No. 3

第三国集団研修エバリュエーション調査団報告書

—ケニア，マイクロウェーブ—

昭和62年3月

国際協力事業団
研修事業部

第三国集団研修エバリュエーション調査団報告書

—ケニア，マイクロウェーブ—

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国 際 協 力 事 業 団
研 修 事 業 部

はじめに

第三国研修とは、社会的、文化的、言語的に共通の基盤をもつ同一の開発途上地域に研修実施国を選定し、そこに当該地域内の途上国から研修員を受け入れて、より現地事情に適合した適正技術、知識の移転を図り、これにより開発途上国間技術協力（ＴＣＤＣ）の推進に寄与し、将来的には実施国が独自に研修員受入事業を実施できるよう支援協力することを目的としている。

ケニアに於ける第三国研修は昭和５４年度に初めて電子交換技術分野に於いて実施されたが、翌５５年度以降からは対象をマイクロウェーヴ分野に改めて、後者の実施は本年度を含めると既に６回目を数えている。

本報告書はケニア郵電公社（Kenya Post & Telecommunication ; KP & TC）、中央訓練学校（Central Training School; CTS）に於いて実施されたマイクロウェーヴ分野の第三国研修を総合的に評価し、今後の対処方針を検討するため昭和61年11月28日から同年１２月１０日までケニアに派遣されたエバリュエーション調査団の調査結果をとりまとめたものである。

この報告書が関係者各位のさらに深い御理解のもとに、第三国研修のより良い今後の展開に資することが出来れば幸いである。

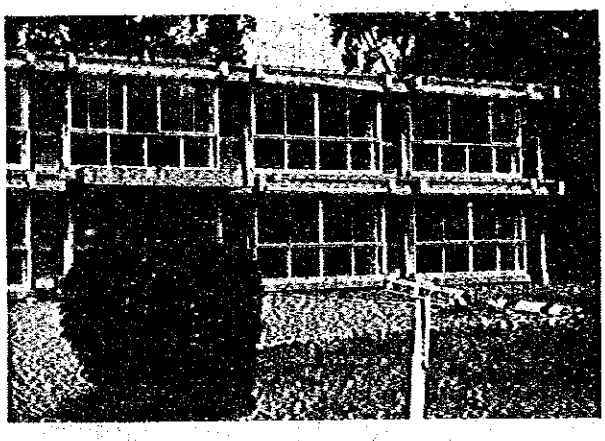
最後に本調査団の派遣に際し、並々ならぬ御協力を賜った外務省、郵政省、在ケニア日本大使館及び派遣専門家の各位に深い感謝の意を表する次第である。

昭和６２年3月

研修事業部長

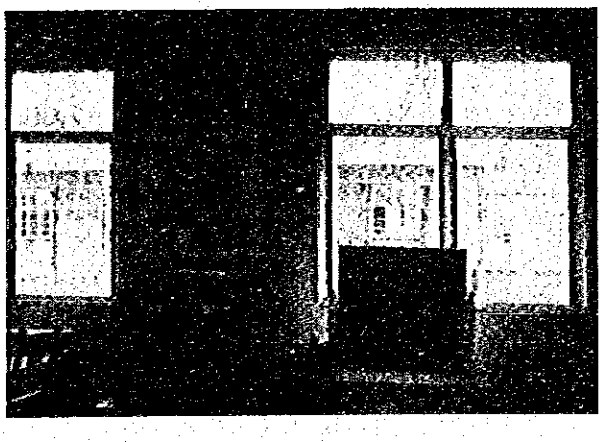
岡　部　和　夫

参加研修員らと意見交換のあと

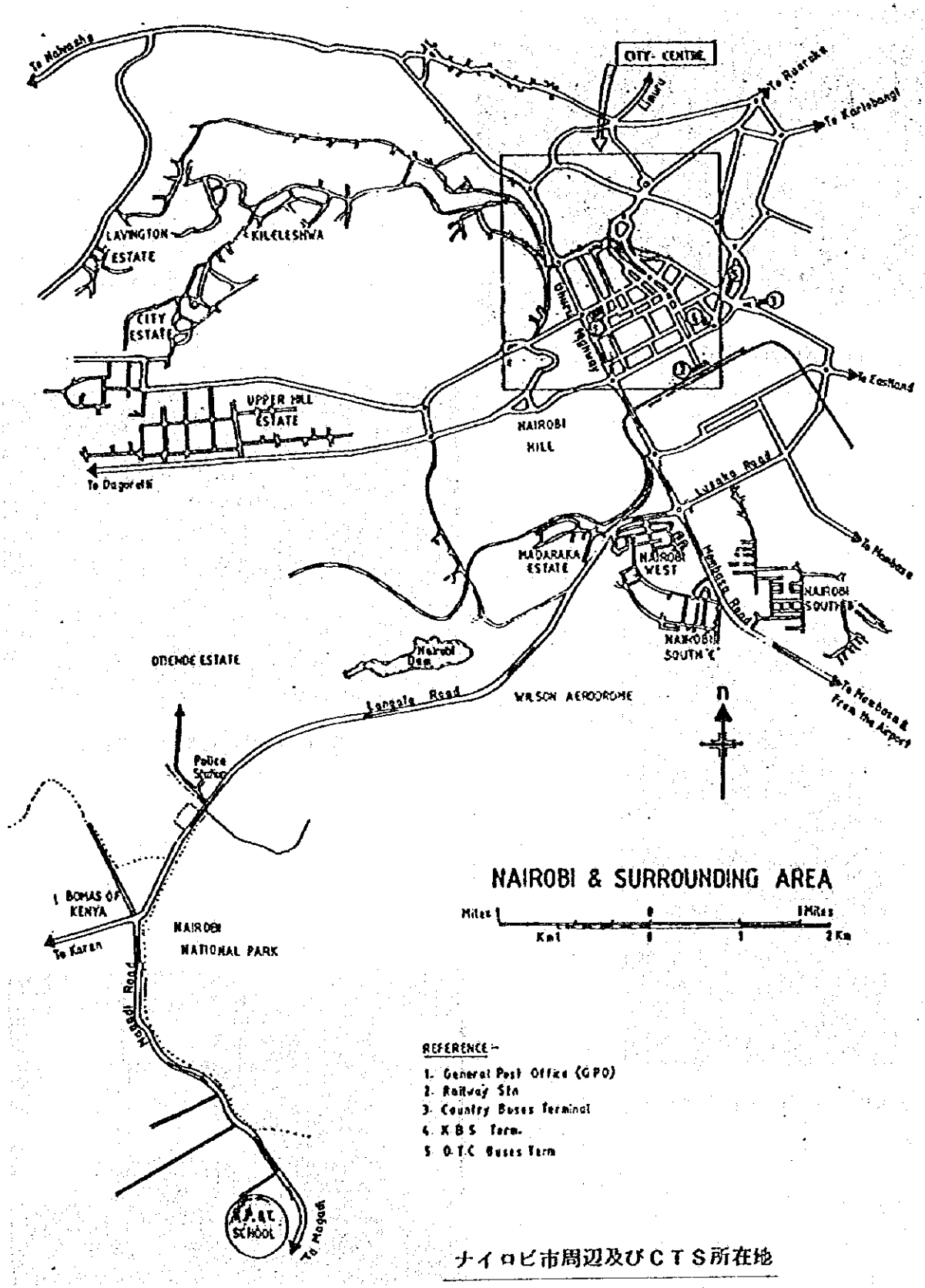


ＣＴＳ内に設置されている図書館

ＣＴＳに据え付けられた研修施設



教室で活用されている教材



ナイロビ市周辺及びＣＴＳ所在地

要　　約

ケニア第三国研修（マイクロウェーヴ）は昭和５５年度以降本年度を含め６回に亘り実施されてきたところ、我が方は研修の総合評価を行い、要すれば今後の研修実施方針の策定を行う目的で、エバリュエーション調査団を客年１１月末から１３日間に亘りケニア国に派遣した。

本件調査団はこれまでの研修実績を踏まえ、ケニア郵電公社代表グループと協議を行い、本第三国研修の総合的評価を行った結果、本件研修はアフリカ諸国のマイクロウェーヴ技術者の養成に大きく貢献してきたものと判断するとともに、ケニア側としては周辺国のニーズの高さにも鑑み、今後とも本件研修の継続の意向を強く有していることを確認した。

このため本調査団は、本件研修の明６２年度以降の実施方針について更にケニア側と協議を重ね、今後の協力継続のためには、正式要請書の提出が必要である旨ケニア側の理解を求めるとともに、右要請書提出を前提とした合意議事録（Ｒ／Ｄ）案の作成を併せ行った。

以上の結果は昭和６１年１２月８日、Summary of Discussionsとして本件調査団とＫＰ＆ＴＣ側との間で署名交換された。

目　　次

別　添　資　料

1. エバリュエーション調査団の派遣

1.1 派遣の経緯と目的

本第三国研修は昭和５５年度以降マイクロウェーヴ分野において今年度研修を含め過去６回実施されたことになるが、当初よりケニア側の主体的な研修実施体制の不備が問題となっており、年々改良は進んでいるものの未だ充分とはいえない。又、研修内容も技術の進歩、周辺国のニーズの変化に伴なう変更が必要と思われる。そこで、今年度までの過去６回実施してきた研修の総合評価を行なう。

明６２年度以降の協力については、本件研修コースの実施体制を他国で実施している通常の第三国研修と同様のシステムとすることを前提に対処することとする。従ってケニア側が第三国研修の趣旨を理解し、より主体的に第三国研修を継続実施したい旨の要請書を提出する場合には、６２年度以降の具体的な実施計画及びＪＩＣＡ側の協力内容について協議する。

1.2 調査団の構成

団　　長	石井　和男（ＪＩＣＡ研修事業部研修第一課長）
研修計画	奥　　公彦（郵政省通信政策局国際協力課）
研修評価及び計画	中道　雅克（ＮＴＴ鈴鹿電気通信学園伝送無線技術部長）
研修運営及び業務調整	石井　　潔（ＪＩＣＡ研修事業部管理課）

1.3 調査日程

日時	場所	内容	出席者
11／28 (金)		成田発 12:30　→パリ着 16:55	
29 (土)			
30 (日)		パリ発 20:10	
12／ 1 (月)		ナイロビ着 7:40	
	ＪＩＣＡ事務所	10:30　ＪＩＣＡ事務所打合せ（ケニアの現状と本件対処方針）	真橋所長、末森所員、山崎専門員、高橋専門家、調査団
	大統領府人事院	15:45　表敬及び本調査団の目的説明	Mr. L. ARAP SAWE, Permanent Secretary Directorate of Personnel Management. 末森所員、調査団
	日本大使館	16:40　表敬及び調査目的説明 ケニアをとりまく国際協力の現状	鈴木公使、石上書記官、末森所員、調査団

日 時	場 所	内 容	出 席 者
12／2(火)	KP&TC, CTS, Mtagathi	10:00 表敬及び調査目的説明 今後の協議予定打合せ 研修施設視察	Mr. J. N. AMISI, Princepal CTS Mr. E. O. ALLELA, Deputy Principal CTS Mr. C. NJIRU, Chief Instructor, CTS 調査団
	KP&TC本部	15:00 表敬及び調査目的説明	Mr. KILILI, Head of Telecommunications Services, Mr. AMISI, Mr. MUFUKU, Assistant Head of Telecommunications Services KP&TC, 高橋所長、高橋専門家、山崎専門員、末森所員、調査団
	ＪＩＣＡ事務所	16:30 協議方針打合せ(団内)	
3(水)	ＣＴＳ	9:30 過去6回実施されたコースに係る意見交換及び評価	Mr. E. N. NDEGWA, Head of Training CTS, KP&TC Mr. MUTUKU, Mr. AMISI, Mr. ALLELA, Mr. NJIRU Lt. Col. J. K. C. BARCHOK, Assistant Personnel Manager, Manpower planning and Development Mr. E. A. MAJANI, Chief of Project Planning and Engineering (Rural) Mr. S. GICINGA, Principal Sectional Engineer, Productivity and Service Improvement
	ＪＩＣＡ事務所	18:30 協議方針打合(団内)	
4(木)	ＣＴＳ	8:30 総合評価及び６２年度以降の計画に対する意見交換、協議 18:00 協議方針打合せ(団内)	山崎専門員、末森所員、調査団
5(金)	ＣＴＳ	8:30 ６２年度以降の協力要請内容に係る協議 10:00 今年度研修員の最終評価会出席 15:00 閉講式 19:00 協議結果のまとめ	同 上

日時	場所	内容	出席者
12／6(日)	ＪＩＣＡ事務所	9:00 Summary of Discussions原案作成 14:00 Record of Discussions原案の修正 15:00 協議結果のまとめに係る方針	末森所員、調査団
7(日)	Pan-Afric Hotel	9:00 今年度研修員クエスチョネア結果の分析	調査団
8(月)	ＣＴＳ	9:00 Record of Discussionsに係る協議 11:00 Summary of Discussions最終記載方法に係る協議 15:00 Summary of Discussions作成	Mr.MUTUKU, Mr.AMISI, Mr.ALLELA, Mr.NJIRO, Lt.Col BARCHOK, Mr.MAJANI, Mr.GICINGA、山崎専門員、末森所員、調査団
	Pan-Africa Hotel	18:00 総合評価及び今後の関係機関との調整 21:00 Summary of Discussionsへの署名	
9(火)		ナイロビ発	
10(水)		成田着帰国	

2. 研修概要と実績

2.1 経　　緯

(1) 昭和５４年１２月１３日　Minutes of Meetingにより電子交換技術オリエンテーションコースの開設をコミットする。

(2) 昭和５５年　３月　電子交換技術オリエンテーションコースを実施

(3) 昭和５５年　８月　単独機材供与仕様内容協議チーム派遣時にマイクロウェーブを希望する旨、ケニア側から発言があった。
（Pan African Telecommunications Networkの維持管理を中心とした技術者の育成が急務であった為）

(4) 昭和５５年１２月２日　マイクロウェーブコース実施に係るMinutes署名

(5) 昭和５６年３月、５７年３月、５８年３月
第１回から第３回までマイクロウェーブコースを実施

(6) 昭和５８年１０月　ケニア側講議分担率の向上等コースの改善を図る為、５８年度はコースの実施を見あわせ、調査団を派遣し、５９年度以降の実施についてケニア側と協議することを名省会議にて決定

(7) 昭和５９年　２月　過去３カ年実施されたコースの評価及び５９年度の実施計画作成の為、調査団を派遣（ケニア側３７Half days，日本側３３Half days担当、定員２２名内ケニア人参加者を９名以下とする。ステアリング・コミッティの設置等決定）

(8) 昭和５９年１０月　第４回マイクロウェーブコースを実施

(9) 昭和５９年１２月　研修管理調査団の派遣

(10) 昭和６０年１０月　第５回マイクロウェーブコースを実施

(11) 昭和６０年１２月　第５回マイクロウェーブコース派遣専門家報告
（ディジタル重視、テキスト改訂、インストラクター養成、機材供与の必要性及びコース運営管理面の不備が指摘される）

(12) 昭和６１年　５月　技術検討作業を開始（６１年度研修計画作成及び６２年度以降の協力計画について協議・検討する）

2.2 研修計画

昭和５４年度に電子交換技術分野でコースが実施されたが、昭和５５年度からはマイクロウェーブ分野の研修を中心として実施され、５８年度以降は新しい伝送技術（光ファイバー、ディジタル伝送）もカリキュラムの中にもり込まれるようになった。

対象は東南アフリカの英語圏の国のENGINEER及びENGINEERと同等の知識を有するものであり、５９年度以降の定員は周辺国１３人、ケニア９人となっている。（別添資料(2)参照）

2.3 実施機関

(1) 組織図

別添資料(3)参照。

(2) 研修指導体制

① 講　　師　　別添資料(4)参照

② 資 機 材　　別添資料(5)参照

③ テキスト　　別添資料(6)参照

④ 評価方法

研修課目に係る試験及び理解度把握テストは必要に応じ行なわれてきた。

コースの評価については、別添クエスチョネアを使用して研修終了時（６１年度研修中間でも）に実施された。

(3) 研修運営

① 受入手続き

イ. G.I.の送付が外交ルートを通さずにＫＰ＆ＴＣより直接割当国関係機関に対し行われ、応募も直接ＫＰ＆ＴＣへ送付される。その選考結果はＫＰ＆ＴＣから本人所属機関へ連絡されると同時にケニア大統領府人事院にも連絡されるが、応募者の国を管轄する在外ケニア大使館に未通報の場合もあり、ビザの取得の際、ケニア本国への確認等の為手間どるケースが発生している。

ロ. 参加予定研修員への航空券の送付、渡航に係る連絡はＪＩＣＡ事務所が行なっている。

② 運営管理

Steering Committee は５９年度より研修計画作成、応募者の選考、運営管理に係る諸問題の協議、評価の実施等の為にＫＰ＆ＴＣ本局、ＣＴＳ、日本大使館、ＪＩＣＡ事務所のメンバーにより組織されたが、６０年度、６１年度コースにおいては夫々約１０回開催されており、実行決定権はないけれども研修実施に係る関係機関の調整を図るのに非常によく機能している。

2.4 研修員受入実績

昭和５４年度に電子交換技術コースにウガンダより１名、ケニアから１３名が参加した。

昭和５５年度から今年度研修までの６回のマイクロウェーブコースにはケニアを含むアフリ

カ14ケ国より119名が参加した。（別添資料(I)－12頁参照）

2.5 日本の協力実績

年度	研修コース名	研修期間	周辺国参加人数	実施国参加人数	単独機材供与	派遣専門家	カウンターパート受入数
54	電子交換技術	55. 3.30～55. 4.14（16日間）	1	13	－	山原哲夫(NTT)	－
55	マイクロウェーブ	55. 8.30～55. 5.22（54日間）	8	15	－	本多慶成(NTT) 林　成美(〃) 細谷　篤(JETIG)	3
56	〃	57. 3.22～57. 5.22（62日間）	11	15	マイクロ波周波数カウンター シグナルジェネレーター マイクロウェーブリング アナライザー オートマチックホワイト ノイズ	中尾　昇(NTT) 小林新平(〃) 大井次郎(〃) 細谷　篤(JETIG)	1
57	〃	58. 3.14～58. 5.18（61日間）	6	10	－	川口一彦(富士通) 大沢一允(NTT) 中尾　昇(〃) 塩田善明(〃)	1
59	〃	59.10.29～59.12.21（54日間）	7	10	－	伊藤雄一(NTT) 都倉　満(富士通) 清水　稔(KDD)	2
60	〃	60.10. 7～60.12. 6（61日間）	9	9	－	豊　義秀(NTT) 鈴木靖男(富士通) 斉藤秀俊(KDD)	2
61	〃	61.10. 6～61.12. 5（61日間）	11	8	－	豊　義秀(NTT) 豊田正則(KDD) 山崎尚男(JICA)	2

3. 評　　価

3.1　評価活動の実績

(1)　５９年度評価ミッション報告

①　評価内容

昭和５９年２月派遣の調査団と「ケ」側で合意された事項に基づき研修運営がなされているか否かにつき調査を行い以下の点が明らかとなった。

○改善点

ア　ケニア側講師の２名配置

イ　ステアリング　コミッティーによる運営体制

ウ　試験及びアンケート調査による評価活動の充実

エ　アローワンス支給の円滑化

オ　募集手続きの早期実施

カ　予算計画に基づく予算管理の実施

○問題点

ア　周辺国からの応募者不足（参加者；周辺国７名、ケニア１０名）

イ　スペシャルレクチャー、見学、評価会、厚生活動、閉講式等に係る計画・実施が不完全

ウ　コース目的、カリキュラム範囲、レベルについては概ね良好なるも、時間配分が不良、研修期間不足

②　今後の指針

ア　研修実施国がコース運営主体である旨の第三国研修の概念に対する理解をステアリング　コミッティーを通じ「ケ」側に周知せしめる。

イ　コース期間中の業務進捗を図るセクレタリーの補上

ウ　ケニア人講師養成のため２名程度の研修員の受入れ

エ　日本人講師の早期人選と十分な準備期間の確保

オ　研修期間の一週間程度の延長

カ　割当国電気通信関係機関への募集情報を同時に外交チャンネルを通じ相手国へ流し、相手国国内手続きの円滑化を計る。

(2)　６０年度コースエバリュエーション

①　評価内容

コースの運営管理に関し、

ア　事前のコース案内が特にケニア国外からの参加者に与えられていない場合がある。

イ　宿泊と食事に関し、研修員の一部は満足していない。

ウ　生活費につき、外国研修員は十分でないと感じている。

エ　研修旅行等、コース運営は改善されている。

オ　教授方法及び表現については総合的に良くなっている。

研修内容について

ア　コース目的、カリキュラムデザインについては適当である。

イ　研修期間が短かいように思われるが、時間配分を適正化することも必要で、重要な課題に十分な時間をかけるべきである。

ウ　デジタル無線回線設計と衛星通信に対するトピックスには反響が多く、電源設備、PANAFTEL、伝送技術基準には関心が少ない。

エ　試験については、全研修員が継続的な課題テストや宿題に置き変えるべきと感じている。

② 今後の指針

ア　アナログマイクロウェーブ装置の運営、保守、制御とネットワークのデジタル化に不可欠なデジタルマイクロウェーブ技術を学べるように、コースを軌道修正していく。

イ　アフリカの電気通信網の現状と将来を考え、訓練、教材・テキストを改善する。

ウ　コンピューターの利用、視覚教材の活用は一層進めていく。

エ　研修期間については多くの研修員が中堅幹部であり、業務上２カ月以上とすることは困難である。

オ　コース案内は研修参加機関に対し遅延なく配布する。

カ　チーフインストラクターとローカルインストラクターで構成する小委員会を設置し、コースカリキュラムと教材の改善を検討する。

キ　ケニア側インストラクターに技術指導する日本人専門家の派遣を公式チャネルを通じ、ＫＰ＆ＴＣが日本政府に要請すべきである。

ク　計算機については、今後訓練期間中に限って研修員に貸与することとし、コース修了時には回収することとする。

3.2　今回の評価の実施目的

本件第三国研修はマイクロウェーブ分野を対象として、本６１年度研修をもって通算６回実施されたことになるが、当初よりケニア側の主体的な研修実施体制の不備が問題視されてきた。右については年々改善がなされているが未だ改善の余地は多い。又研修内容も技術の進歩、周辺国のニーズ（別添資料(7)参照）の変化に伴う変更が必要と思われる。

このため、本６１年度を含め過去に実施してきた研修が当初の目的を達成したかどうかを総

合評価し、本研修の必要性と有効性を明らかにし、その結果をSummary of Discussionsにまとめ、今後継続される条件が整った場合の円滑なる研修実施運営に資するものとする。

3.3 評価方法

本コースの評価方法として、５９、６０年度の評価結果及び本６１年度の研修員からの中間及び終了時アンケート調査表並びに専門家、研修員からのコメントを併せ用い、前年度までと比較して改善された点を明らかにするとともに、本コースの有効性と今後の改善点を明らかにすることとした。（別添資料(8)、(9)参照）

3.4 評価結果

(1) 実施機関及び調査団による評価会での検討結果

① 研修参加国及び人数

第三国研修（マイクロウェーブ）開始以来119名の技術者がケニアを含め１４カ国から参加、各国の関係に広く知れわたってきた。参加国と人数は以下のとおり。

ケニア	67	ウガンダ	8
タンザニア	7	スワジランド	5
レソト	6	マラウイ	7
ザンビア	5	ガーナ	3
エチオピア	4	スーダン	2
ナイジェリア	2	ソマリア	1
リベリア	1	ジンバブエ	1

② カリキュラム

研修期間については少数の者が短かいと感じているが多くの者は適当であると考えている。又研修範囲についても何人かは広すぎると考えているが、総合的にみると（研修員の資質、各国の状況等に幅がある等を勘案すると）カリキュラムデザインは適当と思われる。

③ コース案内

大多数の者は事前にコース案内を入手しておりコース目的を理解していたが、少数の研修員は所属機関内における連絡不徹底の為、コースに参加するまでコース目的を十分に理解できない者もいた。

④ 研修課題

いくらかの研修員は研修課題が体系的に組まれていると感じているが、その他の者はなんらかの改良が必要と思っている。これは、研修員各自の経歴にかなりの差があることに起因するものと思われる。また大多数の研修員は最も興味深く、有益な課題としてデジタ

ル技術を挙げている。一方電源設備や伝送技術概論等に対する関心は低い傾向を示している。しかし、昨年はこれらの課題に対し、多数の参加者が興味に欠けるとしていたのに比べると、今年は少数に限られており研修内容が改善されているものと思われる。

⑤ 講師及びコーディネーター

講師及びコーディネーターは全体的に良かったと評価されているが、コース運営を担当する者が同時に講義も行なう必要もあったため、多大な業務を十分に消火することができなかったと思われる。ケニア側もコースの運営管理に専念できる専任コーディネーターの必要性を認めている。

⑥ 研修施設

現在のコースを実施するのには概ね適当と思われる。

⑦ 募集と受入れ

本６１年度のコースへの募集要項は、１９８６年６月３日に送付され、応募の大半は９月中にケニア側に提出されたので選考手続及び受入回答も遅延なく行われ、ほとんどの研修員はコース開始前に到着することができた。この点は従来に比較し大きく改善されたといえる。

⑧ ステアリング コミッティー

コース運営管理を行なうため１９８４年に設置されたステアリング コミッティーは非常によく機能しており、今後とも継続して設置するべきものと思われる。

⑨ 生活費

本６１年度の周辺国からの参加研修員には夕食及び日当として200ケニアシリングが支給されたが、この手当は適当と思われる。滞在費もＪＩＣＡケニア事務所より直接ホテルに支払われ問題はなかった。しかしながら、研修旅行時は国外研修員に200ケニアシリング別途宿泊費等の為に支払われるのに対し、ケニア人研修員には等級に応じて出張手当てが支給されるだけになっている。（このため実際にはケニア人と国外研修員は同一のホテルに宿泊していない）

今後とも改良が必要と思われる事態が生じた時には見直されるべきと思われる。

⑩ 宿泊及び輸送

本６１年度の宿泊及び輸送の手配は従来に比べ著しく改善された。

⑪ レクリェーション

研修員の厚生活動としてサッカーの試合が実施され好評であった。

⑫ 研修旅行

大多数の研修員は、研修旅行に対し満足しているが、ロンゴノット衛星地球局が修理中とのことで訪問できなかったことに対しては非常に残念な思いをした旨の回答があった。

(2) 派遣専門家の評価

① アフリカ諸国のデジタル機器導入は急速に進んでおり、デジタル化に係る技術移転の要望が高い。

② アナログ方式の保守についての技術は既に移転されており、特に本コースにおいて取り扱う必要はないように思われる。

③ ケニア側教官等に対する適時適切な技術の移転が特に要請されているので、2週間程度の講師としての派遣でなく長期専門家の派遣が必要と思われる。

④ 本コースにおいてもデジタル技術の比重を高めるよう、内容の変更、充実が急務である。カリキュラムの変更とそれに伴なう教科書の抜本的改訂、デジタル設備の導入等につき検討していく必要がある。

⑤ CTSの教官の資質については個人差がある為、広くKP&TC全体から講師にふさわしい人材を選抜して登用出来るよう然るべき手段を構じることが望まれる。

⑥ コースの運営管理は事務的には不慣れな面があるが、すみやかに慣れてくるものと思われる。ただし、コーディネーターの指名、コーディネーターに協力する人々の指名については運営委員会でより適切な人材と人数を確保するようにすべきである。

⑦ 本研修コースで用いる通信手段、交通手段の整備拡充を図る必要がある。

⑧ コース期間は研修参加者が中堅幹部でもあり、職位を長期間空席にできないことを考慮すると、2カ月より少し長い程度が限界であり、3カ月以上のコースの設定は不可能である。

3.5 評価総括

コースの運営管理面では段階的に改善がなされてきている。本61年度はコースコーディネーターが運営管理の他、講義等技術研修分野も兼任していたため、管理事務所の遅延から来る様々な問題が生じたけれども、ケニア側が主体的にコース運営を実施していく土壌は作られてきたものと思われる。

ただし、通信手段の問題は未解決であり、現状では、JICAケニア事務所の協力なくしては受入手続き等に大きな支障をきたすことが予想される。

周辺国への募集案内の実施方法の他、運営管理面での改良を図るため、ステアリング コミッティーを活用し、具体的な対策を前広に検討していく必要がある。

コースの技術面についても鋭意改善が重ねられており、現状は研修目的を十分達成していると評価される。

しかし、電気通信分野における技術の進歩は急速に進んでおり、世界の現状と今後の方向はネットワークのデジタル化にある。アフリカにおいてもしかりである。したがって、本コースもまた、常に見直され、技術変化に遅れることなく最新のものにしていく必要がある。

4. 昭和６２年以降の研修計画

4.1 調査団基本方針

(1) 本第三国研修は、マイクロウェーブ分野において６１年度研修終了により過去６回実施されたことになるが、当初よりケニア側の主体的な研修が問題視され、年々改善が進んでいるものの十分なところまで至っていない。また、研修内容も、技術の進歩、アフリカ諸国のニーズの変化に伴う変更が必要と思われる。以上の点及び今年度を含め過去に実施してきた研修の総合評価を踏まえ、６２年度以降の協力については、本件研修コースの実施体制を他国で実施している通常の第三国研修と同様の体制とすることを前提に対処することとした。従って、ケニア側が第三国研修の趣旨を理解し、より主体的に本件第三国研修を継続実施していく旨の要請書を外交チャネルを通じて提出する場合には、６２年度以降の実施計画及び日本側の協力内容について協議の上でＲ／Ｄの署名を行うこととした。（但し、６２年度以降の具体的な実施計画に係る部分については、Minutesによりその計画案につき両者の意見が一致したことを確認する程度に留めることとした。）

(2) しかし、調査団派遣前にケニア側より上記要請書が提出される見通しがなかったため、調査団は次のような対処方針をもってケニア側との協議に臨むこととなった。

① まず、ケニア側に対し、本件第三国研修における日本側の協力を６２年度以降も希望しているかどうか確認する。

② ケニア側が日本側の協力を引き続き期待し、上記要請書を提出する意向があるのであれば、今後のケニア側からの要請書提出を前提として、６２年度以降の実施計画及び日本側に期待する協力内容についてのケニア側の考え方につき聴取した上で、これをMinutesにまとめ署名する。但し、６２年度以降の協力に関するＲ／Ｄ案については協議し、大筋合意するのみとし、ケニア側より要請書が提出された時点で、再度協議し、署名する。

③ ケニア側が日本側の協力をこれまで通り期待するが、要請書を提出することは困難であるとした場合は、上記(1)の日本側考えを述べた上で、ケニア側の考え方を聴取する。

(3) 上記(2)②を前提とした上での本件第三国研修における６２年度以降の実施計画及び日本側の協力内容に関する調査団の方針は次の通りである。

① カリキュラムの変更

ケニア側の主体性が損なわれないよう注意し、アナログ中心からディジタル中心とする。

② 教科書の改訂

６１年度より６２年度までに改訂が必要とされる教科書の改訂作業をケニア側が行うものも含め始める。

③ 単独機材供与

機材リスト中１６ＱＡＭ方式関連装置（Ａのプライオリティの付いているもの）の６２年度以降の供与につき検討する。バス、建物についてケニア側より要請されても調査団より供与は困難である旨伝える。

④ ケニア人講師の配置

ＫＰ＆ＴＣからの支援を得て、ケニア人講師の配置を増やす。また、カウンターパート研修員は原則として第三国研修の講師となる。

⑤ 専門家の派遣、カウンターパートの受入

ケニア側の考えを聴取する。

⑥ コース・コーディネーション

ケニア側より運営、管理業務の専任担当者を配置する。

4.2 協議の流れ

(1) 調査団がケニア側に対し、本件第三国研修における日本側の協力を６２年度以降も希望しているのかどうか確認したところ、ケニア側は本件コースのこれまでの実績、有用性を認め、６２年度以降も本件コースの継続（５年間）を強く希望するが、継続するに際しては、総合評価でも述べられている通り、電気・通信分野の最近の技術動向を反映したコース（ディジタルを中心とするコース）に変えていくよう述べた。

(2) これに対し、調査団より第三国研修のあり方を述べた上で日本側からの協力を期待するのであれば、ケニア政府より日本政府に対し外交チャネルを通じ正式継続要請書の提出が大前提となる旨詳細にわたり説明した。

(3) ケニア側は、本件コースがこれまで日本側に対する正式要請書がないまま実施されてきた経緯もあったことから、調査団からの上記説明の理解に多大な時間を要したが、最終的にはこれを納得し、ＫＰ＆ＴＣの理事会に諮り、関係省庁の決裁を取った上で、日本政府に正式要請書を提出する旨述べた。

(4) 次いでケニア側は、日本政府より次のような協力を得たい旨の要請があった。

① 機材供与

② 十分な数でケニア人が訓練されていない新しい技術分野におけるインストラクターとしての日本人専門家の派遣

③ ケニア人インストラクターの日本での研修

④ 教科書を含む研修教材の整備

更にケニア側は、今後本件コース改善のために更に自助努力をしていきたい旨表明した。

(5) これに対し、調査団としては上記要請を日本政府に伝達することを約束する旨表明するに止めおいた。

(6) 以上の協議の流れについて、両者間でSummary of Discussionsとしてまとめ、署名された。

4.3 討議議事録（R／D）（案）

4.2の結果に基づき、ケニア側からの正式要請書の提出を前提として、両者間で62年度以降の協力実施に必要なR／D（案）の内容につき協議を行った。

今回協議されたR／D（案）はあくまで暫定的なものであり、ケニア側から正式要請が提出された後、更に協議を重ね両者間で署名される予定である。

R／D（案）の趣旨は、ケニア政府が主体となって日本政府の協力を得て、本コースを実施していくことで、本コースは62年度より66年度まで毎年両政府間の協議により運営され、まず62年度の運営実施方法につき協議された。なお、R／D（案）については上記4.2(6)のSummary of Discussionsに添付した。

4.4 留意事項

上記R／D（案）は概ね両者合意に達したが、次のような点が留意事項としてペンディングとなっている。

(1) カリキュラム（R／D案5.）

R／Dに添付されるコースの暫定カリキュラムについては、後にケニア側より日本側に提出される。

(2) 割当国（R／D案6.）

当初予定していた15ケ国に加えてセイシェル、モーリシャス、ガンビアの3ケ国をケニア側の要望により追加した。これは、これらの国々が英語を話し、また本計画に対する訓練ニーズを持っているためである。なお、当初ケニア側は上記3ケ国以外にモザンビークの招待をも要望したが、調査団より全体の研修員の枠に限りがある以上ケニア人研修員が減ることになるかもしれない旨指摘したところ、ケニア側は要望より落とした。

(3) 研修員の人数（R／D案7.）

上記2.の通り招待国が増えたため、研修員全体の人数を15人から18人に増やした。なお、ケニア人研修員の数は当初案通り5人以下とした。

(4) 申請手続（R／D案10.）

ケニア政府が日本の協力を得て本コースを実施する旨、外交チャネルを通じ割当国にも知らせる文章を挿入することとした。

(5) 両政府の責任事項（R／D案11.）

① ケニア政府の責任事項については、ケニア政府に代わってKP&TCが行うこととする

旨の文章を入れＫＰ＆ＴＣがケニア国内での了解を取りつけることを検討することにした。これに関連して、ケニア側より、日本政府の責任事項についても同様に日本政府に代わってＪＩＣＡが行うこととする旨を挿入するよう要求があったが、調査団より日本側の事項もあり、今後検討して答える旨述べた。

② ケニア政府が招待国にＧＩを送付する際、また招待国からの研修員の選択結果に際しては、外交チャネルを通じて実施することが明記された。

(6) 単独機材供与（Annex Ⅳ）

ケニア側より提出された要請機材リストにおいて、当初は２５人乗りミニバス及び教室・機材室用建物が含まれていたため、調査団より第三国研修の単独機材供与のスキームではこれらを供与することは困難であり、その旨求めたところ、ケニア側は要望リストより落とした。しかし、ケニア側の希望は強いため、今後の協議において再度要請が提出される可能性がある。

5. 調 査 団 所 感

本件調査団の当初の目的は、前項「1.1.1. 派遣の経緯と目的」で述べたとおり、過去に実施された6回のコースの総合評価を行なう事と、「ケ」側から本件研修継続に係る正式要請書を日本側に提出することを前提として次年度以降の実施計画につき先方関係機関と協議を行ない、その結果を討議議事録（R／D）としてとりまとめることであった。

しかしながら、調査団派遣直前に至るまで「ケ」側より正式要請書の提出はなかったことから、最終各省会議においては、調査団の目的としては過去のコースの総合評価のみに留めることも止むなしとの結論に至った。

ケニア到着後、調査団はコースの評価を実施したところ、研修内容も年々改善が加えられ、また本件研修開始当時大きな問題点であった「ケ」側の本件研修に対する主体性及び貢献度等についても回をかさねる毎に徐々にではあるが改善の方向での努力の結果が認められた。

更に、「ケ」側は本件研修の重要性に鑑み、今後とも本件研修を継続したい旨の強い意向を有していることも確認された。

上記の経緯を受け、調査団としては本件第三国研修を本来あるべき形態に戻すべく、「ケ」側が今後とも日本側の協力を必要とするのであれば、「ケ」側からの正式な協力継続要請書の提出及びR／Dの締結が必須条件である旨力説したところ、最終的には先方もこれを納得し、正式要請書を提出すべく至急手続きを進めることを約すとともに、「ケ」側が本件第三国研修のHost Countryとして主体性を増大させてゆく所存である旨の意向表明があった。

また、世界のマイクロウェーブの趨勢は、アナログからディジタル方式に移行しつつあり、アフリカもこの例外ではなく、同分野の技術者の要請が急務となっていることから「ケ」側としては本件研修を継続する場合には周辺諸国のニーズに合った研修内容に徐々に変えて行きたいとの意向を有していることが判明した。

以上のことから、当然のことながら正式要請書の提出及びR／Dの締結が前提ではあるが、調査団としては、各国のニーズがあること、「ケ」側が主体的に取り組む姿勢を見せていること並びに本件第三国研修が東アフリカで唯一のものであり、今後の同種研修拡大の拠点になり得ること等の理由から、基本的には本件研修は継続されるべきものであると思料する。

なお、調査団在「ケ」中には、残念ながら先方より具体的な将来計画の提示はなかったところ、今後の具体的な協力内容については、先方からの研修計画提出を待って、両者間で詳細にわたり協議する必要があると思料される。

以 上

別　添　資　料

(1) Summary of Discussions

(2) General Information

(3) 組 織 図

(4) 研修日程及び担当講師

(5) 研修資機材

(6) テキスト改訂試案

(7) 周辺国のニーズ調査結果

(8) 中間及び最終エバリュエーション結果

(9) 山崎国際協力専門員による評価（英文）

別添資料 (1) Summary of Discussions

SUMMARY OF DISCUSSIONS BETWEEN THE JAPANESE EVALUATION TEAM AND THE KENYA POSTS AND TELECOMMUNICATIONS CORPORATION REPRESENTATIVES ON THE THIRD COUNTRY TRAINING PROGRAMME - MICROWAVE RADIO ENGINEERING COURSE

The Japanese Evaluation Team (hereinafter referred to as "the Japanese Team") organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Kazuo Ishii visted Nairobi, Kenya from 1st December, 1986 to 9th December, 1986 for the purpose of evaluating the training course in the field of Microwave Radio Engineering under the Third Country Training Programme of JICA which has been carried out since 1981 in Kenya.

During its stay in Kenya, The Japanese Team had a series of meetings with representatives of the Kenya Posts and Telecommunications Corporation (hereinafter referred to as "KP&TC") to review the achievement of previous courses and to discuss future plans for the programme.

Attached herewith is a summary report of these discussions.

Nairobi, Kenya, 8th December, 1986

K. Ishii,
Head of Japanese
Evaluation Team
JICA

P.N. Mutuku
Assistant Head of
Telecommunications
Services
KP&TC

I. EVALUATION OF THE PAST COURSES

1. BACKGROUND

1.1 Based on the need for training in the field of telecommunications, with special emphasis on Microwave Radio System in the Eastern and Southern sub Region of Africa, the training course in the field of Microwave Engineering has been conducted by the Government of the Republic of Kenya with support of Technical Cooperation Scheme of the Government of Japan under the Third Country Training Programme, since 1981.

1.2 This course has been designed for graduate engineers or those of equivalent qualifications in telecommunications. The purpose of this course is to provide participants with further knowledge and skills in the field of planning, design and operation of Microwave Radio Systems.

2. EVALUATION

This evaluation was made based upon documents such as Minutes of Meeting, Course evaluation reports and the results of the Questionaires for ex-participants, and opinions expressed by various persons involved with implementation of the programme.

2.1 Attendance of Trainees

Since the programme, a total of 119 engineers have been trained in Microwave Radio Engineering. The breakdown according to countries of origin is as follows:-

Kenya	- 67	Uganda	- 8
Tanzania	- 7	Swaziland	- 5
Lesotho	- 6	Malawi	- 7
Zambia	- 5	Ghana	- 3
Ethiopia	- 4	Sudan	- 2
Nigeria	- 2	Somalia	- 1
Liberia	- 1	Zimbabwe	- 1

This shows that the course is popular and the details of the ex-participants is shown in Annex II.

2.2 Curriculum

A few participants of the Course felt that time allocated was short, while the majority of them felt that time was adequate. Some of the participants also felt that the Courses covered a wide field. However, overall assessment of the curriculum design and coverage was considered adequate.

2.3 Information on the Course

Majority of participants received the information in time and understood objectives of the Course. However, it was observed that a few participants did not get advance information about the Course due to the internal communication problems between the participants and their own organizations. Hence they did not know the objective of the Course until they attended the Course.

2.4 Subjects

Some of the participants felt that subjects were systematically organized, while others felt that certain improvement in the programming in relation to each subject is necessary. These arguments arose because of varying backgrounds of participants.

The majority of the participants listed topics on digital techniques as most interesting and beneficial, while power supply and transmission technical standards as least interesting and beneficial. In relation to the least interesting subjects, however it was observed that in 1986 the number of participants sharing that opinion was negligible.

2.5 Lecturer/Coordinator

It was observed that Lecturers and Coordinators were good in general. The Japanese Team pointed out the necessity of full-time coordinators judging from the wide and heavy work load. In reply, the Kenyan Team undertook to effect further improvement in the general adiministration of the course.

2.6 Training Equipment

It was a general view that equipment for the present course was adequate.

2.7 Invitation and Acceptance

The invitation to the Course this year was sent on 3rd June 1986 and many of the replies were received in September 1986, hence the majority of foreign participants arrived in time for the course. This was a great improvement compared with the previous years.

2.8 Steering Committee

This was set up in 1984 to administer the Course. It has done its work well and it should continue.

2.9 Allowances

The allowance given to foreign participants in 1986 was two hundred Kenya Shillings (Kshs. 200/=) per day. This was to cover evening meals and any other out of pocket expenses. The allowance was considered reasonable and adequate.

Hotel charges in Nairobi were paid directly to the Hotel by JICA. However, when participants went on study tours, they were paid extra allowance of two hundred Kenya Shillings. This facility was not available to some local participants as their allowance were determined according to their grades. Further, the allowance should be reviewed when the necessity arises.

2.10 Accommodation/Transportation

The arrangement this year whereby JICA paid for the accomodation for foreign participants and transportation was a great improvement compared to arrangements of previous years.

2.11 Recreation

Football games for the participants were arranged this year.

2.12 Study Trips

Majority of participants were satisfied with the study trips. However, they were disappointed because they were not able to visit Longonot Satellite Earth Station as it was under repair.

2.13 Overall Evaluation

It was clear from the results of the evaluation that there had been progressive improvement in the administration of the Course. These led to an overall achievement of the objective of the programme.

Furthermore, it was observed that the Kenyan contribution has been successively increased over the past six years.

2.14 Technical advancement in telecommunications field has been changing rapidly. The present and future trend in the world is towards network digitalisation. According to overall evaluation, Africa is moving in that direction too. This course has been reviewed and updated constantly to accommodate these changes of technology.

II. FUTURE PLAN

1. The Kenyan team stated that the programme should continue for five (5) years from 1987, but should be modified and up-dated to reflect the latest technology in the telecommunication field which, as stated in the overall evaluation is towards digitalisation.

2. The Japanese team explained that the request for further cooperation on this programme should be made by the Kenya Government to the Government of Japan for consideration through the normal diplomatic channels. This requirement is in line with the policy applicable to all other Third Country Training Programme. (see Annex III)

3. The Kenyan team replied that in the light of this explanation a request of cooperation for continuation of the Third Country Training Programme in Digital Microwave Radio Engineering Course will be presented to the Management of KP&TC for consideration and onward transmission to the Kenya Government Ministries concerned for their consideration and formal submission to the Government of Japan.

4. In reply the Japanese team stated that in principle they are in favour of the request of the Kenyan team.

5. The Kenyan team stated that their requirements for the co-operation from the Government of Japan on the future programme are as follows:

   a) Additional equipment,

   b) Japanese Experts as instructors in the new areas of technology, where the Kenyans are not trained in sufficient numbers,

   c) Training of Kenya instructors in Japan,

   d) Additional training materials including Text Books.

   The details of requirements are shown in Annex IV.

6. The Kenyan team reiterated that it is the intention of KP&TC to progressively assume more responsibility in running this programme.

7. The Japanese team promised to convey the request of these requirements to the Government of Japan for consideration.

8. In assuming of the submission of the formal request, both teams discussed the content of the draft Record of Discussions (attached Annex V), which is necessary for the implementation of future cooperation.

   The main areas of discussion, which require further discussion, clarification and confirmation before finalization of the Record of Discussions are shown as Annex VI.

Annex I : Attendance of the meeting

Annex II : Number of Ex-participants

Annex III : Third Country Training Programme

Annex IV : Details of requirements proposed by Kenyan Team

Annex V : The Draft Record of Discussions

Annex VI : The main results of the Discussions

Annex I

ATTENDANCE OF THE MEETING

I.	Japanese Team JICA EVALUATION TEAM		
1.	Mr. Kazuo ISHII	Head	Japan International Cooperation Agency (JICA HDQ)
2.	Mr. Kimihiko OKU	Member	Ministry of Posts Posts and Tele-communications
3.	Mr. Masakatsu NAKAMICHI	Member	Nippon Telegraph and Telephone Corporation (NTT)
4.	Mr. Kiyoshi ISHII	Member	JICA HDQ
	EMBASSY OF JAPAN		
5.	Mr. T. ISHIGAMI	Secretary	
	JICA KENYA OFFICE		
6.	Mr. M. SUEMORI	Assistant Resident Representative	
	JICA EXPERTS		
7.	Mr. T. TAKAHASHI	Expert to KPTC	
8.	Mr. T. YAMAZAKI	Expert to CTS KPTC for Third Country Training Programe, 1986	
9.	Mr. M. TOYODA	Expert to CTS KPTC for Third Country Training Programe, 1986	

II. KENYAN TEAM

Kenya Posts and Telecommunications Corporation

1.	Mr. E. N. NDEGWA	Head of Training - Chairman
2.	Mr. P. N. MUTUKU	Assistant Head of Telecommunications Service/ Maintenance and Operation
3.	Mr. J. N. AMISI	Principal of Central Training School, Mbagathi
4.	Lt. Col. J.K.C. BARCHOK	Assistant Personnel Manager/ Manpower planning and Development
5.	Mr. E. A. MAJANI	Chief of Project Planning and Engineering (Rural)
6.	Mr. E. O. ALLELA	Deputy Principal, Central Training School, Mbagathi
7.	Mr. S. GICINGA	Principal Sectional Engineer Productivity and Service Improvement
8.	Mr. C. NJIRU	Chief Instructor - Secretary Central Training School

Annex II

Number of Participants

Country year		79	80	81	82	83	84	85	86	00	00	00	00	00	00	00
Sudan	2			1					1							
Ethiopis	4			1			1	1	1							
Ghana	3						1	1	1							
Lesotho	6			1	1	1	1	2								
Malawi	7		2	1	1		1	1	1							
Migeria	2						1		1							
Somalia	1			1												
Swaziland	5		1	1	1			1	1							
Tanzania	7		1	2	1		1	1	1							
Uganda	9		1	2	2	1	1	1	1							
Zambia	5		1	1	1			1	1							
Liberia	1								1							
Zimbabwe	1								1							
(1) Sub Total	53	1	8	11	6	-	7	9	11							
(2) Host Country (Kenya)	80	13	15	15	10	-	10	9	8							
(3) Total ((1) + (2))	133	14	23	26	16	-	17	18	19							

Annex III

THIRD COUNTRY TRAINING PROGRAMME

(1) OUTLINE

A new type of training arrangement called the "Third Country Training Programme (TCTP)" was introduced to Japan's technical cooperation when the Japan International Cooperation (JICA) inicfated a training course on sericulture in Thailand in March, 1975.

Since then, Japan's TCTP has been expanded and improved to offer 23 couorses in 15 different countries under JICA's TCTP scheme in the Japanese fiscal year of 1985 (April, 1985 - March, 1986).

Unlike the conventional type of training programme in which participants from the developing countries receive training in the developed countries, TCTP is so designed that a leading country in a certain developing area provides training for the other developing countries within the area which have common or similar social, cultural and linguistic background with the cooperation and assistance of a developed country.

The basic idea of JICA's TCTP is twofolds; the one is to provide training which better fits the needs and indigenous conditions of the participating countries, and the other is to promote Technical Cooperation among Developing Countries (TCDC) by extending technical and financial assistance to the host country. For the former purpose, JICA provides fellowship for the participants from the third countries. For the latter purpose, JICA provides necessary expertise under its Expert-Assistant Programme and furnishes the training institution concerned with necessary fund to operate the training course through the government of the host country.

(2) ROLES OF THE HOST COUNTRY AND JAPAN

The training course under TCTP is organized and conducted by the host country and JICA extends such cooperation in holding the course as provisions of fellowship for the participants from neighbouring countries, dispatches of Japanese experts who give advice and lecturres on specific subjects, furnishing the training institute concerned in the host country with the fund necessary for carrying out the training courses.

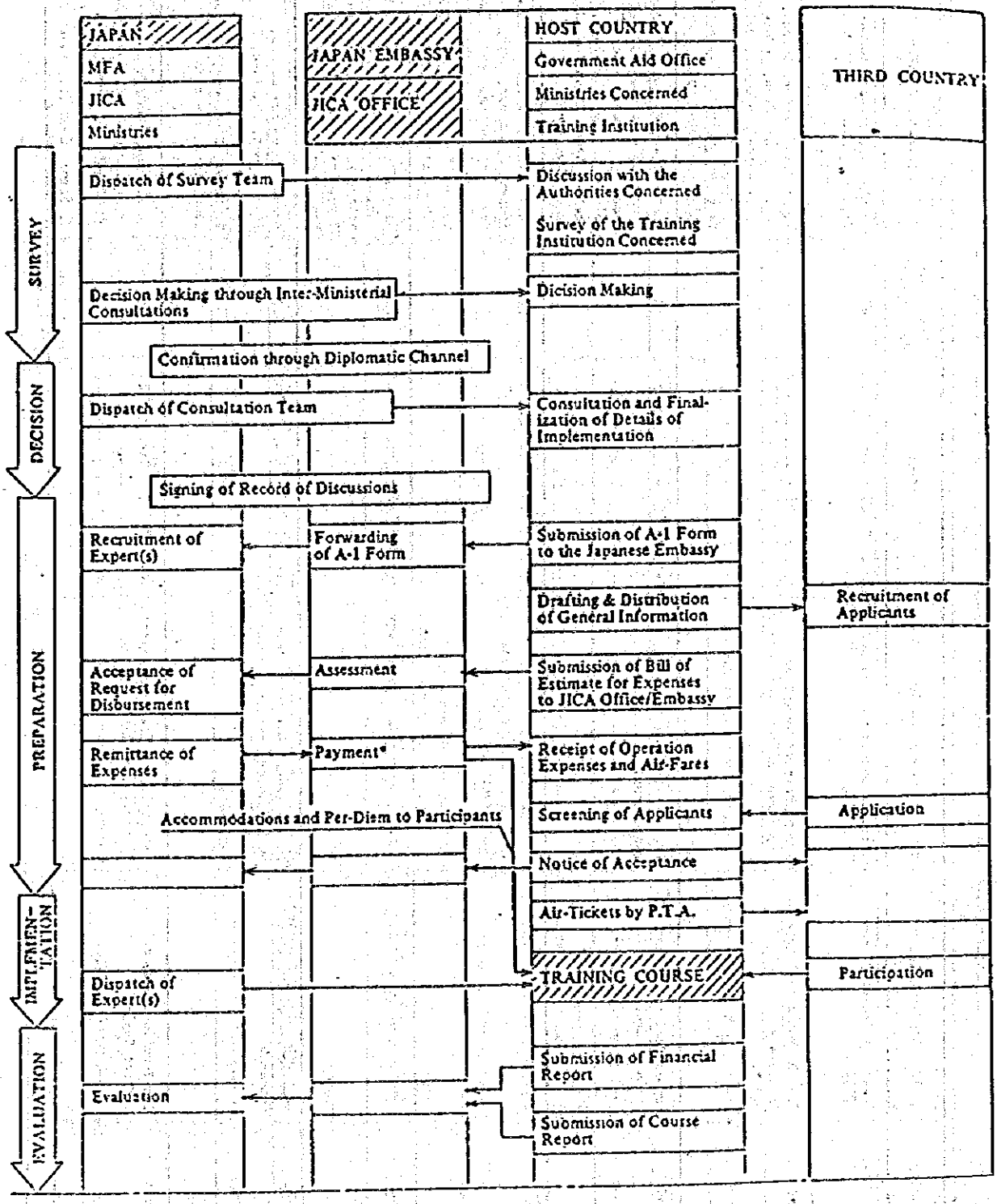
Each training course of TCTP is carried out in accordance with a Record of Discussions to be signed between the host coutry and Japan, and JICA dispatches a survey team and a consultation team to discuss with the authrities concerned in the host country details of the training course as well as roles and responsibilities on each side of the host coutry and Japan.

Under the present scheme of Japan's TCTP, the both governments are supposed to assume the following responsibilities (CHART 1) and procedures (CHART 2).

CHART 1.

HOST COUNTRY	JAPAN
a. Provision of training facilities and equipment	a. Dispatch of expert(s) for giving advice and lectrues
b. Formulation of curriculum	b. Provision of textbooks and other training aids which are not available in the host country
c. Assignment of lecturers, instructors and coordinations	c. Bearing expenses for invitation of participants (i.e. international economy-calss flight fare, accommodation, per-diem and medical insurance premium)
d. Preparation of textbooks and other training aids	d. Bearing training expenses (i.e. honoraria for external lectures, transportation, secretarial services and material procurement)
e. Draftiong of a Course Information	
f. Distribution of a Course Information to the governments which the course are offered to	
g. Acceptance and screening of applications and notification of the results	
h. Arrangement of overseas travel and accommodations for participants	
i. Operation and administration of the course	
j. Submission of a statement of expenditures and a course report to Japan	

CHART 2.



* In case there's no JICA Representative in the host country, JICA will take alternative measures to make payment to the participants and the authorities concerned of the host government.

THE THIRD-COUNTRY TRAINING PROGRAMME IN THE FISCAL YEAR OF 1986 (April, 1986 - March, 1987)

Host Country	Training Institution	Course Title	Period	Number of Participants	Invited Country
1. Philippines	Transport Training Center (PTC)	A Senior Course on Transport Technology	Nov. 10 '86 - Dec. 19 '86	42	Bangladesh, Brunei, Indonesia, Malaysia, Papua New Guinea, Sri Lanka, Thailand
2. Thailand	King Monkut's Institute of Technology (KMIT)	Group Training Course in Telecommunications Technology	Jan. 14 '87 - Mar. 11 '87	24	Bangladesh, Bhutan, Burnei, Burma, China, Iran, Indonesia, R. of Korea, Maldives, Malaysia, Nepal, Pakistan, Papua New Guinea, Philippines, Sri Lanka, Singapore
3. Thailand	Suphan Buri Experiment and Training Center	Rice Cultivation Technique and Extension	Oct. 27 '86 - Dec. 12 '86	14	Philippines, Malaysia, Indonesia Brunei, Singapore, Fiji, Papua New Guinea, Tonga, Tuvalu, Solomon Islands, Kilibati, Niue, Western Samoa, Cook Islands, Nauru, Vanuatu
4. Thailand	Royal Forest Department	Regional Training Course in Comunity Forestry Development Techniques	Nov. 24 '86 - Dec. 26 '86	22	Philippines, Malaysia, Indonesia Brunei, Singapore, Fiji, Papua New Guinea, Tonga, Tuvalu, Solomon Islands, Kilibati, Niue, Western Samoa, Cook Islands, Nauru, Vanuatu
5. Thailand	Institute of Dermatology	Diploma Course in Dermatology	Apr. 7 '86 - Feb. 6 '87	21	Bangladesh, Brunei, Burma, China India, Indonesia, Korea, Nepal, Malaysia, Pakistan, Philippines, Papua New Guinea, Sri Lanka, Singapore
6. Indonesia	Directorate of Building Research	International Advanced Course on Seismology and Earthquake Engineering for Structural Engineers	Jan. 10 '87 - Feb. 21 '87	21	Burma, Papua New Guinea, Philippines, Thailand, Fiji, India, Pakistan, Malaysia, Nepal W. Samoa, Singapore, Sri Lanka, Bangladesh, Tanzania
7. Indonesia	Construction Guidance Service Center	International Training Course in Irrigation Engineering	Nov. 17 '86 - Dec. 18 '86	15	Philippines, Malaysia, Thailand, Brunei, Singapore, Pakpua New Guineo, Fiji, Solomon Is., Tonga, Tuvalu, Kilibati, Niue, W. Samoa, Cook Is., Vanuatu

Host Country	Training Institution	Course Title	Period	Number of Participants	Invited Country
8. Indonesia	Disease Investigation Center in Medan (DIC)	International Course on Diagnosis of Animal Diseases and Their Control Programme	Jan. 25 '87 - Feb. 15 '87 (INDIVIDUAL COURSE) Feb. 16 '87 - Mar. 5 '87 (GROUP COURSE)	20	Bangladesh, Brunei, Bhutan, Brunei, Burma, Fiji, Malaysia, Nepal, Papua New Guinea, Philippines, Singapore, Solomon Islands, Sri Lanka, Thailand, W. Samoa
9. Indonesia	Baronbong Seamen's School	International Training Course for Seamen's Instructors	Oct. 1 '86 - Dec. 20 '86	20	ASEAN countries, South Pacific Islands States
10. Malaysia	Metal Industry Development Center (MIDEC)	Regional Training Course in Welding and Electroplating	Jan. 18 '87 - Feb. 22 '87	16	Bangladesh, Burma, Bhutan, Fiji, Indonesia, Maldives, Nepal, Papua New Guinea, Philippines, Sri Lanka, Thailand
11. Malaysia	Asian Pacific Institute for Broadcasting Development (AIBD)	Regional Training Course in Electronic News Gathering/ Electronic Field Production Operation and Maintenance	Feb. 23 '87 - Apr. 4 '87	20	Bangladesh, Bhutan, Burma, China, India, Indonesia, Iran, R. of Korea, Pakistan, Philippines, Singapore, Sri Lanka, Thailand
12. Singapore	Singapore Polytechnic	Regional Traing Course in Construction and Project Management in Building	Mar. 9 '87 - Mar. 21 '87	26	ASEAN countries, South Pacific Islands States
13. Singapore	Civil Aviaton Training Centre of Singapore	Airport Management Course	Oct. 27 '86 - Dec. 19 '86	9	ASEAN countries, South Pacific Islands States
14. Singapore	Civil Aviaton Training Centre of Singapore	Search and Rescue Mission Co-ordinator's Course	Jul. 28 '86 - Aug. 29 '86	7	ASEAN countries, South Pacific Islands States
15. Singapore	Port of Singapore Authority	Port Management and Operations Course	Jun. 30 '86 - Jul. 11 '86	15	ASEAN countries, South Pacific Islands States
16. Singapore	Port of Singapore Authority	Management and Maintenance of Port Equipment	Jul. 14 '86 - Jul. 18 '86	15	ASEAN countries, South Pacific Islands States
17. Fiji	Telecommunication Training Center (TTC)	Regional Training Course in Telecommunications	Aug. 18 '86 - Spt. 26 '86	20	Cook Is., Tuval, Vanuatu, Kiribati, Marchall Is., Nauru, Niue, Palau, Papua New Guinea, Solomon Is., Tonga, W. Samoa, Micronesia
18. Papua New Guinea	Dept. of Fisheries, P.N.G. University (UPNG)	Regional Training Course in Coastal Fisheries Development	Jan. 18 '87 - Feb. 6 '87	15	Kiribati, Nauru, Fiji, Solomon Is., Palau Is., Tonga, Tuval, Vanuatu, W. Samoa

Host Country	Training Institution	Course Title	Period	Number of Participants	Invited Country
19. Egypt	Arab Maritime Transport Academy (AMTA)	International Course on Maritime Education and Training	Nov. 29 '86 - Dec. 18 '86	20	Morocco, Algeria, Tunisia, Sudan Ethiopia, Somalia, Djibouti, Kenya, Tanzania, Comoro Is., Madagascar, Angola, Congo, Zaire Gabon, Cameroon, Nigeria, Togo, Ghana, Ivory Coast, Liberia, Siera Leone, Guinea, Gambia, Senegal, Mouritania
20. Egypt	Rods Education Technology Center etc.	International Course on Nurse Training	Nov. 16 '86 - Dec. 11 '86	25	Morocco, Algeria, Tunisia, Sudan Ethiopia, Somalia, Djibouti, Kenya, Tanzania, Comoro Is., Gabon, Cameroon, Nigeria, Togo, Ghana, Ivory Coast, Liberia, Siera Leone, Guinea, Gambia, Senegal, Mouritania
21. Kenya	Central Training School (CTS) Kenya Posts and Telecommunicatons Corporation (KPTC)	Regional Training Course in Microwave Radio Engineering	Oct. 6 '86 - Dec. 5 '86	22	Ethiopia, Malawi, Zambia, Zimbabwe, Lesotho, Somalia, Tanzania, Uganda, Sudan, Swaziland, Ghana, Liberia, Nigeria
22. Ivory Cost	University Hospital Center of Treichville	Regional Training Course in Endoscopy of Gastroenterology	Jan. 7 '87 - Apr. 10 '87	10	Benin, Guinea, Mali, Mauritania Niger, Senegal, Togo, Chad, Congo, Burkina Faso, Morocco, Rwanda, Brundi, Zaire, Gabon, Cameroon
23. Mexico	Escuela Nacional de Telecomunicaciones	Curso Internacional de Ingeneria de Transmision	Spt. 2 '86 - Nov. 14 '86	22	Costa Rica, Cuba, Dominican Republic, Guatemala, Honduras, Nicaragua, Panama, El Salvador
24. Mexico	Departamento del Distrito Federal	Los Sismos y sus Efectos en las Ciudades	Spt. 8 '86 - Spt. 11 '86	15	Argelia, USA, France, Italy, Japan, Yugoslavia, Central and South American Countries
25. Costa Rica	Universidad de Coasta Rica (UCR)	Curso Regional de Microscopia Electronica	Jun. 9 '86 - Feb. 8 '87	21	Jamaica, Colombia, Peru, Guatemala, Domaican Republic, Ecuador, Venezuela, Mexico, Panama, Honduras, El Salvador, Nicaragua
26. Costa Rica	Centro Agronomico Tropical de Investigacion y Ensenanza	Intensive Training Course on Implementation of Agroforestry	Mar. 2 '87 - Mar. 21 '87	25	Central and South American Countries

Host Country	Training Institution	Course Title	Period	Number of Participants	Invited Country
27. Brazil	Servico Nacional de Aprendizagem Industrial	Regional Training Course in Applied Electronic Circuit and in Micro Computer	Spt. 1 '86 - Dec. 5 '86	24	Argentina, Uruguay, Paraguay, Peru, Ecuador, Colombia, Venezuela, Guyana, Panama, Dominican Republic, Costa Rica Mexico
28. Peru	Instituto Nacional de Investigacion y Capacitacion de Telecomunicacion (INICTEL)	Curso Internacional de Ingenieria de Comunicaciones Digitales	Oct. 13 '86 - Nov. 21 '86	22	Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Panama, Suriname, Uruguay, Venezuela
29. Peru	Instituto Tecnologico Pesquero del Peru	Curso Internacional de Capacitacion Sobre Productos Pesqueros	Oct. 1 '86 - Oct. 31 '86	22	Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Mexico, Panama, Uruguay, Venezuela
30. Chile	Centro Diagnostico del Cancer Gastrico	Curso Internacional de Avances en Gastroenterologia	Mar. 2 '87 - Mar. 27 '87	28	Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela, Mexico, Guatemala, Honduras, Costa Rica, El Salvador, Panama, R. Dominicana
31. Chile	Faculty of Veterinary Science, Universidad de Chile	International Training Course in Animal Reproduction	Nov. 10 '86 - Dec. 13 '86	18	Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Urguay, Venezuela

Annex IV

DETAILS OF REQUIREMENTS PROPOSED BY KENYAN TEAM

I. TENTATIVE LIST OF EQUIPMENT

(1) General Items

Classroom equipment

Personal computer.

(2) Training equipment and instruments

Primary group digital multiplexing unit

Secondary group digital multiplexing unit

Bay monitor unit

Tertiary group digital multiplexing unit

Quaternary group digital multiplexing unit

Power unit

Bay with term, block for multiplexers

16 QAM switching equipment for 1 + 1

16 QAM transmitter-receiver for 1 + 1

64 QAM switching equipment

64 QAM transmitter/receiver equipment

Variable waveguide attenuator

High power waveguide terminator

Waveguide terminator

Waveguide phase shifter

Branching filter

Angle and Y-junction waveguide

Linear waveguide (rectangular)

Flexible waveguide (ellipse), transducer

Network spectrum analyzer

Logic analyzer

Pulse generator

Digital Transmission analyzer

PCM multiplexor tester

White noise generator

Rectifier

Installation materials

Installation and shipping

II. JAPANESE EXPERTS

One (1) long-term expert
Short-term experts when necessary

III. COUNTERPART TRAINING

Two (2) Counter-parts per year to be trained in Japan

Annex V

RECORD OF DISCUSSIONS BETWEEN THE JAPANESE CONSULTATION TEAM AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE REPUBLIC OF KENYA ON THE THIRD COUNTRY TRAINING PROGRAMME (DRAFT)

The Japanese Evaluation Team (hereinafter referred to as"the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Kazuo ISHII visited the Republic of Kenya from November 30 to December 9, 1986 for the purpose of evaluating the training course in the field of Microwave Engineering under the Third Country Training Programme of JICA which has been carried out since 1981.

Based on the Summary of Discussions signed between the Team and the KPTC Representatives on December 8, 1986, the Japanese consultation team headed by Mr. A. Takahashi (Resident Representative of JICA Office in the Republic of Kenya) had a series of discussions with the authorities concerned of the Government of the Republic of Kenya with respect to the future implementation of the Course.

As a result of the discussions, both sides agreed to recommend to their respective Governments the matters referred to in the documents atached hereto.

Nairobi, Kenya
1986

MR. AKIRA TAKAHASHI
Resident Representative of
Japan International
Cooperation Agency in the
Republic of Kenya

ATTACHED DOCUMENT

The Government of Japan and the Government of the Republic of Kenya will cooperate with each other in organizing the training course in the field of Digital Microwave Radio Engineering at the Kenya Posts and Telecommunications Corporation, Central Training School in Mbagathi (hereinafter referred to as "the Course") under the Third Country Training Programme of JICA.

The Government of the Republic of Kenya will conduct the Course with the support of the technical cooperation scheme of the Government of Japan. The Course will be held once a year from the Japanese fiscal year of 1987 to 1991, subject to an annual consultation between both Governments.

The Course in the Japanese fiscal year of 1987 will be operated in accordance with the following:

1. TITLE

   The Course will be entitled "Digital Microwave Radio Engineering"

2. PURPOSE

   The purpose of the Course is to provide an opportunity of refreshing and upgrading relevant techniques and knowledge in the field of Digital Microwave Radio Engineering.

3. OBJECTIVE

   At the end of the Course, the participants are expected to be able to:

(1) acquire sufficient knowledge and skills in the field of planning, design works and operation of Digital Microwave Radio systems.

(2) understand the Digital Microwave Radio Systems which forms the main part of future telecommunications network.

(3) understand the overall digital telecommunciations network.

4. DURATION

The Course will be held from October 5 to December 4, 1987.

5. CURRICULUM

The tentative curriculum of the Course is attached as ANNEX I.

6. INVITED COUNTRIES

The Governments of the following countries will be invited to apply for the Course by nominating their applicant(s): Botswana, Ethiopia, Gambia, Ghana, Lesotho, Liberia, Malawi, Mauritius, Nigeria, Somalia, Sierra Leone, Seychelles, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe.

7. NUMBER OF PARTICIPANTS

The number of participants from the invited countries shall not exceed eighteen (18) in total. The number of participants from Kenya shall not exceed five (5).

8. QUALIFICATIONS FOR APPLICANTS

Applicants for the Course are:

8-1 To be nominated by the respective Governments in accordance with the procedure mentioned in 10-1 below,

8-2 To be either graduates from colleges or universities who have majored in telecommunications or electrical/ electronics engineering, or those who have an equivalent technical knowledge,

8-3 To have the practical experience of more than three (3) years in telecommunication services,

8-4 To have a good command of spoken and written English, and

8-5 To be in good health to comlete the Course.

9. VENUE

The Course will be conducted at the Kenya Posts and Telecommunication Corporation (hereinafter refered to as KP&TC"), Central Training School, Mbagathi.

10. PROCEDURE OF APPLICATION

10-1 The Government of the Republic of Kenya will write through normal diplomatic channels to the Government of the invited countries informing them that as part of manpower development strategy in telecommunication, the Government of the Republic of Kenya in cooperation with the Government of Japan, will conduct the Course

of Digital Microwave Radio Engineering Systems.

10-2 The Governments applying for the Course shall forward five (5) copies of the prescribed application form for each nominee to the Government of the Republic of Kenya through their diplomatic channels not later than two months before the commencement of the Course

10-3 The Government of the Republic of Kenya will inform the applying governments whether or not the applicant(s) is/are accepted to the Course not later than one month before the commencement of the Course.

11. UNDERTAKING OF BOTH GOVERNMENTS

In organizing and implementing the Course in compliance with Tentative Course Operation Schedule attached in ANNEX II, the Governments of Japan and the Government of the Republic of Kenya will take the following measures in accordance with the relevant laws and regulations in force in each country.

11-1 The Government of the Republic of Kenya

On behalf of the Government of the Republic of Kenya, KP&TC will

(1) formulate the curriculum based on ANNEX I,

(2) draft and print the general information brochures

(3) forward the G.I. to the relevant Authorities of invited countries through its diplomatic channels,

(4) receive application forms,

(5) select participants in the course, and to inform the results of the selection to their respective Governments through diplomatic channels and to the Office of JICA in Kenya (hereinafter referred to as "the JICA Office"),

(6) arrange international air tickets for participants from the invited countries and to meet and see them off at the airport,

(7) arrange accommodation for participants,

(8) assign an adequate number of its staff as lecturers/ instructors for the Course,

(9) provide its training facilties and equipment for the Course,

(10) arrange domestic tour(s) which are included in the Course,

(11) take budgetary measures to bear the expenses necessary for conducting the Course excluding the expenses which are financed by the Government of Japan,

(12) issue certificates to the participants who successfully completed the Course at the end of the Course,

(13) submit a course report and a statement of expenditure to the JICA Office, and

(14) coordinate any matter that is related to the Course.

11-2 The Government of Japan

The Government of Japan will:

(1) dispatch, following the regular procedures of its technical cooperation scheme, experts who give advice to KP&TC, Central Training School, Mbagathi and deliver lectures on such subjects as mentioned in ANNEX I,

(2) bear the following expenses for the Courses as shown in the Tentative Estimate of Expenses ANNEX III,

a) Such expenses relevant to participants from the invited countries as international economy-class flight fare, accomodation, per-diem and medical insurance premiums and

b) Such expenses relevant to KP&TC as arrangement of meeting and study tour(s), teaching aids, expendable supplies, copies and reprints, and secretarial services.

12. PROCEDURE OF REMITTANCE AND EXPENDITURE

The remittance and expenditure of the funds for the expenses to be borne by JICA will be arranged in accordance with the following procedures.

12-1 KP&TC will open a bank account in Nairobi to accept the fund remitted by JICA and inform the JICA Office of the name of bank, the account code number and the name of the account holder.

12-2 KP&TC will submit to the JICA Office the bill of estimate for expenses to be borne by JICA not later than sixty (60) days before the opening of the Courses.

12-3 JICA will assess the bill of estimate and remit the assessed amount of expenses to the account mentioned in 12-1 above within thirty (30) days after the receipt of the bill of estimate.

12-4 KP&TC will submit to the JICA Office a statement of expenditures within thirty (30) days after the end of the Courses.

12-5 In case any amount of the fund remitted by JICA remains unspent, KP&TC will reimburse the unspent amount to JICA in accordance with the instructions given by JICA. The fund allocated for the flight fare, accomodation, per-diem and medical insurance premiums shall not be appropriated for any other purposes.

12-6 By the request of JICA, KP&TC will make available for JICA's reference all the receipts and other documentary evidence necessary to certify the expenditures stated in 12-4 above.

13. This attached document and the following Annexes attached hereto shall be deemed to be a part of the Record of Discussions.

ANNEX I : Tentative Curriculum of the Course

ANNEX II : Tentative Course Operation Schedule

ANNEX III : Tentative Estimate of Expenses

ANNEX II

TENTATIVE COURSE OPERATION SCHEDULE

TIMING	KENYAN SIDE	JAPANESE SIDE
February	1. Submission of Course plan (curriculum, duration, No of participants, estimated expenses. etc) 2. Annual Consultation	1. Annual Consultation
April	1. Preparation of G.I. 2. Submission of form A-1 3. Opening Bank Account	
May	1. Distribution of G.I. and form A-3	1. Recruitment of Experts
June		1. Remittance of Expense
August	1. Receipt of Application form 2. Selection of Participants 3. Inform the results of selection of participants	
October - December	1. Implementation of Course	1. Dispatch of Expert
January	1. Submission of Statement of Expenditures 2. Submission of Course Report	

ANNEX III

TENTATIVE ESTIMATE OF EXPENSES TO BORNE BY JICA

Item of Expenses	Breakdown	Amount (US$)
I. INVITATION EXPENSES 1. Air tickets (round trip) 2. Per-diem 3. Accomodation 4. Medical Insurance		
SUB TOTAL		
II. TRAINING EXPESNES 1. Transportation 2. Material 3. Textbook 4. Employment fee 5. Social meeting		
SUB TOTAL		
GRAND TOTAL		

Annex VI

THE MAIN AREAS OF THE DISCUSSION WHICH REQUIRE FURTHER DISCUSSION, CLARIFICATION AND CONFIRMATION

The following in the draft Record of Discussion were pointed out by the Kenyan team.

1. Curriculum (item of R/D)

   Tentative curriculum of the courses will be submitted by Kenyan team to Japanese team later on.

2. Invited countries (Item 6 of R/D)

   Three countries i.e. Seychelles, Mauritius and Gambia would be included in addition to the fifteen (15) originally invited countries, because thse countries will be invited on the grounds of English speaking countries and they may have training needs for this Programme.

3. Number of Participants (Item 7 of R/D)

   Additional invited countries will increase the number of participants from fifteen (15) to eighteen (18).

   The number of participants from Kenya remain five (5) as originally proposed.

4. Procedure of Application (Item 10 of R/D)

   In order to emphasise the function and role of the Government of the Republic of Kenya, the following should be mentioned:

   "The Government of Kenya will write through its normal diplomatic channel to the Government of invited countries informing them that as part of Manpower Development strategy in Telecommunication, the Government of the Republic of Kenya in cooperation with the Government of Japan will conduct the course in the Digital Microwave Radio Engineering."

5. Undertaking of Both Governments (Item 11 of R/D)

As far as procedure of application, especially "through diplomatic channel" in item 11 of R/D was confirmed by both sides, it is enough that undertaking of the Government of the Republic of Kenya will be done by K.P.&T.C. on behalf of the Government of the Republic of Kenya.

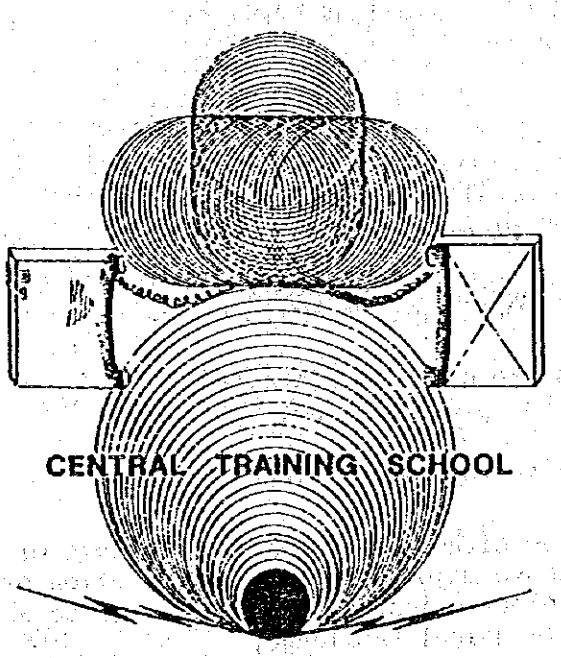
別添資料 (2) General Information

KENYA POSTS & TELECOMMUNICATIONS CORPORATION

JAPAN INTERNATIONAL COOPERATION AGENCY

REGIONAL TRAINING COURSE IN MICROWAVE RADIO ENGINEERING

"General Information"



Sponsored By The Japanese Government
In Co-operation With
Kenya Posts & Telecommunications Corporation

1. INTRODUCTION

As a further step in Technical co-operation between Japan and other countries in Africa, the Government of Japan through its agency JICA (Japan International Co-operation Agency) in co-operation with Kenya Posts and Telecommunications Corporation commenced in 1981 a Third Country Training Programme now called Regional Training Course in Microwave Radio Engineering to be centred at the Corporation's Central Training School, Mbagathi. Already three courses on Microwave Communications Engineering have been successfully conducted here.

2. PURPOSE

This course has been designed for graduate engineers in Telecommunications Administrations of Eastern and Southern Sub Regions of Africa. The Microwave Radio Engineering Course is conducted to provide participants with comprehensive theoretical and practical training in Microwave Radio Engineering so that participants will be able to acquire sufficient knowledge and skill in the field of planning, design work for Microwave systems in their countries. The course will pay particular emphasis on the Digital Microwave Radio System which forms the main part of future telecommunications network.

3. PROGRAMME

Attached is an outline of the programme. This programme is subject to modification so that it includes new topics of interest that may be proposed by the participants.

4. QUALIFICATIONS OF APPLICANTS

Applicants are normally nominated by their Administrations in line with the precedures set out below:-

Applicants to the course are to be:-

(i) be either graduates from College or Universities who have majored in telecommunication or electrical/ electronics engineering, or those who have an equivalent technical knowledge;

(ii) have at least 3 years working experience in telecommunication services;

(iii) have a good command of spoken and written English

(iv) be citizens of the nominating countries;

(v) be healthy enough to participate in and complete the course.

5. PROCEDURES OF APPLICATION

(i) Application forms A-3 will be sent with invitation letters, be filled in duplicate for each candidate and be returned to Central Training School within specified time.

(ii) Normally, one applicant will be accepted from each Administration (This is of course subject to flexibility in special cases).

(iii) This School will inform the applying Government whether or not the nominee is acceptable, before the scheduled commencement of the course.

6. DURATION

The course duration is approximately two months and normally begins in September/October and ends in December.

7. LANGUAGE

The course is conducted in English.

8. PLACE OF TRAINING

The course is conducted at the Central Training School (CTS) of the Kenya Posts and Telecommunications Corporation. The School is situated at Mbagathi, 16 kilometers from Nairobi, the capital of Kenya. There is official transport between the School and the General Post Office (GPO) during the mornings, mid-day and in the evenings. The Kenya Bus Service Company also operates bus services between the School and the bus terminal in Nairobi.

Presently, the School have accommodation capacity of 280 students, with 75 Instructors out of whom 50 are in the Telecommunications (Engineering) Wing.

SCHOOL ADDRESS: Central Training School
P.O. Box 30305
NAIROBI : KENYA

Telephone : 891201 NAIROBI

9. ALLOWANCES AND EXPENSES

(i) JICA (Japan International Co-operation Agency) will provide air travel return tickets to the participants.

(ii) A living allowance specified by JICA is provided while on the course. This allowance will cover local transportation, boarding and loging and other daily personal expenses.

The allowance is sufficient to cover normal living expenses for one person and therefore, participants are advised not to bring any dependants.

(iii) Other expenses will be treated in accordance with JICA's rules and regulations

10. ACCOMMODATION

(i) Participants will be accommodated in one of the suitable hotels in Nairobi

(ii) They will be transported to and from the hotel every morning and evening

(iii) Classes commence at 0815 hours on the first Monday of the course and the participants should make sure that they arrive in Nairobi on the day before. On arrival at Jomo Kenyatta International Airport - Nairobi, participants will be met where flight arrangements are known. Those arriving on unscheduled flights should ring.

11. GENERAL FACILITIES

(i) Lunches are served at the School at a very reasonable charge

(ii) There is a Post Office at the School which carries out all classes of postal business. Participants are advised to deposit any extra money that they may have at the Post Office or any other Commercial Bank of their choice in town for safe keeping. Information on safe custody should be sought from the School's Executive Officer. (Please note that personal money MUST NOT be given to anybody for safe keeping). The School will not accept responsibility for any losses.

(iii) There is a public telephone kiosk, Telephone Number 891646. All private calls should be made from this telephone. During School hours, calls for participants should be made to Telephone Number 891201 so that messages can be passed to them as it will be possible for the participants to receive these calls personally.

12. RECREATION

(a) There is a Bar in the School where the School resident may spend their leisure time in the evenings.

(b) The School provides sports and games facilities, these include, among others: School Library, Television, Radio, Lawn tennis and Tennis Court, occassional Cinema shows, Reading rooms, Indoor games, Church services on Sundays, Football, Volley-ball etc.

13. OTHER INFORMATION

(i) The climate in Nairobi is of tropical type requiring a simple warm weather clothing. But since Nairobi is at a relatively high altitude, the climate may become chilly occassionally and therefore, participants are advised to bring some warm clothing.

(ii) Certificate: Weekly examination tests, will be conducted in both theory and practical work to evaluate the performance of the participants; the participants who successfully complete the course will be awarded a Certificate by JICA.

(iii) Further information concerning the course is available at the given School's address or from JICA office in Nairobi.

We look forward to meeting you here.

Annex 1

1. TOPICS TO BE COVERED BY KENYAN INSTRUCTORS

		Days
1 - 1	Outline of Microwave system	1
1 - 2	Telephone Transmission (FM)	3
1 - 3	Principles of Measurements	3
1 - 4	Power Supply	1
1 - 5	FDM Equipment Measurement Practice	4
1 - 6	Engineering Economy	1
1 - 7	Project Management	1
1 - 8	TV Signal Transmission	2
1 - 9	Digital Radio Transmission	3
1 - 10	Microwave Propagation and Path Design	2
1 - 11	Management, Maintenance and Control	1
1 - 12	Review and Examination	4
	TOTAL =	26

2. TOPICS TO BE COVERED BY JAPANESE EXPERTS

		Days
2 - 1	Digital Microwave Link Design Practice	5
2 - 2	Satellite Communication	3
2 - 3	Introduction to Digital Switching	1
2 - 4	Transmission System Planning	2
2 - 5	Optical Fibre	1
2 - 6	Microwave Components	1
2 - 7	Personal Computer Application	2
2 - 8	Tender Specification, Technical Standards and Acceptance Tests	2
	TOTAL =	17

3. OTHERS

3 - 1	Orientation, Ceremonies, Course Evaluation	2
3 - 2	Saturdays, Sundays and Public Holidays	18
	GRAND TOTAL =	63

COUNTRY REPORT

Participants are requested to prepare a typewritten Country Report describing the introduction of telecommunications in their Country. In preparing this paper please cover the following items:-

1 - Name of the Course

2 - Name of the participant

3 - Name of the Organization

4 - Present status i.e. grade or rank of the participant

4 - (i) Telephone Service (the number of telephones per people, the total number, nation wide network structure, the exchange model especially electronic including digital types (if any).

4 - (ii) Other Services

5 - Future programmes

(i) Executed projects

(ii) On going projects

(iii) Planned projects

6 - Telecommunications problems and difficulties awaiting solution in your Country at present.

7 - The technical status in your own speciality in your Country.

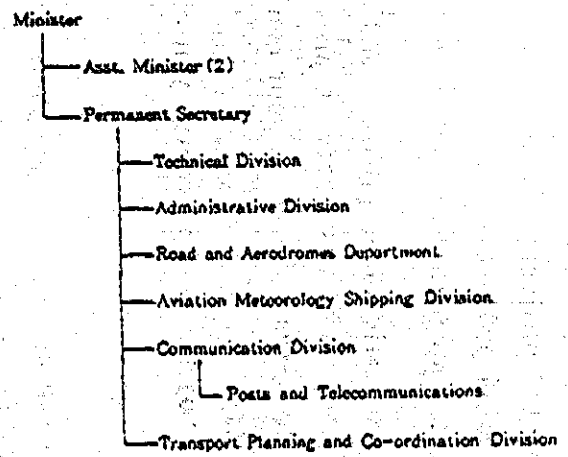
8 - The subject in this course you are most interested in.

別添資料 (3)　組 織 図

国名　ケ ニ ア

管理機関組織図

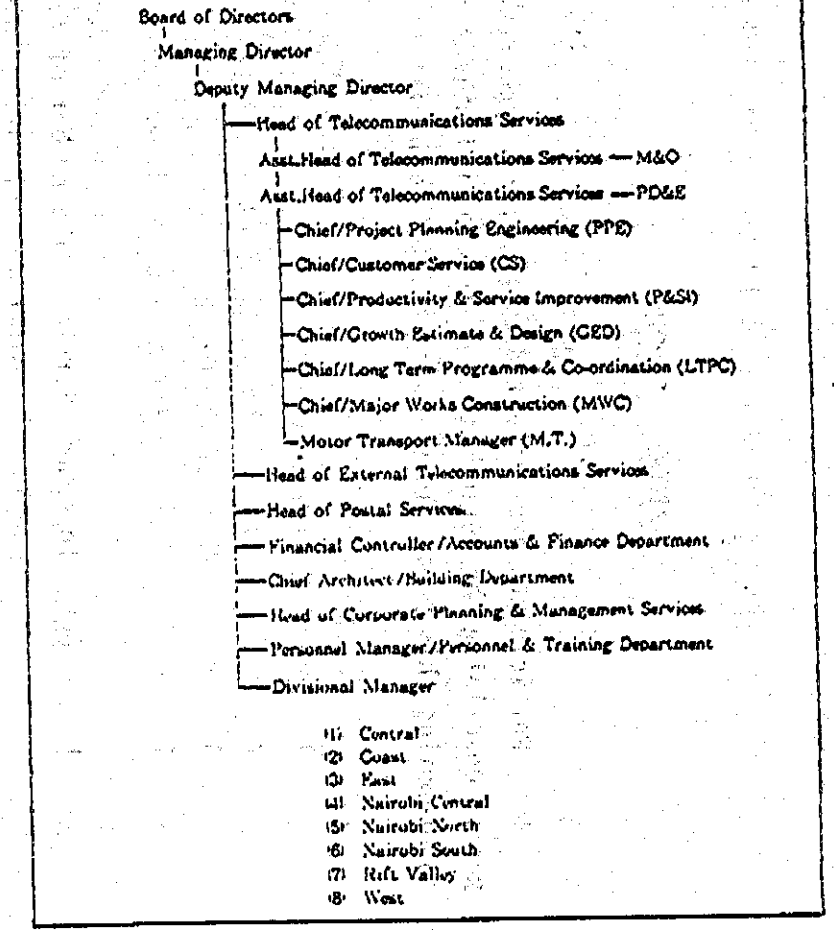
機関名	Ministry of Transport and Communications	電 話	
略 号	運輸通信省 (MOTC)	TELEX	
住 所			



国名　ケ ニ ア

通信運営体組織図

運営体名	Kenya Posts and Telecommunications Corp.	電 話	27 401
略 号	ケニア郵電公社 (KPTC)	TELEX	22245 dirposta
住 所	P. O. Box 30301, Nairobi, Kenya		



別添資料 (4) 研修日程及び担当講師

REGIONAL COURSE IN MICROWAVE RADIO ENGINEERING CURRICULUM SCHEDULE

Date	Morning	Afternoon	Instructor
6/10/Mon.	Drientation	Outline of M/W system	Odhiambo
7/10/Tue.	Outline of MW/System	Telephone Transmission	Odhiambo/Keiro
8/10/Wed.	Telephone Transmission	Telephone Transmission	Keiro
9/10/Thur.	Telephone Transmission	Opening Ceremony	Keiro
10/10/Fri.	Telephone Transmission	Telephone Transmission	Keiro
11/10/Sat.		Bomas of Kenya	
12/10/Sun.			
13/10/Mon.	Principle of Measurement	Principle of Messurement	Muthuri
14/10Tue.	Principle of Measurement	Principle of Measurement	Muthuri
15/10/Wed.	T.V. Signal Transmission	T. V. Signal Transimision	Omukuba
16/10/Thur.	T.V. Signal Transmission	T. V. Signal Transmission	Omukuba
17/10/Fri.	Power Supply	System	Affulo
18/10/Sat.	Study Trip to Mombasa		
19/10/Sun.	Malindi		
20/10/Mon.	"		
21/10/Teu.	Introduction to PCM Transmission		Omukuba
22/10/Wed.	Optical Fibre Transmission System		Ando
23/10/Thur.	Microwave Propagation and Path Design		Affulo
24/10/Fri.	" " " "		Affulo
25/10/Sat	Visit to National Meuseum		
26/10/Sun			
27/10/Mon.	Digital Radio	Transmission	Odhiambo
28/10/Teu.	" "	"	Odhiambo
29/10/Wed	" "	"	Odhiambo
30/10/Thur.	Transmission System	Planning	Yutaka
31/10/Fri.	" "	" "	Yutaka
1/11/Sat.	Trip to Northern Kenya		
2/11/Sun.	"		
3/11/Mon.	Digital Multiplex	Equipment	Yutaka
4/11/Tue.	" "	"	Yutaka
5/11/Wed.	Digital Radio	System	Yutaka
6/11/Thur.	" "	"	Yutaka
7/11/Fri.	" "	"	Yutaka
8/11/Sat.	Trip to Lake Magadi		
9/11/Sun.			

Date	Morning	Afternoon	Instractor
10/11/Mon.	Management and Maintanance of Microwave System		Guest
11/11/Tue.	Project Management		Guest
12/11/Wed.	Considerations on Establishment of Digital Network		Yamazaki
13/11/Thur.	Tender Specifications and Technical Standards		Yamazaki
14/11/Fri.	" "	" "	
15/11/SAt.			
16/11/Sun.			
17/11/Mon.	Practical Measurements on FDM/FM Microwave System		Keiro
18/11/Tue.	" "	" " "	"
19/11/Wed.	" "	" " "	Muthuri
20/11/Thur	" "	" " "	Omukuba
21/11/Fri	Trip to Makuru-Kericho-Kisumu-Eldoret		
22/11/Sat.	"		
23/11/Sun.	"		
24/11/Mon	Digital Microwave Link Design Practice		Odhiambo
25/11/Tue.	" " " " "		"
26/11/Wed,	" " " " "		"
27/11/Thur.	" " " " "		"
28/11/Fri.	" " " " "		Yamazaki
29/11/Sat.			
30/11/Sun.			
1/12/Mon.	Sateelite Communication System		Toyoda
2/12/Tue.	" " "		"
3/12/Wed.	" " "		"
4/12/Thur.	Introduction to Digital Switching System		Takahashi
5/12/Fri.	Course Evaluation	Closing Geremony	Kenya/Japan

別添資料 (5)　研修資機材

Category	Model	Remarks	Judge
EQ	TR-800 120 5A transmitter-receiver × 2	NEC	
EQ	NAR-6072B supervisory equipment × 2	NEC	
EQ	MRT-2B-1 frequency shift converter	Anritsu, 250 ∿ 300 MHz	
EQ	MRT-3B frequency shift converter	Anritsu, 790 ∿ 960 MHz	
EQ	GTE 12 CH VHF equipment		
EQ	NEC 12 CH carrier terminal equipment × 2		
EQ	NAR-6041 B supervisory equipment	NEC	
EQ	Heathkit transmitter		
EQ	Motorola single channel equipment		
EQ	FM6G 10H radio equipment (SV, SW) × 2	Fujitsu CH114 6700 MHz CH214 7040 MHz	
EQ	2 GHz Microwave system (Tx × 2, HODEM × 4, Rx × 2, SV, SW)	Fujitsu	
EQ	Program modulating equipment	Philips	
EQ	GTE UHF radio equipment × 2	800 MHz, 120 CH	
EQ	Multiplexing equipment	Philips, 120 CH	
EQ	PCM Multiplexor	SAT, up to 34 Mb/s	O
EQ	COM 200 switching equipment × 2	SAT	O
EQ	TEX 200 order-wire equipment × 2	SAT	O
EQ	FHD 200 digital radio equipment × 2	SAT, 4PSK, 35 Mb/s	O
EQ	MP25 Carrier equipment	GTE, 960 CH	
EQ	PCM-30 CH system	Fujitsu	
EQ	TELETTRA 3L/E		
EQ	TELETTRA TD3		
EQ	TV CODEL	SAT 34 Mb/s	
SG	B4A Signal generator × 2		
SG	8614A Signal generator	HP, 0.8 ∿ 2.4 GHz	
SG	MG63A Signal generator	Anritsu	
SG	MG425A Oscillator	Anritsu	
SG	618C SHF Signal generator	HP,3.8 ∿ 7.8 GHz (JICA)	
SG	TF 2905/8 sine squared pulse and bar generator	Marconi	
SG	MG 440A Frequency synthesizer	Anritsu, 0.01 Hz ∿ 30 MHz (JICA)	

Category	Model	Remarks	Judge
SG	8620C Sweep Oscillator + 86240C Plug in in	HP, 1.7 ∿ 8.6 GHz (JICA)	
SG	MG 627A Radio frequency signal generator	Anritsu, 1.3 ∿ 2.3 GHz	
NG	TF 2091B Noise Generator	Marconi, 960 CH	
NG	TF 2092C Noise Receiver	Marconi	
NG	WJ-011 Noise Power Measuring equipment	Anritsu	
NG	TF-2092A Noise Receiver	Morconi	
PM	432A Power Meter	HP, 10 dBm (max), 10 MHz ∿ 10 GHz	O
PM	435A Power Meter × 2	HP, SW (max), 50 MHz ∿ 18 GHz (JICA × 1)	O
LM	MS 38B Selective Level Meter	Anritsu	
LM	ML 42A Level Meter	Anritsu	
LM	ML 423A Standard Level Meter	Anritsu	
FM	MF-62A Frequency Counter	Anritsu	
FM	Frequency Meter	Shimada, 1.4 ∿ 2.3 GHz	
FM	5245L Electronic Counter	HP, 50 ∿ 500 MHz	
FM	TR5211B Microwave Counter	Takedariken, 0.5∿18 GHz (JICA)	O
SA	8553B Spectrum Analyzer RF section	HP, 0 ∿ 110 MHz	O
SA	8555A Spectrum Analyzer RF section	HP, 1.0 ∿ 43 GHz	O
SA	Spectrum Analyzer	HP	
OS	1740A Oscilloscope	HP, 100 MHz	O
OS	Telequipment Oscilloscope		
OS	455 Tektronix Oscilloscope	Tektronix	
OS	SS 5157D Synchroscope	0.1 μs	
OS	521B Oscilloscope	Schrunberger, 10 ns	O
PCM	PCM LINE TESTER (HDB3, AMI, BIPOLAR)	2/8 Mb/s, ΔF, TD, BER, 75 Ω, 120 Ω	O
PCM	PCM LINE TESTER	34/35 Mb/s, ΔF, BER 75Ω	O
PCM	PCM TEST SET	Quantization noise etc. 600 Ω	O
ATT	8477A Calibrator	HP	

Category	Model	Remarks	Judge
ATT	UHF Attenuator	Marconi, DC-1 GHz	
ATT	MN 510C Resistance Attenuator	Anritsu	
ATT	SINGER Variable attenuator	1.4 ∿ 2.5 GHz	
ME	MS61B Linear Detector	Anritsu	
ME	MS632S IF-RF Measuring equipment	Anritsu, 2 GHz	O
ME	ME417 BB-IF Measuring equipment	Anritsu	O
ME	Noise Figure Meter 342A × 2 + 347A Noise source	HP, 6 GHz, (JICA × 1)	O
ME	TF 2910/3 Non-linear Distortion Analyzer	Marconi	
ME	3702B IF/BB Receiver (Link Analyzer)	HP (JICA)	O
ME	3710A IF/BB Transmitter (Link Analyzer)	HP (JICA)	O
ME	3705 Differential Phase Detector (Link Analyzer)	HP (JICA)	O
ME	3730B Down Converter	HP, 6 GHz ∿ 11 GHz (JICA)	
ME	3735B RF Module	HP (JICA)	
MIS	Return Loss Measuring Set	(JICA)	
MIS	Transmission Measuring Set	Philips	O
MIS	MN45A Key Box	Anritsu	O
MIS	TF2604 Electronic Voltmeter × 2	Marconi 1 MΩ (max) 0.3 V ∿ 1000 V	O
SB	Solar Cell Model		
SUP	MS71B Noise Figure Meter + Noise Source	Anritsu, 0.2 ∿ 2.6 GHz	
SUP	TF2091C Noise Generator	Marconi, (JICA)	
SUP	3556A Psophometer	HP	
SUP	T707 Transistor checker	Fujisoku Electric Ltd.	
SUP	ML21A Selective Level Meter	Anritsu, upto 200 KHz	
SUP	Educational Test Bench	Microwave Instruments LTD.	

別添資料 (6)　テキスト改訂試案

Subject	Textbooks	Necessity of Revision	Main points to be revised	Schedule of Revision	Org. in Charge
Outline of microwave system	Outline of radio communication	No (untill 88)			
Telephone transmission	o FDM signal concept Property of FM signal Signal-to-Noise ratio in FM sys. o Telephone transmission	No (untill 88)			
Principles of measurament	o Principle of measurement	Yes	o Delete frequency deviation, Linearity, Differential gain, FM system measurement test prodcedure, noise loading test, etc. o Add items of Digital system measurement.	by Sept. 89	NTT or Maker
FDM equipment measurement practice	o PANAFTEL radio relay system and equipment o Partial reproduction of microwave radio relay system test procedure	No (untill 88)			
Digital radio system measurement practice		to be made newly		by Sept. 89	Maker
TV, signal transmission	o The transmission of Television signals for microwave radio relay sys.	No (untill 88)			

Subject	Textbooks	Necessity of Revision	Main points to be revised	Schedule of Ravision	Org. in Charge
Digital picture signal transmission		made newly		by Jept. 88	NTT
Introduction to PCM transmission and CCI Recommendations on PCM systems	o General transmission technique	Yes	o Delete analoque transmission technique o Add Multipler of European hierarchy o Add PCM-30 system o Add CCI recommendations	by Sept. 87	CTS or NTT or Maker
Digital multipleking equipment	o Digital multiplexing equipment	Yes	o "2, 3 stuff multiplenor" should be revised to match 2 Mb/s hierarchy o "4 Principles of Synchronous Multiplening" should be revised to add 2 Mb/s hierarchy	by Sept. 88 (More equipment explanation)	NTT or Maker
Digital radio transmission	o Microwave digital system o Digital pulse theory o Digital microwave radio relay systems o Space diversity techniques for digital radio relay systems	Yes	o Combine adequately so as to cover theoretical part of transmission o Add explanations on long distance system. o Revise completely as if new edition	by Sept. 87	NTT
Microwave propagation and path design	o Microwave propagation and path design	No			
Digital radio systems	o Microwave digital system o Space diversity techniques for digital radio relay systems o Microwave radio relay	Yes	o Delete explanations on analoque systems o Combine all books after selection of items o More detailed explanations	by Sept. 87 or by Sept. 88	NTT or Maker

Subject	Textbooks	Necessity of Revision	Main points to bereviced	Schedule of Revision	Org. in Charge
	system equipment o Microwave component		on equipment o More detailed explenations on measurement		
Digital microwave system design	o Practical microwave system design	Yes	o Add design of long-distance systems o Add foreign methods of design o Match the methods of design of short haul systems to one of the long distance systems o Delete design of FDM-FM system	by Sept. 87	NTT or Maker
Digital short haul link design practice	o Report o Exercise on digital Radio relay system design o Ref. Practical micro-wave system design	Yes	o Allocations of C/N values should be more resesonable for the imaginary system o Parameters of imaginary system should be made more practical	by Sept. 87	NTT or Maker
Digital long-distance system design		to be made newly	o Selection of sites o Design work o Computer programming o 16 QAM or 64 QAM	by Sept. 88	CTS, NTT or Maker
Satellite communi-cation	o Introduction to satel-lite telecommunications o Circuit design of FDM-FM multiplexed tele-phony circuit o Basic concepts and Transmission standards for the FDM-FM-FDHA system	Yes	o Select important subjects and focus upon them o Make the text books less	by Sept. 87	KDD

Subject	Textbooks	Necessity of Revision	Main points to be revised	Schedule of Revision	Org. in Charge
	o Outline of Intelsat V Satellite o Intelsat SCPC/SPADE System o International Television transmission system and standards o Intelsat TDMA/DSI system				
Optical fiber transmission system	o Optical fiber transmission system	No			
Repeater system design of optical fiber system		to be made newly		by Sept. 87	NTT or Maker
Introduction to digital telephone switching	Digital switching system (General)	No			
Digital telephone exchange systems		to be made newly		by Sept. 87	NTT
Digitalization of networks		to be made newly		by Sept. 87	NTT
Transmission system planning	o Transmission system planning				
Tender specifications and technical standards	o Tender specifications and technical standards o Reference 1 o Reference 2	Yes	o Completely newly made, including the examples of new technical standards	by Sept. 87	NTT

Subject	Textbooks	Necessity of Revision	Main points to be revised	Schedule of Revision	Org. in Charge
Project management		to be made newly		by Sept. 87	CTS
Management and maintenance of microwave systems		to be made newly		by Sept. 87	CTS
Power supply system	o Power supply system	No			
Orientation and openning ceremony	o Orientation material	Yes	o Revise completely to include important items	by Sept. 87	CTS

別添資料 (7)　周辺国のニーズ調査結果

Nation	Present Status of Telecom. Services	Status of Introduction of Digital Systems	Number of Engineers and Technicians Qualified to This Course
Ethiopia		o Telettra D/M/S Installation work to be Jan. '87 o Detabit EDX D/T/E Introduced o D/E/S 11 offices introduced	All switching of transmission engineers & technicians: about 600
Tanzania		o 16 QAM sys. under construction (Malawi - Tanzania) o 1 D/E/S	Transmission engineers: about 50 Transmission technicians: about 100
Uganda	o Total capacity of exchanges: 63,916 o Total No. of Sub.: 29,126 M/S : 9,166 SXS : 8,350 XB : 15,400 P/E : 31,000 o Telephone density: 0.224/100	o D/M/W/S: Site stelection by an ITU team finished o 4 D/E/S 2 E10 B's 2 8DX10's	Transmission engineers: 100 Qualified engineers for this course: 30
Malawi	o Automatic exchanges: 27 o Manual exchanges: 44 o Total capacity of exchanges: 20,447 o No. of telephoness: 31,007	o 140 Mb/s 16 QAM sys. under installation work (Malawi-Tanzania) o 8 Mb/s D/M/W sys. in op. o 34 Mb/s D/M/W sys. in final test o D/E/S UXTS in op. 1 AXE-10 in op. 1 NYE-20 in op. (International Gate Office)	Engineers and technicians: more than 100

Nation	Present Status of Telecom. Services	Status of Introduction of Digital Systems	Number of Engineers and Technicians Qualified to This Course
Zimbabue	o Telephone density: 3.18/100 o Telephone subs: more than 240,000 o Automatic exchanges: 42 o Manual exchanges: 44	o 140 Mb/s, 34 Mb/s, & 8 Mb/s D/M/W sys's have been contracted Installation in the middle of 87. o International Gate Exchange: 1 D/E/S o 1 ARX-10	o Graduated engineers: More than 100 o Technicians: more than 100
Nigeria	o Automatic exchanges: 230 o Total capacity of exchanges: 400,000 lines o Total subs: 200,000 o Telephone density: 0.2/100 o Domestic satellite system: No. of earth st. 36	o D/E/S to be introduced in 87.	o Engineers qualified to this course: more than 500
Zambia		o 2 D/E/S	o Engineers in charge of transmission: about 200
Swaziland		o 1 AXE-10 under installation work	o Graduated engineers: 5 o Technicians: 50
Kenya		o 34 Mb/s D/M/W sys. in op. (Total route length, 1,650 km) o AEX-10 ..... 1 UTX- 5 ..... 41 o 140 Mb/s optical fiber sys. starts installation work in the end of 86.	o Transmission engineers: about 100 o Transmission technicians: about 300
Sudan	o No. of telephone Offices: 481 o No. of Toll offices: 142 o No. of subs: 69,388 o Telephone density: 0.3/100	No particular project	o Engineers and technicians in charge of transmission: about 100

Nation	Present Status of Telecom. Services	Status of Introduction of Digital Systems	Number of Engineers and Technicians qualified to This Course
Ghana		No particular project	o Transmission engineers: 1 o Transmission technicians: 3 o Total no. of engineers: 15

別添資料 (8)　中間及び最終エバリュエーション結果

I Objectives

(1) To what extent were you aware of the objectives of this training program before you came to Kenya?

Category \ Mark	Mean	% for M ≧ 3	% for M ≧ 4	Note
Kenyan Participants	2.8	75.0	12.5	
Foreign Participants	3.7	81.8	54.5	
All participants	3.3	78.9	36.8	

1 2 3 4 5

not aware at all　　fully aware

(2) Please indicate to what extent the main objectives of the course have been achieved so far?

	Mean	% for M ≧ 3	% for M ≧ 4	Note
Interim	3.7	100	50.0	
Final	3.8	100	83.3	

1 2 3 4 5

not achieved　　completely achieved

(3) In your opinion, to what extent has your expectation of this course fulfilled so far?

	Mean	% for M ≧ 3	% for M ≧ 4	Note
Interim	3.8	94.1	58.8	
Final	3.7	100	66.7	

1 2 3 4 5

not fulfilled　　completely fulfilled

II Curriculum design

(1) Coverage, level, time allocation, intensity and duration;

(a) Coverage of the subjects

	Mean	% for M ≦ 2	% for M = 3	% for M ≧ 4
Interim	2.9	22.2	55.5	22.3
Final	3.1	11.8	64.7	23.5

1 2 3 4 5

incomplete just right too broad

(b) Level of the subjects

	Mean	% for M ≦ 2	% M = 3	% M ≧ 4
Interim	3.4	0	62.5	37.5
Final	3.2	0	80.0	20.0

1 2 3 4 5

too elementary just right too advanced

(c) Time allocation in general

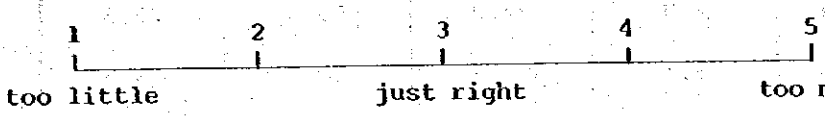
	Mean	% M ≦ 2	% M = 3	% M ≧ 4
Interim	2.6	41.2	52.9	5.9
Final	2.9	23.5	70.6	5.9

1 2 3 4 5

too little just right too much

(d) Discussions

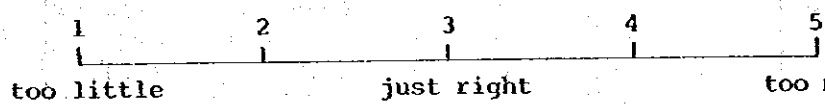
	Mean	% M ≦ 2	% M = 3	% M ≧ 4
Interim	2.9	25.0	62.5	12.5
Final	3.1	5.6	77.7	16.7



too little just right too much

(e) Exercises

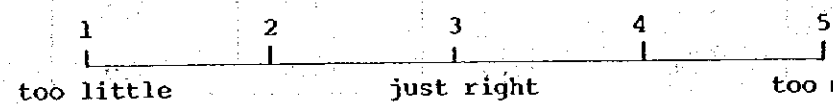
	Mean	% M ≦ 2	% M = 3	% M ≧ 4
Interim	2.4	58.8	35.3	5.9
Final	2.8	17.7	82.3	0



too little just right too much

(f) Observations

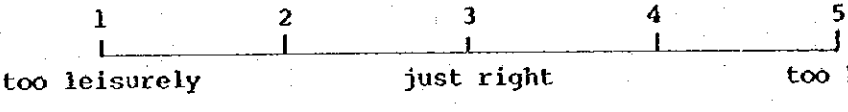
	Mean	% M ≦ 2	% M = 3	% M ≧ 4
Interim	3.0	30.8	46.1	23.1
Final	3.0	17.6	70.6	11.8



too little just right too much

(g) Intensity

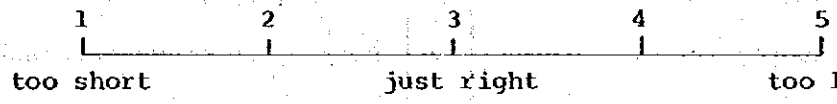
	Mean	% M ≦ 2	% M = 3	% M ≧ 4
Interim	3.2	5.6	66.6	27.8
Final	3.1	0	94.4	5.6



too leisurely just right too hard

(h) Duration

	Mean	% M ≦ 2	% % M = 3	% M ≧ 4
Interim	2.7	44.3	44.4	11.3
Final	2.8	16.7	83.3	0



(2) (a) The most interesting Topics

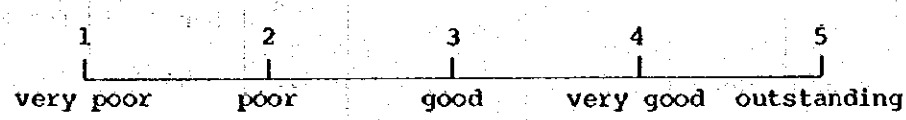
Interim		Final	
Contents	No.	Contents	No.
Digital radio system	10	Digital M/W link design practice	13
Digital radio transmission	7	Digital radio system	5
TV signal transmission	5	Digital radio transmission	4
Introduction to PCM transmission	5	Digital multiplex equipment	3
Digital multiplex equipment	5	All digital topics	2
Project management	3	Introduction to PCM transmission	1
Optical fiber transmission sys.	2	Project management	1
Transmission system planning	1	Project analysis	1
		Microwave propagation	1
		TV transmission	1
		Transmission system planning	1
		Tender Spec and Tech. Stand	1
		Establishment of digital network	1
		Introduction to new technology	1

(b) The least interesting topics

Interim		Final	
Contents	No.	Contents	No.
Management & maintenance	4	Management & maintenance	3
Telephone transmission	2	Power supply system	3
Power supply system	2	Principles of measurement	1
Outline of M/W system	1	Introduction to PCM transmission	1
Project management	1	Telephone transmission	1
TV signal transmission	1	Measurement on FDM-FM sys.	1
Transmission system planning	1		

III Course conduct

(1) Evaluation of each subject matter



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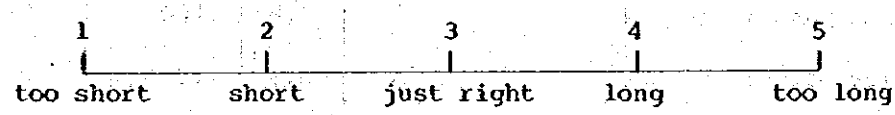

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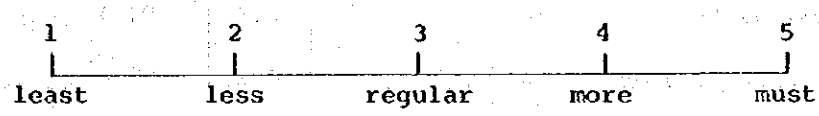


Importance of subject

Subject \ Mark	Mean	% for M≧3	% for M≧4	Note
Outline of M/W system	3.6	94.4	55.6	
Telephone transmission 1	3.8	100	72.2	
Telephone transmission 2	3.8	100	64.7	
Principles of measurement	3.9	100	72.2	
TV signal transmission	3.8	94.1	76.5	
Power supply system	3.4	94.1	41.2	Δ
Cable PCM system design	4.2	100	87.5	
Introduction to PCM	4.1	100	88.2	
Optical fiber transmission system	4.2	100	94.7	
M/W propagation & path design	4.2	100	89.5	
Digital radio transmission	4.3	100	94.7	
CCI recommendations for PCM	3.9	100	77.8	
Transmission system planning	4.1	100	82.4	
Digital multiplex equipment	4.3	100	94.7	
Digital radio system	4.4	100	94.4	
Management & maintenance	3.5	93.75	56.25	
Optical fiber cable system design	4.1	100	88.2	
Project management	4.2	100	89.5	
Consideration on establish. of Dig. Net	4.3	100	94.4	
Tender spec. and technical standards	4.2	100	94.4	
Practical measurements on FDM-FM sys.	4.1	100	83.3	
Digital M/W link design practice	4.6	100	94.4	
Satellite communication system	4.3	100	94.4	
Introduction to digital switching sys.	4.1	100	77.8	

Understandability of instructor's explanation

Subject \ Mark	Mean	% for M≧3	% for M≧4	Note
Outline of M/W sys.	3.9	100	82.4	
TP trans. 1	2.9	64.7	23.5	×
TP trans. 2	4.1	100	87.5	
Principles of meas.	3.2	82.4	29.5	Δ
TV sig. trans.	4.4	100	94.1	
Power supply sys.	3.4	87.5	43.75	Δ
Cable PCM sys. design	4.2	100	88.9	
Intro. to PCM	4.2	100	88.2	
O/F trans. sys.	3.3	77.7	44.4	Δ
M/W prop. & path design	3.5	94.75	47.35	
Digital radio trans.	3.7	94.45	66.65	
CCI rec's for PCM	4.0	100	82.35	
Trans. sys. planning	3.2	94.1	64.7	
Digital mux. eq.	3.8	94.4	66.6	
Digital radio sys.	3.9	100	66.7	
Management & maintenance	3.4	80.0	60.0	Δ
O/F cable sys. design	4.3	100	81.25	
Project management	4.6	100	94.7	
Establish. of Digital Network	4.3	100	77.8	
Tender spec. & Tech. Stand.	4.4	100	88.9	
Measurements on FDM-FM sys.	3.8	100	72.2	
Digital link design Practice	4.4	100	94.4	
Sat. Comm. Sys.	3.8	88.9	44.5	
Intro. to Digital sw. sys.	3.6	88.9	61.1	

(2) Study trips

(a) How were the arrangements and scheduling of the study trips?

	Mean	% M ≧ 3	% M ≧ 4	Note
Interim	3.2	94.7	26.3	
Final	3.1	94.4	16.7	

1 2 3 4 5

Very poor — good — outstanding

(b) What do you think about the frequency of the study trips?

	Mean	% M ≦ 2	% M = 3	% M ≧ 4
Interim	3.1	15.8	73.7	10.5
Final	3.1	5.6	77.7	16.7

1 2 3 4 5

too few — good — too often

(c) What do you think about the usefulness of the study trips?

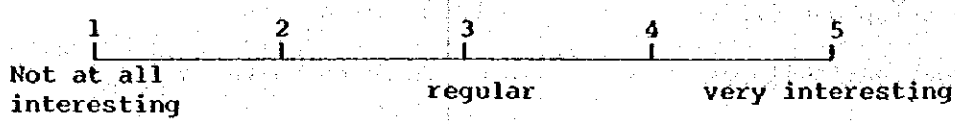
	Mean	% M ≧ 3	% M ≧ 4	Note
Interim	4.1	89.5	79.0	
Final	3.7	94.4	77.7	

1 2 3 4 5

Useless — regular — very useful

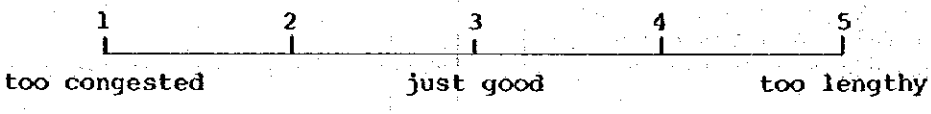
(d) Do you think the observation sites were interesting to you?

	Mean	% M ≧ 3	% M ≧ 4	Note
Interim	4.0	94.7	84.2	
Final	3.7	94.4	72.2	



(e) What do you think about the iteneraries of the study trips?

	Mean	% M ≧ 3	% M ≧ 4	Note
Interim	2.8	82.4		
Final	3.0	88.2	11.8	



Comments on the places you felt interesting

Interim		Final	
Contents	No.	Contents	No.
San Marco tracking and Contrd st.	4	San Marco tracking & control st.	3
Meru telephone office	2	Mombasa	2
Nairobi national park	2	Trip to Northern Kenya	1
Mombasa telephone office	1	Repeater stations	1
Nairobi national meuseum	1	Terminal stations	1
Digital radio link	1	Lamu	1
PCM equipment	1	All communication sites	1
Nyambene hill	1	The safari areas	1
Trip to Northen Kenya	1	Historical areas	1
Various Telecom sites & Set-ups	1		

Comments on the places you want to visit

Interim		Final	
Contents	No.	Contents	No.
Langonot earth station	5	Langonot earth station	2
Radio & carrier room in Nairobi	2	Corporations installations in Nairobi	1
Nairobi telephone house	1	Nairobi telephone exchange	1
ISD in Extelecoms	1	Digital switching system	1
		Bigger installations	1
		VOK-TV in Nairobi	1
		Magadi Soda company	1

(3) Sports and recreation

Interim		Final	
Contents	No.	Contents	No.
1. Sports games were good and interesting.	6	Sports games were good, refreshing.	7
2. More sports and recreation activities should be organized.	4	More sports and recreation activities should be organized.	5
3. Sports games should be organized every fortnight.	3	Sports games should be organized every fortnight.	3
4. Sports games should be organized 3 times in the period.	1		
		5. Sports games should be organized once in a week or after few lectures.	2
6. Sports games should be organized at intervals.	1	Sports games should be organized from time to time.	1
7. Sports games should have more variety.	2	Sports games should have more variety.	4
8. Recreation other than sports are just all right.	1	2 Sports games were just all right, and should continue.	3
9. Sports are necessary, and should be regular after class.	1		

(4) Application of techniques and knowledge

Do you think that you will have chances to make good use of the techniques and knowledge you have attained in the course in your country?

	Mean	% $M \geqq 3$	% $M \geqq 4$	Note
Interim	4.1	100	79.0	
Final	4.1	94.4	78.8	

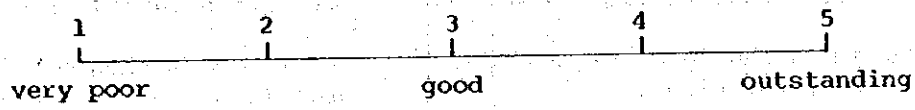
1 2 3 4 5

few quite many

IV Administration and management

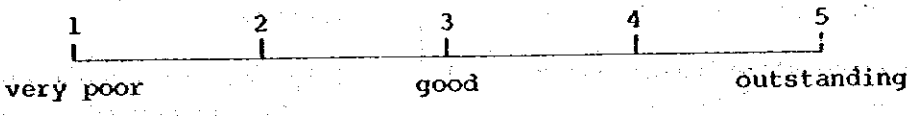
(a) Coordination for course conduct

	Mean	% M ≧ 3	% M ≧ 4	Note
Interim	3.5	100	52.6	
Final	3.4	100	31.3	



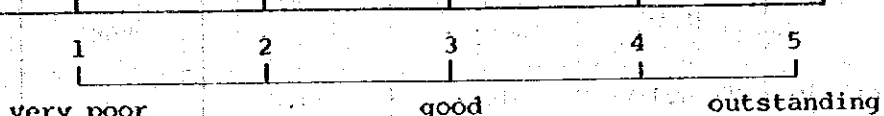
(b) Pre-course information (G.I., Briefing and Orientation)

	Mean	% M ≧ 3	% M ≧ 4	Note
Interim	3.0	80.0	20.0	
Final	3.0	92.9	7.1	



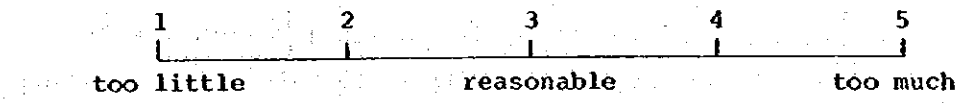
(c) Housing and food accommodations

	Mean	% M ≧ 3	% M ≧ 4	Note
Interim	3.4	94.4	33.3	
Final	3.1	88.2	29.4	



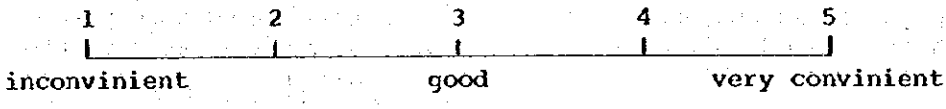
(d) Allowances

	Mean	% M ≦ 2	% M = 3	% M ≧ 4
Interim	2.5	42.8	57.2	0
Final	2.3	73.3	26.7	0



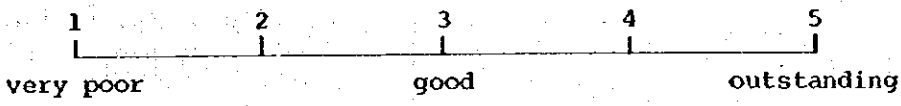
(e) Transportation

	Mean	% M ≧ 3	% M ≧ 4	Note
Interim	4.3	100	83.3	
Final	4.0	100	66.7	



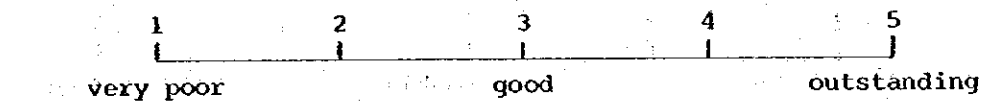
(f) Social program

	Mean	% M ≧ 3	% M ≧ 4	Note
Interim	3.2	93.7	25.0	
Final	3.1	88.2	23.5	



(g) Communication among the participants

	Mean	% M ≧ 3	% M ≧ 3	Note
Interim	3.7	100	61.1	
Final	3.6	100	55.6	



Comments on IV Administration & management

	No.		No.
1. The allowarce should be increased.	2	Allowance is to tight. It should be increased.	3
2. Foreigners and Kenyans should be accommodated in the same place.	3K	Foreigners & Kenyans should be accommodated in the same place.	4K + 2F
3. It is embarassing for Kenyans getting low allowance on field trips.	1	On study trips, allowance for Kenyan should be the same as that for foreig.	1
4. Please inform how much and what to expect.	1		
		5. Coordination in some stages became difficult because of the coordinator being overloaded with work. The school's administration should have been more involved.	1
		6. There must be a clear stand regarding medical care for the participants.	1