have on broadcasting to schools.

In June of 1967, the Ministry of Education, Ibadan, asked that the MATE project be terminated in the West and the technicians be withdrawn. Project technicians there had continued their efforts to work with ministry officials to utilize television and radio for direct instruction on a sustained basis. Plans for developing the promised new studio and installing the equipment never materialized. Ministry officials took exception to several statements included in the MATE progress reports concerning project problems, and asked that the project be terminated. They later withdrew their request, but USAID and MATE decided to terminate the project. It is indeed unfortunate that the project ended in this way. On numerous occasions during the previous years, the contractor had asked for meetings with officials in the Western Nigerian Government, Ministry of Education and AID/Lagos to discuss and review responsibilities of all parties to the project. The meetings were not scheduled. The West never appointed counterparts, and MATE technicians were quite frustrated as they faced the responsibilities of developing lesson plans, teaching and producing the broadcasts - all without backing or assistance.

Mr. MacKenzie's and Mr. Taylor's services were utilized in other sections of Nigeria on a limited basis when there was no activity in the West. With the termination of the contract in the West, Mr. Taylor and Mr. MacKenzie were reassigned to the SBU, Lagos.

Mr. Bowman, advisor to the SBU, Lagos, left Nigeria in July, 1967, at the conclusion of his two-year tour.

Mr. Temple completed his second tour of duty and returned to the United States in September, 1967. In October, Mr. Taylor was released from his contract at the convenience of USAID.

To fulfill a major objective of the project, it was necessary for the MATE staff to acquire a cost-benefit analysis of operating schools broadcasting in Northern Nigeria. Dr. Jefferson N. Eastmond was given a contract to prepare this analysis. He was familiar with Africa and experienced in school finance. He had, in 1964-65, worked in school finance in the Northern Ministry of Education in Nigeria.

Following briefings in Hagerstown, Washington, and Lagos, Dr. Eastmond went to Kaduna in September, 1967, to obtain financial and statistical data from ministry officials. At the

completion of his visit, he prepared A Cost-Benefit Analysis of the Use of Modern Aids to Education in the Six Northern States of Nigeria.

Because Dr. Eastmond did not obtain any new financial data, his investigation drew most of its information from an earlier cost-benefit analysis study conducted by the International Institute of Educational Planning (IIEP). The IIEP study was sufficiently comprehensive and objective to indicate that the unit cost of television broadcasting in the six northern states was inordinately high.

Dr. Eastmond's study, a copy of which is included in this Final Report as a separate document, points out that the IIEP report was conservative in its unit-cost findings. He suggests that the unit costs are perhaps double those reported in the IIEP study, but a more detailed and objective cost-benefit analysis would entail considerable and unwarranted investments of time and money. However, the high per pupil costs would be greatly reduced if the program could be expanded to include more schools.

Mr. Robert Smith, on temporary assignment in Lagos from Enugu, was permanently assigned to the Lagos SBU in October.

Dr. William M. Brish, Home Office Coordinator, visited the project in October, 1967. During his two-weeks' inspection tour, he observed project activities in Kaduna and Lagos, gave direction to the evaluation program, and recommended courses of action to be taken during the closing year of the project. He gathered information to prepare an Interim Report which had been requested by USAID.

When Mr. Barnhart completed his second tour in October, 1967, Mr. MacKenzie was named Chief of Party in his place. At this time, project activities were limited to Lagos and Kaduna. The evaluation program concentrated on the English language series being broadcast in the North.

A two-man team from Educational Testing Service, Princeton, New Jersey, visited Nigeria in November. They observed the testing conditions in Kaduna, administered some tests of their own, and studied the over-all program of evaluation. Upon return to the United States, they reviewed and analyzed the results of the tests, studied the supporting documents and information that had been gathered, and prepared a report on the over-all implications of the evaluation program.

Mr. Kincaid returned to the United States in November, and Mr. Callas in December. The remaining MATE staff member, Mr. Preszler, continued his graphics work in Kaduna.

During the transition period from regional to state government, the SBU of the Northern Region was transferred to the control of the Interim Advisory Council. This arrangement provided the MATE staff with an opportunity to discuss the future of the SBU's with Nigerian officials, and to recommend future organizational patterns that would make the broadcasts to schools a federal responsibility.

The MATE Interim Report was distributed in January, 1968. It contained special recommendations about the future of educational broadcasting in Nigeria. The report was organized under the following sections:

#### A. Current Status of the MATE Project

- B. The Phasing Out of the MATE Project
- C. The Function and Future Status of the Schools Broadcast Unit of the Northern Nigeria Ministry of Education
- D. Data and Suggestions for Consideration by the Ministry of Education of Northern Nigeria
- E. Data and Suggestions for Consideration by the Federal Ministry of Education of Nigeria

In February, 1968, a plan developed by the MATE Chief of Party for the federalization of schools broadcasting was presented to the Chief Federal Advisor on Education. No action was taken immediately.

To provide continuity to the English language series, Mr. Kercheval returned a second time to Kaduna, in March, 1968, for approximately three months. A number of alternate plans concerning the future of the schools broadcasting unit in Kaduna were submitted to officials of the various Ministries of Education.

Mr. Smith completed his tour of duty and departed from Nigeria in May, 1968.

Technical data, factual information, and cost estimates concerning the future expansion and improvement of schools broadcast services in Nigeria were requisites for MATE officials in preparing their recommendations for the Federal Military Government of Nigeria. To assemble this material, it was necessary for the MATE home office to secure an authoritative technical consultant with expertise in schools broadcast services. Mr. William S. Halstead, Engineering Consultant for RTV International, Inc., New York, was selected to assemble this important information for project officials.

Mr. Halstead visited Nigeria in July, 1968, to make on-site observations of existing school broadcast facilities and programs. He also consulted with indigenous, USAID, and expatriate officials who were knowledgeable and concerned about the future of educational broadcasting and telecommunications in Nigeria. As a result of his investigations, Mr. Halstead compiled A Report on Engineering and Technical Aspects of Educational Broadcast Services in Nigeria. His study, which is included in this final report as a separate document, contains illustrations, observations, cost estimates, and basic recommendations to provide authorities with guidelines for the expansion and improvement of broadcast services in Nigeria.

During June and July, 1968, the proposed plan for federalizing schools broadcasting was discussed with officials of the Federal Ministry of Education. Just prior to his departure in August, Mr. MacKenzie, Chief of Party, drafted a request to the Supreme Military Council asking that a decree be issued to centralize schools broadcasting under the Federal Ministry of Education. It was reported that this request, contained in the appendix, was forwarded to the Supreme Military Council.

Mr. Preszler, the last project technician to leave Nigeria, departed for the United States in November, 1968.

The official date for the termination of the MATE project was December 31, 1968.

### Part III

## THE OBJECTIVES OF THE PROJECT

### SECTION 1

#### ESTABLISHING THE OBJECTIVES

When the MATE staff began the project activities in 1963, they were guided by objectives that were originally suggested by Nigerian educators and USAID officials. These objectives were based on needs that were considered most important by both groups, and were shaped by a mutual desire to improve Nigerian education.

Preliminary information about the project stressed the practical aspects of the work to be accomplished, and indicated that the program was not to provide college level training on the theory of school broadcasts. The intent of the project was to provide assistance of a practical nature to Nigerian school systems which sought help in improving the organization, planning, production, and evaluation of their schools broadcasts program.

The United States and the Nigerian Governments agreed to accept specific responsibilities to accomplish the following general aims:

Establishing a national radio-vision service to provide classroom visuals for educational broadcasts

Creating a national film bank of educational films and tapes for broadcast use

Developing a program of research and evaluation to determine the effectiveness of the broadcast lessons

Helping train classroom teachers to utilize broadcast lessons effectively

Providing Federal and Regional Ministries of Education and broadcasting organizations advisory and training services in the development of radio and television broadcasts for school use

Organizing an advisory committee representing the Regional and Federal Governments which would coordinate the programs and supervise the distribution and exchange of lessons and materials

The United States agreed to provide a contractor who would supply:

Four professional advisors - one for the East, one for the West, and two for the North (This was later increased.)

Short-term consultants to provide training in the production and utilization of radio and television lessons

A film bank as a resource for schools broadcasts

Approximately 350 radio receivers and ten television receivers for school use

Other program support materials

The cost of utilities, housing improvements, local travel, and per diem expenses for contract technicians

Maintenance and operation of USAID-financed vehicles

Participant training in the United States for selected Nigerian personnel

\$10,000 in each region to cover the cost of printing support materials for the broadcast lessons

A special allotment of \$30,000 to finance construction of housing for consultants in Northern Nigeria

The Regional Governments of Nigeria agreed to provide:

Staff and budget for the broadcasting sections of the Ministries of Education

Time on radio and television stations for broadcasting school programs

Local technical and administrative support

Local travel and related costs for Nigerian employees engaged in the project

International travel costs and salaries for Nigerian participants while in the United States for training

Adequate quarters for USAID specialists, including basic furnishings of a standard similar to that allotted senior government officials

The Federal Government of Nigeria agreed to provide:

A suitably qualified official to serve as executive secretary of the coordinating committee

At least one counterpart to the USAID technician

Local technical and administrative support, including supplies, equipment, secretarial services, buildings, and facilities

Continued support of NBC schools broadcast project

Costs of port clearances, customs duty, internal transport, installation and maintenance for project equipment and related materials financed by USAID, and to which the Government of Nigeria has title

Local travel and related costs for governmental employees engaged in project business

Adequate quarters and basic furnishings for USAID specialists

A Project Implementation Order was then written which restated the general objectives and added the following restrictions:

The project was limited to activities concerned with the educational uses of radio and television in the context of formal education, agricultural extension, and to a lesser degree, specialized adult education.

Emphasis was placed on the fact that the project was not directly concerned with commercial broadcasting or general entertainment programming.

Specifications required that personnel supplied under the contract have direct experience and contact with educational operations.

The contractor was not to impose a pre-determined program, but to assist Nigeria to do what it wished to do.

Recommendations of the Nigerian Ministries of Education and USAID  
for Developing the Project Program

The MATE staff were furnished information about the general objectives. The Nigerian Ministries of Education and USAID outlined the scope of the project activities.

The following statements are taken from the Preliminary Contract Information furnished the Washington County School System by USAID:

Nigeria has powerful and adequate television and radio stations. It is using them to a small degree for broadcasting, in a limited way, lessons to schools.

These facilities could be used to greater advantage than they now are, and a program could be organized which would:

take advantage of what has been done by using it, improving it, expanding it to include more visual material, and extending the training necessary for more effective utilization in the classroom

It is, therefore, proposed that the implementation of the USAID agreement with the Nigerian Government to assist with the Nigerian Educational Program be carried out in the following way by the contract group which will serve the cooperative agreement.

1. A public school system in the United States - in this case the Washington County School System - will be contracted to work with the appropriate Nigerian national, regional, and local groups to:
  - a. Serve as consultants in the decisions concerning what will be done in the schools

- b. Coordinate the various hitherto independent actions taken by various groups in using modern resources
- c. Build radio-vision, teacher notes, and pupil workbooks for radio lessons already produced
- d. Assist with the re-doing of tapes for lessons that should be altered and improved
- e. Utilize Nigerian sources to plan more complete courses in radio in a few selected areas for a nucleus of selected schools which will include a representative subject in primary and secondary education and teacher training
- f. Develop these same areas for television lessons for another small group of schools
- g. Take advantage of the opportunity for developing in-service training programs for teachers
- h. Expand the program to more courses and more schools as the program progresses

2. The program is based on the following assumptions that:

- a. The emphasis will be on direct teaching using modern resources - in the first cases - radio and television.
- b. The areas selected for teaching will be treated in depth and not superficially.
- c. Ample opportunity should be given for the program to carry over into adult education, social education, and literacy growth if such activities become possible.
- d. If the project is to accomplish any improvement, it must be of considerable size, extend over a period of years, utilize research techniques to prove its effectiveness and be adequately financed.

The project will require at least (5) five years - two years for orientation, decision making, and for beginning the work; and three additional years for carrying out the plans, adjusting, and evaluating.

- e. Whatever is done should be of such a nature as to be recognized as educationally desirable by Nigerian educational groups and capable of being taken over financially by the Nigerian national, regional, and local governments so that the work is continued after the project is completed.
- f. The opportunities for regions to work on aspects of the educational program and exchange materials that are developed can provide effective ways of strengthening the unity of Nigeria as a nation without injuring local loyalty and pride.
- g. In order to emphasize the opportunity for Nigerian unity, a national planning committee, representing the three regions and the national government, should discuss plans, reach agreements, and make recommendations about the development of the program. This committee should be composed of representative Ministers of Education,

Ministers of Information, and other appropriate government officials, headmasters, teachers, and parents.

- h. The production needs and adequate equipment to initiate a reliable research project will be somewhat larger than anticipated in the preliminary discussions between USAID officials and the Nigerian government. In view of the contribution Nigeria is already making to its educational program, a greater responsibility for meeting costs must be assumed by the U. S. based on a willingness of the Nigerians, if the work is successful, to take over payments as the U.S. phases out of the program. It should be understood that costs will cover the following additional needs:

Installation of video taperecorders in all regions and in Lagos

Training operators of video taperecorders

Installation of radios and television sets in selected schools

Training in the maintenance and repair of radios and TV

Meeting the costs of increased station time on the air

Training Nigerian personnel in the U.S.

Development of workshops

Publication of pertinent materials, handbooks, documents, and reports

Recommendations of the Washington County School System  
for Developing the Project Program

As has been mentioned earlier, a survey team of four administrators from Washington County visited Nigeria to observe how the schools were using the broadcast lessons. They discussed the project program with Nigerian educators and the AID/Lagos staff. Their tour of all the Nigerian regions gave them first-hand acquaintance with schools, teacher training colleges, departments of education of the universities, the radio and television studios, production and transmission techniques, and classroom utilization of the broadcasts. This team prepared a statement about objectives and program activities that included several additional ideas.

The following statements are taken from their report:

While substantial work in schools broadcasting has been done in all the regions of Nigeria, the present programs do not provide consistent experiences to show the educational improvement that radio and television make possible. Valid evidence is needed on which to base decisions concerning the role of broadcast instruction in the context of Nigerian education.

A study of the original project agreements, a first-hand look at Nigerian education, knowledge of available resources and existing needs and problems, an evaluation of the present schools broadcasts, and a review of the recent steps taken by AID/Lagos to implement the program have convinced the Washington County survey team that a

challenging opportunity exists to help Nigeria expand and improve its educational program. There is also the added realization that what is done in Nigeria may be of value to other countries that face similar problems.

It is evident that both Nigerian and USAID officials see opportunities for program development that were not considered in the original project agreements. A broader and more comprehensive program is desirable and should be provided through amendments to the various agreements.

These adjustments would make possible the development of a program in Nigeria based on the following objectives:

1. To demonstrate the usefulness of radio and television as resources which can improve and accelerate Nigerian educational development
2. To make more effective educational use of existing radio and television facilities
3. To assist Nigerian schools, educational agencies, and governmental authorities in the acquisition, production, distribution, and use of educational broadcast programs and supporting materials
4. To extend the use of educational broadcasts to an increasing number of Nigerian schools and communities
5. To support the schools broadcasting operations of the Regional Ministries of Education and encourage greater use of these broadcasts in the Federal Territory
6. To develop an experimental series of radio and television broadcasts in a selected subject in each region
7. To emphasize effective classroom utilization of broadcast lessons
8. To encourage the exchange of programs among regions
9. To cooperate with teacher training institutions, colleges, and universities, in preparing prospective teachers to produce and utilize broadcast lessons
10. To establish a film bank as a resource for educational broadcasts
11. To gather appropriate data about the operation of the project so that valid decisions can be made concerning the place of schools broadcasts in the total educational program
12. To provide participant training in educational radio and television broadcasting in the United States for selected Nigerian personnel
13. To assist the Ministries of Education to apply modern techniques to Nigerian educational goals and to analyze logistical, administrative, and financial problems involved in the use of broadcast instruction

The translation of these objectives into a working program will then be based on the following activities, procedures, or assumptions:

1. Initial work in the project will be in the areas of radio broadcast instruction because many schools are equipped with radio receivers. This will make it possible to build on what has been done and provide an opportunity to:

- Review available program material

- Add radio-vision to selected programs

- Revise selected programs

2. The work in television will be of an exploratory nature, limited to small areas in each region and few schools have as yet installed television receivers.

3. The experimental broadcast lessons will emphasize:

- Direct teaching by radio and television

- Treatment of the selected subject in depth

- Consistent day-by-day teaching

4. The experimental program must be of sufficient size and duration to reduce the element of chance and make possible valid deductions based on continuous experience over a period of years. It seems realistic to plan a five-year sequence to accomplish this; two years for orientation, decision making, and beginning the work; three additional years for carrying out the plans, adjusting the program, and evaluating the results.

5. The project will place special emphasis on training in two important areas:

#### Production

- The production of lessons for radio and television broadcasts

- The creation, production, and utilization of appropriate visuals

#### Classroom Utilization

- The development of techniques and procedures for classroom utilization, such as:

  - How to operate sets

  - How to introduce the broadcasts

  - How to use the materials prepared for teachers and pupils

How to encourage pupil activity during and after the broadcast

How to integrate the broadcast into the class work

The preparation of written notes about the programs for teachers

The preparation of work-along material for pupils

Individual classroom visitation, conferences, workshops, films, and special radio and television broadcasts will be used to help teachers understand the program.

The actual objectives of the project, however, as finally listed in the project contract documents, were jointly developed by a team of Nigerian educators representing the Ministries of Education of Eastern, Western, and Northern Nigeria and the Federal Nigerian Government who participated in a seminar in Hagerstown from July 27 to September 16, 1963. Work plans for each area were developed and submitted to USAID and the respective Nigerian Ministries.

These objectives include all the ideas that had been suggested by the various interested groups, but revised, re-stated, and added to by the seminar group. They are included on page 2, Section II of this report, which gives the chronology of project activities.

Separate work plans were developed for each region and the Federal Territory in keeping with local needs and interests.

As the project developed, the objectives were adjusted to meet new insights and changing needs. Some alterations were modest and tried to spell out the original objectives more clearly. But some changes altered significantly the original intent and emphasis of the project.

## SECTION 2

### IMPLEMENTING THE OBJECTIVES

With background gained through discussion, investigations, and the preparation of guidelines to direct project activities, the first MATE staff departed for Nigeria in late 1963. The Hagerstown Seminar and other conferences had produced the workplans which were to be implemented in Nigeria as the MATE advisers sought ways of satisfying specific project objectives. The broad aims were to assist the various Ministries of Education to improve broadcasts to schools by radio and television. Classroom teachers were to be instructed in utilization procedures and, schools broadcasting staff were to be trained as counterparts. MATE staff were to accomplish these general aims and specific objectives that had been developed as they worked in advisory capacities with Nigerian personnel.

The objectives of the project as stated in Report #1, covering the period of July, 1963 - December, 1964, reaffirm the emphasis on advising the ministries in matters of educational

broadcasting. By this time MATE staff had developed working relationships and specific plans to govern their activities, and were making progress.

The project objectives stated in Appendix B of the Operational Plan of December, 1964, were generally consistent with previously-stated objectives. However, they contained the following additions: Objective 3 - "Assume primary responsibility for the planning, production, and detailed evaluation of experimental lessons." Objective 5 - Assist in training "in the proper use of modern aids to education."

These objectives indicate that the MATE staff were to assume somewhat different roles. Rather than assist and advise, they were to take an active part in broadcasting activities. This direct participation required an additional use of time and energies which tended to hinder the counterpart training program. In addition, MATE staff were to advise on other modern aids to education, although primary emphasis would remain on radio and television broadcasting. But even though project objectives were consistent throughout Nigeria, the attainment of them was not.

The needs of each ministry, resources in both funds and manpower, and services each desired for its schools, varied from region to region. Therefore, as indicated previously, there was not one MATE project, but four. The objectives stated in the contract between the United States of America and the Board of Education of Washington County, dated November, 1965, were met in each region with varying degrees of success.

The following are objectives stated in the November, 1965, contract with summaries of activities engaged in to attain them.

1. OBJECTIVE: "Assist the ministries in a thorough consideration of the educational, administrative, and fiscal problems involved in the use of the broadcasting media, and other modern aids to education, in cooperating country schools."

#### Educational Considerations:

During the course of the project, a significant change in the emphasis of broadcasting was brought about. When technicians arrived in Nigeria in 1963, the once-weekly broadcasts by radio did not use a direct instruction approach. The few lessons being telecast were all of an enrichment nature, too. Enrichment information is possibly of some value, but the broadcasts were not based on the syllabi. All television lessons were broadcast only once a week.

By 1966, as a result of technicians' efforts, lessons based on the syllabi, and emphasizing direct instruction were written and broadcast to schools three times a week in the North and East. Concurrently, specially developed teacher materials were prepared and distributed. Teachers, headmasters and principals were trained in utilizing broadcasts and materials through seminars conducted by MATE liaison teams.

#### Administrative Considerations:

When the project began, all SBU's were understaffed and few members were trained to carry out specific tasks. In one unit, the functions associated with broadcasting were

being carried out almost exclusively by expatriate officers. Planning was generally found to be of a short-range nature. Programs were usually chosen for their availability and not for their satisfaction of the educational needs of Nigeria. Involvement of inspectors, headmasters, principals and teachers was lacking. Efficiency in carrying out the tasks required by broadcasting needed improvement through unit reorganization.

During the life of the project, all SBU's were expanded.

The Kaduna SBU was Nigerianized. Counterparts or other SBU staff from all regions were trained in the United States and Nigeria.

The Kaduna and Ibadan SBU's organized advisory councils composed of ministry officials, headmasters, teachers and MATE staff to help plan broadcast courses and schedules.

In all regions, advanced planning of courses was initiated.

To better utilize talents of the SBU staffs in Enugu, Ibadan and Kaduna, plans for reorganization were submitted to the Ministries of Education. The plan was accepted in Enugu and the unit expanded to become the Modern Aids to Education Center.

The proposed "Schools Services Unit" for Kaduna included sections in graphics, photography, printing, liaison, evaluation, and radio and television writing. Such a reorganization would make better use of existing and future talent and permit more efficient operations. The decision to implement this reorganization is pending.

#### Fiscal Considerations:

Consistently, MATE technicians emphasized the need for direct teaching with radio and television. In addition to the sound educational reasons for this, there is also a fiscal consideration. Broadcasting is expensive. This is borne out in the cost-analysis report of Dr. Eastmond. But per unit costs can be lowered drastically by adding pupils to the television or radio groups. However, hour for hour, it costs no more for direct teaching than for enrichment. Direct teaching, based on the syllabi and reflecting needs determined by Nigerian educators, makes a more significant contribution to education than do filmed series produced outside the country, series hastily organized to fill a block of broadcasting time, and other lessons of questionable value. It is a moot point whether Nigeria can afford broadcasting at all; she most certainly cannot afford "enrichment" broadcasts.

In addition to the foregoing recommendations, MATE technicians advised on the overall broadcasting budgets and equipment purchases.

2. OBJECTIVE: "Advise ministry officials and staff members in matters relating to the use of modern aids to education, particularly the radio and television media."

meet this objective, MATE technicians engaged in the following activities:

Conducted lecture-demonstrations with ministry officials, headmasters, local and provincial officers and teachers.

Assisted in organizing Broadcasting Advisory Councils in several regions which made recommendations regarding new courses and schedules and provided feedback about existing programs

Made regular reports to ministry senior staff officers

Wrote monthly reports to the ministry

Conducted workshops in effective utilization techniques at centers throughout the country for teachers, headmasters and Peace Corps volunteers

Prepared booklets, film strips, and diagrams to help teachers use broadcasts effectively

Developed displays of SBU functions and operations at conferences on education

Wrote newspaper and magazine releases containing schedules of and information about schools broadcasting

Trained counterparts to carry out their respective responsibilities

3. OBJECTIVE: "Assume primary responsibility for the planning, production, and detailed evaluation of experimental lessons employing radio, television, and other modern aids in subject areas selected by the ministries."

This objective, suggested by USAID, shifted the emphasis of the original contract. At the beginning of the project, MATE technicians were to operate as advisors, but as indicated above, they were now to carry out all broadcasting functions themselves. This was a difficult assignment because the purpose of the project was not to test the ability of Americans to function overseas, but to assist Nigerians in doing what they believed to be important.

However, prior to 1965, it was necessary for some MATE technicians to operate in this manner. Shortages in manpower caused by the lack of counterparts, overseas participant training and generous leave policies of the ministries required MATE personnel to become actively engaged in broadcasting activities.

They assumed primary responsibility for script writing, preparing teachers' notes and advising on the structure of the SBU's. In some regions, MATE technicians directed lessons, presented lessons, installed television and radio sets and antennas, produced booklets and graphics materials, provided photographic support, and carried out liaison functions.

The MATE staff had agreed that they would perform the tasks needed to carry out the project program whether or not these activities were originally included as part of their work. In addition to script writing and preparing notes for teachers--

Mr. Kline, Mr. Martin and Mr. MacKenzie developed and taught all project broadcast lessons in Ibadan where no counterpart teachers were ever appointed. Mr. Guptill taught a great deal of the time in Enugu until a counterpart was finally appointed. When the counterpart died shortly after appointment, the East found it impossible to secure a replacement.

Had it been possible for the ministries to assign personnel in sufficient numbers to the broadcast units, MATE technicians could have functioned as advisors and trainers instead of personally carrying out the broadcasting activities.

The object of the project was not to determine whether Americans could develop and teach broadcast lessons in Nigeria. The aim was to help Nigerians function in such a program. Nevertheless, MATE personnel functioned in the ways required to help the total Nigerian schools broadcasts program and increase the SBU personnel's concept of the potentials of broadcasting services.

4. OBJECTIVE: "Prepare carefully documented reports showing the results of all experimental lessons produced and used in schools; and including detailed financial analysis."

Early in the project, some evaluation of lessons was carried on in Enugu, Kaduna and Ibadan. This was not of a detailed nature, but was engaged in to get some sense of acceptance and value of lessons that had been developed. Since most lessons were broadcast but once a week and were of an enrichment nature, little evaluation of them was conducted. It was necessary to prepare lessons based on the syllabus and broadcast three times a week before launching an extensive evaluation program. Monthly reports from MATE staff on file in AID/Washington, AID/Lagos and the various Ministries of Education document these early evaluation and feedback efforts. Although the major reports on evaluation and financial analysis are contained in supporting documents as the ETS and Eastmond reports, some additional outside evaluation exists. This is in the form of questionnaires about the usefulness of early series and reports from schools evaluating the quality of later lessons.

In 1964 and 1965, an experimental series in Primary 5 English was prepared in Kaduna at the request of the Ministry of Education. Since no common textbook existed, the series was based on an analysis of problems Nigerians experienced as they tried to use English. Continuous evaluation of the broadcast lessons by teachers and headmasters modified the series from term to term. As indicated by questionnaires completed in schools, teachers and pupils alike were enthusiastic about lessons from this series called English with Dan Aku.

In 1965, UNESCO's International Institute for Educational Planning began a world-wide study of educational broadcasting under the direction of Wilbur Schramm of Stanford University. The investigating team studied educational broadcasting in Nigeria in late 1965. During their visit to Kaduna, they observed and evaluated English with Dan Aku and published the following UNESCO report.

"Dan Aku is a year-long English course of twenty-six lessons based on the syllabus for Primary School, Class Five. The content concentrates on points in the syllabus which have been found particularly difficult for students. The format, which combines story telling and direct teaching, is built around a parrot puppet, Dan Aku, and his teacher. Primary stress is put on oral English and children are asked to pronounce words and read simple sentences. Little or no written work is required. For Dan Aku, the classroom teacher is expected to conduct both preparatory and follow-up activities in relation to the day's television lessons and radio lessons. Manuals of instruction for classroom teachers are prepared and distributed in advance.

These include suggested activities and topics for discussion. With the help of these, the teacher is expected to prepare the students for the day's lesson, background material, and perhaps a review of the preceding lesson. After the program, follow-up work is to precede along the lines suggested in the manuals. Nothing more than the blackboard is required for these activities.

"Dan Aku is well conceived, worthwhile in purpose, constructed at an appropriate level for the target-age group, and utilizes sound teaching techniques. The program has some technical weaknesses: the television teacher makes occasional mistakes and the process of posing a question to be answered in the classroom is frequently misjudged in terms of time lapse. There is a question of how much impact a direct teaching program can have when broadcast only once a week. (It should be noted that this question led to the plans for thrice-weekly lessons of the 1966 school year.)

"The Dan Aku Primary English Course could be used anywhere in English-speaking Africa with little or no modification. Its points are valid in any ordinary direct-method course for the teaching of English. Naturally, it has a Northern Nigerian background with local dress, and the illustrations and names of characters have this local flavor. A slight modification of these points would probably augment its appeal in other areas."

(It is important to note here that although English with Dan Aku was written by MATE project staff, it was carried out totally by the Nigerian staff.)

A precise, authoritative analysis of broadcasting costs could not be made. Some figures were not available; others were hidden in government grants to private broadcasting corporations. After 1966, military control of the country extended to financial information.

5. OBJECTIVE: "Train teachers and cooperating country specialists in the proper use of modern aids to education including student utilization materials (books, charts, and other student materials.)"

There was effort throughout the life of the project to work with teachers and specialists in using modern aids to education. Liaison personnel consistently worked with teacher and headmaster groups at centers or individual schools to improve utilization techniques, and the use of teachers' notes and supportive pupil materials. Seminars were conducted in which radio tapes and classes of pupils were used by MATE technicians to demonstrate effective methods of using modern aids to education.

MATE personnel assisted with training sessions for Peace Corps volunteers who were teaching in the schools of Nigeria.

Participant trainees were identified and sent to the U.S. for theoretical and practical training in employing modern aids. They are now applying their skills in Nigeria.

6. OBJECTIVE: "Provide on-the-job training for ministry staff concerned with modern aids to education with particular emphasis on materials production and on in-service training in classroom utilization."

The extent of on-the-job training varied from region to region in proportion to the staffing of the SBU's and assignments of counterparts by the ministries. Training was also affected by the constant transfer of personnel.

Despite problems, MATE technicians provided on-the-job training in production, presentation, script writing, utilization, photography, printing, graphics, maintenance, liaison, and studio and unit management. In eight instances, on-the-job training was coupled with participant training in the United States.

7. OBJECTIVE: "Develop a program of continuing evaluation of project activity as the project progresses to determine the effectiveness of the projects operation and the recording of its historical successes and failures."

The historical, chronological development of the project is a matter of record on file in the various ministries and AID/Lagos in the form of regular monthly, semi-annual and annual reports.

As early as 1964, an evaluation scheme was beginning to take form. Initially, evaluation was of a subjective nature, carried on through school visits and observing reactions of pupils as they watched or heard lessons. Teachers freely gave their assessments of lessons. Where they existed, Advisory Councils gave their views.

These early efforts were followed by the development of feedback questionnaires which were completed by teachers, headmasters, and principals and tabulated by MATE staff. Short, objective quizzes, not widely used in Nigeria, were administered to pupils in written form during and after broadcasts. Such quizzes were used as indicators of the pupils' grasp of the objectives of lessons.

The knowledge gained in these early evaluation efforts were important in developing broadcasting style and technique, lesson form, and in guiding the professional evaluation conducted in 1967-1968.

Because of the political situation in Lagos, Ibadan, and Enugu, continuing evaluation was a reality only in Kaduna. The liaison officer of the Kaduna SBU was trained in tests and measurements in the United States. Upon his return to Nigeria, he carried out evaluation activities at the request of ETS, Princeton, and continues to apply his skills.

8. OBJECTIVE: "Work with the committee (National Advisory Committee) in coordinating their programs and supervising the distribution and exchange of lessons and materials."

According to Appendix B of Contract No. AID/afr - 367 between the United States and Washington County Board of Education, "A Nigerian Coordinating Committee...will be

formed by the Federal Ministry of Education to integrate all activities of the radio and television project that have national application."

The National Advisory Committee on Educational Broadcasting (NACEB) met only twice in organizational meetings before it was disbanded. MATE personnel were present at both meetings.

Despite the seeming inability of the Committee to function as a clearing house for distribution of lesson series, some lessons were exchanged. Prior to 1963, some exchange of series took place between NBC, Ibadan, and Kaduna. During the life of the project, the exchange was accelerated. Enugu, Ibadan and Kaduna contributed series to NBC for broadcasting on a national basis. The Kaduna SBU organized a radio tape dubbing service for schools which is very popular. The NBC made available pupil and teacher materials which complimented their broadcasts.

If, as recommended, the Federal Military Government would assume the leadership role in future schools broadcasting, the exchange of series should be emphasized as a demonstration of national unity and an economy measure.

9. OBJECTIVE: "Assist the ministries in the establishment of a teacher-training program, both pre-service and in-service, in the effective utilization of modern aids to education with primary emphasis on the radio and television media."

From the standpoint of in-service education alone, broadcasting to schools is of great value. Lessons by radio or television serve as models for teachers to adopt or adapt. Almost daily, teachers are given opportunities to hear and/or see modern aids to education being used not in isolation to regular school activities, but integrated into the curriculum. As liaison officers travelled to schools around the country, they saw teacher using not only techniques and materials devised by SBU's, but they were creating new methods and materials as a result of the stimulation provided by broadcasts. This observation is documented in the ETS report, pp. 43 and 45.

Specific recommendations to include courses in utilization of modern aids at the college level met with limited success. One problem was that MATE recommendations came at a time when teachers colleges were engaged in reorganizing curricula and administration

However, in Enugu and Kaduna, courses in science and English devised for teacher training colleges were broadcast in the regions, and in the case of Outlook on English, on the national network.

Utilization specialists held seminars at TTC's to assist teachers in using modern aids. They also prepared special audio-visual materials and kits for this purpose.

10. OBJECTIVE: "Assist with the establishment and operation of a National Educational Resources Center for the distribution of films, recordings, and other instructional aids."

Although funds for establishing such a center were available, the idea was never enthusiastically received. It appears that feelings and rivalries among regions precluded the setting up of a national center. But even if one center could be organized, it is doubtful whether the system could operate effectively. It probably would have enjoyed limited use because Nigeria is a large country; distances between many towns and cities are measured in days and weeks. Country-wide distribution of centrally-located materials would present, with regard to time and scheduling, a difficult problem. It is conceivable that sending, using, and returning materials could require nearly a year.

For this reason and others, the whole concept of a National Resource Center requires re-examination. An alternative is perhaps the establishment of centers at colleges or universities within larger areas or states.

11. OBJECTIVE: "Provide training in the cooperating country and/or in the United States for counterpart personnel as may be required."

During the MATE Project, eight participants were trained in the United States:

- Maintenance - 5
- Liaison, script writing, production - 2
- Liaison, tests and measurements - 1

Participant training was somewhat hampered by the failure of Ministries to provide counterparts. Had sufficient counterparts been provided, training programs could have been accomplished in the host country. MATE project staff recommends that when possible, training programs be conducted in the host country where conditions exist under which the trainee will operate. It is our experience that many counterparts trained outside of Nigeria are unwilling, unable or, at least find it difficult to fit into their culture when they return. Rather than apply their newly acquired skills at home, they become "professional course seekers" always searching for overseas programs to which they can apply.

12. OBJECTIVE: "Prepare plans and specifications for the procurement of filmed and recorded materials and equipment (including radio and/or television sets, transformers, video taperecorders, audio visual equipment, etc.) required to implement the project and to provide continuing research and evaluation of the project."

Specifications for the purchase of equipment were drawn up by MATE project staff. As is the policy of USAID, specifications were submitted to the Small Business Administration for bidding. Delays caused by this procedure were considerable, particularly with the video taperecorders. A problem is that few manufacturers in the US produce electronic equipment for overseas use where a 50-cycle, 220-volt electrical system is standard. Consequently, most American equipment must be adapted to the new electric requirements, and performance sometimes suffers. (See Brugger supporting document.)

From the standpoint of costs, time, and maintenance in such activities as the MATE project, USAID should consider the desirability of securing foreign equipment that is easily accessible, and developing a system whereby the foreign manufacturer can purchase the equivalent value of American goods. Such a procedure would be realistic in terms of availability of equipment and spare parts and eliminate dollar exchange.

The MATE project did not purchase all equipment and materials used by broadcasting units even though MATE staff assisted with drawing up specifications. The Ministry in Enugu purchased maintenance test equipment, a Land Rover for transport of maintenance personnel, a language laboratory, a closed-circuit camera, and established new, modern quarters. The Ministry in Ibadan bought studio equipment. In Kaduna, the Ministry purchased still and cine cameras, duplicating equipment and refurbished new quarters for the broadcasting unit.

Filmed and recorded materials produced outside the country were studied, but were not recommended for purchase since they were considered inappropriate to satisfy Nigeria's educational needs.

13. OBJECTIVE: "Train cooperating country personnel in the maintenance and repair of the equipment used under this contract."

(See No. 11 above, Section IV A, and Appendix)

Five Nigerians were trained in the United States in maintenance of equipment. However, upon their return to Nigeria, each encountered problems which blunted his efficiency. In two instances, returning maintenance technicians were reassigned to other Ministries. All had difficulty with transportation to and from schools having equipment which needed servicing. Further restrictions were placed on maintenance by lack of spare parts, test equipment and laboratory space. Each technician must be provided the basic tools and conditions with which to work if his skill is to be fully utilized.

In all areas, a carefully worked out and closely followed preventative maintenance program should be instituted to defer equipment failure. This step is as important as actual repairs.

14. OBJECTIVE: "Assist the ministries in coordinating the activities carried on under this contract and such other agencies, private or public, as may be active in this field for the cooperating country or other regions of Africa."

During the project, MATE technicians collaborated with the following agencies:

Indiana University  
Peace Corps  
University of Wisconsin  
Ohio University

Staff Development Center, Kaduna  
AIR  
British Council  
NAVA (National Audio/Visual Association)  
UNESCO  
Ahmadu Bello University  
University of Nigeria, Ibadan  
University of Nigeria, Nsukka  
Mission Schools

The degree of collaboration varied with each agency. With some groups, there was merely an exchange of viewpoints, while with others, there were cooperative efforts to conduct demonstrations and seminars.

MATE staff believe that a more concerted effort is needed to coordinate projects, or aspects of them, which are similar in nature.

15. OBJECTIVE: "Assist the ministries in the establishment and operation of national and regional services to produce classroom and studio audio/visual aids and other complementary instructional materials in support of broadcast lessons."

In all regions, ministries were assisted in the preparation of materials to support broadcast lessons. Booklets, teachers' notes and wall charts were prepared as complementary materials used with broadcasts.

Methods of preparation of these materials varied. The Enugu MATE Center printed instructional materials on their offset press; in Ibadan, the Government printer prepared materials; and in Kaduna, teachers' notes were printed on SBU multilith machines, while other booklets and charts were contracted for with private printing companies.

The National Resource Center, to be organized by the Federal Ministry of Education, did not function as stated earlier. There was, however, some actual distribution of regionally prepared materials by the NBC, Ibadan.

#### Conclusion:

The objectives which guided the MATE project during its five years of operation altered somewhat from year to year. Some changes were minor; others required that the technicians work in new ways with new emphases. These changes, however, did not affect the degree to which objectives were met as much as did other factors cited in this report.

The five-year period of the project was a time of growth of broadcasting units, a time when attrition of Nigerian educational personnel was great, and a time of political, economic and social unrest. Nigeria was growing and changing rapidly requiring the project efforts to change to meet new conditions.

Despite all factors which influenced the development of the MATE project, most objectives were achieved, Nigerian manpower and skills were developed, and MATE project staff acquired a background for recommending future growth. Naturally, it is impossible for all objectives to be met with equal success in all areas. But the knowledge and experience gained by this project personnel can well serve Nigeria as she begins the reconstruction of the country and determines the roles education and educational broadcasting can play in this undertaking.

## Part IV

### ANALYSES OF PROJECT ENDEAVORS AND RECOMMENDATIONS

#### SECTION A

#### TRAINING

In every country, regardless of its stage of development, a new approach to education cannot be implemented without the services of trained personnel. New approaches do not just happen. They are the result of careful thought and planning, some trial and error testing, a dissemination of information and technical knowhow, and an ongoing adjustment to changing conditions. The development of a variety of appropriate training programs is therefore essential.

Such was the task of the MATE project in Nigeria. It was a task which, in retrospect, was too extensive for the small staff of technicians assigned to assist Nigeria in expanding her venture with Schools Radio and Television Broadcasting (see project technicians list in appendix). It was necessary to inform ministerial officials, inspectors of education, provincial inspectors, headmasters, principals and teachers about the programs to be developed. Teachers had to be trained in utilization techniques and SBU members had to develop broadcasting skills in order to reach a performance level that would significantly influence education in Nigeria.

Nigeria's size alone prohibited the dissemination of information and implementation of training programs as rapidly as was envisioned. It was not possible in the short span of five years for the MATE staff, that totaled no more than nine in Nigeria at any one time, to make many significant changes.

Listed below, however, are four approaches to training made by the MATE team with varying degrees of success. These programs provide Nigerian educators with ideas and information about the need for training personnel to develop and operate the Schools Broadcasting Program.

#### 1. DEVELOPMENT OF A COUNTERPART, ON-THE-JOB TRAINING PROGRAM

The cooperation of the regional ministries of education varied considerably in implementing this program.

In Kaduna, a definite assignment of counterparts was made for liaison. These counterparts planned, thought through problems, developed procedures, and visited schools with their MATE advisor for a period of six months before being sent for further training in the United States. There was no definite assignment made for counterparts to the advisor in production and script writing because most of the Nigerian staff had multiple assignments.

The relatively small number of persons assigned to the SBU and the complexity of program production necessitated giving each person more than one specific task. It was understood, however, that MATE staff would give general and specific training programs for all members of the unit who would, from time to time, be responsible for various aspects of the lessons.

A short term MATE consultant was requested and secured for a period of three months to train a graphic artist. Another MATE graphics arts technician worked alone for eighteen months. Two weeks before returning to the United States at the close of his tour, he was assigned a counterpart.

It is notable that the MATE technicians here were not required to present television lessons, and that as the project activities closed, Nigerians were performing all duties.

The school broadcasting staff in Enugu had one member when the first MATE staff member arrived. These two worked closely together for nearly four years. During this time the Modern Aids to Education Center was expanded and the MATE technician helped train the new Nigerian staff.

When the second technician, a science specialist, arrived, there was a delay of several months before a Nigerian counterpart was selected. This counterpart died before completing his training. When the tour of the MATE science specialist ended, the Ministry requested a replacement. However, because of the political disturbances in the country, the contractor was unable to secure the services of a science specialist. The Nigerian science teacher had no opportunity to benefit from counterpart training.

MATE staff consistently emphasized the importance of preparing printed materials to support schools broadcasts. It was recommended that the Ministry's offset printing equipment, acquired under the Indiana Project but never operated, be installed at the Modern Aids to Education Center and be used for printing support materials. The contractor agreed to a request for assistance in the production of graphics. Upon arrival, the MATE specialist in graphic arts was assigned a full time counterpart and several assistants.

The schools broadcasting section of the Modern Aids to Education Center was staffed by eight Nigerians at the time the MATE personnel were evacuated.

The counterpart plan was never given a chance to succeed in Ibadan because ministry officials were reluctant to commit themselves to the project.

USAID was requested by MATE to remove project technicians from all activities in Ibadan after the first year. USAID was not willing at this time to take such action. The request was precipitated, in part, by the fact that the MATE technicians were writing, producing and presenting lessons for television without counterpart assignment. In addition, recommendations by the MATE staff regarding the broadcasting program were given but little consideration. The situation persisted until July of 1967 when technicians were finally withdrawn from Ibadan with the mutual consent of USAID and the Western Ministry of Education.

In Lagos, the only area without instructional television at the start of the project, personnel who could be regarded as counterparts did not become associated with the unit for long enough periods to permit effective training.

A broadcast unit was developed, however, and staffed with talented Nigerians. But the short assignments of personnel and the political situation made training extremely difficult.

Except for Kaduna and Enugu, other areas in which technicians were assigned did not participate in the counterpart plan as expected.

In all fairness, however, it should be pointed out that personnel with the talent needed for successful participation in instructional television were not plentiful. Nevertheless, Nigeria could have selected good instructors from her teacher training and secondary institutions and assigned them to the broadcasting units. Thus, she would have spread the talents of highly skilled teachers to many students. Consider the impact that one excellent teacher, using television as the medium of communication, could have when his image, voice and ideas project simultaneously into 50 - 100 classrooms.

## 2. DEVELOPMENT OF A TRAINING PROGRAM IN THE UNITED STATES TO RAISE SKILL LEVELS IN LIAISON, BROADCAST TECHNIQUES, MAINTENANCE, AND OTHER COMMUNICATION NEEDS

In all, eight persons were sent to the United States by the MATE project for training.

### Liaison

M. Jibir Dukku (Kaduna) participated in scholastic studies at the University of Washington, Seattle, Washington, for six months and supervisory training at the Washington County Board of Education for six months. When he returned to Nigeria, he was, however, promoted from liaison to Head of the School Broadcasting Unit.

Bala Ibn Garba (Kaduna) undertook scholastic studies at Shippensburg College, Shippensburg, Pennsylvania, for six months and supervisory training at the Washington County Board of Education for six months.

### Production and Writing

Joseph DeGoshie (Kaduna) studied at the University of Washington, Seattle, Washington, for nine months.

### TV/Radio and AVA Repair and Maintenance

M. Mohammed Lawal (Kaduna), Francis Oladunmoye (Ibadan), John Nwosu (Lagos), Emmanuel Onyeuku (Enugu) received one year of on-the-job training at Hagerstown, Maryland, in the maintenance shop of Mr. Bruce Campbell (previously mentioned as having made a study of maintenance requirements in each broadcast unit in Nigeria) as arranged through the Continuing Education Division of the Hagerstown Junior College.

Kehinde I. Akinwumi (Ibadan) had three years of scholastic and practical on-the-job training beginning with participation in the Campbell shop and culminating with a Bachelor of Science (Cum Laude) in Electronic Technology from the Capitol Institute of Technology, Washington, D.C.

It is felt that training in the USA is superior to training within Nigeria should be carefully considered by Nigerian educators and USAID. Experience indicates that the exposure of Nigerian educators to US customs and culture, while perhaps desirable, has nevertheless created special difficulties for the Nigerian upon his return.

It has become accustomed to:

the fast pace of living

the availability of a large stock of inexpensive materials, supplies, equipment and tools

the ease with which goods and services are acquired

the quickness with which tasks are accomplished

the apparent affluence of the people as compared to those at home

the high wages commanded by the skilled working man

the speed of communication by telephone and mail

When he returns to Nigeria, he finds that he is out of touch. He has changed. He is frustrated. He often becomes discouraged and seeks other work often at a time when his employer can ill afford to lose his skills. It might be better to organize courses at training centers within the country and staff them with the personnel needed to provide adequate and appropriate programs. The MATE staff suggest that more people can be trained in Nigeria more economically and more effectively than elsewhere.

It is often difficult to utilize US educational courses to meet the needs of the Nigerian and best prepare him for the tasks that lie ahead. What works well in the US may not work equally well in Nigeria. Programs based on Nigerian needs can be adequately developed within the country.

It has been our experience, often reinforced by association with other technicians and trainees, that a serious side effect of training abroad is the aura of "expertise" which the trainee feels he has acquired. This seems to give him the notion that he need only "supervise" rather than roll up his sleeves and work.

### 3. DEVELOPMENT OF A PROGRAM TO TRAIN PERSONNEL IN PREVENTATIVE AND ON-GOING MAINTENANCE OF EQUIPMENT

The problems of equipment maintenance in any economically developing country are vast indeed. Replacement parts are scarce and supply houses are distant and often poorly stocked. Transportation for repairmen, lack of adequate tools, assisting personnel, delivery delays, and the "white collar" effect that training produces are difficulties which faced all of the schools broadcasting units.

A study made in Nigeria by a MATE short-term consultant in 1964, identified the need for training personnel and the establishment of a support division in equipment maintenance in all broadcasting units. As a result, each broadcasting unit sent personnel to the United States for training (see B above). It was planned that upon returning, they would set up a workshop, train other personnel, and establish a maintenance program for the unit.

A later survey of video tape recording equipment made by Mr. Peter Morris of Ampex International, United Kingdom supported the MATE maintenance program and indicated that an increased awareness of all communications equipment maintenance was needed. He strongly recommended that, if continuing progress in schools broadcasting was anticipated, adequate funding would be needed for spare parts. If the maintenance of equipment did not keep pace with the acquisition of television sets, radios and audio-visual equipment by schools, the problems presently faced would drastically multiply.

While all Ministries recognized the need and place of such trained personnel, it was not possible to immediately establish an adequate program.

When one trainee returned from the US, he was assigned to a different Ministry because there was no job specification for this position in the Ministry of Education (Ibadan).

Only in Enugu was transportation furnished on a full-time basis.

None of the Ministries furnished the trained personnel with adequate hand tools or test equipment.

None of the Ministries provided a promotion procedure for such personnel within the unit.

Only in Kaduna and Enugu were additional personnel employed.

Although the above actions represent serious shortcomings to this training program, the project was successful in providing personnel with basic training in maintenance. Maintenance divisions were established in all but one schools broadcasting unit. From this standpoint, a modest degree of success was attained because the need for maintenance was recognized and some positive action taken in all the Regions and the Federal Territory.

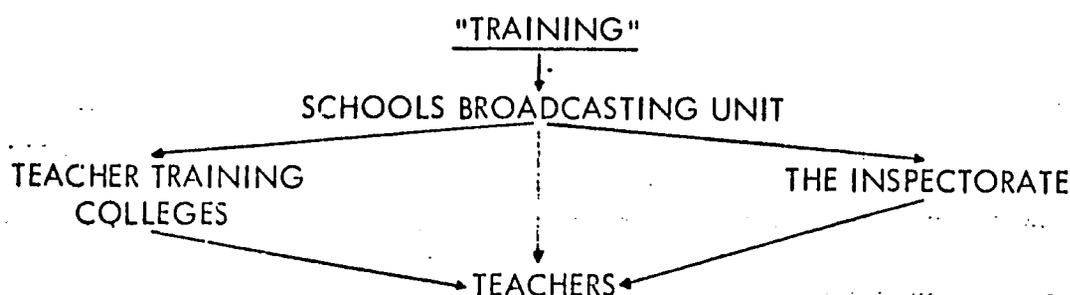
#### 4. DEVELOPMENT OF A TRAINING PROGRAM TO HELP CLASSROOM TEACHERS USE THE BROADCASTS EFFECTIVELY

This was the most difficult of the four training programs to organize and operate. How can useful information on methods of utilization of radio and television presentations be brought directly into the classroom? Very quickly it was discovered that, in a country as large as Nigeria, it is impossible to reach every teacher. But it was even more impossible to visit all schools more than once in a five-year period without a large staff. What then was practical?

The first step was the development of a schools broadcasting staff, competent not only in the production aspects of radio and television, but in the utilization techniques needed in the classroom.

The second step emphasized classroom utilization. This required the orientation and training of staffs in the teacher training colleges (TTC's) in utilization techniques. The TTC's are responsible for teacher education. They should include as a part of their curriculum, lessons, units or courses dealing with the use of communication media in the classroom. Students would then leave the TTC's having developed methods of radio and television utilization that would be applied in teaching.

The third approach was to involve the inspectorate in discussions and demonstrations of utilization methods and techniques. With an informed inspectorate supervising teaching in schools, additional emphasis could be placed on effective utilization of broadcast lessons.



While the other schools broadcasting units carried on short training courses for teachers and groups of headmasters, principals and inspectors, only the Kaduna unit used the planned approach presented in the diagram.

To begin the described program in Kaduna, it was necessary to send participant trainees to the United States for theoretical and practical educational experiences. Meetings for orientation and instruction were then organized and presented at the inspectorate level of the Ministry. This was followed with the writing and testing of a short radio and television course. The course was used for instruction of TTC students and staffs and provincial inspectors. After the course was field tested, it was presented in 43 of the 54 Northern TTC's during the second year of the project. School inspectors and teacher groups in every province of the former Northern Region participated in this in-service training program. It was also possible to assemble teacher groups in the main television centers (Kaduna-Zaria-Kano) for short courses. In this way teachers were directly involved. Following the initial presentation, the course was further refined and printed. Appropriate audio-visual support materials were prepared, and the complete package was sent to all TTC's for incorporation in their courses of instruction.

With continued efforts, including short courses for teachers in TTC's, a definite impact and improvement in the use of radio and television lesson materials at the classroom level was achieved. During the last two years of the project this program was continued along with the television evaluation study begun in Kaduna.

Two trained Nigerian SBU staff members were available to continue the liaison program after the departure of the MATE technicians. Their activities were restricted by the ever constant shift of duties, changes in personnel, lack of definite promotional steps in the Ministry establishment and the great number of staff members taking leave between school terms.

It is evident in the above report that the training programs helped personnel at all levels of instruction to more effectively produce and utilize broadcast lessons, and to more adequately care for equipment.

## Part IV

### ANALYSES OF PROJECT ENDEAVORS AND RECOMMENDATIONS

#### SECTION B

##### EQUIPMENT NEEDS FOR SCHOOLS BROADCASTING

Establishing effective schools broadcast units involves many requirements. Personnel must be selected and trained. Programs, techniques, and procedures must be developed. Scripts must be prepared, and lessons and support material produced. Each requirement involves an amount of equipment and material which varies from office furniture, typewriters, and paper to complicated electronic transmitters and receivers.

Radio and television lessons cannot be produced, broadcast, or received in the classroom without equipment. The whole chain of this instructional process relies on operable equipment. If the equipment fails at any one point, the whole instructional chain is broken.

Equipment, therefore, is an important requirement of any schools broadcasting program. Equipment requirements, selection, procurement, and installation; the organization for operating, maintaining, and repairing the equipment; and the budgeting of funds for initial purchase, amortization, and replacement of equipment are factors that affect the quality, effectiveness, and the successful operation of a schools broadcasting program.

Both USAID and the Nigerian Ministries of Education agreed on the need to supply additional, basic equipment to the studios and schools as a part of the project activities. As an indication of its intent to support the project and the Nigerian schools broadcasting venture, USAID budgeted \$254,750 for the procurement of a variety of specified equipment.

USAID accepted the responsibility for providing radio receivers, television receivers, and films for a National Resource Center. At the suggestion of MATE staff, this was later increased to include video taperecorders, video tapes, and some equipment needed to make their operation compatible with Nigerian transmission and receiving equipment.

Selecting, securing, installing, and maintaining this equipment became one of the major problems of the project. The inevitable delays of delivering equipment overseas and clearing it through customs adversely affected the progress of the program.

Upon their arrival in Nigeria, the MATE staff began investigating the equipment requirements of the project. Radio and television stations, schools broadcasting units, and schools were surveyed. Discussions were held with ministry officials, broadcasters, and educators. This section of the report, Part IV-B, examines the equipment needs and problems that were encountered, describes the equipment that was provided, and evaluates its performance. The reader will note the importance the MATE staff attach to the efficient functioning of equipment. To repeat, no matter how well a broadcast lesson is planned and taught, it will have no effect on a pupil unless the broadcast signal is transmitted properly and is transformed into distinct sound and/or clear vision by a radio or television receiver.

## Radio and Television Receivers

The MATE staff soon determined that too few radios and television receivers existed in classrooms to make any significant contribution to Nigerian education. Agreements were, therefore, reached between the contractor and USAID to supplement the existing radio and television receivers with a sufficient quantity to enable the project to undertake evaluative studies. Radio and television receivers were thus made a significant part of the original project agreement and were supplied by the project.

The estimate of needs established before the MATE staff members arrived in Nigeria was 200 radios and 75 television receivers. This was adjusted, after staff investigation, to a total of 300 radios, 105 television receivers, and seven video taperecorders.

While the MATE staff drew up the specifications for the purchase of equipment, USAID determined the total amount to be spent and where the purchases could be made. This resulted in compromises between MATE and USAID on the type of radio or television receivers deemed adequate for use in Nigeria.

It was decided that the Westinghouse Corporation, which supplied basic components for Diamond radios assembled in Nigeria; and the Motorola Corporation, manufacturers of television receivers in the United States, would provide this equipment. Prior to its purchase, the Diamond radio was believed to be inadequate by the MATE staff. This opinion was subsequently strengthened by the radio reception survey conducted by John Brugger in 1964. Field tests made during this survey indicated the quality of three different types of receivers. The receivers used were:

A Diamond (of Nigeria) Model NELIR-8T3, with the following nominal sensitivities: medium wave band, 200 microvolts; short wave I, 200 microvolts; and short wave II, 100 microvolts

A Philips (of Nigeria) Model B3AN 36T with nominal sensitivities of 20 microvolts on each of the short wave bands

A Zenith (of the United States) Model 3000 with nominal sensitivities: 48 microvolts at 930 kcs; 7.1 microvolts at 3 mcs; 10 microvolts at 6.25 mcs; and 2 microvolts at 9.7 mcs.

(These are not competitively priced receivers, but rather indicate ranges of costs and performance.)

The results of this survey by Mr. Brugger indicated that high quality receivers extend the service range of the radio stations and also increase the quality of the signal as compared to the performance of lower quality receivers. Furthermore, Diamond receivers were recorded as adequate within ninety miles of Kaduna for use on 940 kcs. (10 kws power), 6090 mcs., 6.175 mcs., and 3.326 mcs., and only adequate within fifteen miles of the medium wave transmitters. Better receivers should be used to replace those in the more distant areas.

The Philips receiver (Model B3A 36T) was better than the Diamond receiver used by the MATE project. The Zenith R3000 produced a useful signal over wider areas.

It is important to note at this point, that while USAID agreed to support the project with radio and television receivers, Nigeria also made considerable contributions in this respect.

In one area of the country, radio receivers increased from 500 to over 2,300 (see Eastmond report, page 3) during the course of the five years the project existed. The various ministries of education purchased additional television receivers to add to the project supply. As an example of commitment and enthusiasm, one provincial official used the end-of-year surplus funds to purchase twelve television receivers for schools in his district. The Heads of Schools Broadcasts in two areas also purchased additional television receivers from surplus SBU funds.

It was necessary to train teachers and headmasters to operate the sets and make the various adjustments required to properly tune the equipment to the station. The correct channel had to be selected, the picture adjusted for clarity, and the sound modulated for maximum distinctness. Antennas had to be installed in a way to assure optimum reception. Illustrated booklets and filmstrips were produced and distributed to all participating schools to describe acceptable procedures for successful operation. Even so, many failures in this equipment were not due to the malfunctioning of the set, but to human error.

An interesting side effect to providing this equipment was noted. School officials made efforts to have schools electrified so they could participate in television broadcasts. Other officials solicited funds from parents of school children so that radios could be purchased. Too, there is substantial evidence that many teachers and headmasters brought personal radios to school in order that schools broadcasts could be used.

Radio and television receivers create a necessity for adequate repair and preventative maintenance procedures. The development of departments within the SBU's to handle this task is not only highly desirable, but absolutely essential to the success of educational broadcasting. Personnel were trained, but sufficient test equipment or spare parts were not provided. This fault must be shared equally by MATE, USAID, and Nigeria, since all were capable of providing more. Each felt that the other should take the initiative.

In addition, the television receivers made in the United States required replacement parts produced there also. Lack of these spare parts, replacement receivers, and long delays in the delivery of orders produced situations which prevented schools from continuing their participation.

#### Video Taperecorders

How does one determine if what is being produced for television is achieving its objective? How can television lessons be observed by the broadcast teacher if he must be in front of the camera rather than watching in the classroom or control room at the television station? How can effective lessons be preserved for subsequent use? How can lessons produced in one area of the country be used in another?

These and other similar questions were asked in the Hagerstown seminar in 1963.

As one means of answering these questions, Ampex model VR 650 video taperecorders were provided through the MATE contract.

While the original requests were for four VR 650's, it was discovered that additional recorders were needed to permit telecasting from additional transmitter sites and to provide more complete

SBU recording facilities. Thus, at the close of the project, seven Ampex VR 650's had been supplied through the contract.

Difficulties with the Ampex Corporation and their VTR's extend over the total five-year period of the project, beginning with repeated delays in delivery. This was followed with difficulties in alignment of the VTR's once they were put into operation.

As a result, there was no assurance that a video tape made on one Ampex machine could be replayed satisfactorily on another unit. In fact, often a recorder would not satisfactorily replay a tape that it had just recorded. This situation resulted in strong pressure from MATE and USAID on the Ampex Corporation, which then sent Mr. Peter Morris, their representative in the United Kingdom, to Nigeria to survey the situation.

Mr. Morris reported that some of the difficulty was a result of "stiction," a hesitation of the tape as it passed over the polished drum head. He recommended closer control of temperature in the studios, and a replacement of the bands on the drum head every two years as preventative maintenance. He further recommended that complete refurbishing be given the video taperecorders in Kaduna, Enugu, and Aba, and that an adequate supply of spare parts be stocked. Additional video taperecorders were ordered at this time, and plans were made to send the used units to England for reconditioning. However, the Kaduna unit, which was shipped by air from Kaduna in June, 1967, was not returned to Kaduna until March, 1968. Coincidentally, the new video taperecorder arrived at the same time. Because of the conflict in Eastern Nigeria, the recorders in Enugu and Aba were not sent to England for reconditioning.

#### Ancillary Equipment

Although the receivers and taperecorders represent the largest and most costly equipment provided to the SBU's, they by no means represent all equipment supplied.

Replacement parts, components, and supplies were necessary to keep equipment provided from the United States operational. Such needs could be met through developing stockpiles of parts secured from United States manufacturers.

Neither the Lagos nor Ibadan broadcasting units possessed adequate sound recording facilities. Therefore, MATE supplied microphones, turntables, taperecorders, amplifiers, and control equipment to assist in making these units partly self-sufficient. Photographic equipment, television test equipment, office supplies, and graphic materials, were also provided.

The Enugu unit lacked the necessary facilities to produce printed support materials to accompany radio and television lessons. USAID provided the unit with printing equipment to carry out this function. The broadcasting of a course in science for teacher training colleges required specialized science instructional aids. This need was met through the shipment of a portable lab table, science supplies, and graphic materials from the United States.

MATE supplied numerous pieces of photographic equipment such as cameras, a 35mm slide reproduction enlarger, film supplies, slide projectors, and processing equipment, to all units and financed various graphic projects in support of lesson series. Vehicles were acquired by the project for project personnel to provide supervisory activities associated with each SBU and for reaching participating schools for utilization instruction. Two portable generators were provided to demonstrate TV in areas where electricity was not available, and to temporarily supply electricity to participating colleges when their electric generators were inoperable.

Nigeria indicated her willingness to effectively participate through supplying many pieces of supportive equipment and money. While the degree of participation varied within the country, a significant contribution was made by Nigeria when she provided facilities to properly house the acquired equipment. Without these facilities, the addition of such equipment would have been pointless.

### Problems and Reactions

Supplying necessary and supportive equipment does not automatically solve the difficulties encountered in developing effective schools broadcasting units. While the equipment goes a long way toward building a functional, highly operational organization, technical skills are required to operate and repair the equipment. Due to difficulties encountered because of equipment supplied, it is necessary to make some suggestions to Nigerian educators to help them plan for the future.

1. Radio and television receivers should be selected on the basis of whether the manufacturer is able to provide local repair and maintenance services. It is also important to provide radios which are adequate for classroom use. Receivers should feature a large speaker, band spread for short wave, antenna connection, on-off light, use dry cells for power, and be easy to tune.
2. All types of replacement parts or components must be acquired and stored in quantities large enough to provide repair for a two-year period. Personnel to repair equipment are of primary importance.
3. The useful life of the equipment must be determined, and a system established for replacement. The annual budget must provide funds for the purchase of the replacement parts and the expendable items such as valves, transistors, and batteries.
4. While many excellent radios are available in Nigeria, the equipment cannot guarantee adequate reception if the transmission is poor in quality. The strength and quality of radio signals are below standard in many areas of the country. The survey of signal strength made by MATE consultant, John Brugger, will be helpful to officials wishing to improve the service.
5. While the VR 650's could have been extremely useful to broadcasting during the project's five-year tenure, they were a source of constant problems. Most of these problems were attributed to the project dealings with Ampex or to the ever-persistent problems of maintenance. Ampex felt the equipment was adequate for the task, but, constant and ongoing programs of maintenance were necessary to keep them operational. Comments from other sources tend to negate the claim of the 650's adequacy. This equipment needs further study since at the close of the project, all 650's were operating satisfactorily.
6. Equipment that will be useful and will not be difficult to repair or operate should be purchased. Overhead projectors with polarization attachments to produce motion, or opaque projectors can be very useful, but they must be well maintained to make their purchase worthwhile. Repairs that require shipment out of the country can be expensive and time consuming. Often under present conditions, it is less expensive and less time consuming to purchase a new item.

7. A few television receivers arrived at their destination damaged or broken beyond repair. In one particular instance, it is known that the television receivers were brought from the railway and dumped from the vehicles at the Ministry of Education. Definite procedures for the loading, transporting, unloading, and delivery of delicate electronic equipment are a must. Poor packaging for overseas shipment was noted, especially with the Motorola television receivers. Packing and shipping directions should be a part of the purchase specifications.
8. Much time was wasted in securing the release from customs of equipment imported at no cost to Nigeria. Long trips were often required before the right person was found or the proper document signed. An examination of customs procedures with regard to goods destined to be part of a cooperative government project, or free for educational use, is necessary.
9. Because of the very nature of electronic equipment, its cost is exceedingly high. It is most important, therefore, that proper security measures be taken to provide safeguards which will prevent loss. There are instances recorded where school radio and television receivers disappeared. While it is felt that efforts were made to safeguard equipment, additional precautions or procedures could have been used. The delineation of responsibility, the enforcement of existing procedures, and an examination of security arrangements are required.

While it is possible to identify other problems and set forth recommendations, these few will indicate the careful planning which must precede every decision.

#### The Equipment Requirements of the Future

Expansion of the schools broadcasting program will create a need for additional equipment similar to the type that is now being used. Radio and television receivers are modified and improved each year. Transmitters and production equipment are constantly being up-dated. What should the SBU personnel consider in meeting future equipment needs?

The MATE staff will not recommend a particular brand name or suggest the immediate adoption of a promising prototype, or an intriguing new process that is being seriously considered by broadcast pioneers. The staff, however, can suggest that because of the constant improvement of equipment by the manufacturer, it is highly likely that replacement or additional equipment will not be identical to existing equipment. The SBU's, therefore, have a great responsibility to keep informed about the range of new equipment that is compatible with that which is presently being used.

In addition, the SBU's must be familiar with the changes involved in new technical breakthroughs. The field of electronic communication will experience many changes in the future. This should not delay the procurement of needed equipment. The future of radio and television broadcasts will depend more on the Nigerian educational program than on technical changes.

Claims for many new developments often do not materialize. On the other hand, even the most startling speculation about facilities in 1980 could fall far short

of what will actually be realized. Techniques and equipment can change easily and rapidly.

It, therefore, seems pertinent to suggest that Nigerian educators continue to watch scientific advances in order to select the most useful equipment, procedures, or techniques that are currently available. There is no guarantee that a discovery tomorrow, next month, or next year will not make equipment and procedures obsolete. It is, therefore, important for the SBU's to plan carefully so schools can continue to use what has been acquired.

Among the many new developments that should attract Nigerian attention and study are:

1. The growing use of transistors in electronic equipment
2. The opportunities that will result from the use of satellites for communication
3. The electronic transmission of power which eliminates the need for inter-cable connection
4. Substitutes for electric utilities systems which produce electric current by solar, atomic, chemical, or heat generation
5. The development of networks that inter-connect the signal of telegraph, telephone, radio, television

The attention of the reader is directed to the special report of William S. Halstead, which is included as a separate document with this final report. The Halstead study, entitled "A Report on Engineering and Technical Aspects of Educational Broadcast Services in Nigeria," includes comments and recommendations relating to the expansion and improvement of educational broadcasting on a coordinated national basis; suggests plans for the extension and improvement of broadcasting services by microwave-relay method; and comments relating to new technological developments that might find application in Nigerian broadcasting.

Finally, it should be noted that Nigeria may want to consult with technician-specialists about future equipment needs. The MATE recommendations to both the Nigerian Federal Ministry of Education and USAID include a suggestion that such advice be sought by Nigeria when needed, and furnished by USAID on a short-term consultant basis.

## Part IV

### ANALYSES OF PROJECT ENDEAVORS AND RECOMMENDATIONS

#### SECTION C

#### RESEARCH AND EVALUATION PROGRAM

Research and evaluation of the project's effectiveness in meeting accepted objectives and purposes were fundamental concerns of the staff of the Modern Aids to Education Project from its inception.

A history of frustrations, unfortunate conflicts, misunderstandings, and delays plagued the staff as they endeavored to identify and select authoritative assistance in evaluation.

Between 1963 and 1967, five specialists in research and evaluation were involved before the Educational Testing Service of Princeton was contracted to complete the research program that MATE technicians had initiated in the former Northern Region.

The original planning of a research and evaluation program was done in the fall of 1963 with the assistance of Dr. Walter Waetjen, head of the Department of Research at the University of Maryland. He had expressed a willingness to include this project in his department's program. Following briefing sessions, a preliminary proposal was discussed. The satisfactory progress that was being made, however, was terminated when the University secured a grant from the U. S. Institute of Mental Health and would not permit Dr. Waetjen to conduct research overseas.

It was necessary to identify a new contractor to proceed with the research and evaluation program. Attention was drawn to the work of Dr. Kenneth Komoski and Dr. Herbert W. Gustafson of the Institute of Research, Teachers College, Columbia University. Both of these men had been working in the field of educational research, especially in the area of the utilization of visual aids and programmed instruction in the United States and in Ghana. They expressed the interest of the Institute in the project's activities. Correspondence with AID/Lagos officials indicated their willingness to use the Teachers College Institute of Research as sub-contractor for the Project research program because of the high regard in which it was held among educators.

Discussions were held in New York, Washington, and Hagerstown which resulted in the development of a proposed contract between Washington County and Teachers College, Columbia University.

The Project Home Office proceeded under the assumption that a satisfactory arrangement could be made and the research program be initiated by November, 1964, in Nigeria under the personal direction of Dr. Gustafson.

A series of delays were experienced in working out specific agreements when AID/Washington raised objections because they said that Teachers College had never had any actual research experience in instructional radio and television.

MATE found it difficult to accept this decision because the results being tested were not technical aspects of radio and television, but involved the achievement of pupils in the classroom--an area in which The Institute of Research of Teachers College was highly competent.

AID, nevertheless, would not approve the contractual agreement and suggested that time should be devoted to the investigation of additional contractors even though it would delay the design and implementation of the evaluation as originally conceived by project officials.

By this time, the project technicians and Mr. C. Paul Barnhart, the Chief of Party in Nigeria, had collected valuable data and suggestions about research needs and problems which would be useful in meetings with prospective researchers.

It was then decided that the Chief of Party should return to Hagerstown to participate in the selection of a contractor to design the research. After an exchange of numerous communications between AID/Washington and Hagerstown, a list of potential researchers was compiled.

Mr. Barnhart arrived in the United States on December 14, 1964, and conferences were immediately held with Mr. Griffith J. Davis, Chief, Communications Division, Bureau for Africa; Mr. Walter Smith, Radio and Communications Officer; and Dr. Howard Leavitt, Advisor on Educational Research and Measurements. Both Mr. Davis and Dr. Leavitt made a number of telephone calls to learn whether or not some of the suggested researchers would be interested in the project.

As a result of the discussions, it was decided to prepare a statement of needs for prospective researchers. This and other pertinent supporting documents such as the contract and its two amendments, the initial Washington County proposal, the progress report of May, 1964, and several articles concerning the project prepared by Dr. Richard Rider, of AID/Lagos, were sent to selected research groups, along with a request that they indicate their interest in conducting the research.

These discussions resulted in the following compilation of background information for use in the development of a research and evaluation program for the MATE project in Nigeria.

1. The experimental work in instructional television in Nigeria was in the embryonic stages.
2. In some areas, only a limited number of schools were using the radio broadcasts.
3. There was a great lack of statistical information about the intelligence, ability, aptitude, achievement, interests, and needs of pupils.
4. Adequate measurement instruments were not available. The West African examinations were administered to only those few students who persisted through the formalized secondary school program.
5. There was a growing agreement concerning the goals of education because of the increasing realization that Nigerian education must be based on Nigerian culture and programmed to meet Nigerian needs.

6. There was a great lack of essential ingredients for quality education.
  - a. There were not enough schools. (11.9% of eligible school students enrolled in the North. This is an average of all provinces.)
  - b. Many teachers were insufficiently trained.
  - c. Facilities, textbooks, and equipment were, in most cases, insufficient, inadequate, unsuitable, or outdated (especially at the primary school level).
  - d. Funds were limited.
  - e. Utilities, such as electricity, were either unreliable or not available.

The above list suggested that the program of evaluation and research for the project should assist schools to meet these persisting needs. The purpose of project research and evaluation should not, therefore, be solely an academic statistical demonstration to prove that television and radio were potentially useful tools.

This fact had been documented in enough cases throughout the world to make it acceptable. Where experimental research was not feasible, action or field research could be used. It was recommended that the design for the research should include:

1. The development of anecdotal records about the historical successes and failures of the project's evaluations
2. The gathering and analysis of information about student, teacher, and headmaster attitudes toward the broadcasts
3. The development of a cost benefit analysis
4. The measurement of achievement gains for students receiving the instructional radio and television lessons
5. The reporting of program accomplishments of the contractor
6. The establishment of procedures to provide a continuing program of evaluation, re-evaluation, and implementation of research findings

From the list of potential research contractors, two, American Institute of Research (AIR) and Stanford Research Institute (SRI), were selected and asked to propose ideas for an adequate research design.

The background information that was assembled proved useful to Dr. Paul Spector of the American Institute of Research and Dr. Donald Woodworth and Dr. Philip H. Sorenson of the Stanford Research Institute as they discussed their suggestions for a research program for the project.

Since no specific funds had been granted for evaluation and research, the prospective institutes were asked to propose various packages and price tags.

As the conference ended, it was decided to summarize the suggestions and proposals and ask AID/Lagos to react so that a selection could be made in January, 1965, and the research and evaluation program begun in February.

Further discussions were held between MATE, AID, and the prospective research groups. It was agreed that either AIR or SRI would develop and implement an effective research and evaluation scheme for Nigeria. Dr. Leavitt suggested that AIR would be primarily concerned with the development of a precise measurement instrument and an interpretation of the findings. (AIR was already doing research in West Africa.) It was suggested by AID/Washington that SRI seemed more concerned with attitudes, the relationships of people, and with the establishment of a continuous recurring program of measurement.

SRI was finally selected to develop the evaluation scheme and to make recommendations for increasing the project's effectiveness.

Dr. Philip Sorensen and Mr. Edward Podesta of the SRI staff toured Nigeria from May 2 to June 12 to make a preliminary survey and to collect additional data. Regrettably, their preliminary report described in detail the organizational patterns which they felt AID should have developed in setting up the project. In their analysis of how the project's organizational structure could have been enhanced, the evaluators made four assumptions:

1. That all Nigerian Federal and Regional Ministries had similar structures in their relations with broadcast authorities and attitudes toward school broadcasting
2. That the Ministries had identical organizations
3. That what was acceptable to one Ministry was acceptable to all others
4. That interchange of programming and organization was possible at the inception of the project

(These factors, however, did not exist. The project had been organized to meet the desires of the various ministries.)

Representatives of SRI met to discuss this preliminary report. AID/Washington was highly dissatisfied with the SRI report since it proposed an evaluation that enumerated various testing procedures which would provide answers to such questions as:

1. Is television and radio instruction equally effective or more or less effective, alone or with supplementary printed material to accompany the lesson?
2. Is briefing the classroom teacher on utilization procedures in a face-to-face situation more effective or less effective than briefing by means of printed material?

Both MATE and AID officials felt that these were questions to which answers had already been established in a number of situations. There were no constructive suggestions which dealt with quality-control. It was also felt that the method suggested as an operating procedure would prove unacceptable in the Nigerian situation.

SRI proposed an evaluation of the organizational patterns of the MATE Project, whereas, AID wanted an evaluation of the educational achievements of this project.

Therefore, after further consultation and deliberation, it was decided that the SRI subcontract be terminated on December 31, 1965. It was also determined that the evaluation aspect of the project could be carried out through the appointment of a research specialist to the team.

During this interim, Mr. Peter Callas and Mr. Thomas Kincaid, MATE technicians in Kaduna, planned and implemented a preliminary evaluation scheme for that area. This scheme considered:

1. The enlistment of support of educational officials, at all school levels, through their involvement in the initial planning
2. The preparation and transmission of educational broadcasts in English language (Primary Five)
3. The identification of the school population sample and research design
4. The logistic problems and their solutions
5. The development of field-tested measurement instruments
6. The training of teachers who were involved in the research in utilization of broadcasts (also those in the contrast groups)
7. The development of a hypothesis to be tested by this empirical research

Dr. Albert Klevan, from the Institute of Child Study at the University of Maryland, was contracted to handle the research and evaluation in Nigeria. He arrived in Lagos in July, 1966.

A project team meeting with AID/Lagos education officers and Dr. Brish in attendance was held in Lagos on October 21 and 22, 1966. The purpose of this meeting was to hear reports from technicians on the project's achievements and problems, and to finalize guidelines for the evaluation. Briefly, Dr. Klevan's ideas for the evaluation favored a subjective analysis of classroom teaching techniques as a measure of success of the project's objectives. Dr. Brish and AID officials were opposed to the use of subjective analysis as a sole technique and criterion for use in the proposed evaluation. MATE and AID officials insisted that the evaluation program must contain objective testing of content material presented by radio and television broadcasts.

It was apparent that the status of the project in the former Northern Region, with its preliminary evaluation scheme in operation, presented the best opportunity for the implementation of the research and evaluation design agreed upon at this meeting.

An attempt to initiate an evaluation scheme in the West was unsuccessful. Plans for developing evaluation schemes for the Eastern Region and Federal Territory were being considered by the area technicians in consultation with Dr. Klevan.

During this time, the project staff and AID officials in Lagos and Washington were discouraged with the evaluation program and with the activities and apparent ineffective leadership of the

research technician. AID requested that Dr. Klevan's contract be terminated and that he be recalled to the United States. Dr. Klevan's contract was terminated in June, 1967.

With the departure of the research specialist, four years of intensive planning and delays with the research and evaluation program were obliterated. The evaluation program was continued through the efforts of the project's two technicians in Kaduna and with the assistance of the AID/Kaduna education officer, Dr. Virgil Walker.

Once again, the MATE officials at the Home Office were confronted with the problem of selecting a contractor to complete the research and evaluation of broadcasting lessons being produced for utilization in selected schools in Kaduna and Zaria. To complicate matters the political situation in Northern Nigeria was causing the migration of a great number of people. There was constant large turnover of pupils, teachers, and headmasters. This greatly hindered the efforts to evaluate the program and made research analysis of the results very difficult.

In September, the Home Office conferred with officials of the Educational Testing Service (ETS), Princeton, New Jersey, to enlist their assistance in completing the analysis of data that were being gathered by the MATE liaison officer in Kaduna.

After examination of documents about the project's activities, especially in Kaduna, two ETS staff members, Drs. Stanley Zdep and Sidney Irvine, agreed to conduct a feasibility study in Nigeria in November, 1967. From a research point of view, their visit to Kaduna was most beneficial since the final phase of the evaluation scheme, as originally planned, was being implemented. This included the administration of the last posttest, attitude questionnaires, and the gathering of other pertinent evaluative data.

Even though ETS did not assist in the development of the evaluation scheme and research design, they did conclude that the data collected were of an extensive nature as to permit valid statistical analysis. ETS was then contracted with to complete this statistical analysis and make conclusions and recommendations based upon their interpretation of the results of this research. Their report was completed in June, 1968.

At this juncture, it is appropriate to summarize the salient features of the evaluation scheme and the conclusions and recommendations that were presented in the ETS report.

Although MATE officials react favorably to this report, they believe that certain assumptions and conclusions need to be clarified and/or interrogated. Their comments are also listed.

### THE EVALUATION SCHEME

The basic objective of the evaluation was to assess the achievement gains in the Primary Five English for radio, television, and contrast classes as well as to assess the attitudes of students, teachers, and headmasters toward the project developed broadcast media.

It was reasonable to suspect that classes receiving the supportive broadcasts would have educational advantages over and above those classes which were instructed only by a classroom teacher.

The hypothesis, empirically stated, was: Primary Five classes in Kaduna and Zaria which utilized radio and television English broadcasts would show greater achievement gains in English than classes not receiving these broadcasts.

In order to test this hypothesis, 35 different classes (32 in Kaduna and 3 in Zaria) in 28 different schools involving approximately 1200 students were selected as the population sample. These classes were divided into three groups:

1. Classes which would utilize the SBU English radio lessons
2. Classes which would utilize the SBU English television lessons
3. Classes which were taught English solely by a regularly assigned teacher

The latter group was termed "contrast" because of the inability to establish a control group. The radio and contrast groups were randomly assigned while classes for the television groups had to be assigned to schools where electricity was available. Thus, the assignment of classes was not perfect from a research point of view.

All classes were taught by regular classroom teachers and utilized the same basic English textbook, Straight for English, Pr. 5. This book had been adopted by the Ministry of Education in 1965.

## INSTRUMENTATION

The following measurement devices and data collecting instruments were constructed in Nigeria by the MATE technicians with assistance from the AID/Kaduna education officer. Most of these instruments were pretested in the preliminary evaluation conducted in 1966; however, the general format and content of the achievement tests were not revised because of the failure to receive an item analysis of the tests. This analysis was to have been prepared by the project's evaluation specialists in Lagos.

### Instruments

1. English Achievement Pretest and Posttest (3)
2. Attitude Questionnaire - Student, Teacher, and Headmaster
3. Information Sheet - Student, Teacher, and Headmaster
4. Evaluation of Teaching - Observation Check List and Rating Scale
5. School Profile - Summary of Observations, Problems, Utilization, Participation, Etc.
6. Percentage of Participation - Television and Radio Groups
7. Attendance Record - Student
8. Teacher and Headmaster Turnover Report

The test, Reading 12A, which was administered in November, 1967, was prepared by ETS. It was pretested in one school prior to the general administration of the test to classes involved in the evaluation.

A more detailed description of the measuring devices and time frame follows this discussion.

#### Procedures

As was discussed above, three types of groups—one radio, one television, and one contrast group—were utilized in this research. To measure achievement in English, a 50-item pretest was administered to all classes early in the first school term in 1967. Three posttests were also administered, one at the end of each school term. The time frame for the evaluation was:

<u>School Term I</u> (January to March)	<u>School Term II</u> (May to August)	<u>School Term III</u> (September to December)
Pretest-Posttest (1)	Posttest (2)	Posttest (3) ETS Reading (Test) 12A Attitude Questionnaire (Student, Teacher, and Headmaster)

Each posttest consisted of sub-tests which permitted comparison of gains in English made by all classes on materials taught in each school term. All achievement tests were administered by the project's liaison officer.

In order to assess student, teacher, and headmaster attitudes toward their involvement in the evaluation, an attitude questionnaire was prepared and then administered at the end of the third school term.

The Administration of Reading 12 A (ETS) also took place at this time. This feature of the evaluation was not a part of the original scheme but one ETS official felt it was necessary in order to assess reading abilities of students. This instrument was pre-tested and administered to all students in the three treatments by the liaison officer and his Nigerian counterpart.

#### Data Collection

Between testing periods, the liaison officer performed a great variety of duties in an effort to gather all pertinent information about variables which might influence the results of the experiment. Briefly, the liaison officer:

1. Observed English instruction in all classes at least once in each school term
2. Kept anecdotal records of all observations
3. Kept records of all class percentages of participation in television/radio lessons
4. Gathered information sheets from all students, teachers, and headmasters (Special in-service meetings were utilized to prepare these forms.)
5. Conducted evaluation and utilization in-service training programs with all teachers (Records were kept of all meetings.)

6. Gathered student attendance records each term
7. Serviced all radio and television receivers in the schools
8. Kept reports on teacher, headmaster, and pupil turnover

The decision by ETS to complete the statistical analysis of this experiment was based upon this vast collection of varied evaluation data.

A summation of their interpretations, conclusions, and recommendations from their study is reported below. For a more complete report of the research, the reader is encouraged to refer to the ETS study: Broadcasting Media in the Teaching of Primary Five English in Nigeria - An Evaluation Report, ETS, Princeton, New Jersey, June, 1968.

#### Interpretation of Results, Conclusions, and Recommendations

##### Interpretation of Results by ETS

1. An analysis of the pre-test scores revealed that test items were far more difficult than was desirable.
2. On the basis of an item analysis of scores dealing with the mechanics of grammar, items dealing with English usage were the most valid.
3. An analysis of posttest scores (Term III) revealed that television classes registered the greatest improvement followed by the radio and contrast classes in that order. Uncontrolled sources of influence could have caused the greater gains by the television classes.
4. Items in the Reading 12A test were less difficult than items in the English posttests.
5. Classes taught by better teachers generally showed the greatest gains regardless of the treatment.
6. Students exposed to television did better on Reading 12A than students who were in the radio or contrast classes. Performance on this test was almost completely independent of teacher skill.
7. The acquisition of skills in English depended on the motivation of the teacher.
8. Certain serendipity (non-measured) effects accompany television broadcasts.
9. In terms of attitude assessment, students in both television and radio groups had positive feelings toward the broadcast media.
10. Teachers and headmasters in all groups reacted positively toward their involvement in the broadcasts and evaluation.
11. Teachers and headmasters in the television and radio groups were satisfied with the broadcasts. (An increase in the number and length of broadcasts was suggested.)

12. Teachers' knowledge of more varied teaching methodology (practices) appeared to have been enhanced by the broadcasts.
13. The utilization of the television puppet, "Aku," was highly endorsed by the teachers in this group. (It is important to note here that the UNESCO report, New Educational Media in Action, prepared by Dr. W. Schramm in 1965, commented on this particular feature of SBU English lessons. These lessons, prepared by the MATE staff, were considered by Dr. Schramm to be applicable to English lesson broadcasting in most English speaking countries of Africa.)

#### Conclusions of ETS

1. Interpretations and generalizations on the results of the research were based upon a limited population sample. It is inadvisable to make generalizations of these results to other schools in Nigeria.
2. ETS considered an analysis of all the data collected would be an extremely difficult, time-consuming task.
3. The selection of items for the English achievement tests was based upon the most frequently encountered material in the textbook, Straight for English.
4. Attempts at teaching the mechanics of language as required by the textbook were unsuccessful in all treatments.
5. Substantial gains in achievement by all groups were made in the area of English usage.
6. Students in the television groups made slightly greater gains in English achievement than those students in the other groups. After statistic techniques were applied to control the influences of variables, achievement gains could not be specifically attributed to the broadcast.
7. Achievement gains were made in all classes having better teachers regardless of the treatment involved.
8. Television classes, on the average, outperformed both radio and contrast classes in the Reading 12A test. This superior performance might be associated with gains in visual comprehension, a result of viewing television lessons.
9. Broadcasting stimulated teachers and enabled them to learn a variety of methods of teaching English. The application of these new methods was observed.
10. Teacher attitudes toward the use of broadcasting media were favorable. They felt that more time should be devoted to broadcast lessons.
11. Broadcasting depends heavily upon the active support of the classroom teacher.

12. In the data not statistically analyzed, there might be other serendipity (non-measured) effects associated with broadcast lessons.
13. Teacher skills must be considered extremely important sources of influence on pupil performance in syllabus materials.

The statistical analysis and subsequent interpretation of this material enabled ETS to successfully test the project's hypothesis as stated earlier in this section. The result was that no significant differences in achievement could be demonstrated among classes exposed to different treatments. The achievement gains in English that were identified could not be statistically attributed to participation in one of the three treatments.

#### Recommendations of ETS

1. Any future projects in developing countries should have evaluation and research designs built into the project schemes from their inception.
2. Because of rapid, social and educational change, preferred education programs should be well-designed and short-termed. This would prevent loss of data and also permit the use of feedback to periodically modify the design.
3. All measuring instruments should be subjected to rigorous field trials and adapted to local conditions prior to their actual use.
4. The appropriateness of the English Primary Five syllabus needs to be re-examined. The mechanics of English grammar at the primary five level should be de-emphasized and priority given to instruction in usage and comprehension.
5. Evaluations of the use of modern aids to education in developing countries should be compiled so that future planning might benefit from past successes and failures.

#### Recommendations (Postscript) -- Quoted from the ETS Report, pp. 47-48

Although the achievement data gathered in this evaluation provide little support for or against the continuation of educational broadcasting in Nigeria, the adequacy of this report demands that, as evaluators, we must also report what we feel to be the overall effect generated by the introduction of supportive broadcasts. This effect, observed during our on-site inspection of classrooms was overwhelmingly positive causing us to recommend, although admittedly these are subjective recommendations, that:

1. Broadcasting should be continued at the primary level. In the teaching of English it would be advisable to stress reading, writing, listening, and speaking skills rather than formal grammatical rules which are poorly understood and inefficiently learned in the primary years.
2. While new emphases in broadcasting are being actively sought, it is recommended that efforts be made to record ongoing programs, to collate them with previously recorded programs, and to evaluate all of them so that they can be revised if necessary and used effectively in the future.

3. Priorities in primary, secondary, teacher, and technical education will necessarily determine the future role of broadcasting. It is, therefore, recommended that these priorities should relate closely to manpower requirements that are not being adequately met, and these are reflected by poor performance on national examinations.

### Closing Statements

The final section of this discussion briefly includes the reactions of the MATE team to specific points made in the ETS study. References, for clarification purposes, are made to the conclusions and recommendations of the research analysts.

1. The English Achievement tests were first pretested in schools not involved in the evaluation study. Primary Five students and their teachers made suggestions for the revision of the tests. They agreed that the English content material covered in the tests was adequate. The length of the test, the use of the multiple choice items, and IBM score sheets also proved satisfactory during this pre-testing period.
2. Invalid items on the achievement tests (1967) would have been eliminated had the item analysis of tests administered in 1966 been received from MATE/Lagos by the technicians in Kaduna.
3. The broadcast lessons and tests were based upon the prescribed textbook selected and ordered in 1965 by the Ministry of Education. The books, however, did not arrive until March, 1966. As ETS intimated, this book was too difficult for the students who participated in this research study.
4. Attempts were made to increase the length of broadcast lessons by the technicians. Their endeavors failed because of set radio and television schedules and inadequate funds for increased broadcast time. They did succeed in increasing the number of television English lessons from two to three per week. The length of the programs remained the same; 20 minutes per television lesson and 15 minutes per radio lesson.
5. By the time the final tests that were analyzed and evaluated by ETS were administered, the civil disturbances had created serious problems involving the mass migration of many pupils and teachers to the regions of ethnic origin. There was at least a 50% turnover of teachers between the pre-tests and final tests. This reduced the number of pupils whose achievement could be analyzed. In one test area, only 200 cases of what would otherwise have been 700 could be used in the statistical study. The civil problems, constant turnover of teachers and loss of pupils, the excitement of the times--all adversely affected the results.
6. The MATE staff understands that statistically the test data do not prove that the higher achievement gains of the television classes can be specifically attributed to the television lessons. But they find it hard to understand how the data provides justification for ETS to specifically suggest WHAT the reasons might have been, since these ideas also could not be proven statistically. ETS says, for example, the improvement might be the result of teacher skills, yet in their report on page 14, they measured but ignored such variables as teacher training and experience. The television classes had the large turnover of teachers. Isn't it likely that television did provide a continuous and worthwhile instructional program in English for these classes in spite of the frequent change in teachers?

7. A variable which possibly affected the ETS study of broadcast lessons in Kaduna was the change of presenters during the year of evaluation. The teacher who began presenting the Straight for English lessons was a new member of the SBU. He quickly adapted to television and radio teaching and was rapidly improving his presentation techniques when he was posted to the Kano Teacher Training College at the conclusion of the second term. A new presenter was chosen. He began Term 3 with limited experience in teaching by television or radio. At a time when presentation techniques should have been highly developed, the new teacher had to become acquainted with the media and students and teachers in the treatment groups had to adjust to him. There is no way to document the effect these events had on pupil achievement, but MATE staff suggest that the study was adversely affected.
8. The utilization of IBM score sheets was identified as a problem when students at this level are required to transfer answers to a separate form. This same problem would exist anywhere in the world where IBM or separate score sheets are used. We experienced no difficulty.
9. The problems encountered in scoring the attitude questionnaire would have been lessened had these responses been taped and then evaluated by a team of specialists using a weighted scale to indicate the relative strength of each response. This suggestion was made but rejected by ETS because of the lack of time.
10. The assignment of classes to groups in the evaluation would have been completely randomized had the liaison officer been free to alter the organizational patterns in these schools. Permission to electrify specific schools would have permitted complete randomization of the groups.
11. MATE officials agree that the evaluation should have been designed in 1963. Information in this report substantiates the efforts made by the Home Office to identify a contractor to do this research at the inception of the project's activities. The technicians in the field were insistent that trained research designers plan and implement the entire research program.
12. The ETS research team and the liaison officer identified several classroom situations where radio reception was below average to poor in quality. This variable was not considered in the interpretation of the results of the evaluation.

In spite of many frustrations and delays discussed above, the evaluation was implemented and statistically documented by the ETS. MATE officials felt fortunate in having acquired this thorough, authoritative assistance.

We assume that these reports (ETS and MATE) will serve as effective primary sources of valid information for those who are interested in conducting similar research. Government officials in Nigeria should find these materials most useful in their curriculum planning, evaluation of teaching methodologies (especially in English language instruction) and in their endeavor to integrate educational broadcasts into the mainstream of education. If these are valid assumptions, the efforts put forth in this evaluation can be called successful.



## Part V

### A PLAN FOR REORGANIZING SCHOOLS BROADCASTING SERVICES

Nigeria, on her own, began using radio and television for broadcasting instructional experiences to classrooms.

To do this, she created an organization called a Schools Broadcasting Unit (SBU).

The SBU was not an independent organization. It functioned as a specific part of the Regional Ministries of Education. The Federal Ministry of Education also developed an SBU to begin broadcasting to schools in the Federal Territory.

The idea of using broadcasting grew, the number of personnel of the SBU was increased, the program grew in scope and quality, and operated as part of the regional political organization.

All this is changed. Twelve states now exist. The regions are no longer political entities.

If broadcasting to schools is to continue, it must operate under changed conditions. It will be difficult for the former regional SBU's to function.

Funding will present a serious problem.

Many states will not have television transmitters, and some may not have radio transmitters.

It does not seem practical, at this time, to organize SBU's in each state. The needed services can be supplied with fewer organizations. Duplication is wasteful.

The regional organization included the entire geographical area that received the broadcast signal. Now the signal will cross state boundaries, and it will be difficult to determine how those who can benefit from the broadcasts can contribute to the cost.

Decisions must be made about the organizational pattern for providing the schools broadcast services.

If - the broadcasts should continue - AND THEY SHOULD

If - the regional organization no longer exists - AND IT DOES NOT

If - the most effective and economical organization for the broadcasting is desired - AND IT SHOULD BE

If - the creation of an SBU in each state is not practical at this time - AND IT IS NOT

If - the educators of Nigeria develop a new functional program of education - AND THEY MUST

If - the new educational programs stress national unity and the mutual growth of the nation and the individual - AND IT IS ESSENTIAL THAT THEY DO

If - school broadcasts are to be a part of the new educational program -  
AND THEY SHOULD BE

Then - schools broadcasts are a **MUST**, not just a desirable service

And - the best opportunity to enable the schools broadcasting services to contribute their maximum potential is to organize them under a division of the Federal Ministry of Education

If schools broadcasting becomes a function of the Federal Government, will the benefits that have resulted from the regional SBU's be lost? It seems likely that the results will be lost unless federalization does occur.

Nigeria has used broadcasting to assist in the instructional program of schools for over a decade. Experience has been gained in preparing broadcast lessons and support materials. Equipment and facilities exist and stand ready to serve future needs.

It is, generally, good practice to build on what has been done. There is no reason to return to the beginning, for the early schools broadcasting efforts, even though small, are worthy foundation stones. This is indicated by the positive acceptance of schools broadcasts by teachers, headmasters, and students.

Nigeria now has these assets:

- Four Ministry of Education-organized SBU's
- Much production equipment
- Enthusiastic audiences
- Short-wave and medium-wave radio transmitters
- Television transmitters and studios
- Radio and television receiving equipment in the schools
- Trained personnel
  - Scriptwriters, presenters, directors, sound technicians, graphic artists,
  - photographers, maintenance specialists, printing specialists, liaison officers

An analysis of the present status of schools broadcasting reveals that Nigeria is indeed most fortunate to have reached her present position in such a short time.

SBU personnel have acquired skills that are possessed by few people in the nation. Personnel are available as presenters, on camera or before the microphone. Many of these people have written lessons for broadcast. Some have been trained to be directors or sound technicians, graphic artists, photographers, and printing specialists. Others have developed special abilities which enable them to act as a link between the schools and the broadcasting centers. This trained personnel is a resource Nigeria cannot allow to disappear into other areas of government service where the skills may soon be lost through lack of use.

Each SBU facility has valuable equipment to support the broadcasting service. This equipment must be operated by trained specialists. Sound amplifiers, phonographic turntables, photo laboratory equipment, video and audio taperecorders, microphones, printing equipment, and television sets are but a few of the more important items which are used.

## Some Practical Considerations About Schools Broadcasting in Nigeria

Nigeria is now considering the future of schools broadcasting. It is not difficult to list the choices that are available.

Nigeria will either have or not have a schools broadcasting program.

If a decision is reached to eliminate the broadcast lessons now, the plans for improving education will be concerned with other activities.

If it is determined that the broadcasts are to be continued, the program will be either reduced, increased, or maintained at the same level.

The broadcasting program can continue to be a combination of radio and television, or it can be exclusively radio or exclusively television. The percentage of radio and television time can be proportionately altered as desired.

Schools may be allowed a choice of using or not using broadcast lessons, or may be required to use the lessons.

Each state may be given the choice of establishing or not establishing an SBU, or each may be required to establish an SBU.

The broadcast program can be a state service, a common service for groups of states, a national service, or combinations of services.

It is not difficult to ask the questions or define the range of possible solutions. But the actual decisions are difficult. They will require considerable study, the weighing of priorities, and an evaluation of what can be accomplished as compared with costs of other ways of achieving similar results.

Any organizational pattern for schools broadcasting should be considered in relation to Nigeria's long-range educational plans. (Possible organizational patterns are illustrated in figures 1-6 beginning on page V-4.)

The present situation in the country makes it difficult to secure increased funds for educational purposes. The Ministries of Education must make maximum use of the resources in facilities, equipment, and manpower that are now available.

When realistic, long-range goals are agreed upon, the steps and timetable for their attainment must be established. An extensive undertaking of this kind does not just happen; it is successful only when planned carefully and sequentially. If goals are not clearly stated and understood, it is difficult to know when they are reached.

It is not possible to by-pass this requirement if needs are to be met. Such activities are time consuming and sometimes frustrating, but there is no substitute for this process.

When the basic educational program and the contributions that the broadcasts can make have been determined, the decision makers can organize the broadcast service with a full knowledge

SUGGESTED  
SCHOOLS BROADCASTING LINE OF AUTHORITY

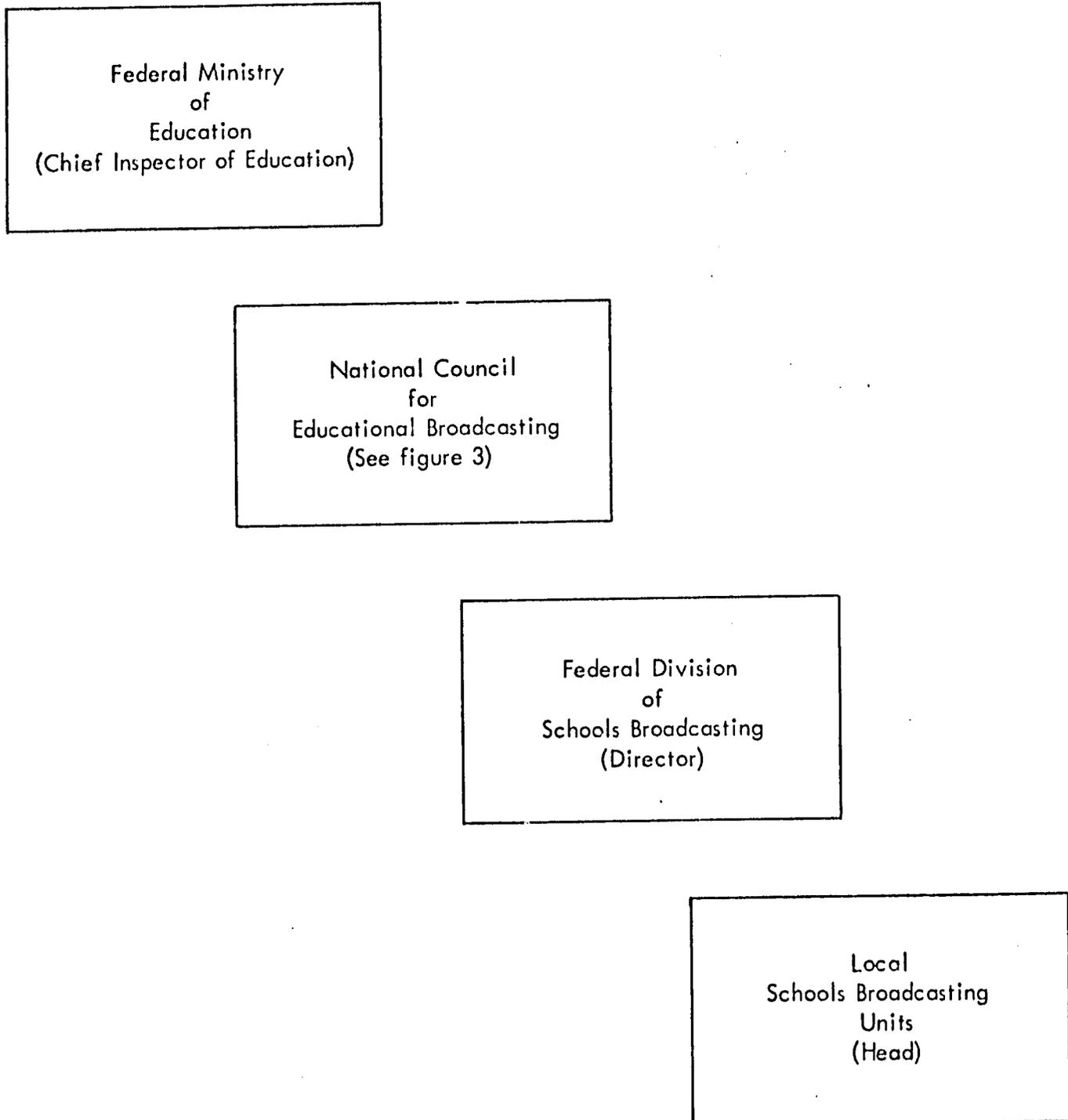


figure 1

# PROPOSED ORGANIZATION OF THE FEDERAL DIVISION OF SCHOOLS BROADCASTING

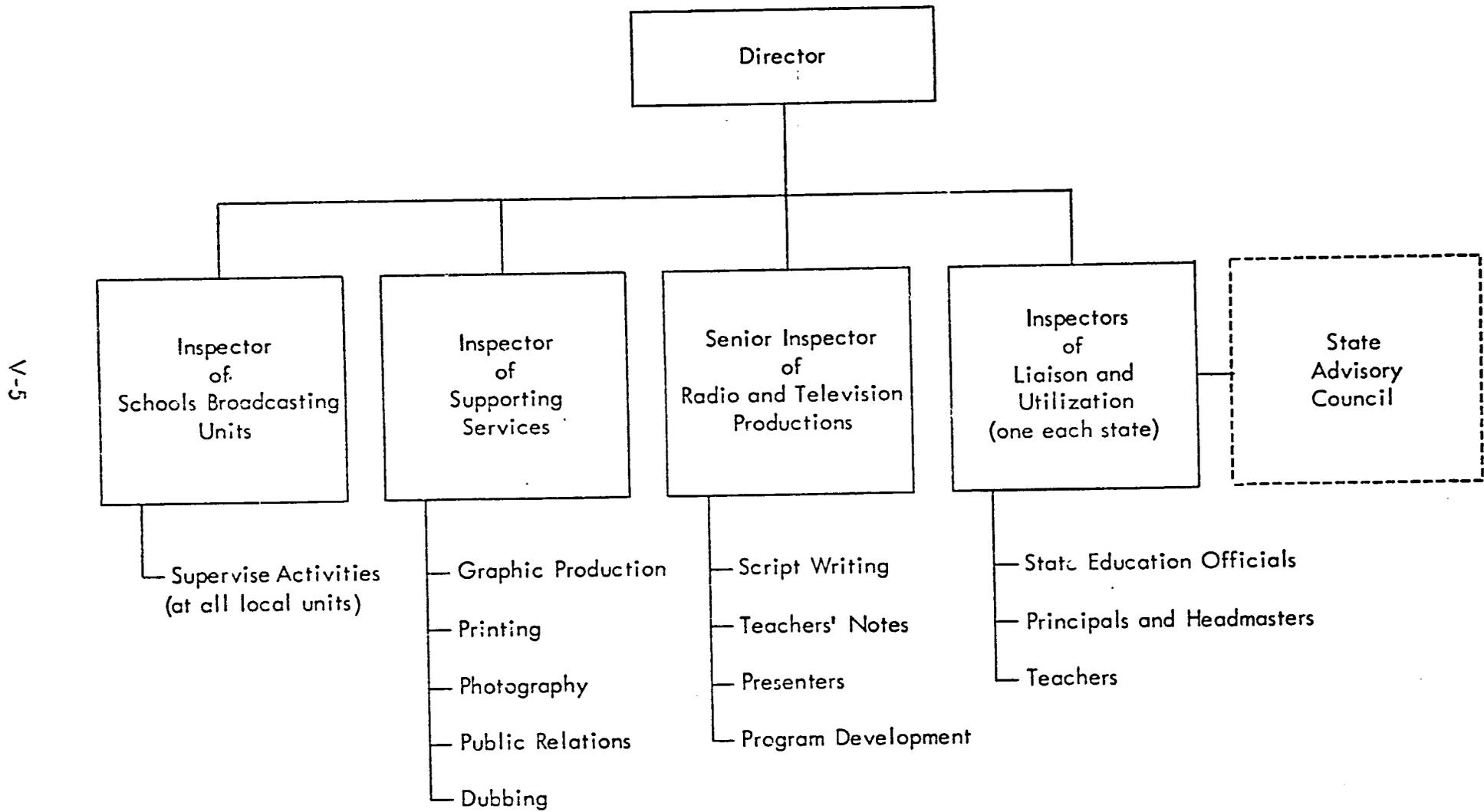


Figure 2

SUGGESTED COMPOSITION OF THE NATIONAL COUNCIL  
FOR EDUCATIONAL BROADCASTING

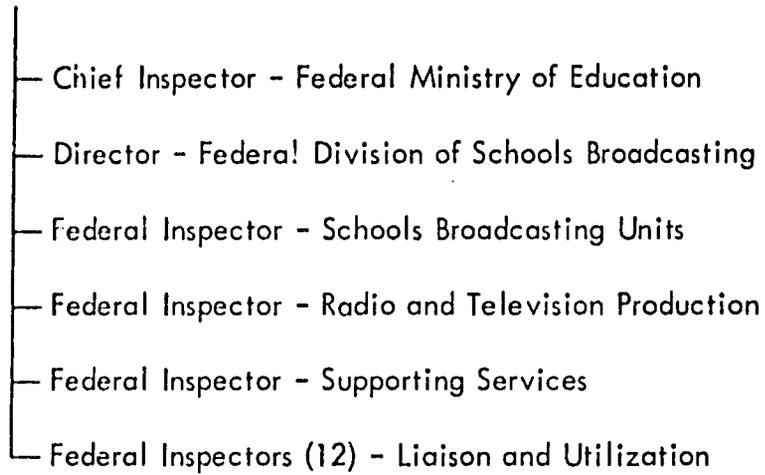


figure 3

SUGGESTED COMPOSITION OF THE STATE ADVISORY COUNCIL

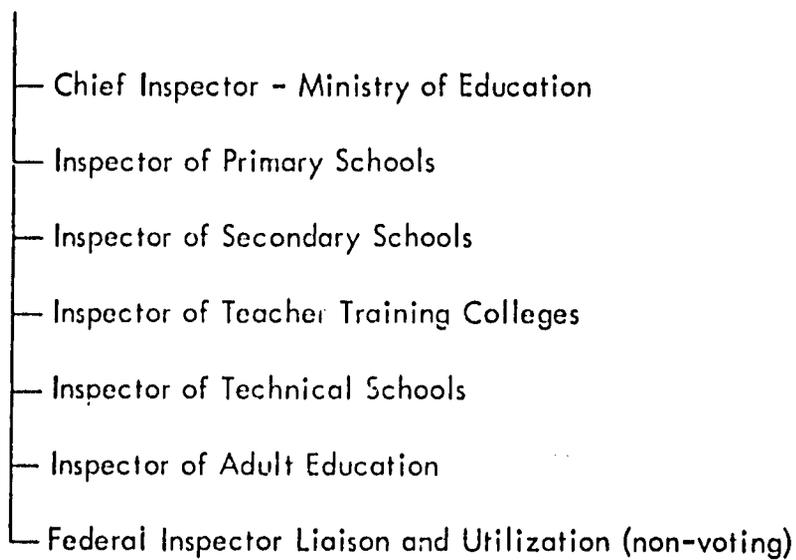


figure 4

# A LOCAL SCHOOLS BROADCASTING UNIT

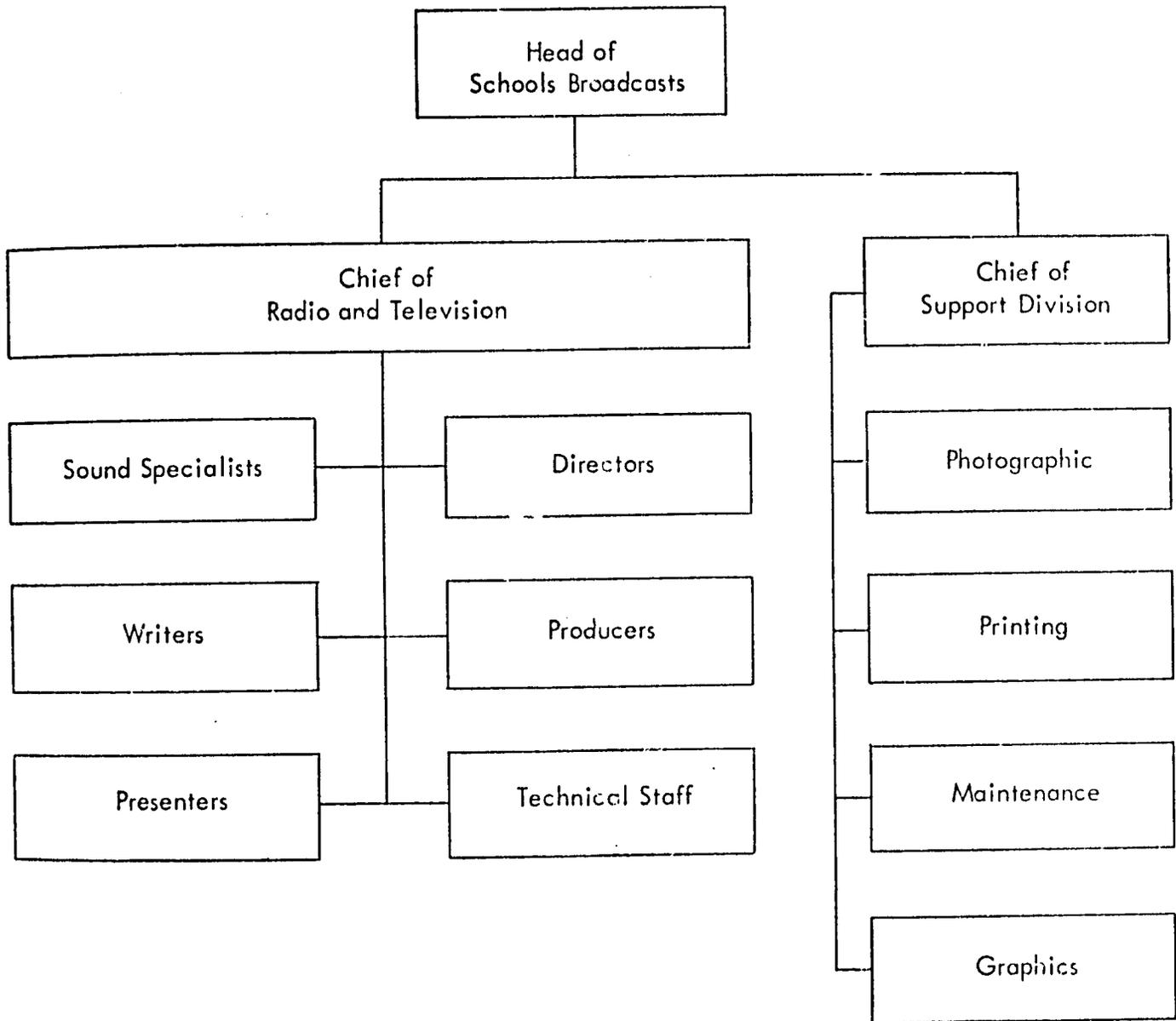
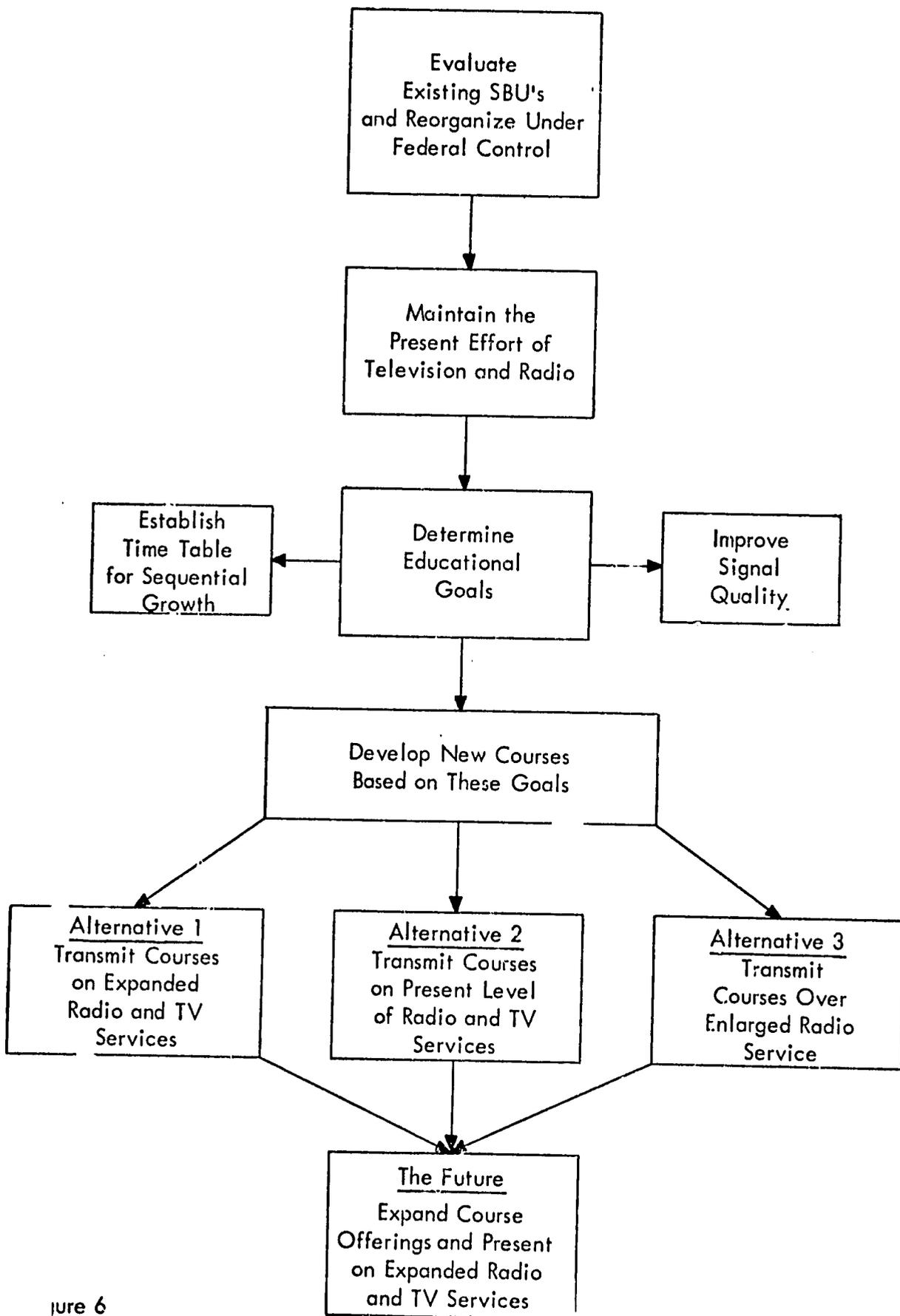


figure 5

# PHASED DEVELOPMENT OF SCHOOLS BROADCASTING



of the needs and problems that must be met. The organization plans that are adopted can then be based on logic and understanding.

If the reasoning outlined above is accepted, Nigeria must go through the decision making process herself. It is important, therefore, that Nigeria understands thoroughly that the contents of the remaining pages of this section are primarily suggestions for Nigeria to consider in relation to her own concerns and understandings.

It is obvious that no single course of action regarding schools broadcasts can be recommended at this time. It is not the desire of the MATE staff to recommend a rigid, prescriptive form of organization. Rather, it is their intent to establish general guidelines and to suggest what they believe to be workable, operational procedures. A number of organizational patterns and procedures must be considered. Each possibility demands different emphases as indicated in figure 6.

If Nigeria believes there is a need to:

- Face common national concerns
- Equalize educational opportunity
- Enlist the support of all its people
- Increase the efficiency of the school program

then she should consider the part that the Federal Ministry of Education can play in assisting the educational endeavors of the state and local community.

In 1968, the Federal Military Government transferred the SBU in Kaduna to the Federal Ministry of Education. A logical continuation would be the eventual federalization of all schools broadcasting units.

Prior to the completion of his tour of duty in Nigeria in August, 1968, the Chief of Party, Mr. Blair L. MacKenzie, submitted a "Draft of Proposal to Supreme Military Council on Federalization of Schools Broadcasting." A copy of the draft is included in the Appendix of this report. The document develops a suggested pattern for the federalization of schools broadcasting.

It has been recommended, therefore, that schools broadcasting in Nigeria be federalized with the Federal Ministry of Education administering all phases of broadcasting. Variations in sizes, population, amount of revenue of the states, along with other differences, prevent them from operating their own schools broadcasting services effectively. These conditions suggest that it is not practical or economical for states to operate their own units independent of each other. This would be a tremendous waste of effort, money, manpower, and other resources which at this time in Nigeria's development, need to be used wisely.

Even though schools broadcasting is federalized, why should it be placed under the control of the Federal Ministry of Education?

Every responsibility of educational broadcasting from the initial concept of a lessons series to the writing, production, presentation, utilization, and evaluation should be carried out by educational personnel. These are not functions to be performed entirely by broadcasters or by a commercial broadcasting organization, for their background and

authority do not permit them to make these decisions about education. The MATE staff feel it would benefit the entire nation to place schools broadcasting in the hands of the Federal Ministry of Education. This is a natural next step in the evolution and growth of the schools broadcasting program.

Consider the history of schools broadcasts in Nigeria.

Prior to 1964, radio and television broadcasts to schools were controlled by Schools Broadcasting Units in the Ministries of Education of Northern, Western, and Eastern Nigeria, and the Federal Ministry of Education. These four SBU's planned the broadcasts and prepared them for transmission. In addition, NBC broadcast radio tapes as a special service to schools. Some of the tapes were duplicates of BBC programs; others were prepared by the various Nigerian SBU's.

Theoretically, the four SBU's represented the school systems of all Nigeria even though some sections of the country could not receive usable radio signals. The television signal covered only a small area, but included the most heavily populated centers.

The formation of the Midwest Region in 1964 created a political entity without an SBU. However, all schools in this area continued to receive the broadcasts as they did when they were a part of Western Nigeria.

In 1968, the Federal Military Government replaced the regions with twelve states. Some of these states did not have a radio transmitter or an SBU. It should be pointed out that it is not necessary for each state to have radio and television stations in order to participate in the schools broadcasts program.

When Nigeria creates a Broadcast Division of the Federal Ministry of Education, it places overall responsibility in the hands of a group that can direct the broadcasting program into the mainstream of the curricula, while reducing the duplication of efforts and overall costs.

National unity can be fostered, and states can be assisted in accomplishing what each believes to be important.

The Federal Broadcast Division would determine basic philosophy and serve the schools of the nation. Its operation would contribute to the growth of common objectives, and agreement on basic aspects of the curriculum. It would make policies, reorganize schools broadcasting services, provide stronger financial support, and give supervision to the development and utilization of the broadcast lessons.

If the Broadcast Division of the Federal Ministry is to function as a national organization, it should have representation from every state. Figure 3 suggests a personnel organization for a National Council for Educational Broadcasting. This group would make the initial plans and determine the action that will be taken. They will recommend to the Federal Ministry of Education and to the state ministries of education their conclusions about the scope of the programs, the needs, and the requests for funds.

Since broadcasting will provide a common program to the schools, all states should participate in the decisions whether they have SBU's or whether any schools in the state use the broadcasting services. Each state, therefore, should select a staff member from its Ministry of Education to

act as a representative to the National Council for Educational Broadcasting. The major responsibilities of this representative are to participate in national decisions, to inform the state ministries of education of what is being done, and to arrange for any appropriate use of the broadcasting program that becomes available to the schools of his state.

One of the first problems that will confront the National Council for Educational Broadcasting is the determination of the elements of the broadcasting program.

Should efforts be made to continue the level of broadcasting now underway, or should the services be stopped until decisions are reached?

The Federal Ministry and the National Council for Educational Broadcasting will be faced with making decisions that require many simultaneous investigations.

Policies and long-range goals require extensive study before they can be established. What, then, is done in the interim so that existing schools broadcasts do not cease?

It seems better to continue the broadcasts on some basis than to discontinue them.

To maintain continuity, consideration should be given to placing the existing SBU's under the control of the Federal Ministry of Education. Trained personnel would then be organized into broadcast groups in Lagos or other centers and given the responsibility of maintaining the present broadcast effort. During this time, the broad aims and specific objectives that will guide the future of schools broadcasting will be developed. When educational authorities reach conclusions about the kind of educational system needed to attain the nation's goals, they can then determine the contributions that broadcasting can make in reaching these goals.

MATE does not suggest that Nigeria adopt a policy of "more of the same" during the transition period. The highest priority should be placed immediately on improving the quality of the broadcast lessons. Excellence, not expansion, should be the primary goal.

If adequate funds are not available to maintain the present scale of operations at a high level of quality, the Ministry should not hesitate to curtail the scope of schools broadcasts to insure quality lessons.

If effective and successful television programs cannot be simultaneously operated in the primary schools, secondary schools, and teacher training colleges, it would be the Ministry's responsibility to decide in which areas telecasting should be suspended and in which areas it should be continued.

Since the reception of the lessons is dependent on the quality of the broadcast signal, efforts should be made during the goal-planning phase to improve transmission. This will require setting and maintaining broadcast standards and changing studio operations. Steps taken to assure signal quality will improve all broadcast reception. Close cooperation between educators and broadcasters is essential.

The past and potential service of NBC should not be overlooked in the transition period. Cooperation and understanding between the Broadcast Division of the Federal Ministry of Education and NBC should be fostered. NBC tapes have contributed to the educational program of schools for many years. They have also contributed to adult education. The Schools

Broadcasting Section of NBC should be commended for the part it has played in pioneering radio broadcasts for the schools of Nigeria. It has rendered a worthwhile and an appreciated service. However, if schools broadcasting becomes a federal responsibility and if broadcast lessons are used for direct instruction based on the syllabi, problems of control may arise should separate services be continued. It would be highly beneficial, therefore, if NBC would post its Schools Broadcasting staff to the Federal Ministry of Education. This move would provide trained and experienced personnel for staffing the new Division of Schools Broadcasting. Complete understanding and accord should be reached regarding such a move.

If the former regional SBU's are placed under the control of the Federal Ministry of Education, the broadcast program would be jointly approved. Costs could be kept at the former level of regional costs, but the funds would be appropriated by the Federal Government. Budget adjustments would be necessary.

It might be desirable for the existing SBU's to continue to prepare and produce television lessons. The units would temporarily make use of existing transmission facilities. The continuation of broadcasts during the transition period would be beneficial in many ways. Nigeria should not lose the opportunity to move the educational program forward as the new nation is forged.

The leadership of the Federal Division of Schools Broadcasting must have a background of considerable depth and experience in education, and must have participated in the production of lessons for radio and television.

This leadership must:

- Plan for the future while working for today
- Strive for improvements
- Generate enthusiasm by example
- Demonstrate that it can perform as well as direct activities

From where will such leadership come? One has only to look at the successful SBU's to find the kind of leadership required. Each unit has some outstanding personnel. But some members have been transferred and should be encouraged to return to broadcasting. In the formation of the Federal Division, it is necessary to capitalize on this talent and skill.

#### Factors and Alternatives to Guide Decisions

Figures 1, 2, 3, 4, and 5 suggest possible organizational plans should the Federal Ministry of Education create a National Council for Educational Broadcasting. The NCEB would consist of:

- The Federal Senior Inspector of Radio and Television Production, stationed in Lagos
- The twelve Federal Inspectors of Schools Broadcasting who would be posted to the states
- The Federal Inspector of Schools Broadcasting Units, a touring officer who would be based in Lagos, and
- The Federal Inspector of Supporting Services, also stationed in Lagos

The National Council for Educational Broadcasting is viewed as an administrative and policy-making body meeting regularly three times yearly between school terms. It would be responsible for organizing, equipping, staffing, and funding the SBU's; decide upon the courses to be presented by radio and television; and through the Federal Inspector of Schools Broadcasting stationed in each state, direct the utilization and evaluation of the transmitted lessons.

Each Federal Inspector stationed in a state would work with a State Advisory Council consisting of:

- The Chief Inspector of Education of the state
- The Inspector of Primary Schools
- The Inspector of Teacher Training Colleges
- The Inspector of Secondary Schools
- The Inspector of Adult Education

The State Advisory Council would promote the utilization and evaluation of schools broadcasts by involving other officials within the State Inspectorate, local education officers, principals, headmasters, and teachers. The State Advisory Council would reflect to the National Council for Educational Broadcasting the educational needs and desires of the area it serves.

It will be noted that the suggested organization for schools broadcasting provides for script-writers, lesson presenters, and the printing of support materials. However, the staffing does not include technical studio and engineering personnel, for they would normally be available through the broadcasting corporations. Consequently, it is not now realistic to project definite staffing patterns for the four SBU's. Depending upon what arrangements can be negotiated with the broadcasting corporations, staffing patterns among the SBU's may differ. However, figure 5 illustrates a conventional organization for a local schools broadcasting unit.

Regardless of the plan used to organize the units, there are initial steps to be taken to assure progress. The development of objectives is very basic, as has been stated earlier. Objectives guide endeavors by indicating what must be done.

After objectives are established and a timetable is set, the educational planners should determine the subjects to be taught in order to achieve the goals.

For example, if the growing nation needs a large, more diversified food crop, various rural science courses should be developed. If technical workers are needed, technical courses should be prepared. The social studies develop pride in and knowledge about the nation. Language study is essential for world trade and international understanding. New courses, based on realistic goals, should replace outdated or unnecessary courses.

When decisions about new courses have been made, the educational planners can choose one of several alternative ways of using radio and/or television to implement the courses. Alternative 1, Figure 6, would require little or no expansion of the schools broadcasting effort. However, the SBU's would continue to assist in preparing and producing the new courses. Through radio and television, common experiences and learnings, based on the new courses, would be shared by all, regardless of state boundaries or backgrounds. But it might be decided that Alternative 1 will not make the desired impact on education.

Alternative 2 could then be chosen if available personnel and funds permit. The selection of Alternative 2 would expand the radio and television services and require commitments to the following:

- An extension of electricity to schools for expanded television viewing
- The acquisition of additional radio and television receivers to increase school audiences and lower per pupil costs
- The preparation of new broadcast courses selected for their appropriateness in satisfying the nation's long-range objectives
- Additional funding for broadcasting
- A training program for new SBU personnel
- Requests to USAID for short-term, advisory assistance in specialized areas

Alternative 2 would increase costs and activities of the broadcasting units, but would give impetus to the nation's efforts to reach the established educational goals.

If it is determined that the costs of television broadcasting cannot be absorbed in immediate budgets, Alternative 3 is suggested. This alternative would de-emphasize television and concentrate most energies to a greatly expanded schools radio service. An attraction of this alternative is that most of the nation can receive radio signals. In addition, the cost of a radio receiver is not high. With radio, the educational objectives could quickly become an integral part of the country's school program because more people could be reached immediately. As pupils are acquiring new ideas and understandings, many teachers would be learning how to implement the curricula. Adults would also profit from an expanded radio service.

Regardless of whether Alternative 1, 2, or 3 is initially selected, long-range plans should point to a future when new and revised syllabi will be transmitted to schools by an expanded radio and television service.

- The nucleus of personnel exists
- The experience and know-how they possess can be multiplied by training others
- There is a need to put programs that can achieve objectives into practice
- Radio and television broadcasts can accelerate the satisfaction of educational needs

But a greatly expanded radio and television service is in the future. The concern at this time should be on the organization of broadcasting units to perform services to schools now.

A decision must be reached as to whether the SBU's will operate as full production units or whether, as branch units of a highly developed Federal production center, they will have responsibility for a more limited program.

If one or more of the SBU's is to be organized as a comprehensive production center, the staffing pattern in Figure 5 could apply.

Obviously, specific personnel requirements would depend upon the number of courses to be developed for radio and/or television.

However, it is known that the Kaduna SBU which was organized on this pattern operated with a total staff of ten persons on an annual budget of approximately £ 20,000. This sum included salaries and the cost of materials which were distributed to the schools of Northern Nigeria that used radio and television broadcasts. It also paid the cost of materials used in the production

of radio and television lessons. It covered the purchase of new equipment and the maintenance of old equipment.

While £ 20,000 was considered an adequate budget for that scale of operation, an expanded service to include more schools in Nigeria would necessitate proportionate increases in both budget and personnel.

If the Federal Division of Schools Broadcasting should assume the major role in program development, a staff and budget such as has been described would be the minimum requirement.

Assuming that the Federal Division of Schools Broadcasting will be largely responsible for program development, local SBU's could have more limited responsibilities. It may be desirable, however, for the Federal Division of Schools Broadcasting to request an SBU to develop a specific program for national utilization. Also, the SBU might, with the approval of the FDSB, produce programs for local use. These and other possible variations would affect budget and personnel requirements.

An option in Figure 6 places primary emphasis upon radio in preference to television.

As indicated previously, cost factors would favor this option: radios cost much less than television receivers and the production of audio tapes for radio lessons is much simpler and less expensive than the production of live or videotaped television lessons.

A further argument in favor of emphasizing radio broadcasts is that radio signals now virtually blanket all of Nigeria while television signals exist only in a few areas.

Unfortunately, medium wave radio reception is often unsatisfactory twenty-five miles away from the transmitter. Sometimes poor signal quality interferes with reception closer to transmitters. Short wave reception, while more dependable beyond this range, was also often unsatisfactory. If the radio signals are strengthened and better receivers are purchased, every school in Nigeria could benefit from radio broadcasts at little additional expense. For example, 1965 statistics indicate that in one former region there were 2,743 primary schools. Of these, 2,300 are reported to have radios. Therefore, the procurement of only 443 radios would enable every school in the area to benefit from the radio lessons. The cost for this expansion, if £ 15 were arbitrarily considered the price per radio, amounts to £ 6,645. Undoubtedly, similar situations exist for the economical expansion of radio broadcasting in other parts of the country. Since transmission costs would remain the same, any increase in the number of schools using radio lessons would result in a proportionate decrease in per pupil costs.

While expansion of radio services is much less expensive than the expansion of television services, it does not follow that the latter should be neglected.

Television provides a double impact! It is a medium which combines the advantages of both sight and sound.

The planning for television is actually a process that must take into consideration many factors. It can be started at any point in the process, but here it is initiated at the consumer level by considering the schools--how many exist? how many are reached? how many might be reached? The following figures are approximations based on information obtained from statistical reports dating back to 1965. While they should not be considered completely authoritative, it is felt that they are accurate enough for this purpose and would certainly form a basis for future

detailed planning. In the absence of data compiled on the basis of new states, figures are grouped according to cities wherein there are schools broadcasting units. These figures represent the schools within the television coverage area, not within a complete geographical area.

<u>Unit</u>	<u>Type of School</u>	<u>No. of Schools</u>	<u>No. of Students</u>
Kaduna	Primary	410	84,000
	Secondary, General	24	5,600
	Teacher Training	13	4,000
Ibadan	Primary	1,300	225,000
	Secondary	160	24,000
	Technical and Vocational	4	350
	Teacher Training	10	1,500
Enugu	Primary	3,000	1,000,000
	Secondary, General	145	30,000
	Technical and Vocational	8	1,200
	Teacher Training	40	4,500
Lagos	Primary	125	130,000
	Secondary, General	51	13,600
	Technical and Vocational	3	2,500
	Teacher Training	5	1,100
		<u>5,298</u>	<u>1,527,350</u>

During the second term of 1968, the following numbers of schools were receiving telecasts from the units indicated:

Kaduna	56	primary, secondary, teacher training, and craft schools
Ibadan	32	secondary schools
Lagos	70	primary schools
Enugu		information unavailable

The last data from the former Eastern Region indicate that in the first term of 1967, educational broadcasts were being received by 23 teacher training institutions.

Only a small fraction of the schools within the television receiving areas were equipped to use the broadcasts.

For the sake of planning, assume that half of the schools in the coverage areas either have electricity or can be feasibly electrified within the foreseeable future. This indicates potential participation of 2,650 schools.

Assume that as an absolute minimum each school should have two television receivers. This shows a need for about 5,300 receivers. In order to provide for proper maintenance there should be provision for an extra 10 per cent, or another 530 receivers, making a total of 5,830 television receivers.

The approximate purchase price for each receiver, antenna, and installation is £ 100. This cost could possibly be reduced by purchasing in quantity.

However, if £100 is used, the cost would be £583,000. To this figure should be added five per cent for spare parts bringing the total to £612,150. The cost of receivers could be appreciably reduced through the removal of customs charges on equipment for in-school use.

There are several methods of exchanging and producing television lessons and materials that could be used throughout the nation. Three possibilities follow:

1. EXCHANGE BASIC MATERIALS FOR LESSON PRODUCTION. A branch unit would receive from the central production unit in Lagos, scripts with accompanying visuals, slides, films, teachers' notes, and other materials required to present a series of lessons. Certain local flavor could be added by changing names, terms, or by modifying visuals. While this method saves the time required for each unit to develop a series with its accompanying materials, it does necessitate the duplication of the actual presentation by each broadcasting unit.
2. DUPLICATE A VIDEO TAPE OF EACH LESSON. Taped series would be sent to each broadcasting unit for replay in accordance with the local schedule. This method requires compatible video taperecorders in each unit's location. If such a method of program distribution is used, it is recommended that two recorders be available to each unit. The use of two VTR's will permit simultaneous recording and playback, but will require a capital investment of £125,000 if new recorders of a different type are purchased. Mr. William Halstead, MATE consultant, has proposed a similar procedure in his report.
3. RELAY TELEVISION SIGNALS BETWEEN TRANSMITTERS. This plan calls for the modification of the telecommunications facility being installed by the Posts & Telecommunications Division of the Ministry of Communications. Such alterations would permit television signals to be relayed through the network. For example, a program originating in Lagos could be broadcast simultaneously in Kano, Kaduna, Ibadan, Enugu, and Aba.

The additions to the telecommunications network would cost between £500,000 and £900,000 to install, depending on whether the system has a single path or double path capability. Operating agreements and yearly recurrent costs need to be determined by the Federal Ministry of Communication, the Federal Ministry of Education, and the various broadcasters. (This plan is favored by Mr. Halstead.)

An alternative that should not be overlooked is the producing of broadcast lessons on film. Using this method, it would not be necessary to have video taperecorders in each broadcasting station. This would also reduce the possible problem of incompatibility of tapes from one machine to another. MATE cannot present comparative costs of filming and taping at this time. It does, however, recommend that this possibility be studied.

There is one other alternative to having branch television production units. If one large production center were established in Lagos, all instructional television lessons could be produced there for distribution or broadcast throughout the country. In this way the schools broadcasting units in Ibadan, Kaduna, and Enugu would require only minimal staffs and equipment.

It is the belief of the MATE personnel, supported by Mr. Halstead's report, that at this time there is no application for closed-circuit television, ultra high frequency (UHF), super high

frequency (SHF or 2500 mH), or satellite broadcasting in the overall educational broadcasting system in Nigeria. Closed-circuit television may have application in certain specialized places such as a university campus, but these uses should receive careful study and consideration. The Federal Ministry of Education should remain alert to new developments that would make the use of such transmission techniques practical and desirable.

These costs represent only a fraction of the total potential expenditure for expanding television to cover the whole nation.

Therefore, the Federal Ministry of Education may consider it inadvisable to continue the present pattern of televising lessons to primary schools, secondary schools, and teacher training colleges. There are approximately 15,000 primary schools, 1,400 secondary schools, and 200 teacher training colleges in the country. Most of the primary schools are not electrified; many of the secondary schools and teacher training colleges are not within range of a television transmitter, although most have electrical service.

If there is a decision to restrict the scope of television, it is essential to determine where the emphasis will be. The concentration of television in the teacher training colleges would have some special benefits. Teachers in training would acquire the most up-to-date knowledge of teaching methods. Special courses to meet special needs could be televised, and the lessons would supplement the teaching by the regular staff. An added benefit to the schools broadcasting program would be that prospective teachers would learn by television how to make the most effective use of modern aids to education. All such possible benefits should be weighed against the costs of extending the television signal.

If it is decided that broadcast lessons should concentrate on the primary and secondary schools, several benefits would result. Through broadcasting, new courses could be introduced into the mainstream of education immediately. As the new courses are being received by pupils, teachers would simultaneously be introduced to methods which would enable them to effectively carry out their classroom responsibilities. By emphasizing broadcasts in primary and secondary schools, it would be possible to produce in a decade a nucleus of newly-trained pupils.

## Part VI

### RECOMMENDATIONS

#### RECOMMENDATIONS OF THE MODERN AIDS TO EDUCATION STAFF

The MATE staff feel they have identified themselves closely with the activities involved in schools broadcasting. This part of the educational program seems to them as much their responsibility as the responsibility of their Nigerian colleagues. They feel personally involved in the outcomes, and, as associates, they feel they must contribute ideas and reactions growing out of their experiences. It is in this spirit that they make suggestions. Nigerian educators must evaluate these reactions and make the vital decisions.

The recommendations that follow echo the ideas that have been advanced in the preceding pages of this report.

#### 1. INCREASE CURRICULUM BUILDING EFFORTS

Under the leadership of Nigerian educators, efforts to develop a modern curriculum to meet the unique needs of the nation should be increased. The new curriculum would contribute to national unity and would establish practical educational goals related to the national plans for the future of Nigeria.

#### 2. ANALYZE THE STATUS OF SCHOOLS BROADCASTS

Nigerian educators should carefully analyze the scope and effectiveness of present radio and television lessons, and the current expenditures for production, transmission, and utilization of schools broadcasts. A decision should be reached regarding the significant contributions which radio and television can make to the needs of the nation.

A study should be made of the availability of personnel who have received training in various aspects of schools broadcasting.

#### 3. SUPPORT THE BROADCAST EFFORT

It is imperative that Nigeria's most influential leaders fully and continuously support the administrative and financial commitment needed to make the schools broadcasting program a success.

#### 4. PROVIDE CENTRAL LEADERSHIP

The Federal Ministry of Education should have the responsibility for the organization and administration of schools broadcasting.

The execution of these responsibilities could be vested in a Broadcast Division of the Federal Ministry of Education. The creation of an advisory council composed of ministry officials, inspectors from each state, and representatives of each functioning SBU should be considered.

## 5. USE BROADCASTS FOR DIRECT INSTRUCTION

The Federal Schools Broadcast Division should advocate the use of schools broadcasting for direct instruction in selected subject areas in preference to broadcasting for mere "enrichment."

Broadcasts should be an integral part of the school day, should implement the approved syllabi, and should be of sufficient frequency to exert real impact.

A minimum of three different lessons per week should be broadcast in each selected subject. Re-broadcasts should be determined by special needs.

## 6. PLAN A PHASED PROGRAM FOR EXPANSION

Long and short-range plans for a progressive development of schools broadcasting activities are essential. These plans should be developed under Nigerian leadership and should involve the use of outside consultants as needed. The plans should take into account the financial, physical, and human resources that can be committed to the project. A sequence of realistic priorities should be established.

The production of top-quality lessons should be a primary concern. Any phased expansion should not be at the expense of quality. However, increased school participation will result in diminishing per pupil cost, per broadcast lesson. Since transmission costs are the same for any number of receivers, it is sound economic policy to equip more and more schools to receive schools broadcasts.

## 7. COOPERATE WITH BROADCASTING CORPORATIONS

Government and the broadcasting corporations should reach agreement on the use of facilities, staff, and transmission time. Such agreements should provide for a minimum of three hours on-the-air time and an equal amount of studio rehearsal time per day for both television and radio broadcasting.

## 8. COMMIT AGREEMENTS TO WRITING

In the past, some misunderstandings developed between Ministries of Information, Broadcasting Corporations, and the SBU's. It is, therefore, strongly urged that future agreements be committed to writing.

## 9. DEVELOP JOB DESCRIPTIONS AND PERSONNEL POLICIES FOR STAFF

The Federal Division of SB should establish job specifications for the various positions within the SBU's.

It should carefully select the best qualified personnel for these positions--particularly the writers and presenters of lessons.

Promotional policies and progressive salary scales should be established.

## 10. INVOLVE INSPECTORS, HEADMASTERS, AND PRINCIPALS IN THE UTILIZATION OF BROADCASTS

The Federal Division of Schools Broadcasting should be responsible for the effective utilization of schools broadcasts within the various states.

Educators with responsibility for supervising schools broadcasts at the state and local level must become involved in teaching the utilization techniques needed to make educational broadcasting a success.

Inspectors, whose duties involve visitation to schools; headmasters, who supervise the teaching activities within their schools; and teachers must receive and actively apply effective utilization instruction.

State seminars and workshops could be developed to train these people. Where possible, personnel from teacher training colleges, universities, and broadcast liaison should be used.

## 11. ORIENT AND TRAIN CLASSROOM TEACHERS IN UTILIZATION OF BROADCASTS

Headmasters and principals should provide adequate orientation and training for classroom teachers so that the most effective use can be made of the broadcast lessons.

Principals of teacher training colleges should be encouraged to incorporate into their curriculum a course in the use of modern aids to education which would better prepare prospective teachers to utilize schools broadcasts.

## 12. ESTABLISH A REGULAR SCHEDULE FOR CLASSROOM UTILIZATION OF BROADCASTS

In order for educational broadcasting to have an impact on the student in the classroom, the broadcast programs must be used each time they are scheduled.

Headmasters and principals must organize their schools so that nothing will conflict with the broadcasts.

The lesson scripts and the necessary supplementary materials should be developed well in advance of the time they will be used. Timetables and support materials must be in the hands of headmasters and principals prior to the opening of each school term.

Inspectors or supervisors of schools must see that participating schools maintain regular viewing and listening schedules.

Teachers must commit themselves to the broadcasting schedules and be prompt in tuning their receivers according to the prescribed timetables.

Viewing and listening areas in schools should be carefully selected to prevent distractions and interruptions.

### 13. MAINTAIN EQUIPMENT

The Federal Ministry of Education should assume responsibility for establishing an adequate maintenance program in each state and in each existing SBU. This would require:

- A skilled technician and such assistants as needed
- Transportation for the technician
- Tools and test equipment
- A workshop
- An adequate supply of spare parts

### 14. EVALUATE BROADCASTS

The Federal Division of Schools Broadcasting should establish an adequate program of evaluation for the various aspects of schools broadcasting activities.

Each teacher using the broadcasts should, at selected intervals, send evaluative reports to the state official in charge of schools broadcasting. These reports should evaluate:

- Quality of transmitted signals
- Appropriateness of lesson content
- Teaching procedures
- Student reactions
- Adequacy of teachers' notes

Formal testing programs should be conducted periodically to measure student learning during telecasts.

The evaluative reports and the results of formal tests would indicate changes that should be made in future lessons.

### 15. ESTABLISH GUIDELINES FOR THE PURCHASE OF EQUIPMENT

The item should be produced by an established, reputable manufacturer.

The item should be field-tested under conditions similar to those found in Nigeria.

The availability of spare parts and service facilities are important considerations.

Favorable consideration should be given to types of equipment and particular models that have been satisfactory in Nigeria.

Transistorized equipment should be selected in preference to vacuum tube products because of greater durability, portability, and low battery drain.

A balance between quality and cost must be established.

### 16. ENCOURAGE COUNTERPART TRAINING PROGRAMS

In situations where personnel with special skills are not available in Nigeria, the Federal Ministry of Education should secure competent specialists from abroad to provide counterpart training.

When feasible, this counterpart training should be on a multiple basis rather than on a one-to-one ratio.

Training in Nigeria should be considered before training abroad.

#### 17. STRENGTHEN AND STABILIZE BROADCAST SIGNALS

Successful reception of schools broadcasts is dependent upon the availability of strong, dependable, stable radio and television signals.

The quality of present transmissions should be upgraded.

Serious consideration should be given to the establishment of a national radio-television network.

#### 18. COORDINATE ACTIVITIES WITH TTC'S AND UNIVERSITIES

Teacher training colleges and universities have specialists, departments, and equipment which are potential sources of great assistance to schools broadcasting in Nigeria.

The Federal Division of Schools Broadcasting should seek close cooperation with TTC's and universities, for they can provide assistance in identifying educational needs, developing curricula, conducting research and evaluation, preparing scripts, presenting lessons and establishing utilization workshops for teachers.

The institutions of higher learning would be directly helping the broadcast effort while providing valuable and practical educational experiences for their own professional staff and the students.

#### 19. SEEK SPECIALIZED ASSISTANCE WHEN NEEDED

As Nigeria continues developing schools broadcasting, she could undoubtedly profit from the help of specialists who would be able to assist with specific aspects of the program.

The MATE staff, therefore, suggest that the Federal Ministry of Education be alert to the possibility of securing special short-term assistance from the United States, and that the Ministry take the initiative in approaching USAID for this assistance.

The MATE staff members, appreciating fully the cooperation and good fellowship they experienced with their Nigerian colleagues, unhesitatingly recommend that the United States Government and USAID give favorable consideration to applications for such special assistance as may be requested, from time to time, by the Federal Government of Nigeria.

The Washington County School System thanks USAID for providing the opportunity for members of its staff to assist Nigeria with her schools broadcasting program, and thanks Nigeria for the hospitality that was extended to these specialists. Every member of the Modern Aids to Education Project joins in sincere good wishes for the future of Nigeria and the success of her schools broadcasting endeavors.

CONCLUSIONS AND RECOMMENDATIONS OF  
CONSULTANTS WHO CONDUCTED SPECIAL INVESTIGATIONS  
FOR THE MATE PROJECT

Section 1

Survey of Nigerian Broadcasting Services  
John R. Brugger

1. A visit was made to various radio and transmitting installations as well as receiver locations. Radio broadcast facilities are quite complete. Observations confirmed the expressed need for more test equipment and replacement parts. Breakdowns are usually prolonged because of the difficulty in obtaining suitable replacements or appropriate repair through substitute parts. It is recommended that a review be made of presently available test equipment for the maintenance of the broadcast and receiving equipment and that steps be initiated to acquire the essential additional apparatus. Further, an analysis should be made of the more common failures of components. Needed replacement parts should be an "on-the-shelf" availability. A determination should be made as to causes of such failures which can be alleviated (e.g., inadequate ventilation, excessive heat problems, component under design problems, air flow, and air filter insufficiencies, modifications recommended by the manufacturer to meet environmental conditions, etc.).

Television stations are well equipped and well operated, particularly BCNN, Kaduna, the Lagos, Enugu, and Aba installations. The Ibadan installation, though well equipped, did not appear to be as well maintained as the other operations. It was reported that in most cases, it is difficult to attract and retain a sufficient number of capable personnel to keep various equipment in use at optimum performance.

2. The need for technical people will continue in Nigeria, as it has in all countries of the world. Particularly, people who possess skills in communication technology are needed to maintain facilities now used for classroom instructional broadcast activities related technologies. It is recommended that the Board of Education of Washington County, Hagerstown, Maryland, be given the opportunity to:
  - a. Provide specialized technical training to a core of Nigerians in order to supply an immediate source of skilled people
  - b. At a later date, institute a continuing program of technical training in Nigeria

The first phases of such an activity may be approached by bringing prospective trainees to Hagerstown, Maryland, for a short-term accelerated program. Later, facilities should be established in several central locations in Nigeria. The Board of Education, Hagerstown, Maryland, has facilities and curriculum to implement the program.

3. Embodied in this report are maps reflecting relative coverage areas of respective radio broadcast services of Northern Nigeria. Television stations are located in Kaduna, Zaria, and Kano and reach a potential audience of approximately 300,000; primarily the urban and suburban communities are served. Coverage data has been prepared and is available from BCNN, Kaduna.

4. Present studies by administrative technical representatives of BCNN and NBC of Nigeria include a review of available frequencies to improve radio coverage. While such deliberations include in some cases international agreements, work should continue to acquire more suitable broadcast frequencies and increases in station power. Further and, in fact, continuous studies in changes of frequency allocations and related pertinencies should be assigned to an appropriate task force with the responsibility of analyzing immediate and long-term values of all broadcast communication services for Nigeria and Africa. Such planning should include the counsel of professional people to represent educational, governmental, public, industrial, commercial, and domestic interests. Plans developed must include educational goals and objectives to be served through electronic media in terms of national, regional, and inter-regional utilization. One of the chief purposes of such investigations and studies should be to determine interconnect facility requirements - both present and future - for radio, television, and related communication services (for various governmental, military, industrial, commercial, domestic, and public services). Obviously, such a task force should function continuously and should maintain a plan for years ahead.
5. Airways are a national resource. Their use must be Federally controlled to assure that the potential utilization may be reached in the interest, necessity, and convenience of the citizens of the country.

Related to this fundamental principle is the need for technical standards to promulgate engineering practices commensurate with this ideal. To achieve this goal, a compendium of technical rules and regulations pertaining to broadcasting must be maintained. Areas in which a high degree of accuracy and control must be exercised include output power of transmitters, power measuring instruments (including ampere and volt meters), station frequency measuring instruments, percentage modulation indicators, transmitter performance specifications, studio production apparatus standards, availability of replacement parts recommended, necessary standardized test equipment and procedures (to be performed at regular and frequent intervals by competent technicians) to provide assurance that operating transmitting equipment meets appropriate minimum standards for broadcasting.

Technical personnel responsible for broadcast facilities must have attained a level of proficiency to be capable of assuming related responsibility, must record and report pertinent operating information through stations log records which reflect hours of operation, schedule of programs aired, operational irregularities, recommended or performed remedies for such irregularities, the nature and extent of corrective and preventive maintenance on operating transmitting equipment, and sundry reporting as is determined useful in achieving the ultimate goal of broadcasting - that being, continuous and reliable program service.

Administratively, the demands to accomplish all these things are enormous, yet with the extensive radio facilities now available in Nigeria, the challenge is real and the rewards would be great.

6. It is hoped that the information reported herein, resulting from the survey undertaken, will assist in carrying forward the purposes of the Modern Aids to Education Project.

## Section 2

### A Cost-Benefit Analysis of the Use of Modern Aids to Education in the Six Northern States of Nigeria Jefferson N. Eastmond

From the evidence gathered and analyzed during this study, the following conclusions can be drawn:

- The Schools Broadcasting Unit of the Ministry of Education has gradually acquired equipment, staff, and school support and in 1967 was transmitting 6 short telecasts and 8 short radio programs each week, although there was a sparsity of evidence on evaluation of programs and extensive utilization of programs by schools within the signal areas.
- Any further microcosmic cost-benefit studies of the Schools Broadcasting Unit will substantiate the very high unit costs found in a 1965 analysis, and will, therefore, fail to justify the continued use of educational radio and television in the six northern states as broadcasts are presently operated and under existing technical designs.
- A macrocosmic cost-benefit analysis has revealed that:
  - (1) As an experiment in education by the Northern Government of Nigeria, the Schools Broadcasting Unit has been a success. It has shown that in the Northern area the new media are technically feasible, professionally promising, and fraught with difficult problems of logistics and support.
  - (2) As a service by the Northern Government and other aid donors, the Schools Broadcasting Unit's impact on lifting the educational level of the masses of people in the area has been negligible.
  - (3) As a pilot study in an international setting, the Schools Broadcast Unit in the Northern states has been very successful.
- Recognizing the scheduled governmental and institutional changes that are to take place in the very near future, the recommendations emerging from this study are:
  - Prompt action should be taken to (1) conserve transmitting and receiving equipment, and (2) retain members of the Schools Broadcasting Unit as a functioning team.
  - The Schools Broadcasting Unit should (1) be shifted so as to be under the auspices of the Federal Ministry of Education, or (2) be transferred into the Institute of Education of Ahmadu Bello University. Both moves should assure the unit's continued operation.
  - The Schools Broadcasting Unit may now be seen as having passed through the experimental and developmental stages. After careful planning and feasibility studies are completed, its transmitting should be redesigned so as to produce top quality programs with high utilization for a very low unit cost.

### Section 3

#### Broadcasting Media in the Teaching of Primary 5 English in Nigeria

S. M. Zdep

S. H. Irvine

#### Conclusions

1. Conclusions presented in this report are based on such analyses as were possible, given the original design. Generalization of these results to other primary schools in Nigeria is therefore inadvisable.
2. The initial design was of such an extended nature that it made analysis of all the data, so conscientiously collected by the field officers, an extremely difficult task.
3. The English achievement posttests used in this evaluation were based on the most frequently encountered material in the text Straight for English as approved by the Northern Ministry of Education, and they proved to be more difficult than the level of achievement of the pupils warranted, regardless of the treatment involved. In this respect the evaluation was severely handicapped because measured gains in all treatments were small.
4. The poor performance on the posttests also suggested that attempts of teaching the mechanics of language as required by the text were unsuccessful in all treatments, and the only area where substantial gains were registered was on English usage. However, those gains which were registered could not be attributed to the influence of the broadcasts. Rather, it appeared that these gains were discovered in classes having better teachers, regardless of whether that class had supplementary broadcasts or not.
5. Reading 12A proved to be a test more suited to the students' abilities and assessed a wide range of English comprehension abilities. It was discovered that the TV classes, on the average, outperformed both Radio and Contrast classes on this test. The superior performance of the TV classes might be associated with gains in visual comprehension skills as a result of viewing TV classes inasmuch as the format of Reading 12A is highly pictorial.
6. No appreciable Hawthorne effect was observed on the base-line scores of all the Contrast groups considered together.
7. A special kind of Hawthorne effect was noted in the one school which had a class in each treatment. In this school the least desirable treatment from the teachers' point of view, proved to be the Contrast Class. The teacher assigned to teach this class voiced dissatisfaction and expressed her determination to have her class outperform the other classes which had the benefits of TV or Radio instruction. The teacher's "overcompensation effect" was indeed successful, as the superior mean scores of the Contrast class indicated.
8. This "overcompensation effect," although highly undesirable in an evaluation which required a valid base-line, is just one example of the role broadcasting could have in stimulating the teacher. Other evidences of increased teacher interest appeared on information sheets filled out by participating teachers in which it was apparent that they had learned a great deal about different methods of teaching English and were employing these methods.

9. The results of Reading 12A and the teacher information sheets suggest that there may have been other non-measured benefits associated with the broadcasts (examples might be increased listening comprehension, greater pronunciation skills and upgrading of teacher skills).
10. Teachers' attitudes toward the use of broadcast media were generally favorable. Their replies to the questions in the inventory indicated that they had benefited from the wide variety of teaching methods employed. Their major criticism was that they felt more time should be devoted to the broadcast lessons and a greater variety of lessons should be presented.
11. Students' attitudes reflected acquiescence to desirable statements in the inventory, an expression of traditional African courtesy, and other indirect methods of attitude assessment will have to be developed for future investigations of this kind.

### Recommendations

1. In future projects involving the use of modern aids to education in developing countries it is imperative that an evaluation be built into the project from its very inception. The evaluation team should be in the field as early as possible and should remain with the project for its duration. The team members should act in the role of participant-observers wherever this is feasible, and they should preferably have or should gain before the project starts detailed knowledge of local conditions.
2. Under conditions of rapid social and educational change, a number of short-term, well-designed studies spanning a single term, covering several subjects, and using a minimum of comparable classes are preferable to a single long-term effort where the possibilities of confounding are increased as time goes on. There are two main advantages of short-term studies. These are feedback which may be used for modification and less loss of data due to extraneous social factors.
3. In light of experience with the use of difficult tests in this study, it is strongly recommended that all measures used should be subjected to rigorous field trials and be adapted to local conditions before they are employed in the actual evaluation.
4. In view of the difficulty experienced by students in dealing with the mechanics of English grammar, it is recommended that consideration be given to the appropriateness of the content of the syllabus at the Primary 5 level. The results indicate that students would respond more effectively to the teaching of English usage and comprehension.
5. Modern aids to education are being increasingly used in developing countries at all levels of education. Perhaps it is now appropriate to pool the experiences gained from all evaluations so that future planning may derive maximum benefit from past successes and failures.

### Recommendations (Postscript)

Although the achievement data gathered in this evaluation provide little support for or against the continuation of educational broadcasting in Nigeria, the adequacy of this report demands that, as evaluators, we must also report what we feel to be the overall effect generated by the introduction of supportive broadcasts. This affect, observed during our on-site inspection of

classrooms, was overwhelmingly positive causing us to recommend, although admittedly these are subjective recommendations, that:

1. Broadcasting should be continued at the primary level. In the teaching of English it would be advisable to stress reading, writing, listening, and speaking skills rather than formal grammatical rules which are poorly understood and inefficiently learned in the primary years.
2. While new emphases in broadcasting are being actively sought, it is recommended that efforts be made to record ongoing programs, to collate them with previously recorded programs, and to evaluate all of them so that they can be revised if necessary and used effectively in the future.
3. Priorities in primary, secondary, teacher, and technical education will necessarily determine the future role of broadcasting. It is therefore recommended that these priorities be established to accomplish both short and long-term goals. In particular, the criteria for establishing these priorities should relate closely to manpower requirements that are not being adequately met, and these are reflected by poor performance on national examinations.

#### Section 4

A Report on Engineering and Technical Aspects  
of Educational Broadcast Services in Nigeria  
William S. Halstead

Specific recommendations of the consultant are listed as follows:

1. Use of the national telecommunications network as a means of interconnecting television and radio broadcasting stations in different sections of the country. The purpose would be to provide the necessary backbone for a national television and radio service of high-grade type at minimum cost. Recommended stages and directions of extension of service are as set forth in Part IV of the Report.
2. Establishment of a national educational broadcasting center at Lagos. To provide a facility, with all required equipment, operating and programming personnel, for origination of educational television and radio programs. The center would also serve as the means for coordinating the programming work of School Broadcasting Units at other locations and avoid problems now presented by shared use of studio facilities and staff of the Nigeria Broadcasting Corporation.
3. Establishment of educational programming facilities as an integral part of School Broadcasting Units in state or regional areas. To minimize the problems involved in shared use of studios, equipment and personnel of the broadcasting organizations. By microwave interconnections with the national center at Lagos, better coordination of all programming activities should be attained and duplication of effort minimized.

4. Coordination of all educational broadcasting functions on a national basis, under the Federal Ministry of Education. To increase the overall effectiveness of educational television and radio services.
5. Use of videotape recorders of transverse-scanning type, made in accordance with international broadcasting standards, for recording of educational television programs. To minimize technical difficulties that have been noted in use of portable videotape recorders of helical-scan type, to upgrade picture quality and attain a maximum degree of compatibility of tapes as recorded at different locations.
6. Interconnection of the CCTV studio facilities at the Advanced Teachers Training College and the television station of BCNN at Kano. To enable programs of the College to be observed at other colleges and schools within the service area of the station at Kano.
7. Augmentation of facilities for maintenance and repair of receivers used in classrooms, including closer liaison with schools. To minimize out-of-service time when receivers become defective, improve receiver performance and overall effectiveness of educational television and radio programs in classrooms.
8. Consideration of use of the FM mode of transmission for educational radio services. To improve quality of broadcasts as received in classrooms for more effective use of radio as an educational aid as well as in the public broadcast service.
9. Consideration of use of FM multiplex methods as a future means of providing additional channels for educational radio programs. To increase scope and flexibility of programs directed to schools by enabling one FM broadcast transmitter at a given location to provide the equivalent function of several transmitters.
10. Adaptation of proposed microwave relay facilities between the satellite earth station and the national telecommunication network to accommodate television signals. To enable television programs of international importance from other continental areas to be seen in Nigeria or those originating in Nigeria to be relayed overseas.







DRAFT OF PROPOSAL TO SUPREME MILITARY COUNCIL ON  
FEDERALIZATION OF SCHOOLS BROADCASTING

Educational broadcasting, including both radio and television, is one of the modern aids to education which this country has adopted to help solve some of her educational problems. The advantages of broadcasting to our education are many and varied, particularly at this stage. Broadcasting can:-

- (1) help to solve the problem of teacher shortage in new subjects, such as primary schools science or "new" mathematics, as one specialist teacher can reach large numbers of students at one time.
- (2) make available to schools up to date information in subjects such as African History in which field research projects are going on currently in our universities.
- (3) help to raise the standards of teaching by bringing to the classroom the latest advances in curriculum development and teaching methods which serve as in-service training for the classroom teacher.
- (4) enrich and supplement classroom teaching by making available resource material such as films, dramatizations, and scientific demonstrations that would not be available to the classroom teacher in any other way.
- (5) correct the inequalities caused by geography by making the same expert teaching available both to town and village.

The application of broadcasting to education and to the instructional process is a valid use of the medium, and its value has been demonstrated many times over in all areas of the world. The present phase of educational broadcasting in Nigeria has been carried on since 1951, but it has been carried on in a regional, fragmentary and uncoordinated way.

One Schools Broadcasting Unit, based in Kaduna, has been producing radio lessons for dissemination over the facilities of the Broadcasting Corporation of Northern Nigeria (BCNN) and television lessons that cover the Kaduna-Zaria-Kano area from the television transmitter of the same corporation. The Schools Broadcasting Unit in Ibadan has been producing television lessons in the studios of the Western Nigeria Broadcasting Corporation. A third unit, in the Federal Ministry of Education, served the Lagos area with television lessons through the television service of the Nigerian Broadcasting Corporation (NBC). Until June, 1967, a fourth unit broadcast televised instruction to the Enugu and Aba area from the transmitters of the former ENBC. In addition, NBC radio broadcasts educational radio programmes from its transmitters located in various parts of the country. These taped lessons are obtained from the various schools broadcasting units, from outside sources (such as the BBC), or are produced by NBC itself.

If the present trend is allowed to continue as it is, the logical conclusion would see separate schools broadcasting units in each of the twelve states. Units would be scrambling on their own to produce the needed volume of broadcast lessons, efforts would be dissipated, talents wasted, investments duplicated. The alternative is a system which would yield

coordination, economy of money and effort, and a better use of limited resources.

The system that is now being proposed for Nigeria is that of a strong cooperative system combining radio and television under the overall operation and administration of a National Schools Broadcasting Unit as it is felt that this approach is essential in order to ensure a uniform development, a high quality of production, the coordination of efforts, the economical use of available funds, and the promotion of national unity. Such an operation, however, must and should be responsive to the needs of the areas which it serves. It must be able to recognize local needs and differences and provide for them.

For these reasons and to achieve these goals it is requested that educational broadcasting be designated as a federal function and that the responsibility for such broadcasting be assigned to the Federal Ministry of Education.

The Supreme Military Council's Decree Number 12, Schedule 6, of 1968 transferred the Schools Broadcasting Unit in Kaduna to the Federal Ministry of Education. The requested designation of educational broadcasting as a federal function would be a logical continuation of this policy and would strengthen the provision of educational broadcasting to all states of the federation. It would make possible the extension of such services to those states which may not now have the funds necessary to create their own individual broadcasting units or which do not have access to broadcasting facilities.

Provisions have been made for the resuscitation of the National Advisory Council on Educational Broadcasting. The NACEB would be composed of members from each state Ministry of Education. The purpose of the NACEB would be to provide the general guidance for the National Schools Broadcasting Unit, to ensure coordination of effort, and to guarantee state participation in policy determination.

Within the NACEB, zonal committees would be established to consider the various problems and requirements peculiar to the areas of the country for which they are concerned. This further guarantees that the efforts of the National Schools Broadcasting Unit will, before anything else, be responsive to local needs. Also, there will be established subject matter committees to furnish expert advice, guidance, and assistance in the development of courses of instruction in the various academic disciplines. An attached diagram shows the proposed structure and relationships of these agencies.

#### Phase I

The first phase of the development of physical facilities would be the establishment of a radio recording studio within the National Schools Broadcasting Unit. Here radio lessons would be recorded and the tapes sent to various transmitter sites for broadcast throughout the Federation. The result would be a truly unified, national service.

The establishment of the recording studio may be accomplished quite easily and inexpensively and could be utilized for the benefit of the whole Federation as early as January, 1969. There is sufficient equipment on hand in various places to permit the initial installation and operation. The construction of a studio building or the modification of an existing space can be done quite economically. As the operation develops other items of equipment may be added to further expand and enhance the capabilities of the unit.

Discussions would be held between officials of the National Schools Broadcasting Unit, the various broadcasting corporations, and Posts and Telecommunications in an effort to further improve the technical quality of the radio signal to expand the coverage areas of the transmitters.

### Phase II

The second phase would be the establishment of television studio facilities for use by the various zonal production units. It becomes increasingly obvious that such facilities are required if the educational broadcasting units are to produce the necessary volume of lessons needed to properly serve the instructional requirements of the schools of Nigeria. The various commercial broadcasting corporations have to cope with their own programming and production and could not be expected to handle an expanded schedule of instructional broadcasts.

It is not intended that separate television transmitters be constructed at this time but only studios. All lessons produced in these proposed studios would be broadcast by the existing television transmitters. As a matter of interest, one of the existing Schools Broadcasting Units now has on hand all necessary equipment to establish such a studio facility, all that is needed is the building and the necessary technicians.

The telecommunications network in Nigeria, part of which has been completed, could be made capable of carrying television programmes to all broadcast stations within the country. This would offer the possibility of direct broadcast of lessons from any of the production units to all transmitters and to the areas which they serve. This factor should be given consideration at the earliest possible moment while the development of the system is still in a planning stage.

The designation of educational broadcasting as a federal function and the establishment of a National Schools Broadcasting Unit can provide the schools of Nigeria with a uniform, high quality, economical service, can prevent duplication, and can better attract external financial assistance.

Council is therefore invited:

- (1) to designate educational broadcasting as a federal function
- (2) to designate the Federal Ministry of Education as the agency responsible for this function.

