

AGENCY FOR INTERNATIONAL DEVELOPMENT WASHINGTON, D. C. 20523 <b>BIBLIOGRAPHIC INPUT SHEET</b>		FOR AID USE ONLY <i>Batch 72</i>	
1. SUBJECT CLASSIFICATION	A. PRIMARY Education		JF50-0000-G208
	B. SECONDARY Technical and vocational education--Mali		
2. TITLE AND SUBTITLE Technical vocational school, Bamako, Mali, final report			
3. AUTHOR(S) (101) Organization for Rehabilitation through Training, Geneva, Switzerland			
4. DOCUMENT DATE 1969	5. NUMBER OF PAGES 22p.	6. ARC NUMBER ARC	ML374.013.068
7. REFERENCE ORGANIZATION NAME AND ADDRESS ORT			
8. SUPPLEMENTARY NOTES (Sponsoring Organization, Publishers, Availability)			
9. ABSTRACT			
10. CONTROL NUMBER PN-RAB-631		11. PRICE OF DOCUMENT	
12. DESCRIPTORS Bamako, Mali? Mali Personnel development Technical education		13. PROJECT NUMBER	
		14. CONTRACT NUMBER AID/afr-35 GTS	
		15. TYPE OF DOCUMENT	

ML  
374.013  
068

AFR/ED  
Official File Copy  
PN-RAB-631



**FINAL REPORT**  
**TECHNICAL VOCATIONAL SCHOOL**  
**BAMAKO, MALI**

A.I.D.  
Reference Center  
Room 1656 NS

*ORGANIZATION FOR REHABILITATION THROUGH TRAINING*

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## FINAL REPORT

### TECHNICAL VOCATIONAL SCHOOL, BAMAKO, MALI

*This is the final report on the project for establishing and operating the Technical Vocational School in Bamako, Mali, as provided for in the Contract concluded between the United States Agency for International Development and the American ORT Federation. The period covered is July 1962 to July 1969.*

#### I. INTRODUCTION

The survey carried out by ORT in September 1961 showed that Mali, like the majority of African countries at that time, was faced with:

- A. Inadequate technical schools, both in quality and quantity.  
In some cases machinery of excellent quality has been purchased and installed. However, in most cases the equipment was inoperative because of lack of tools and materials and inadequate inspection and maintenance.
- B. An almost complete absence of middle-level technicians. The technical and high school systems have shown themselves incapable of training qualified middle-level technicians.

As a result of this survey, the AID requested ORT to take on the task of carrying out a project, the purposes of which were:

1. To assist the Malian Government in the organization and development of a Science Laboratory and Technical Center (SLTC) which would train mechanics, technicians, sub-professional technicians, trade school instructors, secretaries and administrative assistants.
2. To provide assistance in the development of science teaching in other schools.
3. To develop retraining and improvement courses for personnel and public institutions and government departments (such as the Bank of Mali, public works, post office and telecommunications, education, etc.)

**Under the terms of the AID contract, ORT was to:**

- 1. Advise the Ministry of Education officials and the Director and staff of the Lycée Technique on the administration and organization of technical education, operational planning, curriculum development and training methods in general.**
- 2. Be responsible for the procurement of commodities required for the program and provide a staff of technicians to assist in the advisory services required and to teach special courses during the period in which the Malian counterparts were being trained to assume full responsibility of the program.**
- 3. Consult and advise the Malian Government on the operation of the SLTC and provide the following services:**
  - i. Train middle-level technicians in specialties, such as electromechanics, architectural drawing, refrigeration, diesel and auto mechanics, metal work and secretarial work.**
  - ii. Upgrade the general level of science training at the Lycée Technique and Public Works School by providing theory and laboratory courses at SLTC.**
  - iii. Demonstrate up-to-date, practical and flexible training techniques which can be readily adapted to the needs of the cooperating Country.**
  - iv. Improve the effectiveness of technicians, skilled workers and clerical personnel presently employed in government agency enterprises through special courses.**
- 4. Provide other advisory services as may be requested by the Malian Government and approved by US AID and which were within the professional competence of ORT.**

**ORT was also charged with determining and developing the equipment specifications for the SLTC facilities, including but not limited to equipment for offices, classrooms, library, shops and laboratories and necessary instructional materials. ORT purchased the required equipment and materials (including shipment thereof) and supervised and assisted with the installation of such equipment.**

**ORT developed the courses of study in each technical area of the program. The syllabi for these courses was approved by US AID and appropriate Malian officials. ORT provided a regular staff member to assist with the organization plans and who arranged for receipt and care of equipment and supplies.**

**ORT also made arrangements for the screening, selection and training of SLTC students in the techniques of trade and vocational instruction.**

## II. RECRUITMENT AND ORIENTATION OF ORT PERSONNEL

The ORT instructors were recruited by the American ORT Federation office in Geneva from candidates drawn for the most part from ORT's global school network. Recruitment was based on technical qualifications and knowledge of the French language. The instructors represented a broad international group, coming from the following countries:

France	2	
Switzerland	4	(1 short-term)
Morocco	2	
Tunisia	3	(1 short-term)
United States	1	
Israel	15	
Greece	1	
	<hr/>	
	28	(2 short-term)

The instructors were recruited in three groups (apart from 6 instructors who arrived individually). The first group arrived in August 1962 (five experts and the Chief of Party), the second in July 1963 (8 instructors), and the third in August 1964 (6 instructors and the second Chief of Party).

For each of these three groups, the Geneva office of the American ORT Federation organized an orientation seminar at the ORT Central Institute at Anières, Switzerland, during the summers of 1962, 1963 and 1964. These seminars focused primarily on teaching techniques and methodology based on ORT experience in the developing countries.

There were 16 ORT instructors assigned to the project and present in Bamako during most of the life of the project. During the six years of project operations, a total of 26 instructors were recruited and assigned to Bamako, reflecting an extremely low personnel turnover. Changes in composition of the team were generally caused by changes in curricula and program content.

A typical staff of instructors was composed of the following subject specialists:

1. Mechanics and Mechanical Drawing Instructor
2. Physics and Electrical Technology Instructor
3. Architectural Design Instructor
4. Electrical Engineer (Electromechanics)
5. Executive Secretary Training Instructor
6. Refrigeration Instructor
7. Automobile and Diesel Mechanics Instructor
8. Mechanical Engineer
9. Physics Instructor (Electronics – Applied Mathematics)
10. Office Management and Accounting Instructor
11. Topography Instructor
12. Mathematics Instructor (Electro Technician)
13. Workshop Mechanics Instructor (Welding and Forging)
14. Commercial Studies and Bookkeeping Instructor

**III**  
**CREATION OF THE SCIENCE LABORATORY**  
**AND TECHNICAL CENTER (SLTC)**

**A. LOGISTICS**

The SLTC began operations with the arrival in Bamako, in October 1962, of the ORT team, led by the Chief of Party, Mr. Adam Scherer. There were a number of difficulties encountered:

- a) absence of suitable premises: courses were given in the classrooms of the annex of the Lycée Technique;
- b) the equipment ordered was slow in arriving. The first materiel did not arrive in Bamako until June 1963;
- c) no laboratories or teaching equipment were available for almost a year following the team's arrival;
- d) no raw materials for shop work could be obtained, with no possibility for local procurement;
- e) suitable accommodations for the ORT team did not become available until April 1963.

Despite these problems, courses actually began in November of 1962 for the classes in secretarial training, electromechanics and architectural draftsmanship.

The plans for the SLTC building were prepared in ORT Geneva and approved by AID and the Mali authorities. Construction of the building began in February 1963. According to the schedule, the first part of the building was to have been completed before the beginning of the school year 1963/1964, and was to contain the following facilities:

- a) lecture hall with room for preparing experiments;
- b) science and electrical laboratory;
- c) drafting room;
- d) secretarial classroom;
- e) classrooms;
- f) teachers' room;
- g) director's office and administration office;
- h) lavatories;
- i) stockroom.

As soon as the building itself was partly completed, and despite the fact that construction work continued, the ORT team installed the equipment which had arrived and put it into use almost immediately.

In February 1964, SLTC was officially opened.

In May 1964, building work on the extension was begun. It was terminated in February 1965.

In April 1966, work was started on the lavatory building and, in March 1967, on a central store.

**When construction was finally completed, the SLTC contained:**

- a) the lecture theater;
- b) science laboratory;
- c) material testing laboratory;
- d) director's office and administration office;
- e) teachers' room;
- f) planning office;
- g) industrial drafting office;
- h) refrigeration laboratory;
- i) architectural drafting room;
- j) electronics laboratory;
- k) electricity laboratory;
- l) language laboratory;
- m) shorthand and typing laboratory;
- n) special geography classroom;
- o) 5 classrooms;
- p) 3 preparation rooms for the different laboratories;
- q) central store (built in 1967);
- r) lavatory building (built in 1966) outside the SLTC;
- s) library, transferred in March 1967, for lack of space, to the main lobby of the Lycée Technique;
- t) transformer station, outside the SLTC;
- u) duplication room.

**Surface measurements of the buildings are:**

SLTC	ground floor	1000 sq.m.
SLTC	2nd floor	890 sq.m.
Central store		136 sq.m.
Lavatory building		50 sq.m.
Transformer station		50 sq.m.
		2126 sq.m.

As of the date of termination of the AID/ORT contract, there were six sections in the SLTC:

1) secretarial	organized in November 1962
2) electro-mechanics	" " " "
3) architectural draftsmanship	" " " "
4) refrigeration	" " September 1963
5) automobile and diesel mechanics	" " " "
6) electronics	" " October 1965

The laboratories were equipped in such a manner as to allow them to be used also as classrooms. This system permitted the teachers to give the necessary demonstrations during classes. The laboratory and classrooms equipment also included projectors for still photos and slides, overhead projectors, and projectors for 8mm and 16mm motion picture films.

The audio-visual materiel procured in the United States, France, Switzerland and Belgium was adapted locally (production of transparencies for the overhead projector, translation of soundtracks of English-speaking films, translation of instruction manuals for the laboratory equipment, and preparation of tapes for the shorthand and typing laboratory).

The workshops were located in the former Lycée Technique building, but they were modernized by the ORT team.

They comprise:

- 1) an automobile workshop
- 2) 2 diesel laboratories
- 3) an automotive electricity workshop
- 4) a general mechanics workshop
- 5) an angle iron and welding workshop
- 6) an electromechanics workshop
- 7) an electrical installation workshop
- 8) an electric motor winding workshop
- 9) a classroom for technological special subjects.

At the time of drafting this report, workshops of the SLTC occupied a total area of 1320 square meters, and are for the most part equipped with modern American machinery and tools.

The major difficulty in the organization and outfitting of the laboratories, workshops and classrooms was the long lead time between ordering of the materiel and its arrival in Bamako, a period which varied from 6 to 12 months. This fact hampered operations considerably. It was even necessary at times to ship goods by air, or make special trips to Abidjan to extricate shipments that had become hopelessly lost in the port.

## **B. SCHOLASTIC ACTIVITIES**

The students were recruited on the basis of the DEF (diploma of elementary studies), obtained after 9 years of elementary school.

Vocational guidance was given after administration of the aptitude tests. The introduction in Mali of the ORT system of instruction resulted in a change in the general structure of technical education, which, until the arrival of the ORT team, had been based on the BET (technical training diploma) middle-level technician. The students' elementary education was inadequate, which caused considerable difficulty. The Malian student normally begins technical training at age 18 to 22, because during the years 1962 to 1967, schooling in Mali began between ages 10 to 12. The pupils do not begin to learn French until primary school (that is, at the age of 10 or 12), and generally have no familiarity with manual or technical work.

Their attitude towards manual work is generally negative, with most individuals hoping to become white-collar workers. They have a very poor knowledge of science and mathematics. In addition, the struggle against habits of purely verbal and memorized instruction, magnified the efforts required to train a qualified technician within the three year limit imposed.

The majority of students came from a rural background. All lived at school so that proper working conditions (light, noise, cleanliness) could be maintained. The classrooms and the library were used for doing homework and review. The system of grading was based on quarterly examinations (as formerly used in the system in France).

In order to deal with these factors ORT introduced audio-visual methods of teaching, in an effort to change the habits of memorization and attitudes. The students were taught to think for themselves and to find their own solutions to problems. In introducing the system of complex examinations (planning, calculation and execution), ORT created among the students a climate of individual effort and responsibility.

Teachers coming from countries outside Mali were quick to realize the advantages stemming from the use of audio-visual equipment and were not hesitant in changing their methods. The young Malian instructors, trained at the ORT Central Institute, returned well versed in these new methods of instruction and continued on the path opened by the ORT technicians.

The students took an active part in preparing teaching materials (didactic panels, wall boards, teaching models and models of equipment). The shorthand and typing laboratory enabled students to accelerate the learning process, far beyond what would have been possible with traditional methods. The use of individual kits of electric and electronic equipment resulted in considerable saving of time. The equipment for demonstrating electronic subjects and material strength made it easier for all students to assimilate difficult concepts.

The set of cubes used to teach technical drawing made it possible for the students to overcome their classical inability to visualize the third dimension.

A language laboratory made available to students resulted in marked improvement in the effectiveness of the English courses.

The audio-visual equipment, combined with the new, active methods of instruction made it possible to accomplish the task of providing the maximum amount of knowledge within a limited amount of time.

### **C. SUPPLEMENTARY ACTIVITIES**

In addition to its normal activities, i.e., the training of students in the regular classes of the SLTC, the ORT team was also occupied in giving other courses. Examples of these activities were:

- 1) advanced courses for Government officials, technicians and manual workers;
- 2) retraining courses for skilled workers;
- 3) advanced courses for primary and secondary school teachers of mathematics and physics;
- 4) seminars of further training for teachers of elementary school English;
- 5) introductory courses, for primary and secondary school teachers, in the use of science laboratories and audio-visual aids, and in library organization;
- 6) production of teaching materiel for elementary schools and science kits.

The SLTC laboratories were placed at the disposal of other schools, such as the National School for Engineering Technicians (electricity, electronics), the Père Michel private apprenticeship center (refrigeration), while the science laboratory was made available to all the secondary schools in Bamako (the Askia Mohamed and Prosper Camara Lycées, the Lycée de Jeunes Filles, the Ecole Normale Supérieure, etc.).

In addition to these activities, the members of the ORT team carried out maintenance on the team's housing, repaired electronic equipment, refrigerators, automobiles, etc., for the members of the United States Mission, the French Aid staff, various embassies (West Germany, Israel, Poland, Morocco, Algeria), as well as for Malian ministers and establishments. These activities were mandatory because of the lack of qualified service facilities in Bamako and because with highly qualified ORT technicians available, it would have been politically unwise to refuse requests for assistance.

Members of the ORT team also contributed to the preparation of plans for various buildings, for educational reform, for the reform of technical instruction, for expansion of the Lycée Technique, for an institute to provide evening courses, and for a school of civil aviation. Frequent technical advice on a variety of subjects was provided to various public bodies.

### **IV. TRAINING OF MALIAN INSTRUCTORS**

The objective of this phase of the program was to train seventeen Malian instructors in a number of special subjects, in order to be capable of replacing the ORT instructors during the phase-out of the AID/ORT contract.

The operation was divided into the following three consecutive phases:

- 1) A preparatory course was organized in Bamako for the instructor candidates. This course was intended to bring the candidates up to a uniform level, taking into account the difference in their basic education, and to fill the gaps in knowledge.
- 2) Studies at the Central ORT Institute, Anières, in the suburbs of Geneva, and in various other technical establishments (Geneva, Lausanne, Paris) to provide training in the different special subjects taught at the SLTC. The length of course was projected for at least 2 years.
- 3) Practical work under the supervision of ORT instructors of the SLTC classes for at least 1 year.

Studies at the Central ORT Institute also included pedagogic training, on-the-job training in industry, and visits to places of technical interest. Among the trainees were two PTAs (assistant technical instructors), who had already done some teaching in Mali, and who therefore spent only nine months in this phase. The trainees were drawn from the Lycée Technique with a diploma of industrial training (BEI) and the School for Public Works (holding diploma of technical training – BET), with the addition of two students who were already trainee teachers. The 17 students left Bamako on August 14, 1964. The two PTAs returned to Bamako in May 1965, having completed their course of nine months, and two others were sent back by the Institute because of failure to adjust.

In October 1965, four more trainees were sent to Anières. They were selected from the first group of students to graduate from the SLTC. In addition to the pedagogic training provided at the Central ORT Institute at Anières, the ORT team in Mali set up a training course in ORT methods for three Malian teachers who had completed the curriculum at the Ecole Normale Supérieure in Mali (one in math, two in science), a teacher of automobile engineering (trained in France), a storekeeper, a librarian and a planning technician.

A summary of the problems encountered in training the instructors would include:

- 1) insufficient length of time allotted to the training period, not consistent with the period of studies at the Central ORT Institute nor in the other technical establishments,
- 2) inadequate basic education of students,
- 3) the overly broad range of subjects in which the students had to receive additional technical training,
- 4) problems in the students adapting to the European climate and way of life.

The trainees were frequently obliged to take evening courses, to participate in teaching seminars specially organized at the Central ORT Institute during the vacation period. In some cases, private tutoring was required.

Because of the intensive training schedule, in two years the trainees absorbed almost the equivalent of the normal 3-4 year training taken by a teacher of technical subjects. The two short-term trainees, who returned to Bamako in May 1965, began teaching in the mechanical engineering and woodworking shops in the Lycée Technique.

Special seminars devoted to pedagogic training were organized during the school vacations. Numerous visits were also made to industrial installations, educational establishments, and technical and teaching exhibits.

In July 1966, the first five trainees passed their final examinations. Each then prepared a thesis on his particular subject, with very good results.

They then returned to Bamako and began work as instructors under the supervision of members of the ORT team.

In December 1967, three other trainees passed their final examinations with very good results. All the trainees, after presenting their theses before a committee, chaired by the Director of the Superior Technical School and composed of experts in the various special subjects of the trainees, spent some time in training in industry before returning to Bamako.

The remaining trainees finished their studies and returned to Bamako during the 1967/68 school year and began working with the ORT instructors. After a short period of time, they began successfully to take over the full teaching load. The best among them were appointed heads of sections.

The last two trainees arrived in Bamako in December 1967.

In summary, this element of the project, which was clearly the most important, can be termed to have been a success. The "phase-out" – that most rare phenomenon in technical assistance programs – was achieved in a relatively short period of time, with relatively small expenditure, leaving behind a viable, autonomous institution.

## **V. VEHICLES, EQUIPMENT, MATERIELS AND SUPPLIES**

The budget for vehicles, equipment, materials and supplies for the period of August 1962 until December 1968 was \$542,000, of which \$75,000 was for purchases in Europe. The purchases in Europe were necessary because of the difficulty in finding metric materials in the United States and, because the teaching materiel (books, films, panels, etc.) had to be in the French language.

There were two main problems encountered:

- a) long periods of time between ordering of the materiel and arrival in Bamako (6 to 12 months);
- b) the necessity of adapting American equipment to local conditions (voltage, frequency, manuals in English to be translated into French).

The procurement services provided by the American ORT Federation offices in Geneva and New York, expedited slow-moving shipments and helped to break supply bottlenecks. A simple and effective procurement and central system was created to deal with the special problems posed by the Mali project. On balance the quality of equipment procured was excellent, and well-adapted to African conditions.

The cost of transport was fairly high, varying between 25 and 40 per cent of the value of the equipment. The Malian teachers who replaced the ORT team were instructed on the spot in the use and maintenance of the equipment. All instruction manuals and catalogs were translated into French, when required, and made available to the Malian staff. Throughout the period of operations, losses sustained in transport did not exceed \$3000. Packing, in general, was well done.

A set of equipment was bought following the close of the American Trade Fair in Bamako. This consisted of four completely equipped workshops, as follows:

- 1) Sheet metal and welding shop
- 2) Automotive shop
- 3) Machine maintenance shop
- 4) Basic electricity and electronics laboratory

Storage was one of the problems that was difficult to solve. The equipment and materiel were scattered in five different stockrooms, separated by considerable distances. It was only in September 1967 that a main warehouse (136 square meters) was completed. The reserve equipment and materiel were all then transferred to that facility.

During 1967 the ORT team trained a Malian storekeeper to assume responsibility for the management of the warehouse.

The storage system consisted of shelves numbered horizontally and lettered vertically, with a rotary card index recording the position data and description of each item. This facilitated the task of the storekeeper and made for simple and efficient operation.

## VI. PRELIMINARY RESULTS

In November and December of 1968, Mr. S. Dimor, ORT Chief of Party in Mali, carried out a study of the employment obtained by students who had graduated from the SLTC during the period of ORT's activities in Bamako. Graduating students are required to obtain employment through the Civil Service mechanism, and are not permitted to seek employment on their own. Generally, employment is found for them in the public sectors of industry and commerce.

Between the end of the first course in June 1964, until June 1967, 111 students completed their studies at the SLTC. 105 passed the final examinations. The 6 who failed, repeated their third-year.

The 46 students who graduated in June 1968 had not yet found employment at the time of the study.

The total results of five years' activities may be summarized as follows:

- 151 graduates (the project goal called for 115),
  - 19 Malian instructors trained at ORT Geneva to replace the ORT instructors,
    - 1 warehouseman,
    - 1 librarian,
    - 1 planning office technician,
  - 4 Malian teachers trained at the SLTC by the ORT team;
- plus 965 adults given retraining and advanced courses by the ORT team (the project envisaged 500).

The breakdown of graduating students by sections was as follows:

	<u>1964-1967</u>	<u>1968</u>
Secretarial training	31	12
Architectural draftsmanship	19	4
Electromechanics	25	7
Electronics	-	11
Refrigeration	13	6
Auto/diesel mechanics	17	6
	<u>105</u>	<u>46</u>

The results of the review showed that of 102 Malian graduates (three non-Malians returned to their own countries), 16 are continuing their studies in establishments of higher education, 5 are working as teachers in technical education, 8 technicians are working in the public sector and 78 are employed in various state enterprises.

A majority of the former students of the SLTC now occupy responsible positions as section heads, team leaders, regional technicians, chief fitters, service directors, plant technical directors, and heads of various services.

## VII. RECOMMENDATIONS

- a) Since most of the equipment in the SLTC is of American origin, it would be desirable to ensure the purchase of replacement parts in the United States, by making the required foreign currency available to the Lycée Technique.
- b) The Malian teachers will require continuing training in order to keep abreast of new methods. Refresher seminars should thus be provided during school vacations at the Central ORT Institute in Anières.
- c) It is recommended that, as a means of ensuring continuing follow-up, and assessment of progress at the SLTC, ORT carry out annual inspections, reporting to AID on the results of such inspections.
- d) A general mechanics section should be created to serve as the basis for organizing a training unit which would also produce utilitarian items for the local market.
- e) The possibility of utilizing existing equipment and machinery in the SLTC for production purposes should be explored.
- f) The AID-financed Ecole Normale Supérieure should begin, in cooperation with SLTC and its facilities, courses for training of instructors of technical subjects. This would ensure the institutional continuity of SLTC and provide a source of technical teachers for other Malian schools.

## ANNEX A

### CHRONOLOGICAL SUMMARY OF EVENTS

- JANUARY 1961** Study mission by ORT to determine the needs of Mali in technical education, carried out by Mr. Braude, Dr. Levinson, Dr. Wyler and Mr. Aleinick.
- FEBRUARY 1962** Preparation in Geneva of building plans for the SLTC.
- JULY 1962** Signature of contract between the United States Government and the American ORT Federation.
- AUGUST 1962** Recruitment of ORT Chief of Party for Bamako, Mr. Scherer, and five teachers.
- AUG/SEPT 1962** Orientation seminar at the Central ORT Institute in Anières for the first team of teachers. Preparation of programs, books and teaching aids. Preparation of orders for materials and equipment.
- OCTOBER 1962** ORT team arrives in Bamako.
- NOVEMBER 1962** Recruitment and selection of students and commencement of secretarial training, electro-mechanics and architectural draftsmanship courses. Sixty-three students begin work in the classrooms of the Lycée Technique.
- JANUARY 1963** Beginning of a two-month advanced course for 14 Malian teachers.
- FEBRUARY 1963** Construction of first part of SLTC begins.
- MARCH 1963** Beginning of advanced 3-month course for 15 employees of the Bank of Mali. Advanced 4 1/2-month course for 100 supervisors and technicians of the Ministry of Public Works in electro-mechanics and building construction.
- APRIL 1963** The Mali Government makes available six apartments for the ORT instructors.
- AUGUST 1963** Second orientation seminar at Anières for newly appointed teachers.
- SEPTEMBER 1963** Equipment of new SLTC building. Return of students in architectural draftsmanship and electromechanics sections. Creation of two new sections: refrigeration technology and automobile and diesel mechanics (34 students). 21 students of the 2nd-year secretarial training section move on to positions in government offices and continue their studies on a half-time basis. Recruitment of 13 full-time students for a new secretarial training class.
- NOVEMBER 1963** Beginning of a preparatory course of six months for 14 Malian students to be trained as teachers in the Central ORT Institute in Anières. Following the two years of study, trainees to replace ORT instructors. Special 3-month course for 30 senior officials of Mali Government. Recruitment locally of an administrative assistant and a commercial studies instructor. Arrival of eight ORT instructors, recruited by the Geneva office.

**JANUARY 1964** Design and beginning of production of 20 scientific kits.

**FEBRUARY 1964** Inauguration of the SLTC by the President of the Republic of Mali, Mr. Modibo Keita. Dignitaries present include the Minister of National Education, the United States Ambassador, the Director of AID, the Director of the ORT Department of Technical Assistance, and members of the diplomatic corps.

**MAR/APR. 1964** Visit to SLTC by the Malian Minister of Public Works, Minister of Justice and Minister of the Interior.  
 Visit of the Yugoslav Economic Delegation.  
 Visit of the Minister of the Interior of Upper Volta.  
 Visits of various journalists and directors of enterprises.  
 Active assistance of ORT team in the preparations for the American Trade Fair in Bamako.

**MAY 1964** Beginning of construction work on extension of SLTC.  
 Visits by representatives of various countries: Upper Volta, Guinea, Liberia, Sierra Leone, China, Yugoslavia, North Vietnam, East Germany, USSR.

**JUNE 1964** The Meritorious Honor Award Bronze Medal is awarded the American ORT Federation Team in Bamako by the United States Government.  
 Termination of school year.  
 Final examinations are held for the students of the secretarial training section: 11 of the 12 candidates pass.

**JULY 1964** Organization of advanced training courses during the school vacation for Malian teachers in the following subjects:  
 Automechanics: 23 students, 3-month course;  
 Higher mathematics: 37 students of the Ecole Normale, 6-week course;  
 Physics & Chemistry: 51 students of the Ecole Normale, 4-week course.  
 Formal presentation of scientific kits made in SLTC, to the Ministry of Education, attended by the Minister of Education and the Director of AID.

**AUGUST 1964/  
 SEPTEMBER 1964** Departure of 17 Malian trainees for the Central ORT Institute in Anières. Seminar on the use of the scientific kits for 40 science teachers: 1-week course. Departure of Chief of Party and five members of ORT team who have completed their contracts. Recruitment of new Chief of Party and instructors followed by orientation seminar at Anières.

**OCTOBER 15, 1964** Start of new school year.  
 Recruitment of 20 new students for the Secretarial Training section.

Other classes begin:	2nd-year diesel	16 students
	3rd-year refrigeration	19 students
	2nd-year sec't. training	9 students
	3rd-year electromechanics	20 students
	3rd-year arch. drafting	18 students
		<hr/>
		82 students

**OCTOBER 1964** Arrival of new Chief of Party, Mr. S. Dimor.

**NOVEMBER 1964** Visit of Mr. Hutchinson, Assistant Administrator, AID Bureau for Africa, Washington.

**NOV/DEC. 1964** Installation of machinery and equipment in the workshops made available to the project at the Lycée Technique.

**DECEMBER 1964** Inspection of supplies and accounts by Mr. Harold Wald, Controller of USAID, Washington.

**JANUARY 1965** Science and electrical laboratories placed at the disposal of 430 pupils of various schools in Bamako.  
Organization of a 40-hour science seminar for 60 primary school teachers of Bamako. Organization of a 6-month course in technology and industrial drawing for 11 assistant technical teachers and supervisors. ORT instructors help equip 5 AID supplied trucks for the campaign against measles.

**FEBRUARY 1965** Equipment classrooms in the extension of the SLTC.

**MARCH 1965** Visit of Minister of Education of Congo-Brazzaville.  
Construction of two cold-storage rooms in the refrigeration laboratory. Installation of an air-conditioned diesel laboratory. Equipment of a welding and an electric motor winding workshop.  
Trainee Yoro Adams returns to Mali for health reasons, appointed to the SLTC as laboratory assistant in the electricity section.

**APRIL 1965** Organization of a science seminar of 30 hours for 51 primary and secondary teachers of Bamako.  
Visit by Mr. Kuhm and Mr. Crowder, Inspectors of U.S. State Department.  
Two visits by Mr. A. Singaré, the Minister of National Education.  
Visit of Mr. P.K. Daniells, future Director of AID Bamako.  
Visit of Mr. R.C. Moore, new United States Ambassador.

**MAY 1965** Return of two trainees from Geneva on completion of their 9-month course.

**JUNE 16, 1965** Inaugural ceremony of the SLTC extension by Mr. J.M. Koné, Minister of State in charge of the Plan attended by the Minister of National Education, Mr. A. Singaré, the Minister of Finance and Commerce, Mr. A. Maïga, the United States Ambassador, Mr. R.C. Moore, the Directors of AID, Mr. F.J. Lapinski and Mr. P.K. Daniells and others.

**JUNE 1965** Opening of exhibition of students' work, visited by more than 500 people.  
Final examinations of the first group of graduates in the following sections: secretarial training, electro-mechanics, architectural draftsmanship; 47 out of the 48 students taking the examinations passed.  
Termination of school year.

**AUGUST 1965** Organization of a 2-month advanced training in courses in building construction, technical English, electricity, general mechanics, refrigeration for 153 students. Intensive seminars for 100 primary school teachers.  
Organization of 40 hours' science and 30 hours' audio-visual aid courses, as well as an electricity course for 15 railway workers.

**SEPTEMBER 1965** Modernization of automobile and electro-mechanics workshops at the Lycée Technique.

**OCTOBER 1965**      Return of student body. The 2nd and 3rd-year classes continue. Organization of new 1st-year classes in secretarial training, building construction, electronics.  
 Total number of students: 173.  
 Departure of four more Malian trainees for ORT Geneva.  
 Arrival of Mr. Avithal, electronics instructor.  
 Appointment of first three Malian teachers to SLTC (2 science, 1 mathematics).

**NOVEMBER 1965**    Visit of inspection by Director of ORT Department of Technical Assistance.  
 Visit of Mr. Shanon, reporter on the Los Angeles Times.  
 Visit of the Director of the Czechoslovak Department of Technical Education.  
 Visit of members of the Czechoslovak Economic Mission.  
 Arrival of Mr. Mizrahi, automechanics instructor.

**JANUARY 1966**      Visit of Mr. Hans Ries, special envoy of President Johnson.

**FEBRUARY 1966**    Appointment of a Malian assistant storekeeper.  
 Preparation of a plan for an evening technical institute for manual workers.  
 Arrival of Mr. Koskas, refrigeration instructor.

**MARCH 1966**        Visit of Mr. Weber, Director of the West African Department in AID/Washington.  
 Visit of Mr. Crosby, Deputy Chief of Mission, U.S. Embassy.  
 Visit of teachers from the USSR Apprenticeship Center.  
 Arrival of Mr. Corinaldi, new Educational Advisor to AID Bamako.

**APRIL 1966**        Arrival of Mrs. Matile, commercial studies instructor.  
 Construction of lavatory building.  
 Preparation of plans for main stockroom.  
 Construction of transformer building by Energie du Mali.  
 Installation of generators and equipment by students in the workshops of the model village of Djoliba.

**MAY 1966**          Installation of a language laboratory furnished by AID.  
 Preparation of the budget for the school year 1966/67, which is then submitted to the Ministry of Education.  
 Arrival of Mr. Bismuth, ORT technician to draw up a plan for the organization and development of technical education in Mali.

**JUNE 1966**         Final examinations for diesel and refrigeration sections. All 26 candidates pass.  
 Termination of school year.  
 Visit of Dr. Low of USIS, Washington.  
 Visit of Mr. Maïga, Director General of Civil and Commercial Aviation, accompanied by the heads of various services.

**JULY/AUG 1966**    English courses start for 270 elementary school teachers, organized in conjunction with the University of Southern Illinois. Organization of a course in the use of laboratory equipment for 90 physics teachers.  
 Departure of members of the ORT team on Home Leave (6 families) and R and R (9 families).

- SEPTEMBER 1966** Return of teachers from vacation.  
Departure of Mr. Salah Niaré, Director of Technical Education in the Mali Government, and Mr. Moustapha Soumaré, Director of the Lycée Technique, for a one-month visit to the Central ORT Institute in Anières, and the ORT school in Montreuil, Paris.
- OCTOBER 1966** School year begins: total number of students 188.  
The first three Malian trainees who had returned from the Central ORT Institute are incorporated into the SLTC:  
Mr. Thiam Mamadou (shorthand and commercial subjects),  
Mr. Singaré Natena (general electricity, circuits), and  
Mr. Traoré Lamine (electrical laboratory, practical work).
- NOVEMBER 1966** Visit of Dr. J. Bolibough, former Educational Advisor to AID Bamako.  
Visit of Mr. Malik, Chargé d'Affaires for the Republic of Poland, accompanied by Mr. Tryuk, economic advisor.  
Visit of Mr. Droz, professor of the Neuchatel Technicum.  
Organization of theoretical and practical driving course for 26 students of auto-diesel, topography and geology sections.  
A Malian teacher, Mr. Sangaré Mamadou is appointed by the Malian Government to the SLTC in the auto-diesel section.
- DECEMBER 1966** Visit of Mr. M. Camouli, Director of the Department of Cooperation, Ministry of Foreign Affairs, Paris.  
Mr. Diagné Abdou and Mr. Dianka Mamadou, having returned from training in Geneva, begin teaching theory and laboratory in the electronics section.
- JANUARY 1967** A refrigeration course for 13 students of the Père Michel Private Apprenticeship Center is organized, consisting of 8 hours per week for 4 months.  
Arrival of Mr. H. Azoulay, expert in technical drawing, in charge of the planning office.
- FEBRUARY 1967** Three more trainees return from Geneva and take up their duties at the SLTC:  
Mr. Doucouré Mouhamed, in technology and shop work;  
Mr. Togola Yera, in electro-mechanics, and  
Mr. Doucouré Smaba, in technical drawing.
- JAN/FEB 1967** Preparation of a plan for enlarging and developing the Lycée Technique, approved by the Mali Government and submitted to AID Bamako.
- FEBRUARY 1967** Visit of Mr. Djibo, Provost of the Lycée National, Niamey, and Mr. Farmo Mamadou, Director of the Niger Tourist Office.
- MARCH 1967** Transfer of library to Lycée Technique building. The large room thus vacated is divided into two classrooms. Equipping of the shorthand and typing laboratory by students of the electro-mechanics section. Beginning of construction of the main stock-room.  
Mr. Telly Ibrahim, a trainee returned from Geneva, starts shop work in the auto-diesel section.  
Visit of Mr. Dallas Hunter of AID/Washington.
- MAY 1967** Visit of inspection by Mr. M.A. Braude, Director General of the World ORT Union, and Dr. W. Haber, President of the American ORT Federation.  
Visit of Mr. A.J. Ravelli, Education Training Officer, AID/Washington Bureau for Africa.

**JUNE 1967** Mr. Mahamane Traoré, a Geneva trainee, starts instructing topography at SLTC.  
Final examinations are held in the following sections:

Automobile	6 passed
Electromechanics	6 passed
Sec't. training	11 passed (first graduates from this section after 3-year course)

Visit of Mr. A. Erdos, attached to the U.S. State Department, Bureau of African Affairs, Washington.  
Visit of Mr. S. Clark, future AID Affairs Officer, Bamako

**JUNE/AUG 1967** Final departure of six ORT instructors in accordance with phase-out plan.  
Departure of six members of ORT team on R and R.  
Departure of three members of ORT team on Home Leave.

**SEPTEMBER 1967** Return of ORT team from vacation.

**OCTOBER 1967** Return of student body, numbering 253.  
Two more trainees, upon returning from Geneva, take up their duties in the SLTC: Mr. Doumia Boubacar, refrigeration section (technology and shop work); Mr. Haïdara Abdoulaye, secretarial and training section. In all, 12 Malian trainees are now working in the SLTC.  
Construction of main stockroom completed. Transfer of materiel from the five existing stockrooms. The Malian storekeeper trained by ORT takes up his functions.  
Visit of Mr. P. Strauss, Assistant Administrator for Africa, AID/Washington.  
Visit of Mr. H. Cooper and Mr. S. Dyer, USAID Controllers.  
Departure of Mr. Soumaré, Director of the Lycée Technique, replaced by Mr. CYR Mathieu Keïta, teacher of physics in the SLTC.

**NOVEMBER 1967** Final departure of Mr. H. Peled, storekeeper.  
The following Malian trainees begin work in the SLTC:  
Mr. Fofana Mamoutou, electro-mechanics section (electricity, shop work, maintenance); Mr. Touré Hasseye, electromechanics section (electric motor winding, electrical circuits, job technology).

**DECEMBER 1967** Visit of Mr. André Le Gallo, United States Consul.  
Visit of Madame Alexeeva and Mr. Morozov of the State Commission for the Training of Technicians, USSR, accompanied by Mr. Stephanian, Permanent Delegate to Mali of the USSR Ministry of Education.

**JANUARY 1968** Shorthand-typing laboratory in use for the first time, after receipt and preparation of recorded tapes.  
Introduction of three hours weekly civics education in all classes along with a reduction of number of hours of technical instruction.  
Visit of Mr. Plateau, Head of French Cooperation in Mali, accompanied by Mr. Guiniet, Cultural Advisor to the French Embassy.  
Students of refrigeration section install the central air-conditioning system in the refrigeration laboratory, and make plans for cold storage room at Mopti.  
Electronics laboratory is available to students of the Ecole Nationale des Ingénieurs (3 hours per week).

- FEBRUARY 1968** The last two Malian trainees return from Geneva to take up their duties in the SLTC: Mr. Alhadji Mahaman, and Mr. Cissé Baba, both assigned to the architectural draftsmanship section teaching technology, strength of materials, reinforced concrete and structures.  
 Visit of Dr. and Mrs. Garfield, AID/Washington.  
 Visit of Mr. Aliou Traoré, Director of Radio Mali.  
 Visit of Mr. A. Loren, RUA/AID Washington.  
 Production by the planning office and preparation by the ORT teachers of the following school manuals:
- 1) "Electrical Equipment in Automobiles"
  - 2) "Internal Combustion Engines"
  - 3) "Chassis and Transmission"
  - 4) "Refrigeration Technology" (2 volumes)
  - 5) "Use of the Electronics Laboratory"
- MARCH 1968** Bamako Fair. Stand of the Lycée Technique prepared by the students of the SLTC.  
 Final departure of Mr. H. Azoulay.
- MARCH/APR. 1968** Competitive examinations for 3rd-year electronics students to select candidates for a 2-year course of specialization, given by OCORA in Paris. Of the 13 students taking the examination, 7 are accepted.  
 Renovation of the SLTC: repainting of exterior and interior.
- MAY/JUNE 1968** Results of final examinations for all sections as follows:
- |                             |           |                         |
|-----------------------------|-----------|-------------------------|
| Auto-diesel                 | 6         | passed                  |
| Secretarial training        | 12        | "                       |
| Electromechanics            | 7         | "                       |
| Electronics                 | 11        | "                       |
| Architectural draftsmanship | 4         | "                       |
| Refrigeration               | 6         | "                       |
| <b>Total</b>                | <b>46</b> | <b>students passed.</b> |
- Preparation of detailed inventories of equipment, tools, furniture, apparatus; also plans of the arrangements of each laboratory and classroom with the active participation of the Malian teachers. Plans and inventories sent to the Ministry of National Education (15 complete files).
- JUNE 1968** Visit of Mr. Mulleris, UNESCO expert.  
 Visit of Dean Junz and Dean Wantling of Southern Illinois University.  
 Visit of Mr. Schoonover, Area Operations Officer, RUA/AID Washington.  
 Visit of the Director of the ORT Department of Technical Assistance.  
 Publication of following school manuals:
- "Applications of Refrigeration"
  - "Electrical Machinery".

- JUNE 28, 1968** Official ceremony of transfer of the SLTC to the Minister of National Education, Mr. Seydou Tall, in the presence of the Minister of the Interior, Mr. Ali Bagayoko, the Minister in charge of state enterprises, also Mr. Lamine Sow, Mr. O. Crosby, U.S. Chargé d'Affaires, Mr. E.B. Abrams, Director of the ORT Department of Technical Assistance, Mr. D. Diallo, Director of Technical Education, and other officials.
- JULY 1968** Final departure of all the ORT experts, with the exception of the Chief of Party.
- OCTOBER 1968** Reopening of the school. Total number of students in the six sections of the SLTC: 332.  
Visit of U.S. Ambassador, Mr. E.G. Clark, accompanied by Mr. J.F. Christiano, Deputy Chief of Mission, and Mr. S. Clark, AOO.  
Meetings of teachers of technical subjects.
- NOVEMBER 1968** Start up of materials testing laboratory. Instructions translated into French.  
Study of results of SLTC.  
Installation of a cold storage room in the Lycée Technique by the students of the refrigeration section.
- DECEMBER 1968** The planning office publishes the "Methodology of Technical Education", by Mr. S. Dimor.  
A seminar is organized by Mr. Dimor, on audio-visual aids, for 26 Malian teachers of the Lycée Technique.  
Visit of Mrs. E.G. Clark, Mr. J. Christiano and Mr. S. Clark.  
Final departure of Mr. S. Dimor, ORT Chief of Party.