Tripoli, Libya
August 26, 1960

Mr. Robert L. Berenson, Director
and
Mr. E. C. Bryant, Deputy Director
USOM/Libya

Gentlemen:

I have the honor to request your approval to present copies of this briefing document to our two guests, Dr. Van Zile Hyde and Mr. Logan.

We hope that these gentlemen may find some guidance for their evaluation study of division operations.

Sincerely,

Hildrus A. Poindexter

Hildrus A. Poindexter, Chief,
Health and Sanitation Division
USOM/Libya

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Health and Sanitation Division - USOM/Libya

Briefing Paper

for

Doctor Van Zile Hyde and Mr. Logan

August 1960

Office of the Division Chief: Poindexter, Gauch, and Hoffman

It is the privilege of this office to open and close the briefing. The opening will orient the visitors to the general situation and purposes leaving the details of each project to the technician most intimately connected with the implementation of that project. The immediately following subjects are given for orientation purposes:

1. Geography and population of the Kingdom of Libya.

The United Kingdom of Libya has a land area of about 683,000 square miles. It is located in North Africa between 20° and 32.2° North latitude and between 9° and 25° longitude East of Meridian. Libya is bound on the North by the Mediterranean Sea; on the East by Egypt and the Sudan; on the South by the Sudan, French Equatorial Africa and French West Africa; and on the West by Algeria and Tunisia.

The total population is about 1,200,000. The United Kingdom of Libya is composed of 3 major provinces, each with a different history, culture and level of modern industrialization. Today Libya is considered an economically and industrially underdeveloped country.

The 3 major provinces are:

Tripolitania - with a land area of 106,500 square miles has a population of about 850,000.

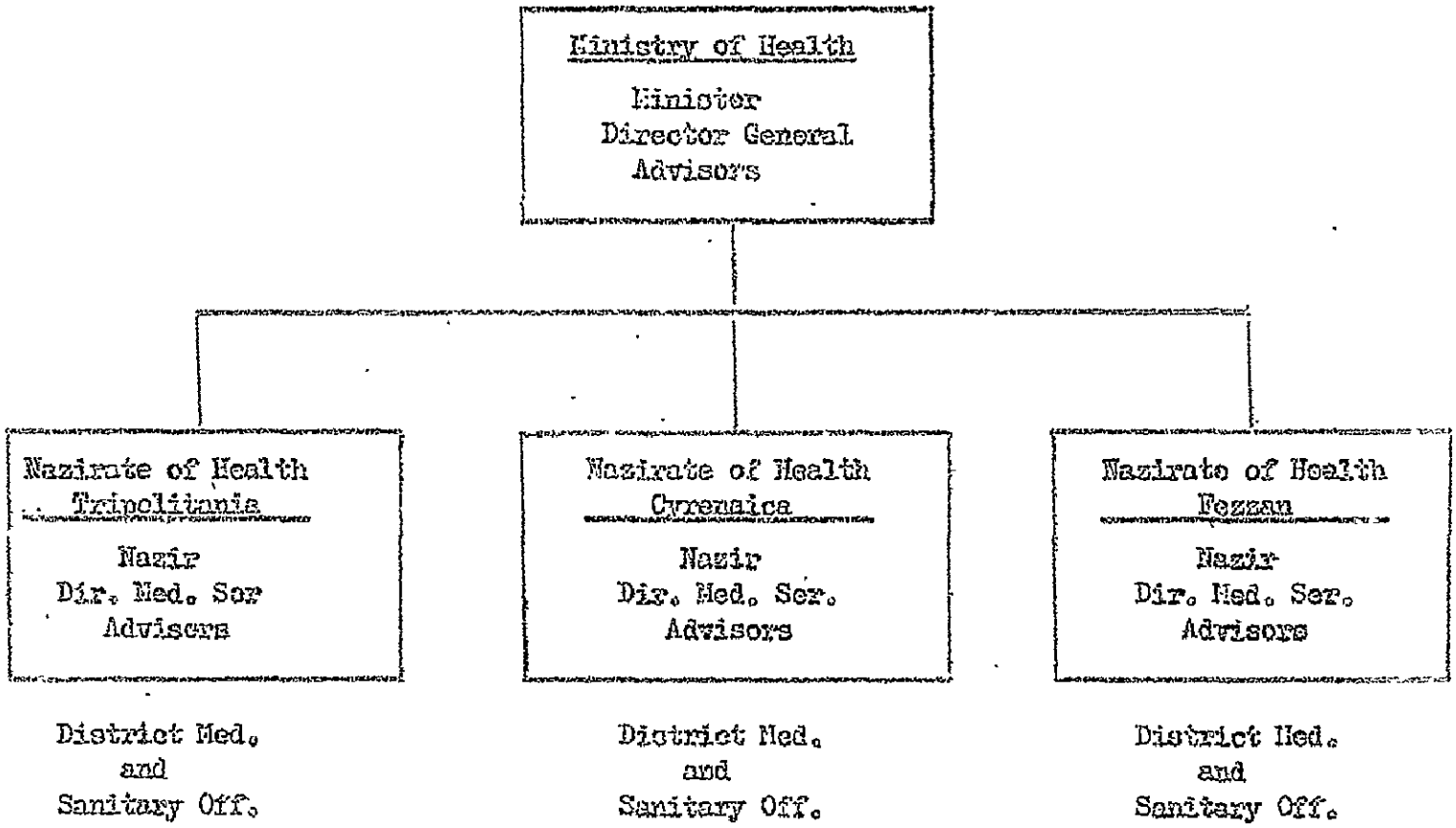
Cyrenaica - with a land area of 333,000 square miles has a population of about 290,000.

Fezzan - with a land area of 243,500 square miles has a population of about 60,000.

In the provinces, especially in the hinterland areas there about 17 or more different tribal groups, some of them largely Nomadic.

The livelihood of the people of Libya is chiefly agricultural at a subsistent level. Dates and olives are produced at a level for export market. In a few areas there are mat weavings with export possibilities. Cattle, sheep, goats and camel breeding and herding are important phases of their livelihood. In general they are for domestic use only.

2. Organization Chart of the Health Services.



3. Major Public Health Problems.

A. Inadequacies and Defects

In Libya the inadequacies fall under the following headings:

1. There is an acute shortage of trained Libyan Health technical personnel at all levels of planning, programming and operations. The medical profession of Libya is composed of 174 physicians, of which 6 are Libyan. The remaining 168 come from 13 (up from 11 in 1959) different countries with concepts of Medical Practice and Preventive Medicine as varied as the life, habits, customs and educational philosophies of these 13 different countries.

There are no Libyan graduate nurses, sanitary engineers nor professional health educators.

2. Outside of the metropolitan areas medical care and preventive medicine facilities are inadequate.

3. The modern western concept of the value of certain preventive medicine measures is not generally accepted in official and non-official circles of the host country; resulting in inadequate enthusiasm and low priority support for programs in preventive medicine. This means that preventive measures do not get financial or personnel support in proportion to curative measures.

4. There is a lack of adequate potable water available for domestic use in or near the human dwellings. According to the reports of the ground water resource investigators there is not enough ground water in the area.

This briefing paper will show some of the things being done by USOM/Libya to correct these defects.

B. Non-effective Control Measures Against Major Social Pathological Entities, Such as:

(a) Tuberculosis - which is believed to be chiefly present in 5% - 6% of the population.

(b) Trachoma - and other serious eye pathologies, which in some areas involve 90% of the school age children.

(c). Such MCH problems as diarrheal diseases, malnutrition and acute upper respiratory infection

and

The control of such endemic diseases of lesser social magnitude such as:

(a) Malaria

B. (continued)

(b) Schistosomiasis: In Tauorga, a village in Tripolitania, stool examinations on school age children show 6% positive for Schistosomia mansoni. The intermediate snail host is Biomphalaria alexandrina.

(c) Epidemic Typhus.

(d) Small Pox.

(e) Some of the acute exanthemata of childhood, especially pertussis.

(f) Leprosy.

C. Poor organization and support for a long range program of preventive medicine by western definition. The contributing factors or lack of enthusiasm for the ideas, lack of funds to support such a program, administrative lethargy for the concepts and inadequate personnel to implement properly.

4. Corrective Measures

One of the corrective measures which this division is attempting is to train Libyans to take over the responsibilities of their own medical care and preventive medicine services.

This is reflected in the participant training program shown in the following sheet .

OFF SHORE TRAINEES

Year	1952	1953	1954	1955	1956	1957	1958	1959	1960	TOTALS	COUNTRY
Totals	3	6	8	5	1	6	9	7	4	49	
Nursing									1*		U.S.
Sanitation				1	1	1	2	4	4	13	U.S.
Maternal Child Health							1			1	U.S.
Pre-Medical		1	1							2	Egypt
Laboratory									1*		Italy
Radiology						1				1	Italy
Pharmacy		1								1	Italy
Orthopedic							3		1*	3	Italy
Pre-Medical		2								2	A.U.B.
Sanitation	2	2	3	4		3	1	3		18	A.U.B.
Pharmacy			1							1	A.U.B.
Laboratory	1		1			1				3	A.U.B.
Special Forms			2							2	A.U.B.
Public Health General							2			2	A.U.B.

* New participants proposed to date.

In-Service Training By Project

Basic Public Health 70-51-910 — Totals

Nurses Aides completed	- 10 (girls)	
Nurses Aides presently	- 9 (girls)	
		19

Sanitation Activities 70-52-909

Sanitarians	- 34	34

Malaria Eradication 70-51-008

Malaria Surveillance Agents	- 5
Laboratory Assistants	- 2
Maintenance Mechanics	- 2

(Malaria Technicians - 2 W.H.O., Cairo, Egypt)

9

Total 62

Hospital Administrator John Locke submits the following information:

1. Project Title and Auspices

Hospital, Ambulatoria and Laboratory Rehabilitation and Administration.

The project was initiated in July 1955. The Project Description was completed and approved at that time by the Libyan-American Reconstruction Commission (LARC), The United States Operations Mission to Libya, and the International Cooperation Administration, Washington.

2. General Outline of the Project

In 1951 the newly formed Libyan Government was left a legacy of Italian structures, hospitals, health centers and ambulatoria, most of which were built prior to 1950. During the period of the war and immediately following it, these structures were allowed to deteriorate. Medical equipment housed in each medical unit became outdated and out of order. Very little modern medical equipment had been brought into the country to replace worn out and obsolete types. Some physical remodelling of medical facilities has been effected in a general rehabilitation program and is continuing. Consideration, however, should now be given to the advances in medicine and medical practices which have developed during the last twenty years. The increase in ease of communication and the improvement of transportation facilities are important factors in the determination of the kind and extent of an essential physical plant. Furthermore, in any long range plan for the development of medical service facilities changes in the population of certain areas must not be overlooked.

The present hospital-dispensary system was designed during the 1920's and was based upon the needs of the times primarily for the Italian Colonials. Little regard was paid to the Libyan population as a whole. The problem as it now exists is that of providing the Libyan people with a workable and economically feasible health program which will make good medical care available to every Libyan. The present system is expensive to operate and does not always offer facilities for medical care properly related to the population served. There has been a tendency towards considering the number of hospital beds as a sole criteria for good medical care. Moreover, some areas are uncovered medically while certain others are relatively overhospitalized. Emphasis has been on new construction and remodelling, while little consideration has been given to the procurement of modern integrated medical equipment and to staffing patterns which stress the employment of qualified and trained personnel. There is no systemized and routine procedure for out-patient and dispensary care in the outlying areas which provides for the quick referral of patients who require hospital care to an appropriate hospital.

3. The major purpose of this project is the establishment and gradual development of a coordinated Hospital and Medical Service system in Libya.

The General Hospital

General Hospitals are being rehabilitated in Tripoli and Benghazi using the facilities of the Government Hospital in each city. These two general hospitals are being provided, to the fullest extent possible, with the equipment and staff to serve the major disciplines of medicine. In addition, these units will eventually serve as training hospitals for the supportive staff, such as nurses, laboratory technicians, medical records librarians and hospital administration personnel.

The two general hospitals are available for referral of all patients who require diagnosis and treatment beyond the scope of the district hospital and dispensary-infirmary described below.

The District Hospital

This type of facility is smaller in bed capacity than is the general hospital. The facilities for diagnosis and treatment are strictly limited, both by equipment and by staff. Typical examples of the district hospital are those at Misurata, Jeffren, Derna and the new hospital at Tobruk. These hospitals are equipped to handle routine medical, surgical and obstetrical cases and are provided with facilities for x-ray and clinical laboratory work. Consultation on difficult cases is obtained from the staff of the general hospitals. Transportation facilities must be maintained to provide quick transfer of patients from the district hospital to the general hospital for special diagnosis and treatment.

The Dispensary-Infirmary

The term "dispensary-infirmary" is used because these medical units cannot and do not offer complete hospital services. Surgery and obstetrics are limited and diagnostic equipment is only supplied if it is so justified by the professional standing of the resident physician or physicians. The dispensary-infirmary has the privilege of referring patients directly to the general hospital, or at its discretion to the district hospital. A dispensary-infirmary usually has an out-patient Department so equipped and staffed as to be able to care for community ambulatoria needs, to carry out emergency treatment, to make early diagnosis and to permit referral of the patient direct to the district or general hospitals.

The Special Hospital

The special hospital supports the general hospital, the district hospital and dispensary-infirmary in certain medical disciplines. Tuberculosis sanitoria and mental hospitals are included in this category.

The Staff

It is hoped that the future will bring recognition and acceptance of the major premise that a hospital or any curative medical facility is only as good as its professional and sub-professional staff, and that Major emphasis will be placed upon providing a corps of qualified physicians supported by an adequate number of fully trained professional and sub-professional personnel. This ancillary staff should include trained nurses, clinical laboratory technicians, x-ray technicians, medical records librarians and dieticians. The latter, who if not of the stature of a graduate dietitian, at least should know the principles of diet therapy. In addition, hospital administrative personnel, who are sufficiently familiar with the maintenance requirements of medical equipment, electricity, plumbing and laundry installations should be employed.

The project goals, as they pertain to rehabilitation and modernization of equipment, have nearly been attained. The original planning of late 1955 and early 1956, invisioned the completion of this phase of the project in Fiscal Year 1962/63, and present indications are that this schedule can be met. The staffing of medical facilities, however, has made little or no progress. Only recently, $45,000 were obligated for the recruiting of certain key hospital personnel for the government hospital, Tripoli. The more important of these are senior nurses in surgery, medicine, obstetrics, psychiatry, leprosy and physiotherapy. No progress at all can be reported on the training of Libyans to serve on the supporting staff of hospitals.

There are certain specific problems which impeded and continue to impede project progress. These are as follows:

a. No Libyan in authority in the field of health at federal level or provincial level has had proper training in medicine or the medical sciences.

b. There are only 6 Libyan physicians in the entire country. The Medical Fraternity in Tripolitania is 99% Italian. That in the Fezzan is almost entirely French. The situation in Cyrenaica is unique. As of December 1959, the Provincial Government had on its payroll, 36 physicians. This group was made up of eleven nationalities. Libyans may then be said to be medically served and influenced by eleven different concepts of medicine, of hospital care, of hospital organization and management, and of medical education. It should be emphatically stated here that few of these eleven concepts of medicine are in the least similar to that practiced in the United States. The American technician, therefore, has been faced in the implementation of this program with a hostile lair of imported third country national physicians, all with vested interests in their job and constantly on guard against any change which might affect their tenure. The third country national physicians will gladly accept American money for physical rehabilitation and for the procurement of new equipment. However, he considers any suggestion

along administration or operational lines as a reflection on his professional competence. The project leader has been told many times by these third country national physicians that American money is needed, not American technical know-how.

c. In Tripolitania and the Fezzan, the administration at Mazirate level, has been constant for over 4 years. In Cyrenaica, however, in this same period of time, there have been five Nazirs of Health and six Directors of Medical Services. Continuity of program planning has been therefore, an impossibility in Cyrenaica.

d. Purdah, in itself, presents a serious obstacle to the development of medical services in Libya. Most effected is, of course, the nursing and supporting staff of the hospital. Also the problem of segregation presents great difficulties.

e. A serious problem is the almost unshakable belief of the Libyans that medical care and the care of patients is determined solely by the number of buildings (preferrably new) and the number of hospital beds.

No specific steps can be taken, at this stage, to quickly overcome the problems listed above. Until Libyan education has reached a level which will permit the training of Libyans in medicine and medica-scientific fields, there will be little improvement in the country's medical care. In the opinion of the project leader, it will take years and even generations to develop in the Libyan, concepts of medicine, medical techniques, cleanliness, and medical organization, which will permit the establishment of modern medical and professional standards in the field of creative medicine.

Specific Accomplishments and Projects Currently in Process.

Actual Accomplishments

Tripolitania

A. COMPLETED PROJECTS

Tripoli - Government Hospital

1. Installed a completely new and modern x-ray laboratory which would compare to that of any United States medical center (L£ 30,000).

2. Provided modern sterilizing equipment for the departments of surgery and obstetrics (L£ 9,000).

3. Re-modeled an existing building and provided new equipment throughout, for an Out-Patient department (LE 22,000).

4. Provided electric food conveyors for the dietary department which will serve approximately one half of the hospital (LE 3,000).

5. Established a tuberculosis Out-Patient clinic in the Nazarate Compound (LE 5,700).

6. The Government Laboratory has been enlarged by the addition of a second story and all equipment has been modernized (LE 18,000).

7. A building has been remodeled and equipped into a 100 bed pediatrics unit (LE 15,000).

Misurata Hospital

1. This facility has been rehabilitated and largely re-equipped with modern equipment. This unit is a model of what a district hospital in Libya should be, exclusive of staff. Approximately LE 50,000 went into this project.

B. PROJECTS IN BEING

Tripoli Government Hospital

1. Two wards housing the dermatology department have been rehabilitated and remodeled.

2. Plans and specifications for an 80 bed Leprosorium are presently out for tender (LE 10,500). The first tender offering brought no bidders.

Zavia

1. The Zavia health center ambulatoria is 95% complete. This is a model unit and will serve as a guide for the establishment of other health centers in Libya.

C. PROJECTS READY FOR TENDER

Tripoli

1. The mental hospital is being moved from the location in Tripoli to the Gargaresh Jail Compound. LAJPHS has prepared plans and specifications for a kitchen-laundry building which will serve 500 patients and the hospital staff. (Joint Services contribution is LE 26,000 and the Provincial Government contribution will be LE 9,000).

2. A new laundry for the Government Hospital. Complete data for tendering is now in the hands of the Public Works Department.

FEZZAN

A. PROJECTS COMPLETED

Sebha

The Sebha Hospital has been enlarged from 40 to 80 beds and new items of major equipment have been supplied. This equipment includes a new x-ray unit which is at the moment being installed (L£ 28,000).

B. PROJECTS IN BEING

The Murzuk Hospital is being re-modeled and rehabilitated into a 20 bed unit. Construction contract is L£ 10,250. Equipment has also been ordered for the dispensaries at Hun, Ghat, and Brak amounting to L£ 5,000. This will be operated as an equipment pool.

CYRENAICA

A. COMPLETED PROJECTS

Benghazi

1. The surgical block (old British Military Hospital) has been re-modeled and re-equipped into a modern surgical unit (L£ 25,000).

2. The Government Laboratory associated with the above hospital has been re-equipped (L£ 4,000).

3. The Out-Patients' department (sharia Baghdad Clinic) has been supplied with a small modern sterilizer, for autoclaving, utensil boiling, and water sterilization (L£ 1,000).

B. PROJECTS IN BEING

Tobruk

Tobruk Hospital is the major venture of the health facilities program and was initiated in late fall of 1956. The project was planned in five phases and is now in phase 3. At the end of this phase a new and modern 110 bed hospital, adequately equipped, will be open to receive patients. Completion of this phase is expected in October 1960. To date L£ 130,000 have been expended.

C. PROJECTS READY FOR TENDER

Benghazi

1. The Government Hospital kitchen will be enlarged and all equipment modernized so that food may be properly prepared and delivered in a sanitary and appetising manner to all the wards (LL 10,000).

2. Plans have been prepared for enlarging the pediatrics department from 40 to 80 cribs. This project will also include a complete rehabilitation of the existing pediatrics building (LL 13,000).

3. Plans and specifications are complete on the rehabilitations of the department of ophthalmology, this hospital.

4. Plans and specifications have been prepared for the re-modelling of the Pediatrics Department and the Female Medical Ward, Derna Hospital.

Projects Which Will Be Initiated Before
The Close of FY 1959-60 (June 30, 1960)

TRIPOLITANIA

The Gadames Hospital (20 beds) will be remodeled and rehabilitated (LL 14,000). This project is now ready for tender.

CYRENAICA

Government Hospital - Benghazi - The Tuberculosis wards will be remodeled (LL 8,000).

FEZZAN

Continuing improvements will be made at Sebha Hospital (LL 7,000). The Murzuk rehabilitation will be continued (LL 3,000) and the rural dispensaries at Brak and Hon will receive LL 4,000 and LL 3,000 respectively for minor rehabilitation.

Economic and Social Returns

Medical care in Libya has most certainly been improved through the provision of modern diagnostic and therapeutic equipment in all important hospitals. The question of "cost benefit ratios" is not applicable to a health program.

Investments

I.C.A. Contribution	$ 1,254,600
GOL Contribution in kind	$ 242,000
Libyan American Reconstruction Commission other than I.C.A. funds	$ 576,000
	$ 2,072,600

Summary

The project has been a success if the criteria is considered to be improvement of medical care in Libya. Modernization of hospitals and diagnostic and therapeutic equipment has given the medical fraternity a good professional environment and tools with which to work. However, hospital organization and management have not been improved. The implanted layer of third-country physicians, each with a vested interest in his job as a job, has militated against the acceptance of technical advice, and the development of medical organization in accordance with high medical standards.

The medical body of some 170 physicians is made up of thirteen nationalities. This means that between the American technicians and the Libyan health officials there is an antagonistic group of doctors trained in thirteen different concepts of medicine, medical care, hospital organization and management, and medical and nursing education. These doctors do not want American technical advice and the Libyan Health Officials take the stand that they must support the professional concepts of the physicians in the employ of the various Libyan Health Agencies.

After four years and several months as project leader, of the Hospital, Ambulatoria and Laboratory Rehabilitation Project, it is my considered opinion that:

a. Further construction and remodelling of Libyan hospitals is not desirable until existing medical facilities can be properly staffed.

b. Existing facilities are now adequately equipped for the level of medicine being practised in Libya.

c. Future development of a medical care program must be predicated upon refinement as opposed to physical expansion.

It is recommended, therefore, that the project be terminated in its entirety as of June 30, 1961 or as soon as existing commitments are complete.

STATUS REPORT ON THE LIBYAN MALARIA ERADICATION PROGRAM

August 1, 1960

by

William J. Goodwin, PhD.
Malaria Advisor

TABLE OF CONTENTS

I. Introduction

The specific goal of this project is: "To eradicate malaria from Libya as quickly, economically, and efficiently as possible".

This report is designed to include a review of activities conducted in previous years; to give the present status of the program; to discuss the role of the various organizations involved; and to make recommendations for future program operations.

II. History of Malaria in Libya

An excellent history of malaria in Libya can be found in a special issue of the Health Torch, Vol. II, No. 8 and 9, entitled "Malaria in Libya". This publication was issued by the Health and Sanitation Division of USOM Libya.

In 1954 the Health and Sanitation Division initiated the first malaria control work employing residual insecticides. This work was conducted in the Tripolitania oasis of Tauorga which was known to be malarious. This program continued on a yearly basis through 1957. Parasite surveys conducted in 1957, 1958, 1959, and 1960 have all been negative, therefore malaria has apparently been eradicated.

In Fezzan, malaria was suspected in many cases but very little information was available from this province. The residual spraying control program was initiated in 1955 and continued through 1957. The program was discontinued in 1958 in order to conduct the pre-eradication surveys.

In Cyrenaica malaria is known to be present in two small areas along the coast. The spraying program for eradication was initiated in 1958 in these areas.

In 1957, at the request of ICA/W, the Malaria Advisor submitted a malaria status report based on very preliminary investigations. As a result of this report and of the emphasis on world-wide malaria eradication, Libya was granted funds to initiate a malaria eradication program. The writer was relieved of his assignment as Vector Control Advisor and placed in charge of the new malaria eradication program. An agreement between the United Kingdom of Libya and the United States Government was signed establishing the Malaria Eradication Program and placing it under the Joint Services Organization.

In 1958 the World Health Organization reached an agreement with the United Kingdom of Libya concerning their role in the proposed malaria eradication program. As a result of this agreement a W.H.O. Malariologist arrived in Libya in 1958 to assist in the conduction of the pre-eradication surveys.

III. Pre-eradication Phase of Malaria Eradication

The pre-eradication surveys were completed in the spring of 1959 and the malarious areas of Libya were delimited. Malaria was found in each of the three provinces with the majority of malarious areas occuring in Fezzan. There are a total of 31 malarious villages in Libya; 25 in Fezzan, 4 in Tripolitania, and 2 in Cyrenaica. The 25 malarious villages in the Fezzan are distributed over 600,000 square kilometers of Sahara Desert.

Plasmodium vivax and Plasmodium falciparum are the only two species of malaria parasites found in Libya. P. falciparum appears more frequently than P. vivax.

There have been a total of eleven species of anopheline mosquitos reported from Libya. There are presently five species occuring in malarious areas, and these are A. multicolor, A. sergenti, A. superpictus, A. marteri, and A. hispaniola. The two principal known vectors are A. sergenti and A. superpictus. Malaria is found in many cases in Libya where the only anopheline present is A. multicolor, although sporozoites have never been found in the salivary glands of this mosquito.

The Malaria Advisor recently published a mimeograph article entitled "The Mosquitos of Libya". In this publication the records of both anopheline and culicine mosquitos collected since 1954 are given.

IV. Attack Phase of Malaria Eradication

The attack phase of malaria eradication in Libya was initiated on April 15, 1959 when the first residual spraying for malaria eradication was begun. During the spring of 1959 all of the malarious areas in Libya were sprayed. Some of the important statistics of this campaign are given in Table I. In October of the same year all of the villages in the Fezzan which had not been sprayed during the control campaigns were sprayed again.

The second complete residual spraying for eradication was conducted in the spring of 1960. The spraying activities for this year have all been completed and the statistics are given in Table I.

The statistics on the cost of the residual spraying program for 1960 are given in Table II.

Table I. Statistics of the 1959 and 1960 Residual Spraying Programs

Item	1959	1960
Number of LAJS personnel	5	6
Number of squads	2	2
Number of spraymen	10	10
Number of vehicles	3	3
Number of villages sprayed	29	31
Number of houses sprayed	2,316	3,165
Number of rooms sprayed	9,264	12,247
Number of other structures sprayed	2,155	2,198
Average number of rooms per house	4.1	4.0
Average square meters per room	50	50
Average square meters per other structures	25	25
Total square meters sprayed	517,050	671,275
Number of persons protected	14,831	12,373
Average number persons per house	-	4
Total Kgs. of 75% DDT WP used	1,345	1,589
Average grams of Tech. DDT per square meter	1.9+	1.8+
Duration of Operation in days	70	75
Kms. traveled by three vehicles	24,000	25,000

Table II. Cost in U.S. Dollars of the 1960 Residual Spraying Program

Item	Cost
Truck repair and maintenance	$ 300
Gasoline 6,250 liters x 0.7	437
Depreciation on vehicles 100 x 3	300
DDT 75% WP 3,496 lbs. x 0.30	1,049
Miscellaneous	10
Labor	385
Salaries	1,875
Per Diem	1,280
Total Cost	$ 5,686

Total Number Persons Protected 12,373
Average cost per person protected $0.46

Two complete cycles of residual spraying have been completed and it is anticipated that only one more will be required due to the low incidence of malaria in these areas. This cycle should be applied in the spring of 1961.

V. Surveillance Phase of Malaria Eradication

The surveillance phase of this program should be initiated in the fall of 1960 in order to have an efficient organization when the attack phase has been completed. It is very essential that the surveillance be well conducted and be based on sound scientific procedures. The Malaria Advisor has formulated plans for this phase and has initiated the training of certain personnel as surveillance agents and microscopists. This will be discussed later under the section on Personnel and Training.

VI. General Accomplishments

The following is a listing of the general accomplishments of the program since it was initiated in 1958.

1. The pre-eradication surveys and two cycles of residual spraying have been completed.

2. A malaria laboratory has been established and two assistants have been trained.

3. A malaria warehouse has been established in Tripoli.

4. A malaria sub-headquarters including warehouse, garage space, and laboratory has been established in Sebha, Fezzan.

5. The training of personnel will be discussed separately.

6. The W.H.O. Plan of Operations has been signed by the United Kingdom of Libya which commits Libya to the world-wide malaria eradication program.

7. The Malaria Advisor has written a proposed malaria eradication regulation.

8. The Malaria Advisor has prepared Volume I of the Malaria Eradication Manual which deals with all aspects of residual spraying operations as related to conditions existing in Libya. He is now working on Volume II which will cover all aspects of surveillance.

9. An ICA Support Specialist, Mr. Richard F. Shaw has been assigned to the program effective July 8, 1960.

10. A W.H.O. Sanitarian/microscopist has been named and will soon be assigned to the program. He will be stationed in Sebha, Fezzan.

11. All of the malarious areas in Libya have been mapped, the houses numbered, and a census taken.

12. Epidemiological surveys have been conducted in all villages sprayed in 1959 and in certain others that are not being sprayed.

13. The Ministry of Health has been requested to appoint a Director for the program.

14. The Ministry of Health has been requested to assume the responsibility of the program and to transfer it from the Joint Services Organization. At the present time the conditions existing in Joint Services make it impossible to operate a malaria eradication program.

VII. Status of Program Requirements

At the present time there is on hand or on order sufficient of the following items for the completion of this program.

1. Vehicles
2. Insecticides - 75% DDT WP and Technical DDT.
3. Sprayers and spare parts.
4. Drugs
5. Microscopes
6. Larviciding equipment and materials

VIII. Personnel and Training

The two greatest difficulties facing this program are the lack of trained personnel and the lack of cooperation by the Government of Libya. The latter subject will be discussed later.

The Malaria Advisor is in charge of all administrative, operational, and technical aspects of this program. Instead of serving as a technical advisor he serves as program administrator.

There is one third-country national technician employed in the program and he has served as Sanitarian, Laboratory Technician and Training Officer. The remaining personnel are Libyans composed of the following which have all been trained in this program.

1. One Sanitarian
2. Two Laboratory Assistants
3. Two mechanics
4. Two Sanitary Inspectors employed by the Nazirate of Health, Fezzan, and loaned on a part-time basis to the program.

The Sanitarian has completed the one year sanitation course at A.U.B. and the Junior Malaria Training Course conducted by W.H.O. in Cairo. He has been employed in the program for only nine months.

The two laboratory assistants have been trained to identify parasites, to conduct surveys, and to serve as squad leaders. One of them is receiving a six months laboratory training course in Italy at the present.

The two mechanics are responsible for driving, and for maintaining and making field repairs of the vehicles employed in the program. They have also been trained to repair sprayers and mix insecticides.

The two Sanitary Inspectors have been partially trained to serve as squad leaders and have received the preliminary training in surveillance techniques.

There have been a total of four additional Sanitary Inspectors trained in the W.H.O. Malaria Training School in Cairo, but unfortunately none of them can be utilized by the malaria program. Due to lack of coordination by the Ministry of Health, and to the political situation now existing in the provinces, they are employed as meat inspectors.

There is not a high school graduate in the program and only one has completed more than five years of schooling.

IX. Program Organization

The Libyan Malaria Eradication Program is a part of the Libyan American Joint Services which is a separate organization and not a part of the Ministry of Health or the Mazirates of Health. This creates a great number of administrative problems as we are working in one organization and dealing with five others. The five others are the Ministry of Health, United States Operation Mission, and the three Mazarites of Health. The Mazarites of Health are responsible for their provinces and operate as separate units. The Ministry of Health does not have an operation organization and exerts little authority over the provinces.

The Malaria Advisor requested in May, 1960 that the malaria program be integrated with the Ministry of Health as he anticipated the failure of the Joint Services Organization. This request has been refused. Malaria Eradication is the type of program that requires the utmost support by the Federal Government. The Malaria Advisor does not believe that our goal of malaria eradication can be accomplished under the present political and administrative set-up.

X. Role of the United States of America

The following sections indicate the financial and personnal investments of the United States of America, the World Health Organization, and the Government of Libya.

A. Financial Investments in Thousands of U.S. Dollars

	1958	1959	1960
ICA	24	88	70
WHO		21	
GOL	-	-	-

B. Contribution in Kind by GOL in Thousands of U.S. Dollars

	2	2	2

C. Personnel

ICA	Malaria Advisor	Malaria Advisor	Malaria Advisor (Support Specialist)
WHO	Malariologist (6 months)	Malariologist (6 months)	-
GOL	-	2 Part-Time	2 Part-Time
LAJS *	6	6	6

* Salaries paid by funds from Special Assistance Funds, U.S.A.

XI. Major Problems

The following are the major problems the program has encountered

1. This program is country-wide and in all other countries the malaria program operates under the Ministry of Health of an autonomous unit. This program is seriously handicapped operating under Joint Services.

2. Lack of coordination between the Federal and Provincial Governments of Libya.

3. Lack of sufficient trained personnel.

4. Lack of administrative support in the USOM organization.

5. The lack of administrative and operational support by Joint Services including personnel, procurement, garage, warehousing, budget and fiscal, and all others.

6. The necessity of operating under extremely adverse conditions in Fezzan including climate, road, communications, vehicle maintenance, and administrative procedures.

XII. Conclusions and Recommendations

1. Malaria eradication can be accomplished in Libya if the Government of Libya demonstrates sufficient interest to support the program. Libya should furnish something besides the cases of malaria.

2. There are no serious technical problems at the present to prevent the accomplishment of our goal.

3. This program will benefit Libya and in turn will be a part of the world-wide campaign to eradicate malaria.

4. This program must be integrated into the Ministry of Health if it is going to be a success. Malaria eradication is the type of program that must proceed according to schedule or all effort is lost. The Malaria Advisor will not accept the responsibility for the eventual failure of this program if it remains under the same administrative and organizational set-up.

5. It is recommended that the Malaria Advisor and other bilateral and international advisors serve in the capacity of advisors and not as program administrators.

6. It is recommended that one of the Senior Sanitarians returning this month from training in the USA be appointed as Director of this program and be employed by the Ministry of Health. It is also recommended that the Director and the Malaria Advisor be allowed to employ the necessary qualified personnel for the efficient conduction of the program. Ifiit is necessary to obtain them from other LAJS health programs in order to obtain personnel with training then the Malaria Advisor recommends that this be done. It is much better to do one important program properly than to do several halfway.

7. The final recommendation is as follows: "Serious consideration should be given to withholding any future USA contributions unless the Government of Libya expresses more interest in the program and takes the necessary steps to organize a Malaria Eradication Section in the Ministry of Health. Due to technical reasons this organization must be established within the next three months or the program will be severely affected."

Sanitarian Bailey submits the following information:

The highlights and achievements in the Sanitation, Slaughterhouse and Health Education Section by Province:

A. TRIPOLITANIA

1. Funds for salaries of 28 Libyans; Sanitation (20) and Health Education personnel (8); in-service training in the functions of Sanitary Inspection and Health Education programs.

At the beginning of the Public Health Program, here in Libya, there were no qualified personnel to assume the various responsibilities of a Public Health Program. Personnel were obtained from various related programs - aid-men in hospitals, truck drivers and clerks. This group of personnel, was given short training courses in sanitation and allied public health activities. Those that were found interested in sanitation and capable, were given training in off-shore universities.

In 1951, the first group of Libyans was sent to the American University of Beirut to attend a course in sanitation. Since that time, a total of 19 Libyans have been sent to AUB to study. Of which, seven (7) have been sent to the U.S. for one additional year of study at the American Universities. Of the seven (7), one has returned to study for a degree in Sanitary Sciences. This person, originally started to work in the field of public health as a janitor in the Base Hospital in Wheelus. Not having a high school education, he enrolled in a correspondence school, from the U.S. and completed his high school study in order that he might be accepted for study in the University of Oklahoma. He will be receiving his degree, either in the January or June of 1961. Upon completion of his studies, he will return to Libya to assume the responsibilities of the country wide program sanitation. (This student, along with the others who have received off-shore training, will form the nucleus of the sanitation organization of Libya.)

On additional Libya, has been nominated for a scholarship of four years to study in the field of Sanitary Sciences to qualify him as a professional sanitarian. This Libya, has also enrolled in accourse for High School by correspondence at his expense to qualify for admittance as a regular student in an American University.

2. Funds for the rehabilitation of 57 public cisterns; - in the villages of Garian, Jefren, Misurata and Zleiten.

In these areas, there is a great shortage of water. The inhabitants (2,500) depend on rain water collection. This is their main water source. Again, this is a short supply. It is necessary that the water be hauled into these areas for drinking purposes. This makes the water very expensive. The inhabitants provided the labor to rehabilitate the cisterns on a self-help plan.

3. Funds to provide materials (sand, cement, gravel and steel) for pit privy and cesspit cover programs (2,000 slabs).

Gastro-intestinal diseases are one of the greatest causes of sickness in Libya. The main contributing factor in the high incidence of these diseases, is the lack of public and private latrine facilities. This program has been a demonstration to the public. The public to supply the labor for digging the pit, making the salb, placing the slab and preparing a superstructure where required for privacy. This program was difficult to get started at the beginning. After a concentrated program of the Health Education Section, the public showed more interest in this program and applications are now being received faster than they can be met . Improvements in human excreta disposal also contributes to a reduction in the high child mortality rate.

4. Funds for assistance in the construction of public latrines at Misurata, Cussabat, Tarhuna, Garian, Jefren, Gindo, Assaba, Ben Ulid, Azzizia, Suk el Khamis and Zavia.

The above villages were without any public toilets. The benefits stated in the above paragraph are also applicable here.

The villages cooperated by providing 25-50% of the costs for the above construction.

5. Loan of vehicles - (6) to villages to help in the garbage and trash collection programs.

Many of the villages either do not have, or equipment is too small to provide adequate collection services. These vehicles are utilized to assist these villages with their clean-up programs. Six vehicles surplus to the needs of the program have been transferred to these villages to be utilized in sanitation activities.

Garbage and trash is another source of fly breeding. Since flies are associated with the transmission of many gastro intestinal infections, their control is considered one of the most important activities in sanitation. Thus, by eliminating those factors which are the most important agents in the transmission of diseases, and with these basic steps, the gastro-intestinal infections incidence that are transmitted by flies, will be reduced.

6. Funds to purchase 700 salvaged gasoline drums for use as storage containers for garbage and trash collection for the main principal villages of the province. These drums to be utilized as main public garbage collection stations, distributed at convenient points in each of these villages.

This activity facilitates better collection system to the garbage collectors and to the householders. Also it helps in the control of fly breedings and contributes toward the reduction of fly borne diseases in the community.

7. Scavenging service equipment.

Funds for assistance to villages in Zleiten, Garian, Jefren, Zavia, Tarhuna to purchase two and four wheeled animal drawn carts for use in the garbage collection program of these villages. Other cleaning equipment, such as wheelbarrows, shovels, rakes, canvas bags, have been supplied to these and other villages; Giado, Garian and Jefren.

Several of these villages contributed from 25-30% of the cost of these carts. The villages in turn supplied the animals and employed laborers for the collection and disposal of garbage from the village on a routine bases; daily, semiweekly or weekly. Prior to this, there were no collections in many of these villages.

8. Funds for insecticides; (DDT 10% dust - 5 Tons; DDT 75% WP - 5 Tons; 47% Malathion emulsion - 700 gallons and spraying and dusting equipment. The insecticides were utilized for insect control programs in public buildings, schools, mosques and public houses.

Insecticides were used to complement the clean-up programs and were also used to control mosquitoes in Tawerga area prior to the beginning of the Malaria Eradication program in Libya. Swamps in this area were treated for three (3) years during 1955, 56 and 57 and this has contributed greatly to the reduction of Malaria cases in this village. There has been no Malaria confirmed cases reported from this area for the past two years.

Fly control programs have been conducted in cooperation with the Wheelus Air Base in Suk el Guima for three years, 1956, 57 and 58 during the fly breeding seasons. The areascontrolled were in the Gabillas adjoing the Base. While these control programs were in operation reports from the Suk el Guima dispensary revealed an approximate reduction of 75% in the gastro intestinal infection among the inhabitants of this area. Reduction was also reported in the Wheelus Air Base, since many of the people live near this area and many of them are employed as messhall attendants and houseboys at the base. Also, it was reported that the gastro intestinal incidence of the Base dropped from the highest rate of Bases on the Mediterranean to the lowest rate.

Other fly control programs have been conducted in Zevia in 1959 and in Gadames this year.

A full scale Fly Control Program was conducted this year (1960) in the poverty camps located at the outskirts of Tripoli. Forty thousand (40,000) population are located in eleven camps around Tripoli, living in 8,000 huts made out of various structures; metal, wood, mud and cardboard. Prior to the beginning of the program a one week clean-up campaign was completed first with the help of the inhabitants of these areas. Following the clean-up, a spraying and dusting program for control of flies and other household pests were conducted. Other sanitary improvements were also carried out in these areas. These include repairs and improvements of existing toilets, construction of 32 pit privy latrines, improvements in

the water supply and drainage systems. The city of Tripoli contributed with 30% of the cost of this program.

9. Funds for the rehabilitation and construction of new slaughterhouses where no slaughterhouse exists.

The object of this project is to rehabilitate existing facilities and/or construct new ones where no slaughterhouse exists and train Veterinary and Sanitary Inspectors in the proper handling of meat, pre and post mortem inspections.

In general, the present slaughterhouses built by the Italians 25-30 years ago either are inadequate for present requirements, or through lack of maintenance, are in a very bad state of repair and operation. There is a great need for improvements of slaughtering, processing, distributing, storing, preparation and cleanliness in the slaughterhouses. This is due, to the lack of trained personnel on the fundamental principles of meat hygiene as well as on the economic consideration in the way of handling meat included the reduction in losses in meat and its by-products and prevention of diseases transmitted to other domestic animals.

Through efficient and well improved methods of slaughtering, cleanliness of the methods of preparation, distribution, supervision, inspections pre and post-mortem, etc., will reduce the incidence of diseases transmitted from animals to man and it will provide a safe, wholesome product for his consumption. It also provides better quality of skins for the leather industries.

Plans, drawings and specifications are complete, ready for tendering of contracts, with some under construction at Garian, Jefren, Homs and Tarhuna. The slaughterhouses in Misurata and Zleiten will be rehabilitated. The slaughterhouse in Suk el Giuma has been co pleted.

10. Food and meat inspection is another important responsibility of the sanitation program. The food establishments have been inspected on routine basis with filing cards prepared for each establishment. Follow-up inspections are made to determine compliance with previous recommendations to correct deficiencies. Below is a chart of monthly inspections performed by the sanitation personnel.

Establishment	Khoms	Cussabat	Tarhuna	Zliten	Misurata	Zawia	Suk el Giuma	Garian Jefren
Butchers	22	9	6	15	16	72	33	18
Breadsellers	21	7	-	7	34	28	-	-
Bakeries	6	6	4	2	10	8	14	18
Bars	9	3	5	3	7	8	3	5
Groceries	48	22	15	25	84	-	66	35
Coffee Houses	6	3	5	5	7	24	28	10
Fruitsellers	32	22	15	46	59	106	19	15
Oliveoil seller	10	7	6	12	16	18	13	10
Tea makers	2	3	4	8	4	25	3	8
Restaurants	3	6	4	2	9	-	3	2
Wheat Mills	6	4	4	2	4	-	11	17
Slaughterhouses	2	1	3	1	3	3	3	2

11. Health Education Activities.

These activities are performed by eight Libyan personnel trained through short in-service training courses in Health Education Methods, Public Health Activities, and Audio/Visual techniques. Two Libyans have been sent to AUB, where they studied in the field of sanitation with special emphasis on health education.

Personnel engaged in group discussions and individual contracts, cooperating with other public health workers in their various fields, preparation and distribution of pamphlets, posters and bulletins to the general public. The success of the Public Health Program depends upon the education of the public to accept the many changes that are required in order to bring about improved health conditions in the homes and community.

Equipment has been procured for teaching the public, such as movie projectors, public address systems, tape recorders, slide projectors, screens, cameras, electric generators, film and filmstrips.

B. CYRENAICA

The remarks for activities in Tripolitania also hold for those in Cyrenaica.

1. Purchase and delivery of one Bedford 4 x 4 four ton truck to be utilized as a Provincial Garbage Collection Vehicle.

This vehicle has been utilized to assist small villages on a revolving basis with their clean-up campaigns. Once the villages are clean, the village is responsible to maintain proper collections.

2. Funds for the purchase of 850 salvaged gasoline barrels for storage containers of garbage and trash to be utilized by the villages of the province.

The people of the village carry their garbage and trash to these strategically located points, where the village collects and disposes of the accummulations.

3. Funds to purchase scavenging service equipment - 60 wheelbarrows, 60 shovels, 60 rakes and canvas for distribution to villages of the province to be utilized in their trash collection system.

4. Funds to purchase eight 4-wheel animal drawn carts to be utilized for garbage and trash collections in the following towns:

2 - Tobruk
2 - Barce
2 - Agedabia
2 - Beida

5. Funds to construct four public latrines in Tobruk and four in Barce.

6. Funds for materials to make 300 pit latrines (sand, gravel, cement, and steel).

7. Funds to purchase three Bedford Truck cesspool evacuators.

8. Assistance with Typhus control program by loan of vehicles and supply of insecticides.

Lindane dust 0.5%	- 1 Ton
DDT, 75% WP	- 2 Tons
Hudson sprayers	- 20
Dusters	- 50

Through this cooperation, the Typhus rates have been reduced as follows:

1956	- 187 cases
1957	- 58 cases
1958	- 6 cases
1959	- 5 cases

The insecticides were also used to complement the provincial-wide clean-up campaigns of spraying and dusting after the clean-up programs.

A Fly Control Campaign was conducted in Tobruk to reduce the great number of flies in this town. Tobruk, which is the home town of the King, has increased in population due to the increase of British Personnel families from el Adam Air Base, also from movement of Bedouin families into the town. This has put a heavy load on the already inadequate collection facilities which resulted in large accumulations of garbage for fly breeding sources. This control program will greatly reduce the fly population densities with the resultant reduction of illness transmitted by the fly.

9. Funds provided for construction of 2 Slaughterhouses; 1 at Tobruk and 1 at Barce.

The contract has been awarded at Barce and construction should get under way in August 1960.

10. In-service training courses: Short courses of three months duration on basic sanitation activities have been conducted for all sanitation personnel in the province. A similar short course (1 three-week duration), was conducted at the Military Headquarters for food handlers personnel. Short course lectures on general and personal hygiene, were given to the summer school teachers in the province. A one month practical field demonstration was also conducted

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C. FEZZAN

1. Vehicles have been loaned to the city of Sebha, until the delivery of 1 Bedford 4 x 4 Four Ton Truck for garbage and trash collection in the capital city of Fezzan.

2. Purchase of materials, 80 wheelbarrows, 50 shovels, 50 rakes and canvas for the following villages of Fezzan:

Sebha	Ghat
Hon	Brak
Murzuk	Um el Araneb

3. Assistance given to these same villages, by payment of laborers for collection of trash and garbage from the villages. The Nazir of Interior cooperating on payment of 40% of the cost of the laborers.

4. Plans and drawings and funds for construction of 4 public latrines in Sebha.

> Sebha, the capital of the Fezzan, was without any public facilities for disposal of human excreta. These public toilets will provide needed facilities and eliminate the use of public property for this purpose.

5. Insecticides, DDT 75% WP, 5 Tons; Lindane dust 0.5%, 1 Ton DDT 10% dust, 3 Tons, with 50 sprayers and 70 dusters have been supplied to the administration of Fezzan.

> These insecticides, have been used for three spraying programs during the years 1955, 56 and 57 - when approximately 50% of the houses in the Fezzan were sprayed for Malaria Control. This was prior to the Malaria Eradication program and these three spray program contributed to the reduction of Malaria cases in the Fezzan.
>
> The insecticides were also used for fly control programs in Sebha, during the years of 1957, 58 and 59 and 1960 - when all of the houses of Sebha were sprayed following clean-up campaigns. The daily routine of trash collection along with DDT spray programs have contributed to a noticeable fly reduction in Sebha.

6. Designs, specifications and funds were provided for the construction of 1 public bathhouse in Sebha.

Although Sebha has a water distribution system, water is not available in every house. The public bath, will provide a facility where the general public will be able to bathe. This will improve the personal hygiene of this group of population which is so necessary in the reduction of Trachoma and other skin diseases.

7. One Slaughterhouse constructed in Sebha. Construction completed.

Sebha, the capital city of Fezzan, had no public slaughterhouse. Slaughtering was performed in the open air upon the ground. This makes possible contamination of meat for public consumption. The new slaughterhouse will provide a good quality of meat slaughtered under better sanitary conditions.

Plans and specifications and funds available for construction of small slaughterhouses at Brak, Murzuk and Hon.

Development of Domestic Water Supplies Project No. 70-52-908. - Agnano, Griffith and Kent. - Their presentation follows:

1. Description of Project

The project was first programmed in 1955 and is a continuing country-wide project for the development and rehabilitation of domestic water supplies for municipalities, villages and rural population groups. Priority of work was established to provide at least minimum needs of potable water in population centers where domestic water supplies are non-existent and where existing supplies are inadequate for reasons of quantity or sanitary quality.

During 1955 and 1956 engineering studies and surveys were undertaken to define the scope of the problem and to determine a basis on which to plan the program of improvements. Initial activities involved the rehabilitation of rural wells and cisterns used as sources of domestic water supplies throughout the Province of Tripolitania. The activities have now been extended to Cyrenaica. The rural well rehabilitation program was organized and implemented as a direct LAJPHS operation utilizing project personnel and materials and equipment resources. Yearly work plans were formulated and reviewed with the Mazarate of Health for concurrence and implementation.

In 1957, activities were begun on the development of community water systems at Sebha, Fezzan; Misurata, Tripolitania; and Tobruk, Cyrenaica. Activities have been extended to other priority communities in the three Provinces. Assistance was given to established priority municipalities by rendering technical guidance, by direct LAJPHS installation of facilities, and by means of grants-in-aid to the Provincial Public Works Departments, as expedient. The project also provides for training and demonstration activities in techniques of plant management, operation and maintenance of water supply systems for domestic use.

2. Causation or Rationale

The broad rationale for the development of domestic water supplies was stated briefly by Dr. H. G. Baity, Chief of the Sanitation Division of the World Health Organization, "A safe and adequate water supply is the basis for all human progress." Renewed and concerted emphasis is being given to the provision of safe and adequate water supplies to all peoples of the world through a World-wide Program for Community Water Supplies sponsored by ICA, WHO, and other cooperating agencies.

In Libya, the project was conceived to meet an immediate need generated during World War II and the post war years, in which period water supplies and systems were damaged or destroyed, and in many instances allowed to

lapse into deterioration and obsolescence because of lack of maintenance and supervisory control. It was regarded as essential that at least minimum domestic water needs be provided in the rural areas and communities as a base on which an effective public health program could be developed in the country.

Responsibility for the installation and maintenance of water systems rests with the Public Works Department of the Provinces, and responsibility for the safe quality of the water available for human consumption rests with the Mazarates of Health. This responsibility is only nominally assumed by the health departments. In addition, the Public Works Departments were incapable of progress in meeting the needs for water supply improvement because of limited resources in funds and personnel. The project, therefore, was designed to assist the responsible agencies in accomplishing an improvement of the domestic water supply facilities in the country.

The objective of the project is to provide essential water supply to the neediest rural areas and organized communities. Installation of equipment and facilities are of minimum requirements and complexity to avoid excess burden on the benefiting communities for operation and maintenance of the facilities. Proposals are offered to the responsible local authorities for the establishment of service rates to provide revenue for the operation and maintenance of the facilities and to assure conservation of the critical water supplies for essential domestic uses.

3. Project Goals and Problems

Results of the preliminary engineering surveys indicated need for improvement of a great majority of the rural water supplies derived mostly from unprotected dug wells, and the need for development or rehabilitation of domestic water supplies in twelve communities involving an estimated population of 83,000.

Because of the relatively greater populations affected in both rural areas and communities, the initial project activities were concentrated in Tripolitania. Records indicate that required improvements and installation of facilities in the priority areas were to be implemented in cooperation with the Provincial Public Works Department. Project history also shows that work implementation was excessively delayed because of the several incapabilities of the local Public Works Department.

In an attempt to expedite project implementation, plans were made for construction of water systems by direct LAJPHS operations. Accordingly, a U.S. well drilling contractor was imported into Libya to expedite exploratory

well drilling for location of water sources and to undertake installation of the necessary equipment and facilities. Progress and accomplishments utilizing the services of the off-shore contractor left much to be desired. In the course of two years of contract operation, one water system was completed at Misurata and two non-productive wells were drilled at Cussabat. The cost of the effective services were excessive and progress performance was generally unsatisfactory. Subsequently, work involving the installation of water supply systems is undertaken in cooperation with the local Public Works Departments to the maximum extent possible. It is felt that even at the expense of delayed progress in work planned, greater long range benefit will accrue to the local governmental agencies and communities through the utilization of local staff and local contractor services.

Offshore commodities procurement requirements and delivery schedules have been continuous problems in effective planning and implementation of works. Past experience indicates that the average delivery of commodities requires eight months to one year.

In prior years project funding procedures, the latitude of carry-over of funds facilitated the budgeting of sub-projects, continuing beyond a single fiscal year. The provisions of the Project Agreements for FY 59-60 do not allow for carry-over of funds allocated for completion of a specific job and, further, PIO/C's are required for equipment and materials early within the period of the Pro Ag in effect.

The administrative reasons for the procedures are appreciated, however, in the case of developing community water supplies, extended exploratory drilling has to be done in search of suitable sources of water. In a number of instances the results of the drilling operation are negative and the entire approach and plans have to be modified. Submitting specifications for specific pumping equipment particularly, prior to the results of drilling tests, cannot be accomplished until basic data as to depth of well, yield of water, distance water has to be conveyed from source to community, etc. have been obtained from the exploratory drilling operations. Comparable data is also necessary for the preparation of specifications for piping and auxiliary materials.

Provisions of the current Pro Ag also threaten non-completion of jobs awaiting the arrival of offshore commodities because other costs funds allocated for installation of facilities cannot be expended or obligated prior to June 30, 1960. Other provisions of the Pro Ag requiring U.S. type specifications and world-wide tendering for commodities are not acceptable to the local Public Works Departments technicians because of the possibility of receiving a variety of equipment not familiar to them and not amenable to requirements for standardization of equipment, spare parts and maintenance services.

In the implementation of water development project activities, and as a matter of fact all public health program activities, the American technician is dealing in most instances with several groups of third country national employees from the planning phases through the execution of projects. In Tripolitania, Italian technicians are employed by the Nazarates of Health and Public Works; in Cyrenaica, British technicians are employed in key positions; and in the Fezzan, French medical personnel and Egyptian engineers are employed. Each group brings with it different concepts and preference for types of facilities, equipment and materials familiar to it.

In addition to the variety of concepts brought into the country by the third country employee, frequent changes in the staffs of the provincial governmental agencies makes continuity of project planning and execution difficult, and in some cases impossible. For example, in Cyrenaica, since 1955 the Nazarate of Health has changed six Nazirs and an equal number of Directors of Medical Services, a position regarded as the technical advisor to the Nazir.

There appears to be little or no opportunity to correct the problems inherent in the staffing changes of the provincial health departments. Improvements may be accomplished, however, in the areas of more direct responsibility within the Mission, particularly as regards to funding procedures, procurement and possibly the method and kind of project assistance extended to the local governments.

4. Accomplishments

Rural Water Supplies: Since the beginning of project field activities in 1956, 120 shallow wells and several cisterns have been rehabilitated and sanitized to serve upward of 80,000 people in dispersed and remote rural population centers throughout Tripolitania. The project activities were planned and programmed in cooperation with the Nazarate of Health. Actual field work was undertaken as a direct LAJPHS operation, including staff, vehicles, equipment and local costs funding.

Similar activities were begun in Cyrenaica in 1960 where six rural wells have been rehabilitated to serve approximately 4,000 persons in four population centers. Activities in Cyrenaica are undertaken in cooperation with P.W.D. staff supported by project vehicle, equipment and local cost expenditures.

Community Water Supplies:

Sebha, Fezzan. A complete water supply system including deep wells and pumps, elevated concrete reservoir, and 5 kilometers of distribution lines was completed in August 1958 to provide Sebha and two fringe settlements with their

first piped water supply. The original installation provided for 100 metered house connections, and 20 public fountains; actual population utilizing the system is approximately 7,000 persons. The system was constructed totally by project funds and staff, including design and construction, utilizing local contractor services.

Misurata, Tripolitania. Preliminary to the development of a complete public water supply system in Misurata, exploratory well drilling operations were begun in July 1957 utilizing off-shore contractor services. Operations continued for a period of one year before an adequate supply of good quality water was located at a source 13½ kilometers from Misurata. Installation of the basic facilities including three deep drilled wells and pumps, concrete storage reservoir, 13½ kilometers of supply main and 9 kilometers of distribution lines was completed in August 1959. The system is presently undergoing test and minor improvements prior to turnover to the municipality for operation and maintenance responsibilities. Prior to the installation of the new system, the water supply needs of the inhabitants was met by distribution of saline water through the obsolete public system for sanitary and washing purposes, and by house to house delivery of fair quality water by tank truck and cart for drinking and culinary purposes.

Other project activities completed or underway in Tripolitania include:

Garian: Rehabilitation of springs and supply mains anddrilling of deep well equipped with pump to supplement community water supply. The completed improvements have resulted in an increase of 50% in the water supply available to the community.

Cussabat: Exploratory drilling is underway in an attempt to locate an adequate source of water amenable to develop for a public supply. Designs for a community system have been completed and funds are allocated for installation of the facilities.

Suk el Giuma: Project funds and technical assistance have been made available for the construction of a storm water drainage sewer for the protection of the community center of Suk el Giuma. Implementation of the facility is a cooperative LAJPHS - P.W.D. undertaking.

Sicrte: Plans for a community water system have been completed and exploratory drilling is underway in an attempt to locate an adequate source of water to supply the domestic needs of the community. Funds for installation of the facilities have been programmed for FY 59/60.

Principal project activities which have been completed or are underway in Cyrenaica are:

Tobruk: A series of deep wells have been drilled to supplement the present sources of water. Improvements to the community distribution system include the completed construction of an elevated concrete reservoir of 50,000 gallon capacity and replacement of 10 kilometers of deteriorated water mains throughout the community.

The rapid development of housing and increase in population in Tobruk has placed the improvement of water supply and electricity facilities as first priority of needed public utilities services.

A water desalting plant of U.S. manufacture has been installed at the new Tobruk Hospital to supply 5,000 gallons per day of potable water for the needs at the hospital.

Barce: An elevated concrete storage reservoir of 75,000 gallons capacity has been completed and work is scheduled for rehabilitation of the deteriorated water system facilities. Drilling of additional wells is also planned to supplement the present sources of water supply. The system is designed to serve 5,000 - 6,000 population.

Girabub: Installation of water piping and storage facilities is underway and procurement of a water treatment plant has been processed for early delivery to provide the remote desert community of 1,000 with a potable water supply system.

Guarcia: In cooperation with Joint Services Agriculture and P.W.D., a combined potable water supply and irrigation system is under development for the community of 500 and surrounding rural population of several thousand inhabitants.

5. Economic Returns, Social and Political Impact

The availability of adequate quantities of safe water is fundamental to both modern healthful living and economic growth of the community. Piped water to the homes not only cuts the chain of transmission of water-borne disease, but also makes possible personal and environmental cleanliness essential to the prevention of filth-borne diseases. The provision of adequate quantities of safe water is the foundation on which a sound and effective community public health program must be built.

From the economic point of view, the provision of adequate safe water, with general health services, increases the earning capacity of the work force of the community and decreases the burden of welfare support and medical care services recognized as a prime responsibility of the government. Piped water is a basic prerequisite for development of industry, commerce and tourism. In newly developing countries the installation of water facilities would provide stimulus for public works of many types and would catalyze urban improvement.

Political impact considerations may be regarded as generally more immediate and direct than many of the "long range" type of projects. Water supplies are essential basic needs of all the inhabitants. The fulfillment of the needs is immediately recognized and readily utilized. The development of domestic water supplies project requires no campaigning or long range demonstration activities, acceptance is ready, and numerous proposals for justified project activities are offered by the responsible government officials.

Benefits derived from the provision of adequate quantities of safe water accrue to all aspect of community development and welfare. Most generally the benefits are of the nature of intangible or indirect benefits. In the "older" countries and those more advanced in the process of development, water supply is regarded as a commodity which should be paid for by the consumer. In Libya, water supplies are regarded as the responsibility of government and are subsidized in whole or in part from provincial or federal administration funds. Most of the smaller organized communities are incapable of generating funds for the construction of relatively expensive water supply systems and have in the past been denied the benefits of the service or have been supported by central government or outside aid funds.

The costs of development of water supplies in Libya are excessive as compared to installation under "average country" conditions. The factors contributing to the high costs of water supply systems are several. Foremost is the scarcity of adequate sources of underground water amenable to development. Libya may be regarded as a country with no streams or lakes, low rainfall averaging 10 inches per year over the populated coastal belt, and is extensively underlain with saline aquifers producing water of saline or marginal quality. Extensive and costly ground water exploratory operations must, of necessity, precede the development of water supply systems. Other factors influencing the costs of installation are the necessity of importing all equipment and materials from foreign sources and the high local contractor costs for installation of the facilities. With full recognition of all factors influencing the cost-benefit ratio, it must be recognized that, within limits, potable water in Libya is worth what it costs.

6. Project Investments

Support of project activities from 1955 through 1958 has been totally from ICA funds except for token contributions in kind in the form of P.O.L. for project vehicles and estimated rental value of storage warehousing space for storing of project equipment and materials. Access to land for installation of permanent water supply structures is provided by the local governmental agency concerned. Contributions in manpower have been solicited from the benefiting local population groups during the early period of the rural well rehabilitation program. The net contribution in value and effort was inconsequential. Experience dictated the discontinued use of local labor contributions in the interest of expediting operations.

Water supply development activities in Tripolitania and Fezzan have been undertaken as direct LAJPHS operations involving planning and design of facilities with project engineering staff and installation of facilities with project personnel, local contractor services or off-shore contractor services. In Cyrenaica, project activities are undertaken in cooperation with the Provincial Public Works Department supported by grants-in-aid for procurement of commodities and for local costs expenditures. Contribution in kind is made in the nature of services of P.W.D. supervisory field staff rendered during installation of the facilities. The arrangement precludes the requirement for LAJPHS field staff in Cyrenaica and transfers responsibility for implementation and completion of work to the local governmental department.

During FY/59, G.O.L. (Tripolitania Administration) provided direct financial support for two project activities; the storm water drainage system at Suk el Guima and the Misurata water supply. ICA contribution for the Suk el Guima drainage is LL 31,000 and G.O.L. contribution is LL 10,000 or 1/3 of the total construction costs. Contribution by G.O.L. for minor modifications to the Misurata water system is LL 2,000 as compared to ICA contribution of LL 3,000.

The total ICA contributions to the project from initial programming in FY 55/56 through FY 59/60 amount to $2,215,000; annual allocations are as follows:

FY 55-56	FY 56-57	FY 57-58	FY 58-59	FY 59-60	Total
$215,000	$430,000	$760,000	$276,000	$534,000	$2,215,000

G.O.L. contributions are as follows:

FY 59-60	Cash $33,600.	Previous Years in Kind, Estimated $50,000.	Total Investment $83,600.

7. Conclusions and Recommendations

Success of the project can be measured on the basis of rural water supplies and community water supplies completed and in process for eventual completion as reported previously under "accouplishments". From operations experience and observations of the resources and progress capabilities of the local Public Works Departments for rehabilitating or developing water supplies in the critical priority areas of the country, it is reasonable to assume that few, if any, of the activities completed would have been possible without project assistance as rendered.

Immediate benefits realized from project accomplishments is the provision of adequate and safe water to a substantial population in both the rural areas and several communities which, for years, have been deprived of this basic and essential commodity for healthful living and economic growth of the community. Long range benefits are the concepts of design and construction of the facilities and the introduction of water treatments processes and plants which will remain as demonstrations for future works. In Cyrenaica, the rural wells rehabilitation program is accomplishing the training of a small staff of local P.W.D. employees who will be capable of continuing the operations following the integration of the services into the local governmental department.

Prolonged operations extending beyond programmed completion dates and relatively high costs of completed facilities may be regarded as failures, but must be tempered with the many influencing factors characteristic of the local conditions mentioned previously under which operations have to be carried on.

Because of the non-professional qualifications of the responsible government officials concerned, support of the project activities has been "routine" and lacking in full appreciation of the department's responsibilities in the construction, maintenance, operation and control of sanitary quality of water supplies. Unilateral project activities in Tripolitania and Fezzan and cooperative activities with P.W.D. in Cyrenaica suggest a transfer of the technical and construction phases of the project from the Nazarates of Health to the Nazarates of P.W.D. Control of the sanitary quality of public water supplies should be retained in the Nazarates of Health as the logical agency to exercise this responsibility.

Experience has shown in Tripolitania and Fezzan that unilateral project activities financed in total with project funds has not generated the complete cooperation and interest in responsibility for the facilities or the requirements for maintenance and operation. Responsibilities for technical aspects

of facilities construction and maintenance and operation rests with third country national employees of the departments who display minimum regard for the economic aspects of facilities design and construction or the application of management principals to develop the self supporting or revenue producing potentialities of public water supply systems.

In view of past operations experience, and in view of the fact that the Provincial P.W.D.'s are the logical governmental construction agencies for water supply facilities, reconsideration of transfer of action agency responsibilities to the Public Works Departments for future project agreements is indicated.

Further, it is recommended that the extent of ICA project assistance be limited to costs of off-shore commodities and to off-shore contract services, if required, to allow for participation in local costs by the benefiting local agency concerned. It is intended that the requirements for local costs participation will relieve the Health Division of construction operations responsibilities and develop locally an interest in completed facilities, for required future expansion of facilities, and maintenance and operation essential to derive the mutual objectives and benefits from the project activities and aid assistance.

Chief Nurse Perry and Regional Public Health Nurse Armstrong submit the following information:

1. Understanding of the program, activities and accomplishments of Nursing, USOM/Libya, requires some knowledge of Nursing as it exists in Libya today:

a. General: The nursing profession, as such, does not exist in Libya. There is, at the present time, one qualified Libyan Nurse. She completed a 3-year course at the Nursing School in Tripoli in 1960. The restricted social status of Libya women and the relatively small number who, until now, have received adequate education, greatly limit the number one can expect to interest in the nursing field. Most of those who have been encouraged to go beyond primary education are being trained as teachers. Until the basic education of women is improved, special training and education such as nursing, can be added only with difficulty. Nursing suffers in Libya, as it has in other countries in the past, from a stigma attached to it, so that families are most reluctant to allow their daughters to study in this field.

b. Hospital Nursing: The hospitals of Libya are staffed primarily with sub-professional or non-professional personnel. There are Sisters (nuns) in most of the hospitals but few of them belong to the nursing order. There are a few trained Italian midwives in the Government Hospital in Tripoli and a few nurses in the Government Hospital in Benghazi. The other personnel consists of untrained attendants, both male and female, and those who received a six months training course 20 years ago. There is no organized nursing service and there are no nurses on the wards to assist doctors in carrying out their orders for medical care to the patients. No nursing care to patients exists except for prescribed treatments, injections, and temperatures. Procedures are frequently carried out without proper sterile technique. There is no adequate 24-hour coverage of wards. As a result, patients are not always properly cared for and the hospital stay of patients is greatly lengthened. Because of this situation, little improvement can be made overall within the hospitals. Many discussions and consultations were held on this subject by our predecessors with little, if any, success.

c. Nursing Education in Libya:

(1) The first school of nursing in Libya was opened in 1957 under the auspices of the Ministry of Health and the World Health Organization. The School offers two training programs; one, a 3-year program for female nurses, is for girls who have completed the secondary class;

the second, a 2-year course is for girls who have completed the sixth grade, or primary school. These girls will be known as assistant nurses. The instructors for these courses are W.H.O. personnel with assistance from locally employed third country nurses and doctors. The hospital, because of the lack of organization of its clinical staff does not provide a very satisfactory area for training. Since supervision of the students during clinical practice is not and can not be furnished by the hospitals, it is furnished by the instructors from the school of nursing. In 1957, one student entered the three year program for nurses and 12 students entered the two year program for assistant nurses. The assistant nurses who completed the two year course in September 1959, were employed in the Government Hospital. The same obstacle, lack of nursing supervision, to providing the students with good clinical practice, affects the utilization of these students as graduates. Unless some measures are instituted to provide better clinical practice for students and better utilization for graduates, Libyan efforts to prepare its own women in nursing will continue to be weak in terms of preparation and wasted in terms of utilization. In September 1959 another class of 15 assistant nurses began the two year course. No students were recruited for the three year course. Despite this fact, the Ministry of Health is presently planning for another school (three year course) in Benghazi, Cyrenaica. Recruitment has been primarily from Tripoli. Because of the limited number of girls receiving further education and the reluctance of parents to allow their daughters to come into nursing, recruitment remains one of the major difficulties.

(2) There are two other schools for young women in Libya also under the auspices of W.H.O., one in Suk-el-Giuma, Tripolitania, and one in Berka, Cyrenaica. These two schools conduct an 18 month course to train girls to be auxiliary midwives and to work in the field of Maternal and Child Health.

(a) Suk-el-Giuma - Eleven girls, trained in the first class at Suk-el-Giuma, were employed either in rural areas of Tripoli or in Tripoli itself. Two were sent to Sebha, Fezzan. A second group of ten girls completed the course in September 1959. A few of these girls have been assigned to rural areas (Zletin, Taxhuna) in Tripolitania.

(b) Berka - Twelve girls completed training in September 1959. Those girls were to have been sent to rural areas to work under the supervision of the doctor in the Dispensary. All of the, however, were recruited from Benghazi and they and/or their families were

unwilling to have them live away from home. They were therefore employed in the Government Hospital in Benghazi doing work for which they have not been trained while Maternal and Child Health in the rural areas for which they were trained received no benefit from the training. In September 1959 a second class of 15 began training. These were recruited from outlying towns such as Barce, Derna, Beida.

(c) The W.H.O. Regional Nursing Advisor, who visited these schools last year, expressed some criticism of the course in Suk-el-Giuma, after observing the performance of the graduates of this school at Jefren (MCH Center and Ambulatoria operated by the Nazarates of Health, Tripolitania) and Garian (Health Center operated by the Libyan American Joint Public Health Services). Comparing the students of the MCH School, Suk-El-Giuma, with the assistant nurse students at the nursing school, Tripoli, she stated:

> "As the young woman of this school and the nursing school are of similar background, one can only conclude that the apparent difference in their appearance and behaviour is one of training."

(d) On the basis of our experience with the graduates of this school who were assigned to the Health Center in Garian, we are in agreement with the opinion expressed by the W.H.O. Nursing Advisor. It is true some of the difficulty stemmed from a failure of the employing agency (Nazarate of Health) to define clearly the lines of authority. As a result these girls, although young and with a minimal amount of training, were unwilling to accept the supervision of the graduate nurse in the Center. Other contributing factors were (1) the reluctance of the community to accept a change in customs and (2) the fact that the young girls were not prepared to conduct themselves wisely in a less restricted situation. Only time will modify the attitude of the community but the young girls can be prepared during their training to exercise their greater freedom more wisely. Without such preparation and better supervision the training invested in those young girls will not be of much benefit to Libya.

2. Nursing, USOM/Libya, can be divided into 2 major phases on the basis of project agreements between the Government of Libya and USOM, as follows:

a. A project for Trachoma Control through clinics and a school program signed in October 1952.

b. A project for Trachoma Control and Basic Public Health signed in 1955.

3. In 1952, it was decided by USOM and a W.H.O. Public Health Advisor to the Government of Libya, that the health program of USOM would be limited to Trachoma Control and school clinics.

a. Nursing Personnel: In August 1952, five Middle Eastern, Arabic-speaking nurses were recruited in Beirut, Lebanon, by the Chief, Health and Sanitation. These nurses (third country nationals) reported to Tripoli, Libya, in September 1952 and were assigned to work with the teams engaged in Trachoma Control. In December 1952, a Chief Nurse (USOM), Miss Bertha Tiber (1952-54) reported for duty. In March 1953, one of the Middle Eastern nurses was transferred to Benghazi, Cyrenaica, to assist the doctor in initiating the Trachoma Control program. In May 1953, a PH Nursing Advisor, Miss Octavia Heistad, arrived from the States and was assigned to the province of Cyrenaica (1953-55). In August 1953, Miss Tiber made a trip to the Middle East and recruited 2 additional nurses who reported for duty in November 1953. In December 1954, Miss Tiber completed her tour of duty and returned home, leaving the PH Nursing Advisor in Cyrenaica as the only USOM nursing representative in Libya.

b. Program - Nursing Activities:

(1) Tripolitania: The first attack against Trachoma was launched in November 1952 at Gargarish by a doctor assisted by 2 of the Middle Eastern nurses. A Clinicar was used, and after Gargarish the team proceeded to Suk-el-Giuma, where the District Commissioner provided them with space for a clinic. Since the adults did not return for treatment after the inflammatory process subsided, the clinics were closed and the attack was concentrated in the schools. The closing of the clinics gave rise to many complaints against LATAS. To allay these, the Nazir and the Minister of Health prevailed upon LATAS to take over and operate (DEC. 1952) an eye clinic in the Old City. One of the Middle Eastern nurses was assigned as the nurse supervisor of this clinic. In January 1953, by another agreement with the District Commissioner, Suk-el-Giuma, the Director Medical Services, Tripolitania, and the Chief, Health and Sanitation, the teams begun a Trachoma Control program in 18 schools in Suk-el-Giuma (3,500) students). The students were examined, initial treatment begun and then the teachers were trained to administer the treatment. The nurses did most of this teaching and the periodic supervision of the teachers. In January 1953, the Nazir of Health demanded that LATAS supply the original four teams promised and cover the province. LATAS, pleading the high incidence rate (estimated at 40 - 60% but actually about 92%) and the amount of time required and expense involved in treatment, suggested that they be permitted to establish a demonstration area to determine if Trachoma Control could be accomplished in a given area. The Nazir of Health continued to demand more action and solving of the Trachoma problem. LATAS agreed to complete the schools in the Suk-el-Giuma area and then to operate a similar

similar program in Zavia. In May 1953 LATAS wished to implement a school health program but could not elicit the interest of local authorities. Hence little was accomplished in this area except for classes conducted by one of the nurses in First Aid, Home Nursing, and Child Care at the Women's Teacher Training College and later at the Vocational and Agricultural Training College. These classes continued to be held for over one year. Nurses also organized and assisted with physical examinations of the students at the Vocational and Agricultural Training College and the LATAS Art School. LATAS activities in Trachoma Control were then expanded into three Orphanages and in one of those (Tripoli) a scientific study of Trachoma on a controllable group was carried out by a team consisting of a doctor, nurse, clerk and a laboratory technician.

(2) Cyrenaica: In Cyrenaica the Trachoma Control program began about March 1953 when a doctor and one of the Middle Eastern nurses from Tripoli reported for duty to Benghazi. The nurse assisted the doctor with examinations of students and taught and supervised the teachers to instill ointment in the eyes of the students. By July 1953, this program was being de-emphasized and the nurse and the PH Nursing Advisor, who had just arrived, participated in 10 weeks of summer Institutes for teachers. They taught classes in hygiene, first aid, and recognition of disease. In September they planned to begin a School health program but it was not possible to finalize the arrangements. At the request of schools, which had opened with some teachers absent and hence some classrooms vacant, they began health classes for the teachers. Following this, they assisted in examination of the students at the Teachers' Training School and the Girls' Secondary School. With the assistance of the teachers they established clubs for the mothers of the students in these two schools, thereby providing for an even wider dissemination of health information. The nurses also assisted in the visual screening of post-elementary students for spectacles, a project to which LATAS contributed (75% of the cost of the spectacles). The nurses screened the first year students in the Girls Primary school in preparation for physical examinations and used this activity to provide additional health information to the teachers in this school. They also participated in teacher In-Service Training programs and served with a School Health Committee composed of Health and Education officials of the government and LATAS staff.

c. Evaluation of Nursing Contribution:

(1) The Chief Nurse, Health and Sanitation, USOM, summarized the nursing part of this program as follows:

"It should be noted that there is no nursing program as such in this operation except the limited amount of teaching that is being done in the schools. The reason for this limitation is that project agreements provide for activities limited to Trachoma Control. Inasmuch as there is no nursing program in the country, in fact no health department set up into which we might infiltrate, nor are there counterparts in the government who understand or appreciate professional nursing, a more direct approach must be made. A nursing program as such can be developed only in a situation where there is some understanding of what is involved, some desire for the services, and a framework delineating what form those services shall take. Among other things required is contact with, or at least recognition of and by the medical practitioners in the country and their support. These cannot be initiated at the nursing level but must be an undertaking of higher mission officials. Contact with the women and informal promotion of nursing service is a function which can, and has been undertaken and can well lead to further action when appropriate contacts have been made at an official level."

(2). Having the disadvantage of only a brief assignment to USOM/Libya (March 1, 1960) but the advantage of "Hindsight", it seems to me the Chief Nurse has underestimated what Nursing was able to accomplish as a part of the Trachoma Control Program. Granted there was no nursing program as such; still nursing enjoyed numerous and varied contacts with those members of the community who, by reason of their position could exert great influence on the people. In my opinion this is of equal, if not greater importance in interpreting nursing, as a program. Furthermore nursing in the Trachoma Control phase had the advantage, as member of the team, of working closely with the doctors. In a country where the social status of women is low and where nursing is not yet "quite respectable", such close association with the doctor adds prestige to the nurse and hence to nursing.

(3) In 1953, W.H.O. Regional funds were limited and it became necessary for USOM to expand. In 1954 Trachoma Control was expanded and reorganized and preliminary surveys were made regarding the development of a generalized Public Health Program. This survey revealed needs in three fields: water supplies, community health and rehabilitation of medical facilities. In the summer of 1955, LATAS became LAJS and projects were planned in the area of water supply, sanitation, rehabilitation of hospitals, ambulatoria and laboratories, assistance with health training (Nursing School in Tripoli and the Sanitarians' School in Benghazi), and Trachoma Control and Basic Public Health. Research in connection with Trachoma Control activities had revealed that Trachoma among school children was of long duration and consequently, if control was to be

effected, the pre-school child must be reached. This directed attention to the need for a community approach. In addition, it was believed that there was a need for better health organization in the districts, whose medical facilities were curative, consisting of a hospital and an ambulatoria which was an extension of the hospital. It was planned to replace this district organization with one in which a District Health Officer would be in charge of the Ambulatoria and its doctor, and a Health Center. The latter would serve as a "focal point" for Public Health Nursing, Sanitation, and Health Education. From this plan was born Project 51-910, Trachoma Control and Basic Public Health.

4. In 1955, the presently operating Trachoma Control and Basic Public Project, of which nursing is a part, came into existance. This project provided for the construction and/or rehabilitation of buildings in selected co.munities of Tripolitania and Cyrenaica to be used as Health Centers. These centers also called Community Health Centers and District Health Centers, were to serve as a center for Public Health Nursing, Sanitation and Health Education Activities, and to constitute, together with the Ambulatoria (Dispensary) and its personnel, a health organization for a district under a District Medical Officer. Buildings were constructed and/or rehabilitated at Misurata and Garian, Tripolitania, and at Barce, Cyrenaica. In Zavia, Tripolitania the nursing activities were originally housed in a leased building and then in such space as was available in the Ambulatoria, pending the completion of a building to house both the center and the Ambulatoria. In Tagiura, Tripolitania, which in contrast to the above, was never planned as other than a nursing center, a leased building was used.

a. Nursing Personnel: In July 1955, Miss Maybelle Sacher (USOM) reported for duty as the Public Health Nursing Advisor for Cyrenaica. Miss Octavia Heistad, formerly in this position was transferred to a similar position in Tripolitania after her return from home leave. In December 1956, Miss Katherine Kendall reported for duty as Chief Nurse, a position which had remained vacant for two years. In July 1957, Miss Heistad returned to the States and her position remained vacant until February 1958, when Miss Anne Gibbons reported for duty. Miss Gibbons returned home in November 1958, and again the position of Public Health Nursing Advisor, Tripolitania, remained vacant until Miss Ione Armstrong reported for duty in June 1959. In August 1958, Miss Kendall returned home and was replaced by Miss Marguerite Perry in March 1960. In April 1960, Miss Maybelle Sacher returned home and the position o" Public Health Nursing Advisor, Cyrenaica is presently unfilled. The above nurses were assisted in the implementing of the Nursing aspects of the Basic Public Health Program by a group of 8 - 10 Third Country Nationals, Arabic-speaking nurses, who became increasingly more difficult to recruit.

b. Program - Nursing Activities:

(1) Tripolitania: Third country national nurses, for the most part Arabic-Speaking, but only in a few instances prepared in Public Health Nursing, working under the supervision and guidance of a Public Health Nursing Advisor, implemented the following Nursing Programs in the Centers in Tripolitania: Ante-natal, Post-partum, and Well Baby Clinics. Demonstrations of preparation of food and the feeding of children were added because of the great number of nutrition problems encountered in the above areas. Home visits account for a large portion of the Nurses' time both as a means of encouraging the mothers and as a follow-up on the effectiveness of the teaching and demonstrations done in the center. When a doctor was assigned to the center, although this occured only briefly and intermittently, the scope of the Nurse's activities were greatly increased. There was a sanitarian available in the center to whom the Nurses could refer information about sanitary conditions in the home which they obtained from home visits. The Nurses engaged in considerable activity in Health Education both in the Center and in the home and were assisted in much of this activity by the Health Educators and Health Education Aides. The latter assisted them in the showing of films and by carrying on similar and simultaneous programs for the men, without much of the teaching of the women would have been wasted. The nurses engaged in no activity in the schools inasmuch as no school program, as such, was developed in connection with this project. Attempts have been made to train Libyan girls to work in the Centers but this has not been too successful.

(2) Cyrenaica: Nursing Activities in the Health Centers in Cyrenaica did not get underway until 1957, and then they were confined to one Center in Barce. Prior to the opening of this center, Nursing operated Feeding Clinic attached to a Pediatric Clinic, in Benghazi. Mothers were taught to wash, cook and prepare vegetables and cereals for their babies. A gardening project was operated in conjunction with this clinic for which the Nazarate of Health provided a gardening instructor, indicating some understanding of the value of the clinic. It was closed in January 1960. About May 1957, a Health Center was opened in Barce in temporary quarters pending the completion of a new building. The Center moved into this building in December 1958. This Center, staffed with two nurses, engaged in activities similar to those listed for the nurses in Tripolitania. In the Center, however, a woman doctor has been assigned and this has increased the activities of the nurses. Health Education activities in this center were confined to those carried on by the doctor and the nurses. No sanitarian was available with whom the nurses could discuss their findings regarding Sanitary Conditions in the home. A School Health Program was initiated in January 1960.

c. Evaluation - Nursing Contribution:

(1) Nursing's contribution to the overall objectives of the Basic Public Health project has been limited because:

a. Doctors were not assigned to the centers.

b. The sanitarian even when available, belonged to another project, and since there was inadequate coordination between projects, there was poor coordination between the employees of these projects at the center level, and

c. There was no central

c. There was no central authority to weld all elements of a Basic Public Health Program together at the District level.

(2) The District Medical Officer of the original plan never materialized. Since this individual would have been in charge of the Ambulatoria (a government institution) as well as the Center (LAJS) it would have been necessary for him to be an employee of the Provincial Government. Far from suscribing to this idea, the provincial government - at least in Tripolitania - considers the doctor in the ambulatoria in charge of all health matters in the district. This has created many problems for the nurses whose orientation was toward the preventative not the curative aspects of health. These were problems which neither the nurses in the centers, or for that matter any nurse, could resolve.

(3) It is apparent that the original plan to effect a change in the health organization of the district has not been successful. The Health Centers which were to have formed a part of this organization, lacking as they did a physician and a coordinated team, have become limited maternal and child health centers. As such they parallel a similar development by the GOL and contribute to their confusion. We say, "This is a Health Center", and when they examine it closely, they find it differs little from the MCH centers which they are attempting to operate.

(4) Granted, the above is true, it represents an evaluation of the project as a whole, and not the nursing activities which are only a part of the project. The nursing contribution in these centers, both in Tripolitania and Cyrenaica, unfortunately does not lend itself easily to evaluation. The activities of the nurses, primarily teaching and demonstration and only incidentally service, must be measured in terms of changes in human behaviour. If one reads the narrative reports of the nurses who work in these centers, one feels that changes have and are taking place, e.g. "I come to you because my neighbor told me his baby was sick and you taught his wife how to feed it - please teach my wife". If, after hearing a CARE representative recite the difficulties of teaching Libyan

children to drink milk, one visits a center to observe a feeding demonstration and sees a three year old tug at the nurse's skirts and hold up her glass three times in succession for a glass of milk, one feels changes are being made. If one visits the Mudir a group of tribes near Garian and is asked, "Please give us a center for our women and children such as Garian has for its women and Children", one feels that behaviour is being changed. On the other hand, one must admit these are feelings based on isolated incidents and not evidence that change in behaviour is occuring or to what extent such change is occurring. One thing is certain - it is and will be slow, for as Dr. Van Zile Hyde has pointed out, "Human emotions and prejudices, unlike human diseases, do not yield easily to rational solutions."

Dr. William W. Harris has served as Branch Chief and Project Leader during the year: first in Tripoli and now in Benghazi.

His former interest in Libya was that of a Public Health Physician; with special emphasis on Trachoma Control and Epidemiology.

In his position as Branch Chief there are many opportunities for service in the field of Division Administration and unit coordination: Specifically, Dr. Harris has taken an active and useful part in --

(a) Program planning for the division
(b) Preparation of project proposals
(c) Project guidance
(d) Coordination of division contributions with those of the United Nations Agencies in Libya and with CARE.
(e) Membership on USOM
(f) Quarantine activities for the country.
(g) Immunization campaigns.
(h) Representation of this Division at numerous meetings.

During the last few months Dr. Harris has been pushing activities to get the Zavia Health Center opened and in operation and making plans for smooth operation of that Center and smoother operations of other Health Centers.

In addition to the information on Trachoma Control already given, Dr. Harris gives the following paragraph.

" A trachoma control program was the first activity instituted by the project designated Basic Public Health; in many locations it was definitely proven that the measures were effective in controlling this disease. This project rehabilitated structures and supplied personnel, equipment, etc. for several health centers in Libya to demonstrate the concepts of preventive medicine and public health. Until very recently, health education has been under the jurisdiction of Basic Public Health and through it many people have been given the benefits of enlightenment on health matters. This group was supported by motion picture projectors, vehicles, printed matter and many other items of equipment and audio-visual aids in order that they might get their message to the people. Several public health nurses have been brought into Libya under this project and have introduced nursing techniques which are new to this country, such as infant care, pre- and post-natal care, demonstrations on food preparation, home visiting and other activities which will be detailed elsewhere in this presentation. Finally, this project has rendered special assistance on many occasions, for example, giving varying quantities of medicine, supplies and equipment to the Ministries and the Mazantes, poliomyelitis vaccine and assorted supplies for disaster relief."

Miss Gabrielle Anctil is secretary to the Branch Chief.

REFERENCES

For more details on Division Operations, the reader is referred to:

a. Briefing document for Dr. Arthur C. Curtis - October 1959

b. Briefing document for Mr. Samuel Butterfield - December 1959

c. Submission to The High Health Council, GOL - April 1960

d. Summary of Chief Accomplishments during the Last Five Years, submitted to the Director General of Health, GOL - August 1960

e. Division Monthly Activities Reports

f. Quarterly Summary of Division Activities Reports

HEALTH & SANITATION