



**TERMINATION
PHASE-OUT
STUDY
PUBLIC SAFETY PROJECT
GHANA**

MARCH 1974

**AGENCY FOR INTERNATIONAL DEVELOPMENT
OFFICE OF PUBLIC SAFETY
WASHINGTON, D.C. 20523**



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**HAROLD CAPLAN
RENE L. TETAZ**

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CHAPTER I

INTRODUCTION

A. Terms of Reference

U.S. Public Safety assistance had been provided to the Government of Ghana to develop the skills and effectiveness of its civil police forces. At the project's initiation and during its progress mutually agreed objectives and courses of action were established and at times adjusted to achieve the overall goals as well as to accommodate changing situations in the country. Both host government and U.S. resources were programmed and employed to jointly strive toward these goals.

Due to U.S. congressional action, the continued input of U.S. Government resources planned for this project until June 30, 1974 was terminated sooner than planned and prior to the full achievement of the goals and objectives which were mutually established by the two governments.

It is therefore the purpose of this report to note the progress made thus far and to enumerate what remains to be accomplished in order to achieve the project goals. The report also includes recommended actions which the Government of Ghana should take, employing their own resources, but under the circumstances excluding in-country assistance by the U.S.

B. Conduct of the Evaluation

The nature of this program being somewhat different from that of more usual Public Safety projects; it did not lend itself to the normally followed evaluation process. Instead, the evaluation was conducted by the two resident Public Safety advisors prior to departure from post on March 15, 1974:

Harold Caplan	-	PS Advisor, Motor Maintenance
Rene L. Tetaz	-	PS Advisor, Telecommunications

This report summarizes the activities of the Public Safety program in Ghana, from its inception to the closing of the program. Actually, there was no program as normally established through PIO/Cs, ProAg and other documents. The Public Safety assistance to Ghana was in the form of a loan, administered by the USAID Mission, providing the funds for procurement of vehicles and telecommunication equipment, and of grant funds covering the costs of participants' training in the U.S.

Two advisors were assigned to this project, one to assist the Ghana Police Service in all activities relating to vehicles and automotive maintenance, one to perform the same service in relation to telecommunications. For this reason, the report is divided in two sections, one covering the project activity in the automotive field, the other in the telecommunications field.

The project was limited to these two activities, there was no assistance to other elements of the Ghana Police force. Therefore, the report will limit itself accordingly.

The report was discussed with USG and appropriate GOG officials prior to the advisors' departure.

CHAPTER II

THE PUBLIC SAFETY PROGRAM

A. History

The initial assessment of the feasibility of a Public Safety project in Ghana was made in 1968. A survey team from AID/W completed a fairly extensive study of the Ghana Police Service, from September 23 to October 10, 1968. This document became the basis for the supply of commodities and assignment of advisors. In August 1969, final lists were compiled, with the agreement of the GOG, and the Afro-American Purchasing Center, in New York, designated as the procuring agent. Due to various misunderstandings between AID/W and the GOG, it was not until April 1970 that the purchase orders were actually placed; the advisors arrived in Ghana in August and September 1970; the first commodities in December 1970. AID/W (OPS), as can be understood from the above, was the originator of the specifications, type and quantity of equipment initially shipped to Ghana.

In November 1971, with most of the first commodities distributed in Ghana, a second list of equipment, designated as "second tranche," was agreed upon by AID/W and the GOG. The procurement agent was the Ghana Supply Commission, in Accra, and the commodities arrived in-country during the latter part of 1972 and early 1973. The following sections of this report give a detailed analysis of the activities in each respective branch of the project (Automotive and Telecommunications).

B. Telecommunications

1. Status of Ghana Police Service Telecommunications Division in 1970

Up to 1966, the Police telecommunications were closely supervised by the P&T (Posts and Telegraph). This agency was responsible for the installations, maintenance and repairs of the equipment. In 1966, the Police realized that they should not depend

upon outside help, and took over the P&T responsibilities, at the same time pirating a good number of their technicians. The Police then embarked on an arduous program of "do it yourself" installation, maintenance and repairs. They had neither the facilities nor the personnel to carry on the work involved in such a program, and a long struggle ensued.

Under the impulse of an energetic Commander, the telecommunications division layed out plans for a complete modernization of their networks in 1968, and the Public Safety assistance entered the picture. During the two years elapsed between the survey referred to above, and the arrival of a U.S. advisor and of commodities, attempts to set up repair shops were made, personnel increased, and miscellaneous equipment ordered and installed (Pye and Telefunken radios). Breakdowns were numerous, maintenance very sketchy, repairs erratic, and some very expensive equipment plainly abandoned although almost new. The City of Accra had very limited communications between its precincts, very few radio-equipped vehicles, and limited communications with the Regions.

The main repair shop in Accra consisted of a narrow hall adjunct to a Police precinct, opened to the street, with one bench, practically no tools, and hardly any test instruments. Spare parts were scarce and stocked in a small one-room store. It was impossible to physically store the equipment arriving from the U.S., and hundreds of radios and accessories had to be stacked in various rooms at Police Headquarters. A small office was used at Headquarters as a temporary repair shop, and all the radios from the U.S. were processed and tested in that very inadequate location.

Several months after the arrival of the U.S. advisor, a building under construction at the end of 1970 was completed and used ever since as a major repair shop and central storeroom.

2. Distribution of Commodities

The commodities ordered by AID/W (first tranche) included 700 transceivers, low power FM, complete with all accessories required for installation, spare parts, test equipment, shop tools, 50 Rohn towers, as detailed in Attachment A. All of this equipment has been installed.

The introduction of the OPS-designed FM radios has been a great boost to the Ghana Police Service. An extensive network (over 40 stations) has been placed in operation in Accra, and each of the 12 Regional capitals now has its own local net, varying in importance with the size of the town involved. It should be noted that 150 of the FM-1 radios (hand carried) were exchanged for 75 FM-5 radios (fixed stations), as the Police preferred smaller size units for the Officer corps. The exchange was made at no cost to AID, thanks to excellent cooperation from the U.S. manufacturer.

Thirty-one training films were also included in the first tranche. Due to the lack of proper classrooms, only a limited use has been made so far of these films. Plans underway for establishment of classrooms in a new building almost completed will permit extensive use of the films in the very near future.

The total dollar value of the first tranche commodities was \$456,000.

At the end of 1971, commodities for the second tranche program were ordered. Due to the extreme complications in the purchasing methods of the Ghana Supply Commission, most of these commodities arrived in-country in the latter part of 1972, some mid-1973. Attachment B shows the list of commodities, consisting principally of additional low power FM transceivers, of motorcycle radios, FM base stations, HF base stations, additional test equipment, training aids, spare parts, one screen room, small size FM hand carried transceivers. All of this equipment has been received in-country.

In March 1973, the USAID Mission advised that there was a balance of unused funds for the second tranche, and final orders were placed in April 1973. Attachment C shows the detailed list of the items ordered. Up to this date, only items 1 to 12 have been received.

The total dollar value of the second tranche equipment was \$358,200.

3. Work Completed - To Be Completed and How

A description of the work completed requires a word about the achievements and the planning of the Telecommunications Division of the GPS. Parallel to the installations of the AID-procured equipment, as mentioned elsewhere in this report, the GPS established a nationwide radio-teletype network, linking the capital of Accra and the Regional capitals. All of the teletypes were procured by the Ghana Police, but there were not enough transmitters supplied by the GOG to complete the net. Item 66 of the second tranche list covers the additional transmitters which permitted the completion of the net.

Common planning by the Commander of the Telecommunications Division and the AID advisor forecasted the creation of a Communication Center in Accra, with separate transmitter site and receiver site, and a remote control by UHF link between the Communication Center and the transmitter site. The ground was broken in 1971 for the building destined to house the Communication Center, and for another building for final permanent workshops, classrooms, and storage area for spare parts. The workshop building is in the process of completion, and expected to be turned over to the Police by April 1974. The screen room has been erected in that building.

The Communication Center building will not be completed before the end of 1974. For this reason, items 60 to 65, inclusive, of Attachment 2 are now stored and cannot be installed until completion of the building. Items 31 to 36 of Attachment 3, not yet received, will also require completion of the building before installation.

Fortunately, all of the equipment to be installed is supplied by Motorola, and all the help needed to see this through to complete operation can be provided by the local Motorola shop. It should be noted that the Commander who was very eager to see these plans through has since left the GPS and is now a Motorola employee. He is fully aware of the requirements and will no doubt cooperate fully with his ex-colleagues in the Police.

To summarize, all of the first tranche equipment is installed or in use, all of the second tranche, except the items noted above, is also installed. Of course, items such as spare parts, extra antennas or accessories for replacement are either in stock or drawn upon as required in day-to-day operations.

4. Personnel

The total strength of the Telecommunications Division is 550, with 12 officers, 35 NCOs (Inspectors), the others constables, corporals and sergeants. Projected increase for 1974 is 50 additional men. All of this personnel is, of course, engaged in technical work of one form or another, shop technicians, tower erectors, installation crews, engine maintenance and repair men. None is performing police duties as such (arrests, patrols, etc...). Most unfortunately, the concept of promoting this type of personnel strictly on their professional merit has not yet permeated the Service. Numerous attempts have been made by the U.S. advisors to bring this to the attention of the top ranking officers of the Service, but although many promises were made to look into this matter, no action of any kind has resulted. The entire police force is promoted on the basis of arduous examinations in British laws as adapted to Ghana, and the telecom technicians have no such background. The results are rare promotions, long years of service without salary increases, and it can be said that the morale of this Division is extremely low. Coupled to these conditions, the basic rate of pay barely affords a living wage, and good men have been lost to private industry or are constantly on the look-out for opportunities to improve their lot. Three excellent technicians, two of them recent participants in U.S. training courses, have left the Service in 1973. This may appear as a small figure, but it takes years to train a fully qualified radio technician, and such losses are very detrimental to the Division.

Recruitment and Training

There are very few technical schools in Ghana which could be used as a source for recruiting personnel. The best one is a school sponsored by Canada, with adequate instructors, teaching aids, etc. Most of the best technicians in the Division have been recruited there, but numerous others come to the force with a bare knowledge of basics. A long process of on-the-job training takes place for these recruits, and it becomes practically impossible to eliminate those who are totally incapable of absorbing this type of training. In this matter, as in many others, considerable efforts have been made by the U.S. advisor to have the Division weed out the undesirable elements, but to no avail.

The best men available devote some of their time to on-the-job training, and good results have been obtained, but this is a very slow system; however, it is doubtful that it can be improved upon for some time. An elaborate classroom with excellent training aids provided by the Public Safety project will be ready for operation by April or May 1974, and there are men who can be used as qualified instructors.

It would be presenting a false picture of the general conditions under which the work is performed if no mention was made of the unfortunate habits prevailing in the Division. There is very poor discipline all around, a lot of absenteeism, and poor organization of the work. During two solid years, the U.S. advisor was running the major workshop in Accra and repeatedly asked for a competent officer to take over and be indoctrinated in proper operation of this facility. None were available; when one was finally appointed, he was loaded with so many other functions that the shop is frequently left under the command of a corporal, not qualified for this important post.

During the life of the Public Safety project, there have been three Commanders of the Division; the best one left 15 months ago for private industry, the next one was removed for incompetence after a year, the current one is capable but needs intense training in organization.

Participants

A total of eighteen men were sent to the U.S. for participant training during the life of the project; all have now returned to Ghana, and except for two who resigned have been assigned to repair and maintenance work in Accra and in the Regions. The participant training financing (\$148,600.00 total) was provided from grant funds.

5. Budgets - Financing - Procurement

The fiscal year in Ghana extends from June 30 to the next. In February or March the Division submits its estimate of expenses for the next fiscal year, and is notified with considerable delay, some time as late as October, of the actual amounts it will be allowed to spend for the year.

For many years it has been a fact that the Communications Division has been at the bottom of the list for budget allocations. This situation became so bad that it was one of the reasons for the resignation in 1972 of its best Commander. This lack of funds hampers the operations of the Division to a great extent; many jobs contemplated wait for months and months because of inadequate funding. The procurement of new equipment and especially of spare parts, vital for maintenance, has to be done on a piecemeal basis, and sometimes is completely stopped. With an investment of close to \$2 million of equipment, the budget for parts and replacement items, or expandable items, did not exceed \$15,000.00 for fiscal year 1973.

The Ghana Supply Commission is the procurement agency for the GOG. Its operating methods are so slow that it takes an unreasonable amount of time to get vital items in country. It should be possible to have the Ghana Police Service operate its own procurement. This has been suggested by the advisors to the Inspector General of Police.

Stores and Maintenance of Stock

An adequate and well maintained storeroom is a very important item for the good operation of the Communications Division. Many efforts have been made to improve the existing system of stock cards, to introduce the notion of maximum and minimum levels, the re-ordering in time of spare parts, and the proper physical appearance of an orderly storeroom. Progress in this activity is very slow, mainly due to the type of personnel assigned to the job. It is recommended that qualified storekeepers be brought to this task; there is now too much of a feeling of "let's do it as we always did it before," which means without order or real system.

6. Conclusion

Impact of Public Safety Project

While the preceding text may present a somewhat dark picture of the Telecommunications Division, it remains that, compared to its status in 1970, very considerable progress has been made. The nets

enlarged and created since that date are operating properly; there are communications in many remote parts of the country; all the Regional capitals are linked to Accra by teletype, with excellent reliability. An average of 70,000 messages are passed monthly over the various nets. Numerous GOG Ministries, lacking proper facilities, use the Police networks to transmit urgent messages to their Regional personnel (Forestry Division, Health Department, Justice Department, Agriculture, to cite a few).

The problems examined in the previous parts of this report can be summarized in order of importance as follows:

Need for management and organization improvements;
Acceptance by the GOG of the funding requirements;
Improvement of the pay and status of the personnel.

These points have been constantly brought to the attention of responsible top commanders. The presence of the U.S. advisors has given the impetus for action, at least in the physical completion of the communications systems. Given time, there is no doubt that the long-range plans under consideration will mature, the most elaborate one being the completion of the Central Communication Center in Accra. The Division has the capability of achieving this project, but needs the financial support required to see it through. With the closing of Public Safety programs, future U.S. input will be limited to IPA training. The most important field to cover in this respect would be in the management part, and it is recommended that the candidates now under consideration be given the opportunity to benefit from this instruction.

C. TRANSPORTATION

1. Description of Conditions Found in Transportation Division in 1970

a. Workshops

Accra Central Workshop

This shop was found to be an inefficiently operated facility. It was overcrowded and cluttered with vehicles in many stages of disrepair. It had a dirt floor that during the rainy season

turned into a mudhole, thereby slowing and even stopping the repair work, such as it was. There was no supervision and shop control did not exist. The Supply Section was a jumbled operation with inadequate stock records, no stock locator system and the few parts they did store were difficult to identify because of a lack of parts supply catalogs for the over 35 various makes of vehicles the police operated country wide. In addition, scattered through the area around the outer perimeters of the shop were about 200 vehicles in a like-junk condition.

Preventive care and maintenance of vehicles and equipment was less than adequate. New equipment which had been purchased several years earlier was stored in various out-of-the-way areas throughout the shop. Much of this neglect was attributed to the lack of sufficient budget allotted to the Workshops Division. However, it was also unquestionably true that there was a general failure on the part of management to recognize the importance and economy of the proper care and maintenance of vehicles.

The vehicle, a relatively expensive piece of equipment, was used without the proper attention needed until it could no longer operate. No care or concern was in evidence. Minor problems that needed attention were neglected until they developed into a major difficulty causing the stoppage of the vehicle. Because of limited capabilities and the lack of spare parts to repair the vehicle, it was deadlined and allowed to rust and deteriorate. At this stage cannibalization of the vehicle started to occur until its identity as a complete vehicle was nullified and its usefulness as a vehicle destroyed.

Such carelessness was a luxury which the Police could ill afford. The unescapable conclusion which emerged at that time, aside from the limitations imposed by economic factors, was the focal point of failure to correct this condition, attributed to:

- a. Lack of responsibility, direction and leadership.
- b. Deficiencies of organizational structure, i.e., status as a minor division of police with practically no authority.

- c. Lack of technically qualified personnel, shortage of personnel, and poor working conditions.

Cape Coast and Kumasi Workshops

Both the Cape Coast and the Kumasi Workshop buildings had been under construction for over two years and were not completed.

2. Tools and Equipment

It was evident that if this shop was to be developed into a well-managed and efficient workshop, capable of repairing and rebuilding police vehicles, technical support and modern equipment were needed. Discussions about the type of equipment required to supplement equipment now on hand and spare parts needed to activate deadlined vehicles were held with the shop personnel concerned. From these discussions a list of additional vehicles needed, equipment and spare parts was developed. (See Attachment D.) Through channels the GOG then requested the USAID to allow the purchase of these items from Loan 009. At the same time, using their own resources, the Police placed orders for additional tools and equipment to completely outfit the shops at Kumasi and the Cape Coast.

3. Accomplishments

It is over three years since the arrival of the Public Safety advisor at post. During that period, equipment found to be on hand and the equipment purchased through Loan 009 has been installed and is being used. Personnel has been trained and a great degree of progress is readily noticeable. The Ghana Police Service now has an operational Central Workshop in Accra capable of the maintenance and repair of the entire police fleet of over 1,000 vehicles. The recently activated Cape Coast Shop is now in operation and has a staff of 67 skilled technicians. The shop at Kumasi is in operation with 73 skilled technicians on its staff, but there has been a delay in the electrical hookup of the equipment. This will be resolved before the end of February.

In the Accra shop a substantial concrete floor was installed to improve working conditions. This, as in the case of most of the improvements to the shop buildings, was done by the workshop personnel.

A shop policy has been developed and a workable production control and accounting system has been established. The management techniques are improving, and there is better shop supervision. The repair and rebuild work being performed is of high quality. An initial and final inspection section is in operation which assures quality work. The work-flow and control of major repair jobs through the shops is excellent. A reclamation shop with trained personnel is in operation. A dustproof paint shop is in operation. A wheel alignment machine has been installed, personnel trained, and it is being used. The shop has four recovery vehicles operated by trained personnel. A complete blacksmith and radiator shop is in operation. Personnel now are in the United States being trained in the modern techniques of welding and radiator repair. They are due to return to Ghana momentarily. An extension to the Carpenter Shop was partially constructed which has helped alleviate some of the overcrowding of the shop.

Funds have recently been made available which will allow for the completion of the Carpenter Shop, improvement of the lighting system, a dressing room, and the renovation of the gutter system throughout the shop. This also includes the electrical hookup of equipment for the Kumasi Shop.

4. Participants

The opportunity was afforded 30 officers and men to attend several technical courses for periods up to five months at Aberdeen Proving Grounds, Maryland, U.S.A. The men without exception obtained a high degree of capability by attending these courses. All participants received excellent to superior grades and comments from the school attended. A breakdown of the courses follows:

<u>Course</u>	<u>No. of Men</u>
Maintenance Officers (Mechanical)	5
Maintenance Officers (Supply)	2
Auto Repairs	17
Electrical (Automotive)	2
Welding/Radiator Repair	2
Machine Shop Training	2

The total amount of funds expended for U.S. participant training was \$87,100.00. In addition, 7 men were trained at the Nissan Motor Co., Japan, and the Motor Gussi Motorcycle Company, Italy, for specialization on these particular vehicles. The Police operate a considerable number of motorcycles and Nissan trucks, jeep-type vehicles and sedans.

5. Training Methods and Sources

The police workshops enjoy a workable "on-the-job" training program which assures the continual improvement of shop personnel capabilities. The observed result is that the residual impact has improved the overall shop operation. However, training must be continuous to assure a high quality of work output. In dealing with this training requirement, the Police are using qualified technical schools located here in Ghana. Presently 6 men are enrolled at the Weija Technical School for a six-month course in automotive repair. Negotiations are underway with the Canadian Technical School for space allocation.

6. Personnel Problem Areas (Salary)

Though the Police Workshops now enjoy a large number of skilled mechanics in all related fields, several have resigned because of the low salary scale and benefits. Just recently two men, one an Inspector of Police and the other a Sergeant, both U.S.-trained participants, resigned from the service to accept commercial jobs. The Inspector now is the supervisor of a large automotive shop earning over 3600 Cedis yearly including housing and other amenities. His former salary as a Police Inspector was 1400 Cedis per annum. The Sergeant has taken an automotive mechanic's teaching job in Kumasi. It is not known at this writing what his yearly earnings are. Almost daily, better paying jobs at repair facilities in and around Accra are offered to skilled mechanics. Fortunately, most of the qualified personnel have a deep feeling for the Police Service and ignore these offers. In recent months, there has been a substantial number of promotions. Though these promotions affect only a small percentage of the shop personnel, there is a sense of pride of accomplishment that surges through the shop when promotions are made.

It is evident that the economy of Ghana is growing to such an extent that personnel skilled in the automotive fields are in demand. As this growth continues, prices and salaries on the commercial market increase, making employment more attractive to skilled police personnel.

A program thus must be developed in the Police Service that would afford skilled personnel a supplemental salary for technical competence. This would assure the retention of skilled personnel required to repair the highly sophisticated equipment a modern Police Force depends on.

7. Standardization of the Police Fleet

It is impractical to provide service and repair facilities on an economical and efficient basis for numerous makes of vehicles and to maintain stocks of parts necessary to keep the various makes in operational condition. Each make of vehicle usually requires additional special tools for proper servicing and repair. This results in added costs and related expenses. Similarly, each additional make requires the maintenance of separate stocks of spare parts which require bins, storage and clerical assistance. Significant savings in costs will result from the overall standardization of the GPS vehicle fleet. Though the number of makes in the GPS fleet has been reduced, approximately 12 different makes are still being operated by the Police. An extended effort should be made to further reduce this number. These savings will increase proportionately if the fleet is increased, as planned, over the next few years. Standardization will also permit simplification and improvement of administrative controls such as obtaining and reporting stock status information, interchangeability of spare parts, providing data relative to replacement levels, and the computation of future requirements.

8. Budgetary Difficulties

a. Each year the Police go through a fiscal budgetary exercise, where funding requirements are determined for the Workshop Division. At that time funds are earmarked for the procurement of equipment, spare parts, supplies of all types, and

the operation of the Workshop Division. However, even though a funding amount has been agreed to, the total amount is not allocated to the shop. Instead, each time the shop needs funds, which is frequently, a justification must be prepared. As in most cases, the amount shown is disregarded by the Finance Division and only half the requested amount is forthcoming. This procedure definitely slows down the overall operation of the Workshop Division. This method of funding needs to be closely examined by management and a determination made that would allow for a smoother release of funds.

b. Another important consideration is that tools and equipment have wear and tear factors and must be replaced as needed. Budgetary consideration for this replacement should be determined on a well-planned basis.

c. When funds are available and spare parts available to purchase, the prices of these items are astronomical. For an example, a carburetor that could be purchased offshore for \$16.25 plus shipping, costs 107.00 Cedis (U.S. \$93.70) on the local market (See Attachment E). These high prices play havoc with the funding allowed the Workshop. As indicated in the attachment, there is a large difference in the costs of spare parts here and offshore. From this sampling of items, it is readily apparent that if the Police could enjoy a foreign currency allowance with which to purchase spare parts offshore, a great savings could be realized. It is understood that other GOG agencies enjoy direct procurement of commodities. Yet the Police, with more personnel, more vehicles, and more widely dispersed throughout Ghana, do not have this authority.

d. The Police operate over 1,000 vehicles throughout Ghana. This is the largest single fleet operation in the country. To sustain this fleet economically, a 20 percent yearly replacement factor is needed. This is due to the tremendous amount of mileage each vehicle is subjected to under the severe road conditions in Ghana. This factor alone requires substantial foreign currency. Therefore, it behooves the Police to actively pursue this subject with the appropriate authorities.

9. Conclusion

Because Police Service is considered the first line of protection in dealing with crime, disasters and civil defense, it is necessary that the Police have the mobility needed to accomplish the primary function of effectively protecting the public and enforcing the country's laws. The Police now have the facilities and capabilities to provide for the proper care, maintenance and repair of their vehicular fleet. This involves expenditures of substantial amounts of local and foreign exchange, that if forthcoming will result in a considerable improvement in Police operations.

CHAPTER III

RECOMMENDATIONS

Based upon observations contained in preceding sections of this report, the team offers the following recommendations for Government of Ghana consideration:

It is recommended that the GPS:

Telecommunications

- 1) Modify the status of the telecom personnel to promote them on the basis of their technical capabilities instead of competing strictly on law examinations as currently practices.
- 2) Establish special pay status for telecom technicians.
- 3) Provide adequate budget for support of the Division, particularly to permit continuous purchase of spare parts, repairs of test equipment, renewal of obsolete items, addition to existing networks.
- 4) Generally improve discipline of workshop personnel (absenteeism).
- 5) Appoint a qualified Officer in charge of the major workshop in Accra, to supervise that shop full time, and not as part of his duties as performed at present.
- 6) Intensify training of technicians under a regular schedule.
- 7) Nominate as many of the upper ranks Officers to attend management courses as offered by donor countries, U.S. or others.

- 8) Provide the Division with a minimum of vehicles to permit proper operation both in Accra and in the Regions.

Transportation.

- 9) Develop a program that would afford skilled personnel a supplemental salary for technical competence to induce retention of skilled personnel.
- 10) Continue to standardize their vehicle fleet.
- 11) Reexamine the method of releasing budgetary funds for police use.
- 12) Plan for the timely replacement of vehicles, equipment and tools for shop operations.
- 13) Initiate procedures for direct off-shore purchase of spare parts and equipment.
- 14) Top management give continued support to the technical services of the police operations.

ITEMS ORDERED FOR FIRST TRANCHE

<u>Item No.</u>	<u>Quantity</u>	<u>Description</u>
1	340	FM. 1 Transceiver
2	361	FM. 5 Transceiver
3-34B (inclusive)		Miscellaneous accessories for Item 1 & 2
35	3	VHF-FM Base Stations 60 Watts with Remote Control
36	1 Lot	Spare Parts for Item 35
37A	14	VHF-FM Base Station 30 Watts PC-23OHM/D
37B	14	PT-200 Power Tray
37C	14	RA-56 Microphone
37-1	1 Lot	Spare Parts for PC-23OHM/D
38	200	20' Masts, Rohn
39	3 Rolls	Guy Wire
40	500	Ground Rod
41-92 (inclusive)	22	Shop tools and storage cabinets
93	28	Triplett Volmeter Model 630-PLX
94	10	Simpson Volt-Ohmmeter Model 312
95	10	Test Probe
96	9	Oscilloscope, Motorola Model S-1301
97-1	9	Transistor Tester
97-2	9	Test Probe

98	9	Bird Wattmeter Model 43 with Elements
99	6	RF. Coaxial Load Resistor Bird No. 8201
100	1	DC Power Supply, Motorola Model T1012A
101	1	Ripple Filter, Motorola TEK15A
102	9	FM Signal Generator, M.C. No. 801
103	2	Gertsch Frequency Meter, Model FM-10, with 2 each RFA-2 and 1 each MDM-1
104	1	Volmeter Motorola 1063A, with SKN6009A and SLN6055A
105	10	Fluorescent Magnifier Lamp
106	1	Parts Substitution Assembly
107	10	Steel Frame Cabinet
108	29	Tool Kit
109	18	Soldering Iron, DC
110	40	Transformer
111	40	Transformer
112	4	Transformer
113	12	Transformer
114	22	Transformer
115	50	Rohn Antenna Tower, Model 25G, complete
116	1	Erection Fixture

117	3	VHF Base Station Antenna Model 725
118	32	VHF Base Station Antenna Model 731
119	89	VHF Mobile Antenna, Model 764
120	2000	Transmission Line, RG/8-U
121	2000	Transmission Line Andrews FB4-50A
122	80	Connector, Andrews 44AU, Male
123	20	Connector, Andrews 44AU, Female
124	30	PL-258 Connector
125	200	PL-259 Connector
126	20	SO-239 Receptacle
127	50	UG-175/U Adapter
128	1000	Transmission Line, Belden 8259

ITEMS ORDERED FOR SECOND TRANCHE

<u>Item No.</u>	<u>Quantity</u>	<u>Description</u>
1	75	OPS/FM-5 Transceivers, single channel, narrow band, less battery case and battery cable (\$15.00 discount allowed by factory for omission of these items) Operating frequency 165.330 OMEz
2	125	OPS/PAC-5 power supply
3	150	OPS/AE-4 ground plane antenna
4	50	OPS/AE-8 RG-8/U transmission line.
5	5	OPS/PS-25 DC to DC converter
6	6	OPS/TS-20 Test set
7	25	OPS/AU-25 fuse holder
8	10	Ni-cad battery holder for use with PAC-5 (to charge Ni-cad batteries)
9	5	PC-230 base stations, 30 W. RF output power, narrow band, 2 channel, channel 1 operating frequency 165.330 MHz, channel 2 blank
10	5	PT-200 power tray for item 9
11	5	Microphones for item 9
12	1	Let spare parts for item 9, cost not to exceed 10% of cost of item 9
13	20	Set crystals for PC-230 transceivers, each set to include one transmit and one receive crystal, operating frequency 165.330 MHz
14	100	Variable capacitors, 5-50 pf. Hallicrafters part No. 044-00153

ATTACHMENT B

15	150	Transistor MPS918
16	150	Transistor MPS6515
17	100	Transistor 2N3638A
18	100	Transistor PT 5654
19	100	Transistor PT 5655
20	20	Transistor 60199 (Hallicrafters Part No. 019-004491)
21	20	Transistor 2N5591
22	150	Capacitor, electrolytic, 15 mf. 20 v DC (Hallicrafters part No. 045-001527)
23	5	Transformers, T-1, (for Hallicrafters AC power supply, part No. 050-003473)
24	725	Set crystals for FM. 5 radios, narrow band, each set to include 1 transmit and 1 receive crystal
25	5000 feet	RG-8/U coaxial cable in 500 spools
26	200	PL-259 connectors
27	75	PL-258 straight adapters
28	20	Andrew Type 44AU connectors, UHF female termination
29	100	VHF mobile type antenna, HyGain model No. 764 or equal
30	200	Nickel-cadmium batteries, General Electric No. 41B002FD04
31	5	Bird Thruline Wattmeter, model 43, with connectors No. 4240-050 to match PL-259 connector, and with carrying case.

32	35	Elements for item 31, as follows:
		5 elements No. 10C
		10 elements No. 50H
		10 elements No. 100C
		10 elements No. 250H
33	2	Transistor tester, AEL model 240. Omit model 242 test probe
34	1	Digital Frequency/Deviation meter, Motorola model S1325A or equal
35	1	Copper screen room, model No. 18, 10'4 $\frac{1}{2}$ " x 10'4 $\frac{1}{2}$ " x 8' 1 3/4", as manu- factured by Erik A. Lindgren & Associates, Chicago, Ill. Ship disassembled and packed for export
36	6	Magnifying lamps, Allied Radio cat. No. 849X9480
37	1	Dymo tapewriter model 1270, with 10 rolls of tape and carrying case, Allied Radio cat. No. 769-9520
38	20	Steel frame storage cabinet, 48 drawers, Allied Radio cat. No. 729 x 3306
39	10	Steel frame storage cabinets, 36 drawers, Allied Radio cat. No. 729 x 3310
40	200	Fuses, slow blow, 1 amp
41	200	Fuses, slow blow, 2 amp
42	100	Fuses, Type 3AG, $\frac{1}{4}$ amp
43	100	Fuses, Type 3AG, $\frac{1}{2}$ amp
44	100	Fuses, Type 3AG, 1 amp

45	150	Fuses, Type 3AG, 2 amp
46	100	Fuses, Type 3AG, 5 amp
47	100	Rolls Vinyl electrical tape, $\frac{1}{2}$ x 12 $\frac{1}{2}$, Allied Radio cat. No. 910-5829
48	1	BG 210A Electricity learning unit, with series 100 Electricity transparencies and 10 Book II
49	1	B/G 410A Electronics learning unit with series 200 Electronic transparencies and 10 Book III
50	1	B/G 510A Transistor learning unit, with series 300 Transistor transparencies and 10 Book IV.
51	1	AM600 Projection Meter (Brodhead- Garrett cat. page 349)
52	1	Buhl Overhead Projector, 10" x 10" model 80 with No. 615.82 2-way writing roll attachment, No. 615-5 heavy duty reusable acetate roll 50'.
53	5	No. FOB 600 watt replacement lamp for item 52
54	20	VHF-FM motorcycle station, 2 channel, narrow band, operating frequencies: Ch. 1 165.330 MHz Ch. 2 blank
55	1 Lot	Spare parts for item 54, to be selected by manufacturer for 2 year maintenance, cost not to exceed 5% of cost of item 54

56	100	Handie-talkie, 2 channel, narrow band, 1.8 watt output power, Motorola model No. H-23FFN1130-N, frequencies to be indicated later
57	50	Straps for item 56, Motorola NLN 6349
58	12	Chargers for Ni-cad batteries of item 56, Motorola No. NLN6685A
59	25	Ni-cad batteries Motorola No. NLN6682A
60	13	HF. receivers, 4 channel, Motorola model SR-174, frequencies to be indicated later
61	6	FSK converters (T x & Rx combined) Motorola model TG-170
62	12	UHF link equipment combining each 1 Transmitter Motorola No. L34MBB3104M-SP, frequencies to be indicated later
63	12	Single tone coder for CW keying Motorola model No. S0-200-01-B
64	24	Yagi antennas, 9 db gain, Motorola model No. BY-450
65	1 Lot	Spare parts for items 60, 61, 62, 63 to be selected by manufacturer, total cost not to exceed 5% of cost of these items
66	8	HF-SSB base station transceivers, 4 channel, operating frequencies to be indicated later. Motorola model SA-100, including microphones
67	4	FH-SSB base station transceivers, 6 channel. Operating frequencies to be indicated later. Motorola model SA-700, including microphone

68	1 Lot	Spare parts for item 66, to be selected by manufacturer. Cost not to exceed 5% of cost of item 66
69	1 Lot	Spare parts for item 67, to be selected by manufacturer. Cost not to exceed 5% of cost of item 67
70	25	Microphones, Motorola model TMN 1000
71	40	VHF-FM base stations, 2 channel, desk top, Motorola model L53BBBL190-M (narrow band), complete with 40 TDD6020 omni-directional base station antenna 2.8 db gain
72	1 Lot	Spare parts for item 71, to be selected by manufacturer, cost not to exceed 5% of cost of item 71

SECOND TRANCHE
ITEMS ORDERED WITH BALANCE OF FUNDS AVAILABLE

<u>Item No.</u>	<u>Quantity</u>	<u>Description</u>
1	100	Electrolytic capacitors, 15 mf, 20 v DC
2	50	Speakers for FM-5
3	50	" " FM-1
4	100	Transistors PT 5654
5	5	Transistors PT5655
6	100	Diodes 368D
7	300	3 amp fuses, 3AG
8	300	2 amp fuses, 3AG
9	100	1 amp fuses, 3AG
10	20	Transistors 2N1554
11	20	" 2N1557
12	100	Connectors, o10-004821
12a	45	FL-1 filters, o49-000853-001
13	100	Rolls "44" Rosin core solder
14	100	Unger Model 535 Heating units
15	200	Battery clips 28F523
16	100	Red insulators 28F406
17	100	Black insulators 28F407

ATTACHMENT C

18	5	Coils 250' each 2-conductor cable 36F1566
19	3	DC power supplies, Motorola T-1012A
20 to 26 incl.		Spare parts kits for Motorola HF transmitters
27	4	Local desk sets Motorola T1976
28	4	100' cable kits, Motorola T4345
29	100	50' Collapsible masts, Rohn Model H-50
30	10	50' Rohn towers, model 25G
31	12	SA-104 transceivers, Motorola - less power supplies*.
32 to 36 incl.		Accessories for item 31 (antennas, tuners and cables)

*Power supplies are special, made by Motorola Israel, and were to be purchased by GOG. Order not placed yet due to lack of funding.

COMMODITIES PURCHASED

AUTOMOTIVE

I. Vehicles (Total quantity 118)

<u>Item No.</u>	<u>Quantity</u>	<u>Description</u>
1	58	Jeeps CJ-6*
2	26	Chevrolet Carryall
3	19	Chevrolet Trucks
4	3	Chevrolet Wreckers
5	3	Chevrolet Dump Trucks
6	2	Chevrolet Ambulances*
7	7	Chevrolet 60 Passenger Buses

*18 Jeeps, 1 Ambulance due April 30, 1974.

II. Spare Parts

5 Lots*

III. Tools & Equipment

2 Lots*

IV. Training Films & Teaching Aids

2 Lots

*1 Lot of spare parts & 1 Lot of tools & equipment due April 30, 1974.

ATTACHMENT D

Dollar Value of Commodities

Vehicles	\$499,557.00
Spare parts	91,335.00
Tools & equipment	34,690.00
Training aids & films ...	9,124.00
<hr/>	
Total Dollar Value	\$634,706.00

TOOLS AND SHOP EQUIPMENT

<u>Item No.</u>	<u>Quantity</u>	<u>Description</u>
1	1 ea.	Universal Rim Adaptor
2	1 "	Growler (220V-50 Cycle)
3	1 "	Press Set
4	1 "	Complete Test Bench 220V/50 Cycle
5	1 "	Battery Post Adaptor
6	1 "	Adaptor
7	1 "	Hammer Set
8	1 "	Flexible File Holder
9	2 "	Flexible Flat File
10	2 "	Flexible Flat File
11	2 "	Flexible Flat File
12	2 "	Half Round File
13	2 "	Body Dent Puller

14	2 "	Pull Rod Set
15	2 "	Tee Dolly
16	2 "	Heel Dolly
17	2 "	General Purpose Dolly
18	2 "	Anvil Dolly
19	2 "	Hammer
20	2 "	Hammer
21	2 "	Hammer
22	2 "	Shrinkage Hammer
23	2 "	Gross Peen Hammer
24	2 "	Pick Hammer
25	2 "	Picking/Dinging Hammer
26	2 "	Picking Hammer
27	2 "	Peen Hammer
28	2 "	Panel Cutter
29	2 "	Cutter Blade
30	2 "	Door Handle Tool
31	1 "	Straight Cut Shears
32	1 "	Right Out Shears
33	1 "	Left Cut Shears
34	2 "	Door Panel Remover
35	2 "	Door Handle Tool

36	1 "	Molding Release Tool
37	1 "	Arbor Press
38	1 "	Clutch Aligner Set
39	1 "	Universal Steering Wheel Puller
40	1 "	Bench Grinder - 220/440-50 Cycle
41	1 "	Grinder Pedestal
42	2 "	Grinding Wheels Grit 60
43	2 "	Grinding Wheels Grit 36
44	2 "	Grinding Wheels Grit 36
45	2 "	Grinding Wheels Grit 60
46	2 "	Grinding Wheels Grit 36
47	2 "	Grinding Wheels Grit 60
48	1 "	Wheel Dresser
49	1 "	Extra Cutters
50	1 set	Eye Shield
51	1 ea.	Drill Grinding Attachment
52	3 "	Engine Saf-T-Lift
53	3 "	Nut Splitter
54	1 "	3/4 Electric Drill 220 Volt/50 Cycle
55	1 "	1/2 Electric Drill 220/Volt - 50 Cycle
56	1 "	Drill Set
57	1 "	Drill Set

58	1 "	Drill Set
59	1 "	Metric Series, Service Tool Set M/Kra-56A Metal Chest
60	1 "	British Standard/Service Tool Set W/Kra-56A Metal Chest
61	1 "	Key Cutter
62	1 "	Cutter
63	1 set	Key Assortment
64	1 set	Oxy Acetylene Welding. W/two Stage Regulator
65	40 pkgs. ea	3/32, 1/8, 5/32, 3/26, 3/32, 1/8, 5/32, 3/26, 1/4
	40 " "	6/64, 3/32, 1/8, 5/32, 3/16
66	6 ea	Bit Boring
67	6 "	Bit Boring
68	1 "	Langdon Miter Box
69	3 "	Columbian Woodworker
70	3 "	Columbian Woodworker Vise
71	2 "	Stanley Vise
72	12 "	Stanley Hammer 1602
73	6 "	Jack Plane
74	1 "	Brace, 8"
75	2 "	Brace, 12"
76	1 "	Ammco Mobile Brake Shop, 220V/50 Cycle

77	1 "	Automotive Paint Spray Shop
78	1 "	Spray Outfit
79	1 "	Volume Work Spray
80	2 "	Suction Gun
81	1 "	Metal Working Tools
82		Newman K16 Tilting Arbour Variety Saw Medal K16, 220/440 Volts, 50 Cycle W/Three Extra Combination
83	1 "	Saw Blades Model IL Engraving Machine complete w/1 set No. 100
84	1 "	Master Type
85	1 "	Radiator Repair Shop Complete w/ Accessories Fle Testor, Hot cleaning Vat, Test and Repair Beach, 220 Volt/50 Cycle
86	1 "	Doser EK-61, complete repair system portable body and frame straightener
87	1 ea.	Bear Headlight Tester Model 565
88	1 "	Pit Rack Space Master Service complete
89	6 "	Rabbit-Plane
90	6 "	Spoke Shave
91	3 "	Doweling Jig
92	2 sets	Anger Bit
93	2 ea.	$\frac{1}{2}$ Hollow Chisels
94	2 "	$\frac{5}{16}$ " Hollow Chisels

95	2 "	3/8" Hollow Chisels
96	2 "	1/2" Hollow Chisels
97	2 "	1/4" Hollow Chisels Bits
98	2 "	5/16" Hollow Chisel Bits
99	2 "	3/8" Hollow Chisel Bits
100	2 "	1/2" Hollow Chisel Bits
101	2 "	Hand Drill
102	2 "	Saw Clamp
103	2 "	Disston Saw Set
104	4 "	Rip Saw 26"
105	4 "	Cross Cut Saw 26" 10 Point
106	4 "	Panel Saw, 10 Point 26"
107	2 "	Cross Cut Saw
108	2 "	Rip Saw
109	3 "	Dove Tail Saw 10"
110	6 "	Compass Saw 12"
111	12 "	Extra Blades
112	6 "	Key Hole Saw 10"
113	12 "	Extra Blades
114	12 "	Mylar Tape Rule 12"
115	1 "	Press

116 1 " Armature Lathe

117 1 " Motor 220V/50 Cycle

118 1 " Dewalt Heavy Duty Radial Arm Saw,
Model 3576, 220/440V 50 Cycle,
w/Three Extra Combination Saw
Blades

119 1 " Mechanic's Tool Sets

COMPARISON OF PURCHASE COST OF TYPICAL SPARE PARTS

<u>Part</u>	<u>*Local Purchase</u>	<u>Off Shore Purchase(\$)</u>
Carburetor	93.70	16.25
Carburetor Repair Kit	20.57	4.00
Voltage Regulator	52.97	6.00
Starter (Comp)	129.00	43.10
Gasket Set (Overhaul)	31.70	7.20
Sealed Beam	9.13	2.00
Fan Belt	5.00	1.10
Piston Ring (Set)	68.11	8.11
Piston	19.96	4.80
Crankshaft	240.05	103.00
C.B. Points	8.46	1.00
Coil	21.29	4.68
Generator (Comp)	96.89	32.00
Distributor Cover	8.46	1.00
Brake Linings	21.15	2.35
Clutch Disc.	73.88	13.25
Water Pump Assy	57.89	8.01
Water Pump Repair Kit	22.12	3.60

*U.S. \$ equivalent based on exchange rate of \$1.00 = Cedis 1.15.

ATTACHMENT E