No. 03

フィリピン電気通信訓練センター
計画打合せチーム報告書

昭和59年12月

国際協力事業団
社会開発協力部

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フィリピン電気通信訓練センター
計画打合せチーム報告書

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昭和59年12月

国際協力事業団
社会開発協力部

国際協力事業団	
受入月日 '85. 3. 11	118
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序

本プロジェクトは，フィリピン共和国政府が同国全土における電気通信網建設計画の一環として策定した北部ルソン電気通信網建設計画に導入される最新鋭の電気通信機器の保守・運用要員を養成することを目的としており，昭和５６年４月２日署名の討議議事録（Ｒ／Ｄ）に基づき，交換，無線，搬送，電力，電信，線路の６分野に亘りセンター協力を実施しているものである。

国際協力事業団は上記Ｒ／Ｄに基づいて，昭和５８年度までに長期専門家を１２名派遣，総額約３億６千万円の機材を供与，カウンターパートを８名受け入れるなど，フィリピン電気通信訓練センターへの技術協力をすすめるとともに，昭和５８年１１月には巡回指導チームを派遣し，協力計画についての討議を行った。

本計画打合せチームは，昭和５９年９月９日から同年９月１５日に亘り派遣され，その間，同プロジェクトの進捗状況の調査及び今後の両国の協力体制の強化及び円滑な運営をはかるべく，フィリピン側と協議したが，特に，昭和５９年度以降における実行計画について，詳細に意見交換を行った。

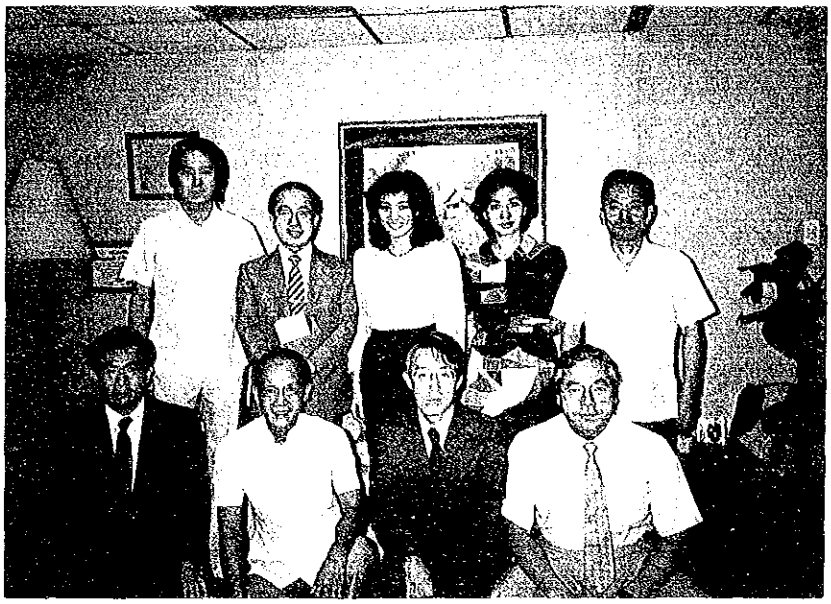
本報告書は，計画打合チームの現地における調査並びに討議事項をとりまとめたものである。

最後に，本プロジェクトに対する技術協力が実現し，円滑にすすめられていることを，喜ぶとともに，外務省，郵政省及び現地での調査活動を進めるにあたって，絶大なご協力を賜った，在フィリピン日本国大使館の方々並びに，その他の関係者の方々に対して，深甚の謝意を表する次第である。

昭和５９年１２月

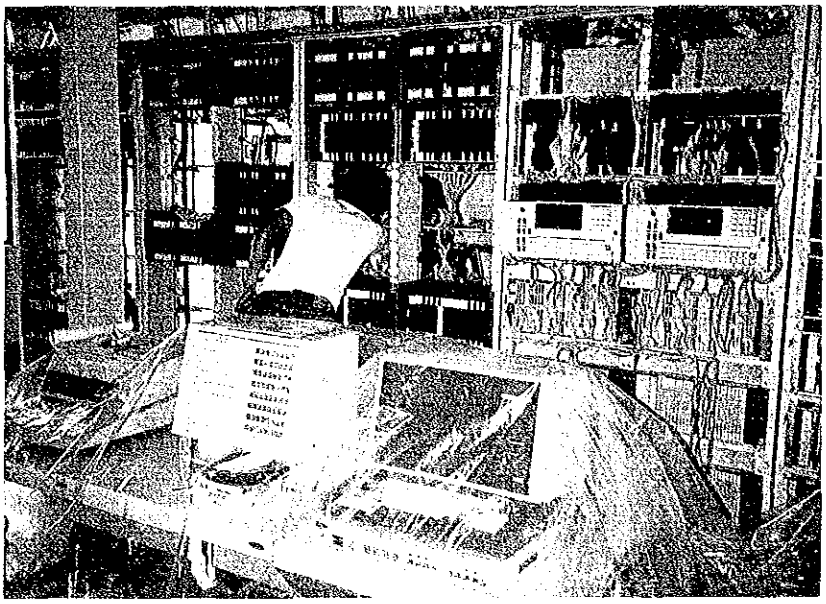
国際協力事業団

理事　中　澤　弐　仁

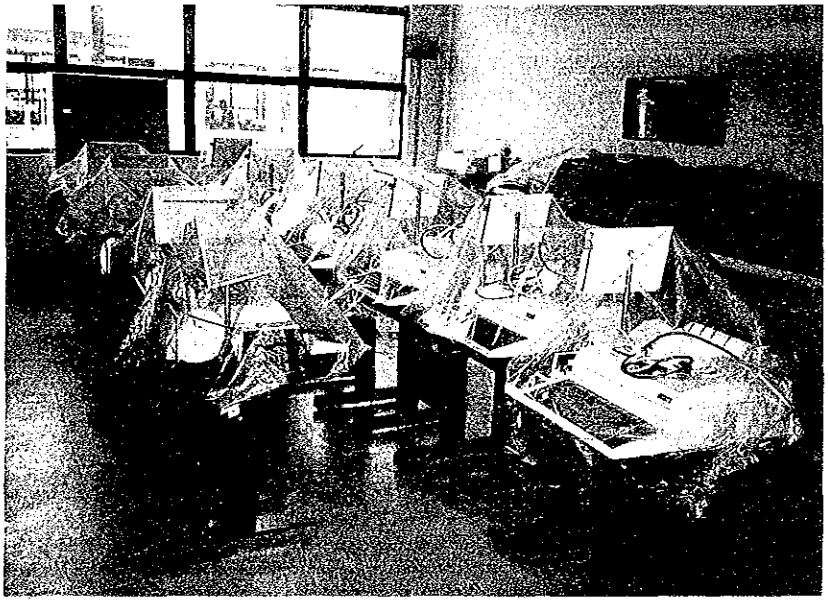


前列左から　中村団員，コルデロＴＴＩ所長，植田団員，内田団員
後列左から　ガルシア次官補，武内団長，運輸通信省関係者，
速水リーダー

全　体　会　議　風　景



デジタル交換機据付状況



通信機器据付状況

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付属資料－２５　ＪＩＣＡ訓練計画の作業フロー
付属資料－２６　ＴＴＩ職員リスト
付属資料－２７　フィリピン政府のインプット
付属資料－２８　ＴＴＩ予算
付属資料－２９　技術指導調査票
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参考資料－　3　フィリピン国一般事情
参考資料－　4　フィリピン国通信事情

1. 調査の目的

1981年4月2日から1986年4月1日まで5カ年の協力期間を定めて発足したＴＴＩプロジェクトについて，その現状と計画の進捗状況を調査し，実施上の問題点を明らかにするとともに，比側及び日本人専門家チームとの協議を通じてそれら問題点の解決を図る。またＲ／Ｄに明記されている訓練実施計画を残る1年6カ月で達成するため，本プロジェクトの今後の効果的な実施につき，比側及び日本人専門家チームと協議し，具体的なプロジェクト実施スケジュールを策定する。

2. チームの構成

団長	総括	武内新一	郵政省
団員	電信・無線・線路	植田　肇	ＮＴＴ
〃	交換・搬送・電力	中村安昭	ＮＴＴ
〃	業務調整	内田智允	ＪＩＣＡ

3. 日程・スケジュール

1984年9月9日（日）～同年9月15日（土）

月　日	曜日	ＡＭ	ＰＭ
9月　9日	日	ＰＲ－431 （東京発　10：15）	（マニラ着　13：25） ＴＴＩ専門家と打ち合せ
10日	月	大使館・ＪＩＣＡ表敬	BUTEL・MOTC表敬
11日	火	ＴＩＩ所長・Ｃ／Ｐ・専門家との全体会議（於ＴＴＩ）	ＴＴＩ施設視察（ＡＭ・ＰＭ） ＴＴＩ専門家との全体会議（於ＴＴＩ）
12日	水	ＴＴＩ専門家との個別会議（於ＴＴＩ）	ＴＴＩ専門家との個別会議（於ＴＴＩ） ＴＴＩ専門家との全体会議（於ＪＩＣＡ）
13日	木	ミニッツ案打ち合せ（於ホテル）	PLDT電話局・訓練施設見学（マカティ）
14日	金	サブコミッティ出席（於BUTEL）	BUTEL・MOTC帰国挨拶 大使館・ＪＩＣＡ帰国報告・ミニッツ署名
15日	土	帰国準備	ＰＲ－432 （マニラ発　14：20） （東　京着　19：20）

注：ＴＴＩ　：Telecommunications Training Institute
　　ＰＬＤＴ：Philippines Long Distance Telecommunications Company
　　ＭＯＴＣ：Ministry of Transportation & Communications

4. 主な面談者

（フィリピン側）

1.	Mr. Renato S. Garcia	運輸通信省（MOTC），大臣特別補佐官
2.	Mr. Ceferino S. Carreon	電気通信局（BUTEL），局長
3.	Mr. Manuel B. Casas	電気通信局（BUTEL），副局長
4.	Mr. Miguel O. Cordero	電気通信訓練センタ（TTI），所長
5.	Mr. Jose Azarcon	U. P. Foundation
6.	Mr. Ras A. Sabado	国家経済開発庁（NEDA），局長

（日　本　側）

1.	新行内一等書記官	在フィリピン日本国大使館
2.	御手洗所長	JICAマニラ事務所
3.	坂田次長	JICA　〃
4.	岡崎所員	JICA　〃
5.	速水昭三専門家	JICA，TTI，リーダー
6.	樋口重孝専門家	JICA　〃　無線
7.	宮田光夫専門家	JICA　〃　交換
8.	原口正美専門家	JICA　〃　電信
9.	喜岡清一専門家	JICA　〃　線路
10.	内沼　寛専門家	JICA　〃　搬送，電力
11.	竹本節生専門家	JICA　〃　業務調整
12.	田村志郎専門家	JICA，BUTEL
13.	坂上隆男専門家	JICA　〃

5. 調査の概要と結果

(1) プロジェクトの管理・運営状況

(a) ステアリング・コミッティ（サブ　コミッティ）

プロジェクトの効率的な実施を計るために，日・比両国の関係者によってセンターの実施，運営・管理等についての基本方針を審議・策定する様R／Dに規定されている。作業内容としては，

(i) プロジェクトの基本計画に沿った暫定実施スケジュールの進捗状況

(ii) プロジェクト実施に伴うセンター運営予算及び専門家派遣，カウンターパート研修，機材供与等技術協力の要請。

(iii) 両国関係当局に対するプロジェクトの各段階，各レベル毎の進捗状況等の報告を審議することになっている。

運営委員会の構成は，

日　本　側	フィリピン側
チームリーダー	BUTEL局長
JICAマニラ事務所長	BUTEL副局長
	TTI所長
	関係省庁（MOTC，NEDA）の代表
オブザーバー	
在・比日本国大使館の代表	

前回の調査時（1983. 11）以降1984年3月，5月及び9月の3回ステアリングコミッティ（サブコミッティ）が開催された。

この3月及び5月のステアリングコミッティにおいては，TTI訓練生の募集に関する規定，TTIの1984年度の主として，環境整備及び訓練用機器の増強等に関する計画を審議し，9月のステアリングコミッティは本調査団の在比中に調査団も出席して行われた。

（付属資料－1，2，3，4，5，6参照）

(b) TTI内における3委員会の設置とその活動

1984年5月にTTI内にThe Committee on the TTI-JICA Joint Projectとして TTIスタッフと専門家（リーダーを除く）から成る次の3分科会が設置された。

①	General Committee	1984. 5～9	5回開催
②	Training Course Committee	〃	8回開催
③	Equipment Committee	〃	2回開催

これらの3委員会は，JICAチーム側の提案に基づき，サブコミッティにも報告され正式に設置されたもので，TTI-JICAプロジェクトの運営・推進に関し，極めて効果的に機能している。

（付属資料－7参照）

(c) 計画実施の円滑な推進を図るため，TTI専門家チームは，毎四半期ごとの訓練計画の進捗状況をとりまとめ，BUTEL，JICA等に報告することとし，1984年4～6月分から実施している。

（付属資料－2参照）

(2) ＪＩＣＡコース開設状況

現在までのＪＩＣＡコース開設状況は，次表の通りである。

なお，１９８４，１９８５年の予定は，付属資料－５に示す通りである。

昭59.10現在

コース／専門	交換	搬送	無線	電信	線路	電力
エンジニアコース	1 （1）	3 （1）	1 （1）	2	2	1 （1）
テクニシャンコース	1 （1）	2 （1）	2 （1）	2 （1）	0	4 （3）

（ ）内は前回調査時以降の開設数の再掲

参考までに既存レギュラーコースは，１９８３年１０コース，１９８４年８コースを開設している。（付属資料－５，８，９，１０，１１，１２参照）

(3) 教科書作成状況

生徒用教科書については，電信部門を除いた他の部門では追加改訂作業中である。教師用指導書については，各部門とも未完成であるが，Ｒ／Ｄ終了時迄に完成させる様に作業をすすめている。

（付属資料－１３，１４参照）

(4) 訓練生

現在までにエンジニアコース１２９名（５コース），テクニシャンコース１４４名（８コース）が各コースを終了している。

（付属資料－１０参照）

募集生徒数については，北部ルソン電気通信網建設計画の大幅な遅延のため保守運用について，ＰＬＤＴへ移行する契約が延び延びになっており，ＰＬＤＴからの訓練生派遣が消極的であることが大きな原因である。

他方，訓練生のコース定員を以前の２０人／コースを２５人に増加し，広く一般応募も認めることとしたため，最近においては比較的優秀な一般募集参加者が増え，改善されつつある。

（付属資料－８，９，１０，１１，１２参照）

(5) カウンターパートの状況

(a) 配置状況

現在３１名のカウンターパートが配置されているが，Daily Wage（日給）が１２

名を占め，その定着性が問題であるとともに，エンジニアの資格がないもの（大学を卒業していない）が１２名，５０才以上の高齢者３名という状況にあり，また優秀なカウンターパートには他の役職との兼務者があり，最新技術を移転する対象者としては，なお問題があると思われる。

なお，在籍年数は３１人のうち；１年以内１２人（３９％），２年以内６人（１９％）２年以上１人（３％），当初からカウンターパートとして配置され現在に至る迄１２人（３９％）である。

（付属資料－１５，１６参照）

(b) 日本での研修状況

５７年度２名，５８年度６名，５９年度２名の計１０名がすでに派遣されており，今年度中にさらに２名の派遣が予定されている。

（付属資料－１７参照）

(6) 機　材

既設の機材については，訓練コースに応じて活用されており，管理状況は良好である。NEAX－61 ディジタル電話交換機，NEDIX電信交換機の据えつけ工事が９月から始まっており，据えつけ指導のJICA短期専門家が各２名着任し，業務を開始している。使用可能な時期は1984年１２月初旬であるが，カウンターパートのOJT訓練の一環として，設置及び総合試験を含む実習訓練を実施中である。

その他５９年度に供与を予定している機材については，JICAチームからの要請をもとに機材委員会で調達準備中である。

供与機材で問題となるのは，故障の場合の対応であり，故障修理に関しては原則として比側負担であるが，現状をよく見きわめて，R／D協力期間中に可能な限りの故障修理とパーツの補給を実行されることが期待される。

（付属資料－１８，１９，２０参照）

(7) 既存コースへの協力等

既存レギュラーコースへの協力ならびに，関連技術についての知識を深めるため，JICAコース間においては，各指導科目間相互の支援を行っている。

(8) 環境整備

相手側負担による電話・線路関係実験室及び教室は完成している。現在訓練生用寮（６０名収容）を建設中であり，本年中にも完成予定となっている。

その他伝送・無線関係実験室及び教室の改装工事も本年内着工が予定されている。

中庭の整備，本館の改装等については現在ダンス大臣の予算示達の決裁準備中である。訓練活動が最盛期を迎えるにつれ相手側もようやく本腰を入れてきたといえる。

（付属資料－２７，２８参照）

(9) 北部ルソン電気通信網整備拡充計画

現在Phase A 計画（１７局）を実施しているが，現地ポーションの予算が大幅に削減されたため，局舎，鉄塔の建設等に支障をきたしている。このため予定より６～１０カ月の工事の遅れが見込まれている。

（付属資料－３０参照）

(10) 専門家の派遣

新・旧専門家の交替が１９８４年初頭に行われ，チーフを含め５名の専門家が交替し，２名が延伸した。現在の専門家の構成は次表のとおりである。

No	担当	氏名	任期
1	総括	速水昭三	1984. 2. 15 ～ 1986. 4. 1
2	業務調整	竹本節生	1983. 4. 1 ～ 1985. 3. 31
3	電話交換	宮田光夫	1984. 4. 30 ～ 1986. 4. 1
4	無線	樋口重孝	1984. 4. 19 ～ 1986. 4. 18
5	線路	喜岡清一	1984. 2. 15 ～ 1986. 4. 1
6	搬送／電力	内沼寛	1984. 3. 30 ～ 1986. 4. 1
7	電信	原口正美	1982. 2. 22 ～ 1985. 2. 21

（氏名はＲ／Ｄに記載順）

6. 調査結果の勧告と比側のコメント

９月１４日に開催されたステアリングコミッティでの調査団の調査結果の勧告と相手側のコメント概要は次の通りである。

（付属資料－１，３，４参照）

(1) ＴＴＩプロジェクトに係わる調査団の勧告の概要（本文は英文）

(a) プロジェクト運営・管理

ローカルコスト負担については本年８月派遣された年次協議調査団より相手側へ申し入れた経緯もあり，ＴＴＩにおいてもローカルコストの確保に万全を期せられたい。とくに，供与機材のランニングコスト，資材購入費，テキスト作成費，環境整備費の確保方努力されたい。

(b) 訓練コース（１９８４～１９８６）

添付の訓練コース予定線表参照（付属資料－５）

過去の訓練コースにおいては，R／Dに述べられている訓練定員をみなしていないので，定員の確保については一層努力されたい。

(c) カウンターパート

R／D上の人数は充足されているが，技術移転の効率的推進のため長期に亘る専任者の確保に更に努力されたい。

(d) 供与機材の維持・管理

本プロジェクトの供与機材は最先端の電子機器であり，維持・管理に十分注意を払われたい。

(e) 環境整備

施設の効率的活用を図るため，環境整備について更に改善方努力されたい。

(2) 比側のコメント

項目(a)及び(e)については同種のものであり，ＴＴＩプロジェクトは二つのファンドからなっている。８５年のインフラ整備についても努力する。

項目(b)の訓練コースについては了承。訓練生の定員の確保については，ＰＬＤＴとの間に問題があったが，その他の理由として応募者が少ないことによる。

項目(c)は，有資格の職員でカウンターパートになれる者が非常に少ないためである。

項目(d)は，現在進行中である。

7. チームとしての見解

本プロジェクトは，北部ルソン電気通信網の保守要員養成を第一の目的とするものであるが，国内経済事情による建設工事の遅れと，それに伴う訓練生の確保難あるいはカウンターパートの定着性等の問題のほかに環境条件の劣悪さなども重なり，本プロジェクトの進捗は当初極めて不本意な状況にあった。

しかしながら，その後のプロジェクト運営に対する日本側・比側の積極的な取組み努力，専門家の柔軟な対応により，本プロジェクトは昨年，巡回指導チーム来比時（１９８３年１１月）と比較し，カウンターパートへの技術移転，ＪＩＣＡ訓練コースの開設，校舎整備の状況等について着実な進歩がみられ，現時点においては確実に軌道に乗って管理運営され，フル活動に入っていることがみとめられた。

この報告書を結ぶに当たって，本プロジェクトの指針として，次の諸点についての配慮が望まれる。

(1) フィリピン側のローカルコストの負担

ローカルコストの負担については，１９８４年８月に派遣された年次協議調査団から，フィリピン側に申入れた経緯もあり，ＴＴＩにおいてもローカルコストの確保に一層の努力

を期待する。

(2) 訓練コース実施予定表（１９８４～１９８５年分）の変更

今後，実施予定の訓練コースの一部を次のとおり変更することが適切である。

(a) 交換部門＝短期専門家による電子交換機の据付工事期間中（１９８４．９～１９８４．１１）をカウンターパートに対する正規の実習訓練コースとして行う。

(b) 線路部門＝レギュラー・コース（１９８５．７～１９８５.９）をＪＩＣＡ訓練コースとする。

(c) 搬送・線路部門＝両部門が別個に実施する予定のエンジニア・コース（１９８５．１０～１９８５．１２）を訓練効果を高めるため，合同で行う。

(3) 計画進捗状況報告会（Progress Meeting）の開催

現在，ＴＴＩ側と専門家チームによる合同の３つの分科会がおかれ，これによって所内の各種の問題の解決が図られている。しかしながら，カウンターパートへの技術移転の進捗度が部門間で格差があり，また，協力期間も残り少ないため，部門間の相互協調を一層密にして訓練効果を高め，全体のレベルのより一層の向上を図り部門間格差の解消に努めていくことがのぞまれる。

このためにＴＴＩ所長，各部門のチーフカウンターパート及び専門家が集まり，各部門の計画進捗状況を定期的に説明・報告する会を設置する。

(4) 教師用指導書の作成等

今後，訓練コースをカウンターパートが独力で運営可能とするため，現在取組み中の教師用指導書と生徒用教科書の作成を急ぐとともに，フォーマットの整備，ナンバリングなどのほか，各種資料や教科書の保管・管理を統一的に行う方法を検討する。

(5) 事務引継方法の改善

任地における事務引継ぎについて，後任者への引継ぎが必ずしも十分でない点が散見され，これが業務の運行に少なからぬ影響を与えている状況であるので，今後，引継ぎの際は前任者は後任者に対し十分な引継ぎを期待する。

(6) 新鋭機材据えつけ完了時にＴＴＩ施設の公開及び式典の実施

当ＴＴＩは，マニラ市郊外に位置し，交通不便のことなどもあって，訓練機材，訓練内容の優秀さにもかかわらず，一般にはもとより電気通信関係者の目に触れる機会も比較的少ない。

このため，建物，校庭等の整備が進み，訓練用機材の据付けが完成した時点をとらえて，MOTC，BUTEL，ＴＴＩ，PLDT，大使館，ＪＩＣＡをはじめ，広く一般国民に対し，ＴＴＩ訓練設備を公開展示し，ＴＴＩに対する関心を高めることができるならばＴＴＩ－ＪＩＣＡプロジェクトを推進していく上で効果的である。

付　属　資　料

付属資料－1　ＴＴＩサブコミッティ会議議事録

Republic of the Philippines
Ministry of Transportation and Communications
BUREAU OF TELECOMMUNICATIONS
A. Roces Ave., Q.C., MM

September 14, 1984

MINUTES OF THE MEETING

DATE : September 14, 1984

TIME : 10:00 a.m.

VENUE : 6th Floor Conference Room

- -

P R E S E N T

1.	Manuel B. Casas	-	Chairman
2.	Miguel O. Cordero	-	Head, T T I
3.	Jose Azarcon	-	U.P. Foundation
4.	Shinichi Takeuchi	-	Head, JICA Consultation Team
5.	Yasuaki Nakamura	-	Member, JICA Consultation Team
6.	Tadashi Ueda	-	Member, JICA Consultation Team
7.	Tomochika Uchida	-	Member, JICA Consultation Team
8.	Masami Haraguchi	-	JICA - T T I
9.	Setsuo Takemoto	-	JICA - T T I
10.	Shozo Hayami	-	JICA - T T I
11.	Ras Sabado	-	NEDA
12.	Lyn Lozada	-	MOTC Telecommunications Training
13.	Eusebio Pagcaliwagan	-	T T I

MATTERS TAKEN UP

CALL TO ORDER:

The meeting was called to order by Mr. Manuel B. Casas (Chairman of the Committee) at 10:00a.m. at the 6th Floor Conference Room, September 14, 1984 introducing the BUTEL side with Mr. Hayami on the Japanese side.

Mr. Cordero Chief, TTI made mention of Telecomminications Training Institute - JICA Project which started construction last 1982. He also reiterated the Infra financial and economic problems for 1985 together with the re-alignment of RTDP Project. On the Ministry panel, Ministry approval on Budget allocation is uncertain according to Mr. Casas.

Mr. Hayami reported the following:

1. Training Courses, under the Telegraph and Telex Terminal Technician Courses, covering the period, April 16 to June 16, 1984 there are 14 trainees while under the Power Plant Technician Course covering the period, April 16 to May 18, 1984 there are 12 trainees. Power Plant Technician Course has been offered which commence June 25 to July 27, 1984 while Carrier Engineering Course is July 7 to August 24, 1984. Table I of the report shows lecture hours carried out by Telecommunications Training Institute Staff from January 1983 to June 1984. According to the table, 71.3% of the total lecture hours was done by Telecommunication Training Institute counterpart and the rest by Haraguchi.

2. Money value of the equipment donated by JICA to Telecommunication Training Institute amounted to ¥160,700,000.00.

3. Short Term Experts had arrived for the installation of Telegraph and Telephone Switching equipment.

   For Telegraphy Wing:

   Mr. Kyouchi Kuwahara - Engineer, Switching System
   Mr. Seiji Kitabayashi - Engineer, Switching System

   For Telephone Wing:

   Mr. Kitsuru Mizukami - Switching Integration Engineer
   Mr. Junichi Sato - Switching Integration Engineer

4. Mr. Martin Garabiles and Mr. Leovino de Roxas are now under-going training in Japan on Outside Plant and Telegraphy respectively.

5. The creation of Internal Committee at Telecommunication Training Institute prove to be very successful. It enhances the mutual consultancy of Telecommunication Training Institute's personnel with the Japanese counterpart.

6. The offering of Preliminary Courses in Computer which are Micro Computer basic for Telegraphy Wing and Micro Computer Course for Carrier Wing staff prove to be very successful.

Mr. Casas commented on the course component/schedule because it is delayed by 6 to 10 months from the revised schedule. This was brought about that PLDT must have a big share in the training, but PLDT as of now cannot employ in advance, Engineers and Technicians to be utilized in the RTDP I & II project. The graduates in Telecommunications Training Institute are limited in number primarily because of the above reason.

It was stated by the Chairman that the training schedule will be finalized in the next sub-committee meeting.

The Chairman also stated that some funds shall be derived from other projects to be added to the 1985 budget for the development of Telecommunications Training Institute.

Mr. Cordero was asked by the Chairman to prepare budgetary proposal for 1985 Infra Fund for Telecommunications Training Institute Project to be submitted to MOTC.

Mr. Uchida submitted and read the report of the JICA consultation team as attached.

The Chairman commented on item 1 & 5 of the report that they are similar. He made mention that Telecommunications Training Institute Project has two separate funds, the JICA - Telecommunications Training Institute Infra fund which is for the infrastructure of Telecommunications Training Institute & JICA - Telecommunications Training Institute COE Fund which is for the current operating expenses. He accepted the suggestion on item 2-1 of the report.

As for item 2-2 which is the standardization of number of trainees, Telecommunications Training Institute cannot be successful to fulfill because of the problem previously stated regarding PLDT as per records of discussion. Another reason stated was very few recruiters.

On item no. 3, the Chairman commented that due to lack of qualified personnel necessary to man the JICA - TTI Project especially the training counterpart most of the personnel are concurrent in their positions to devote their time as counterpart is only minor.

The Chairman brought out also the plan to make Telecommunications Training Institute as National Telecommunications Training Institute under University of the Philippines Foundation.

With regards to the maintenance and operation of the equipment donated by JICA especially in putting air condition and partition of the equipments, the Chairman stated that more or less it will be done. He expresses gratitude to the Japanese consultation team for their presence. Mr. Takeuchi also express their thanks and promise to help in the development of Telecommunications Training Institute.

The meeting adjourned at 11:45 a.m.

PREPARED BY:

EUSEBIO PAGCALIWAGAN
Coordinator

ATTESTED BY:

MANUEL B. CASAS
Chairman, Sub-Committee

SHINICHI TAKEUCHI
Head, JICA Consultation Team

付属資料－2　サブコミッティへのＪＩＣＡチーム報告書

Sept. 14, 1984

Report of JICA Team at TTI to Sub-Committee

1. Quarterly Report to the Signatory of R/D on the TTI Project.

   The quarterly report is made and attached hereto.
   (See the attached (1))

2. JICA-TTI Course finished.
   (See attached (2) for the number of trainees in each course)

   2.1 Power Plant Technician Course (See the attached (3))
   June 25 - July 27, 1984

   2.2 Carrier Engineering Course (See attached (4))
   July 7 - Aug. 24, 1984

3. Short-Term Experts for the Installation of Telephone and Telegraph Switching Equipment.

   3.1 Installation of Telegraph Switching:

Name & Age	Specialization	Duration
(1) KYOUICHI KUWAHARA 26 years old	Engineer, Switching System Division, NEC System Integration and Construction Limited	11 September 1984 (2 months)
(2) SEIJI KITABAYASHI 21 years old	Engineer, Switching System Division, NEC System Integration and Construction Limited	- do -

   3.2 Installation of Telephone Switching:

Name & Age	Specialization	Duration
(1) MITSURU MIZUKAMI 31 years old	Switching Integration Engineer, Overseas Headquarters, Kyowa Densetsu Kaisha Ltd.	27 August 1984 ($3^1/2$ months)
(2) JUNYICHI SATO 26 years old	- do -	- do -

4. Preliminary Information about the Schedule of RTDP Training at TTI.

5. Others:

5.1 Equipment expected to come within fiscal 1984.

5.2 Infrastructure Improvement.

SHOZO HAYAMI
Chief Advisor, JICA Team

Attached (1)

27 July 1984

General Ceferino S. Carreon
Director
Bureau of Telecommunications
M O T C

ATTENTION: Mr. Miguel O. Cordero
Chief, TTI

Re.: Report of JICA Team at TTI from April - June 1984

Dear General Carreon,

The Government of Japan has sent the group of experts to TTI through JICA in order to accomplish objectives of our joint project.

This project as the Record of Discussions says, is on a limited time basis from 2 April 1981 to 1 April 1986. I feel it necessary at this time and also from now on to report on quarterly basis the progress, some findings, and some comments on this joint project to you, the signatory of the said R/D, as it might be one of my job here in TTI as Chief Advisor of JICA team.

It would be much appreciated if you would let me know your comment.

Very truly yours,

SHOZO HAYAMI
Chief Advisor
JICA Team, TTI

cc.: MOTC - Mr. Garcia and Mr. del Rosario
NEDA - Mr. Sabado
BUTEL - Mr. Casas
Embassy of Japan - Mr. Shingyochi
JICA Manila Office - Mr. Mitarai

PROJECT REPORT OF JICA TEAM (APRIL, MAY and JUNE 1984)

1. Training Courses:

1.1	Telegraph and Telex Terminal Technician Course	April 16 - June 16	14 trainees
1.2	Power Plant Technician	April 16 - May 18	12 trainees

Comment: Accomplishment Report of the two courses has been made.

2. Equipment Arrived from JICA to TTI-BUTEL:

	Major Items	Amount
2.1	Central Processor Frame	¥59,700,000.00
2.2	Automatic Switching Equipt.	¥35,400,000.00
2.3	Automatic Telex and Telephone Equipment	¥56,600,000.00
2.4	Standard Signal Generator	¥ 9,000,000.00

These were transported from Manila to TTI by the brokerage nominated by BUTEL and the expenses were paid by BUTEL. I hope these will be registered and maintained in good order. TTI Staff inspected these package according to the packing lists in early July.

3. Installing of the above equipments:

Although it was expected that the installing engineers would come in the end of June, their arrival will be delayed by one or two months due to the clarification of indemnifying item in A-1 Form and the availability of proper personnel.

4. JICA training in JAPAN:

4.1 Mr. Garabiles has been to Japan on 24 June 1984 for three months to study Outside Plant Technology at NTT as JICA Counterpart training.

4.2 Other three candidates of Carrier, Telegraphy and Radio have already sent their application forms to Japan. JICA Manila Office has sent telex asking Tokyo Office to accelerate their acceptance. Expected place of training is NEC.

5. Setting-up and activity of TTI internal committee:

To ensure effective and efficient service of TTI, 1) Training Course Committee 2) Equipment Committee, and 3) General Committee are created by TTI Internal Office Order No. 484-24-A on May 3, 1984. The members of the committees consist of 4 TTI Staff and 4 Japanese Advisers respectively. Their activities in this period are as follows:

1) Training Course Committee was held on May 8, May 15, May 29, June 20, to discuss schedule of Digital Switching Course, Power Plant Course, Training Program for 1985, preparation of handouts, and etc.

2) (Equipment Committee was held on July 13 to discuss the list of equipment donated by JICA in 1985).

3) General Committee was held on May 21 and June 24 to discuss water system in TTI, Sports facilities and etc.

The minutes of the meeting were made and submitted to Chief Adviser and TTI Chief for reference and for approval.

Comment: The above committee members well exchanged their opinion thereby making the operation of TTI well-prepared and fruitful.

6. Preliminary micro-computer course:

The following two courses were conducted preliminarily. It successful, these will be expanded to TTI Staff as a whole.

6.1 Micro-computer Basic for Telegraph Wing Staff

Trainee : Five
Duration : June 5, 26 and 28 (Total 18 hours)
Computer : PC 8801 series

6.2 Micro-computer course for Carrier Wing Staff

Trainee : Three
Duration : June - 29 (15 days x 2 hrs. = 30 hrs.)
Computer : PC 8801

7. Some comments:

7.1 Water Suppy, garden beautification, anti-crime fencing:

As an organization of an Institute, these three are some of the fundamental infrastructures to be put in order. I noticed the TTI management was making good effort of acquiring the budget for this purpose this year although in vain. I am also now trying to get some fund for this from JICA Tokyo head office. They are now under studying the availability of the fund.

7.2 Extent of Technology Transfer:

Mr. Haraguchi, expert in Telegraphy has made an interesting table which shows the extent of technology transfer from him to counterparts in the Telegraphy wing. (See attached Table 1)

This shows lecture-hours carried out by TTI Staff from Jan. 1983 to June 1984. According to this table, 71.3% of the total lecture hours was done by TTI counterpart and the rest by Mr. Haraguchi. Therefore, it is expected that the remaining 28.7% will be taken care of by TTI counterpart by the end of our cooperation period, thus reaching 100% of self-reliant stage.

Table 1. Lecture's Hours Carried Out by T.T.I. Staff (TG, Wing) and Total Hours

(From Jan., 1983 to June, 1984)

As of June, 1984 (Hr)

Subject / Instructor	Basic Theory	Logic Circuit	TG Tech-nology	TG Switch-ing System	TG Switch-ing Equipt.	TG Terminal	V.F.T.	T.D.M.	P.C.M.	TG/Telex Plans	New System	Main-tenance	Remarks
Eusebio C. Pagcaliwagan	-	42	21	-	-	48	-	36	-	-	18	-	165
Leovino I. de Roxas	-	-	-	-	-	159	-	-	-	-	-	-	159
Silvestre S. Caguicla	39	-	-	12	30	21	-	-	-	-	-	9	111
Benosa B Salve	-	-	-	-	-	12	18	-	-	-	-	-	30
David Roman	-	6	-	-	-	21	-	-	-	-	-	-	27
(hrs.) T.T.I. Inst. / Total (hrs.)	39/69	48/48	21/21	12/39	30/75	261/261	18/36	36/36	0/6	0/15	18/36	0/30	492/690
%	56.5	100	100	30	32	100	51.4	100	0	0	50	30	71.3

JICA Course	No.1 Engr. Course (General)	No.2 Techn. Course (Terminal)	No.3 Engr. Course (Switching)	No.4 Techn. Course (Terminal)	Remarks
(hrs.) T.T.I. Insts. / Total (hrs.)	55/147	144/183	111/162	182/198	492/690
%	37.4	78.4	68.5	91.9	71.3

Attached (2)

The Numbdf or Trainees in JICA Courses in 1984 (As of Sept. 14.)

	Course Title	Duration	Times Courses	Number of Trainees		Member of Trainees									Note
						BUTEL	PLDT	COMMEL	DOMSAT	NTC	TESCO	Heart Center	Recruit	TTI	
Tech-nician	Radio	Feb. 6 - Mar. 16	2	20	20	5	5	7	2					1	
		Nov. 5 - Dec. 14													
	Carrier	Jan. 9 - Feb. 6	2	21	21	7	5	7	2						
		Oct. 1 - Nov. 2													
	Telephony	July 16 - Oct. 12	1	23	23	9	5				2	1	6		
	Outside Plant	Oct. 1 - Dec. 14	1												
	Telegraphy	Apr. 16 - June 15	2	14	14	5		4					5		
		Oct. 1 - Dec. 14													
	Power Plant	Apr. 16 - May 18	3	12	36	5		3					3	1	
		June 25 - July 27		9		6							3		
		Aug. 27 -		15		4		10					1		
		Total	11		114	41	15	31	4		2	1	18	2	
Engineer	Radio	Aug. 27 - Oct. 5	1		(20) 18	9		1		1			6	*(+2) 1	* Counterpart Training
	Carrier	July 9 - Aug. 24	1		16	9				1			6		
		Total	2		34	18				2			12		
Counter-part	Telegraphy	Sept. 3 - Nov. 12	1		4									4	
	Telephone	Sept. 3 - Dec. 8	1		6									6	
		Total	2		10									10	

Attached (3)

BRIEF COURSE DESCRIPTION

(TTI-JICA POWER PLANT TECHNICIAN COURSE)

A. COURSE TITLE:

Power Plant Technician Course

B. FOR WHOM:

Power Plant Tech. in Government and Private Entities

C. COURSE DURATION:

Four (4) Weeks

D. NUMBER OF TRAINEES:

Fifteen (15) Trainees

E. QUALIFICATION LEVEL OF TRAINEES:

Vocational/Trade School graduates in Auto Diesel Mech. 3rd year Mechanical or Elect./Electronic Engineering Students or any equivalent with practical knowledge on Internal Combustion Engine.

F. COURSE OBJECTIVES:

* To familiarize operating/servicing personnel with the principles of the Diesel Engine generator set to ensure the most efficient performance under all operating condition.
* To provide troubleshooting and repair, Instruction, capable of performance by the operator/technicians, to restore operation of the set in the event of a minor malfunction.
* To study new source of power applicable in communication especially in a remote areas.

G. COURSE CONTENT: (4 weeks = 20 days)

SECTION I - GENERAL (4 hurs.)

1.1 Introduction
1.2 Main Composition

SECTION II - PERFORMANCE SPECIFICATION (4 hrs.)

2.1 Type
2.2 Performance Specification

SECTION III - OPERATION (3 days)

3.1 Preparation
3.1.1 Operation Instruction
3.1.2 Alarm and Indication
3.1.3 Check and Preparation
3.2 Operation Procedure
3.2.1 Manual Operation
3.2.2 Automatic Operation
3.2.3 Other
3.2.4 Test
3.2.5 Standard Value

SECTION IV - MAINTENANCE (3 days)

4.1 Guidance for Maintenance
4.2 Maintenance Schedule
4.2.1 Engine Generating Set
4.2.2 Engine
4.2.3 AC Generator
4.2.4 Control Cubicle
4.2.5 Starting Battery
4.2.6 Daily Service Fuel Tank
4.3 Maintenance Procedure
4.3.1 Engine Generating Set
4.3.2 Engine
4.3.3 AC Generator
4.3.4 Control Cubicle
4.3.5 Starting Battery
4.3.6 Daily Service Fuel Tank
4.4 Maintenance Advice
4.5 Maintenance Check Sheet

SECTION V - ADJUSTMENT (2 days)

5.1 Setting Values
5.2 AC Output Voltage
5.3 Charger Output Voltage
5.4 Speed Control Knob
5.5 Voltage Relay (84G)
5.6 High and Low Relay (84G)
5.7 Overspeed Relay (12)

SECTION VI - TROUBLESHOOTING

6.1 General
6.2 Inspection and Remedy

SECTION VII - TECHNICAL DESCRIPTION (4 days)

7.1 Engine
7.1.1 Technical Data on Engine
7.1.2 Recommended Lube Oil
7.1.3 Construction
7.1.4 Lubricating System
7.1.5 Fuel System
7.1.6 Auxiliary Parts of Engine
7.2 AC Generator
7.2.1 Construction
7.2.2 Connection Diagram
7.2.3 Principal Component of AC Generator
7.3.1 Control Cubicle
7.3.2 Composition
7.3.3 Theory of Operation
7.3.4 Control Cubicle Auxiliary Parts
7.4 Charger
7.4.1 General
7.4.2 Construction
7.4.3 Theory of Operation
7.4.4 Preparation before Operation
7.4.5 Test Operation
7.4.6 Floating Charge
7.4.7 Euqalizing Charge

7.6 Daily Service Fuel Tank

7.6.1 Construction

7.6.2 Operation of Daily Service Fuel Tank

7.7 Automatic Voltage Regulator (AVR)

7.7.1 General

7.7.2 Construction

7.7.3 Theory of Operation

7.7.4 Dummy Load

SECTION VIII - APPENDIX

8.1 Engine Parts List

8.2 Disassembly and Reassembly

8.2.1 Engine

8.2.2 AC Generator

SECTION IX - RECTIFIER (2 days)

SECTION X - LOAD BATTERY (1/2 days)
LOAD EQUIPMENT (1/2 days)

SECTION XI - SOLAR BATTERY (1 day)

SECTION XII - REVIEW & FINAL EXAMS - (1 day)

SECTION XIII- O J T (2 days)

(- 20 days -)

Attached (4)

BRIEF COURSE DESCRIPTION
(PCM TRANSMISSION TRAINING)

1. COURSE TITLE:

   PCM System Engineering Course

2. FOR WHOM:

   System Engineer for Carrier System

3. COURSE DURATION:

   Six (6) Weeks

4. NUMBER OF TRAINEES:

   Sixteen (25) Trainees

5. QUALIFICATION LEVEL OF TRAINEES:

   Graduate of electronics and Communication and Electrical Engineering Courses who have knowledge about conventional Carrier System and can understand basic modulation techniques.

6. COURSE OBJECTIVE:

   The objective of this course is to be able to understand the concept of digital transmission system and to be able to learn how to operate and maintain the system.

7. COURSE CONTENT (6 Weeks = 30 days)

   * Orientation
   * Transmission Standard
     Electronic Fundamentals
     Pulse Logic — 5 days
     Multivibrator
     Sequential Logic
   * Lecture on PCM Theory

Muliplex Technique	
Principles of PCM	5 days
Sampling Theorem	
Quantizing & Companding	
Compression Characteristics	
* Coding Rules	
Synchronization	
Line Transmission Code	
Regenerative Repeater	5 days
Fault - Location	
Digital Multiplexing	
* Instrumentations	2 days
* Practical on PCM System	
Routine Work for Maintenance	
Fault - Location	10 days
Trouble - Shooting	
* Observation of PCM System at Private Company	1 day
* Examination	1 day
* Free Discussion and Closing Ceremony	1 day

8. HANDOUT AND MATERIALS:

* Text prepared for this course
* PCM-30 Terminal Equipment (VF MUX)
  PCM-30 Terminal Equipment (Line Terminal)
  Practical Measurement
  Digital Transmission Technique
  Optical Fiber Transmission
  Transmission Standard
  Logic CKT. Trainer
  Pulse CKT. Trainer
  Electronic CKT. Trainer
* PCM-30 Equipment
  Terminal Equipment
  Line Terminal Equipment
* Measuring Instruments
  Error Rate Meas. Send
  Error Rate Meas. Receive
  Channel Test Set

Line Test Set

Transmission Meas. Test Set

Universal Counter

Selective Level Meter

Synchroscope

The Recommendations of The Consultation Team At Telecommunications Training Institute Project

1. Budget

As the Japanese Annual Consultation Mission for technical cooperation who visited in last August, 1984 made the proposition that the local cost for implementing the joint project should be secured by the Philippine side, the local expenditure at TTI in terms of running cost for the supplied equipment, printing cost for textbooks, improvement works for infrastructure at TTI compound will be secured.

2. Training

1. Training Course (1984-1985)

Referring to the attached sheet of "Training Course Execution Program", the mutual consultation team suggests the following points on the above-mentioned program,

1-1 The telephone wing counterpart training course for installation and acceptance test starting from September, 1984 up to November, 1984 to be added.

1-2 Outside plant regular course (July-September, 1984) to be replaced with JICA technician course.

1-3 Engineer courses of telephone wing (October-December, 1985) and outside plant wing (October-December, 1985) to be jointly performed.

2. The Number of Trainees

The number of trainees at training courses in the past did not always fulfill the planned number of trainees as mentioned in the R/D.

It would be appreciable to make effort to meet above.

3. Counterpart

The number of counterpart personnel mentioned in the R/D is fulfilled, however, to effectively transfer the advanced telecommunications technology, permanent full-time counterpart personnel should be assigned.

4. Maintenance of Donated Training Equipment

The donated training equipment which utilize the most advanced and sophisticated technology are required to be maintained in full condition.

5. Improvement of Surrounding Facilities

To obtain effective utilization of facilities, it would be necessary to make effort to improve the surrounding facilities at TTI compound.

付属資料－4　ＴＴＩプロジェクトに関する計画打合調査団の勧告（和文）

ＴＴＩプロジェクトに係る討議議事録記載事項

1. プロジェクト運営・管理

ローカルコスト負担については本年８月派遣された年次協議調査団より，相手側へ申し入れた経緯もあり，ＴＴＩにおいてもローカルコストの確保に万全を期せられたい。特に，供与機材のランニングコスト，資材購入費，テキスト作成費，環境整備費の確保方努力され度い。

2. 訓練コース（１９８４／１９８５，１９８５／１９８６）

2.1　別添訓練コース実施予定表参照（付属資料－５）

2.2　コース定員

過去の訓練コースにおいては，Ｒ／Ｄに述べられている訓練定員を満たしていないので，定員の確保については一層努力されたい。

3. カウンターパート

Ｒ／Ｄ上の人数は充足されているが，技術移転の効率的推進のため，ならびに長期に亘るパーマネントの専任者の確保に更に努力されたい。

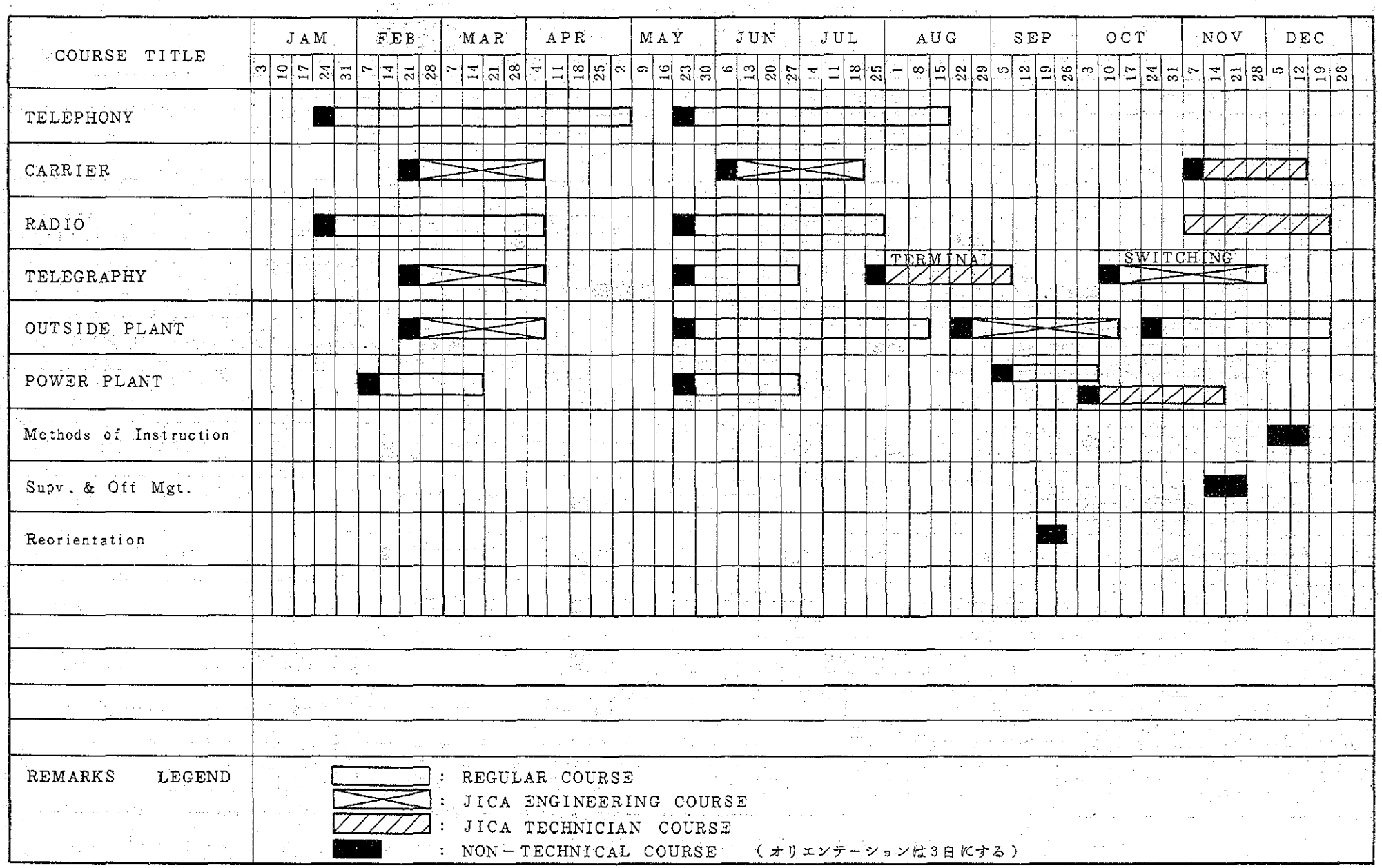
4. 供与機材の維持・管理

本プロジェクトの供与機材は最先端の電子機器であり，維持・管理に十分注意を払われたい。

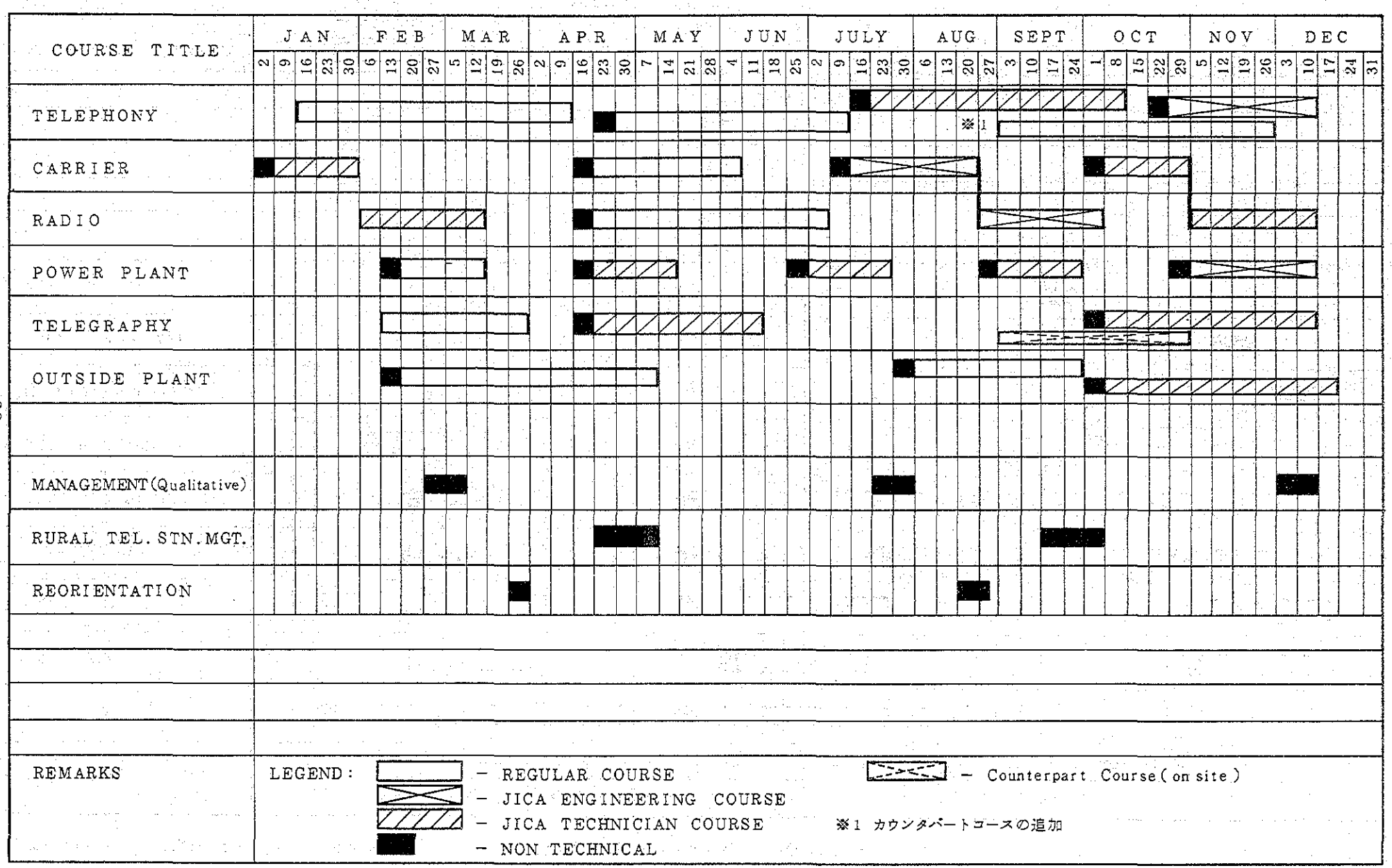
5. 環境整備

訓練施設の効果的活用を図るため環境整備のさらに改善方努力されたい。

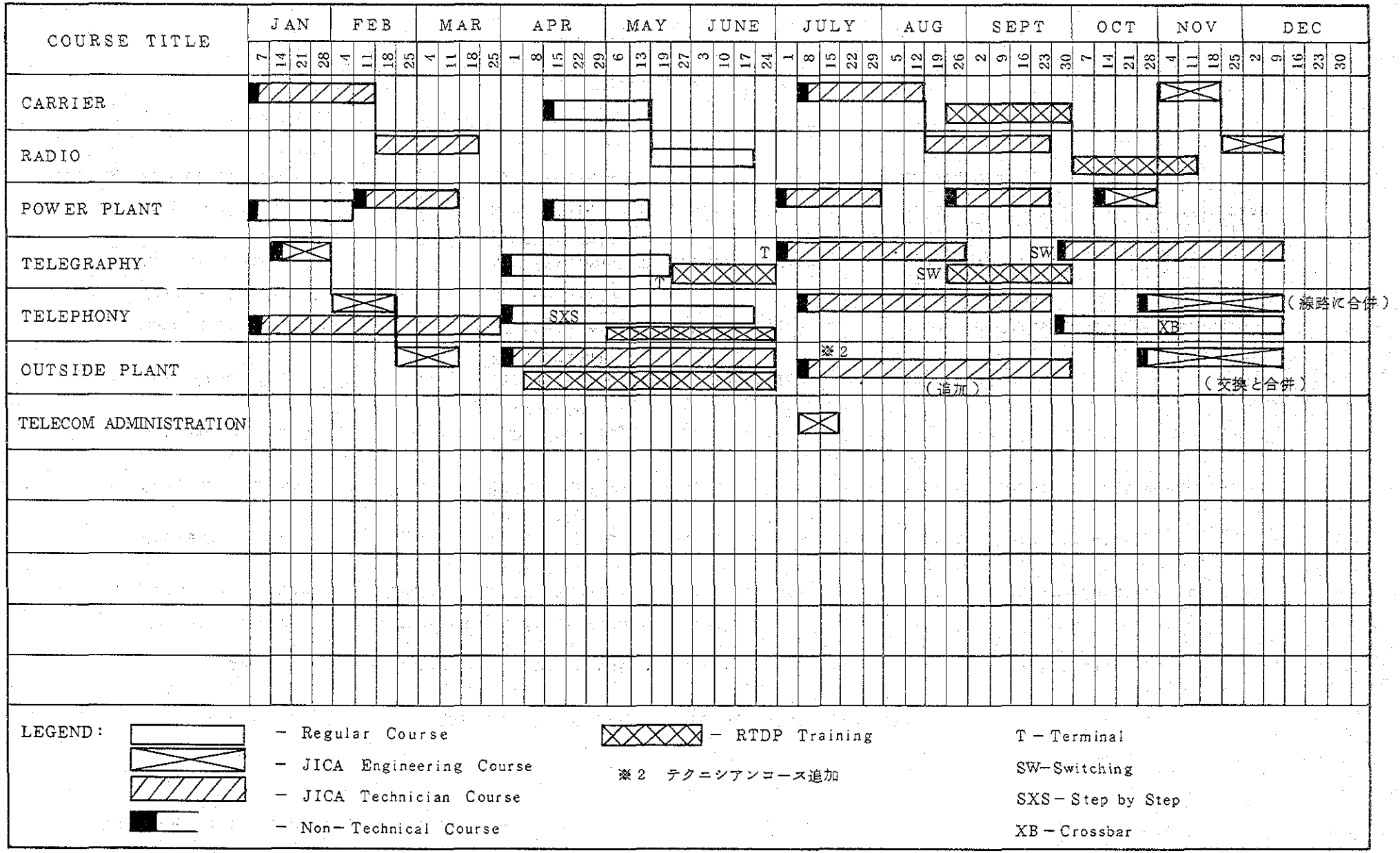
付属資料－5－(1) 訓練実行計画 1983 TRAINING PROGRAMME FOR 1983



付属資料－５－(2) 訓練実行計画 1984 REVISED TRAINING PROGRAMME FOR 1984



付属資料－5－(3)　訓練実行計画　1985　REVISED TRAINING PROGRAMME FOR 1985



付属資料－6　ステアリングコミッティのメンバー表

THE LIST OF MEMBERS OF THE STEERING COMMITTEE

	Name	Title	Organization Agency	Position
1	Manuel B. Casas	Chairman	BUTEL (Bureau of Telecom.)	Assistant Director
2	Renato S. Garcia	Member	MOTC (Ministry of Transportation & Communication	Senior Executive Assistant to the Minister
3	Jesus M. Sunga	;	NEDA (National Economic & Development Authority)	Director Infrastructure
4	Gen. Lee Santos	;	AFP (Armed Forces of the Philippines)	Chief, Communication & Electronics Group
5	Antonio R. Samson	;	PLDT (Philippine Long Distance Telephone Co.	First Vice President for Manpower
6	Col. Cesar Hechanova	;	PETEF (Phil. Electronics & Telecomm. Federation)	President
7	Dean Marine M. Mena	;	UP (University of the Phil.)	Dean, UP College of Engineering
8	Jose A. Azarcon Jr.	;	UP Foundation	Professor, UP
9	Meredith Galanida	;	NTC (National Telecommunication Commission)	Training Office
10	Romeo de Vera	;	MOB (Ministry of Budget)	Director, Fiscal Planning Department
11	Miguel O. Cordero	;	TTI, BUTEL	Chief, TTI

THE LIST OF THE MEMBER OF THE SUB-COMM.

	Name	Title	Organization Agency	Position
1	Manuel B. Casas	Chairman	BUTEL	Assist. Director, BUTEL
2	Miguel O. Cordero	Member	TTI, BUTEL	Chief, TTI
3	Gaudencio del Rosario	;	MOTC	Chief, Telecommunication Division
4	Renato A. Sabado	;	NEDA	Director, Infrastructure Planning
5	Col. Yabes	;	AFP	Colonel, Electronics Group
6		;	JICA	
7	Akihiro Mitarai	;	JICA	

付属資料－7　ＴＴＩ３委員会の設置と実施状況

REPUBLIC OF THE PHILIPPINES
MINISTRY OF TRANSPORTATION & COMMUNICATIONS
BUREAU OF TELECOMMUNICATIONS
TELECOMMUNICATIONS TRAINING INSTITUTE
VALENZUELA, METRO MANILA

May 3, 1984

Internal Office Order No. 484-26-A

SUBJECT: Committee on Training Course, Equipment and Materials, General Function & Implementation of TTI-JICA Joint Project.

To ensure effective and efficient service of the Telecom. Training Institute particularly on the TTI-JICA Joint Project the following committee are hereby created:

I. Training Course Committee - Shall determine the present training needs on the course to be offered by (JICA) Japan International Cooperation Agency. Shall evaluate and recommend the development of new courses relative to new equipment donated by JICA. Undertake the preparation of course materials for courses concerning the whole telecommunication field.

This would include:

1. Preparation of Handouts for any Courses
2. Preparation of Audio Visual Aid Software, particularly transparencies
3. Designing and setting up of practicals and demonstrations
4. Writing of Instructors guide
5. Preparation of Annual programme of in-service courses
6. Selection for training of counterpart staff including Scholarship/ Fellowship to take over the experts duties with full competency
7. Installation of Training Equipment and setting up of laboratories
8. Preparation of TTI brochure/prospectus
9. Restructure and develop new courses suitable to local conditions

Member of the Committee

TTI Staff -			JICA Staff -
1. Guido C. Agon	- Chairmen	-	1. Masami Haraguchi
2. Eusebio Pagcaliwagan	- Members	-	2. Shigetaka Higuchi
3. Amada S. Laquian	- "	-	3. Mitsuo Miyata
4. Priscilla Reyes	- "	-	4. Hiroshi Uchinuma

II. Equipment Committee - Shall take charge in receiving of all deliveries donated to the Institute which includes:-

1. Attend to systematic safekeeping of all equipment received and be ready for verification if representatived from JICA, BUTEL and other Government Agency request it so.
2. Take proper account for future inventory and determine by identifying particular problem of equipment donated to the Telecom. Training Institute.
3. Responsible for the preparation of supplementary list of equipment to be donated.
4. Prepare requests for the repair of defective donated equipment received.

Member of the Committee

TTI Staff -			JICA Staff -
1. Roberto Evangelista	- Chairmen	-	1. Masami Haraguchi
2. Dominador Garabiles	- Members	-	2. Mitsuo Miyata
3. Agustin V. Figueroa	- "	-	3. Kiyokazu Kioka
4. Marylou Pili	- "	-	4. Setsuo Takemoto

III. General Committee - Shall attend to the entire needs of the JICA Experts, Employees as well as trainees at the Institute on the following:-

1. On water and power supply.
2. Medical/dental services and trainee accommodation.

3. Take charge on the implementation of the cleanliness of the Institute, sport program, physical fitness and safeguarding TTI Compound.

4. Assist in the development of effective methods for improved co-operation and coordination between any of the working groups, (Local or International) with responsibilities for use of equipment on Training Activities.

Member of the Committee

TTI Staff -			JICA Staff -
1. Roberto Evangelista	- Chairmen	-	1. Setsuo Takemoto
2. Tereso Pachica	- Members	-	2. Shigetaka Higuchi
3. Priscilla Reyes	- "	-	3. Kiyokazu Kioka
4. Marcela Braganza	- "	-	4. Hiroshi Uchinuma

MIGUEL O. CORDERO
Chief, Telecom. Training Institute

NOTED:

SHOZO HAYAMI
Chief, Advisor

MEMBER OF THE COMMITTEES ON THE TTI-JICA JOINT PROJECT

1. General Committee:

TTI STAFF	JICA EXPERT
*Roberto Evangelista	**Setsuo Takemoto
Tereso Pachica	Shigetaka Higuchi
Priscilla Reyes	Kiyokazu Kioka
Marcela Braganza	Hiroshi Uchinuma

2. Training Course Committee

*Guido C. Agon	**Masami Haraguchi
Eusebio Pagcaliwagan	Shigetaka Higuchi
Amada B. Laquian	Mitsuo Miyata
Priscilla Reyes	Hiroshi Uchinuma

3. Equipment Committee

*Roberto Evangelista	**Masami Haraguchi
Dominador Garabiles	Mitsuo Miyata
Agustin V. Figueroa	Kiyokazu Kioka
Mary Lou Pili	Setsuo Takemoto

Notes:

Chairman

**Person of responsibility in summarization.

JICA-TTI Project, General Committee

NO.	DATE	AGENDA	REMARKS
1	June 4, 1984	1. Water System 2. Sports Program 3. Cleanliness of TTI Compound 4. Excursion Trip for JICA-TTI Staffs	
2	June 18/84	1. Presentation of Justification for JICA-TTI Project of the following: a) Proposed Multipurpose Court b) Proposed Water System c) Proposed Peripheral Fence 2. Sport/Program/Activities 3. Pleasure Trip and Educational Trip at Los Baños or Pagsanjan Falls 4. Other matters	
3	July 2/84	1. Energy Conservation Measures 2. Presentation of Justification for JICA-TTI Project of the following: a) Proposed Multipurpose Court b) Proposed Water System c) Proposed Peripheral Fence 3. Sport/Program/Activities 4. Other matters	
4	July 16/84	1. Presentation of TTI electrical load and request to MERALCO on daily meter reading. 2. Submission of canvass for sport facilities (Chessboard, Table Tennis). 3. Location for Table Tennis. 4. Other matters	
5	Aug. 6/84	1. Water System Installation in TTI 2. Preparation for the 2nd edition of TTI Brochure. 3. Energy Conservation Measures 4. Other matters	

JICA-TTI Project, Training Course Committee

NO.	DATE	AGENDA	REMARKS
1	May 29, 1984	1. Revision and Shortening of Training Programme - 1st Telephone (JICA-TECH) Course. 2. Submission of Trainees Evaluation Reports. 3. Selection of Scholarship. 4. Progress Report on JICA On-Going Training.	
2	June 7, 1984	1. Handouts and Materials to be used in 1st Telephone (JICA-TECH) Course. 2. Training Programme - Telegraph Counterpart on-Site-Training Course. 3. Training Evaluation Report - 1st Telegraph Terminal (JICA-TECH) Course. 4. Other matters.	
3	June 21, 1984	1. Training Programme - 2nd Power Plant (JICA-TECH) Course. - 2nd PCM (JICA-ENGR.) Course. 2. Pilot Course on Micro Computer in Telegraph and Carrier Wing. 3. Technology Transfer in Telegraph Wing. 4. Other matters.	
4	July 12, 1984	1. Training Programme - 2nd Radio (JICA-ENGR.) Course. 2. Revision of Training Schedule in the 4th Quarter (1984). 3. Other matters.	
5	July 19, 1984	1. Training Programme for 1985. 2. Grading System for Termination of Trainees. 3. Training Man-hours in 1983 - 1985.	

NO.	DATE	AGENDA	REMARKS
6	Aug. 9, 1984	1. Training Programme - 1st Outside-Plant (JICA-TECHN) Course. - 3rd Power-Plant (JICA-TECHN) Course. 2. Micro Computer Training. 3. Other matters.	
7	Aug. 13, 1984	1. Training Programme - 2nd Telegraph (JICA-TECHN) Course. - 3rd Carrier (JICA-TECHN) Course. 2. Trainees Evaluation Report on 1st Telephone Course. 3. Grading System on JICA Courses. 4. OJT-Training on Outside - Plant JICA Course. 5. Other matters.	
8	Sept. 6, 1984	1. Training Programme - 2nd Telephone Switching (JICA-TECHN) Course. - 4th Power-Plant (JICA-ENGR.) Course. 2. Lesson Plan on Telegraphy JICA Course. 3. OJT-Training on 1st Telephony JICA Course. 4. Trainees Evaluation Report on 2nd PCM Course. 5. Other matters.	

JICA-TTI Project, Equipment Committee

NO.	DATE	AGENDA	REMARKS
1	July 9, 1984	1. Equipment will be donated by JICA for the year 1985 - Outside-Plant Wing - * Replacement Tools * Measuring Equipment * Materials and Cables for the Practice - Telegraph Wing - * Maintenance Units for Terminal * Maintenance Tools for MTTY * System Unit for TDM * Switching System (NED1X-510AS) - Telephony Wing - * Spare Package for Switching Equipment * Others - Carrier Wing - * Logic Square * Others - Radio Wing - * VHF/UHF Radio Transmission Equipment - Power Plant Wing - * Special Tester * Others	
2	Sept. 7, 1984	1. Installation and Testing Schedule of Equipment donated by JICA for the year 1984. - Telephone Digital Switching Equipment. - Telegraph Electronic Switching Equipment. - Others.	

ジェネラルコミッティ会議議事録

REPUBLIC OF THE PHILIPPINES
MINISTRY OF TRANSPORTATION & COMMUNICATIONS
BUREAU OF TELECOMMUNICATIONS
TELECOMMUNICATIONS TRAINING INSTITUTE
VALENZUELA, METRO MANILA

September 4, 1984

MEMORANDUM:

FOR : The Chief, Telecom. Training Institute
The Chief, JICA Advisor

FROM : The Chairman, General Committee

SUBJECT : Result of the General Committee Meeting last September 3, 1984

****

Hereunder are the topics discussed and agreed upon by the General Committee for your reference and approval.

1. Regarding the preparation of the 2nd edition of TTI Brochure, the TTI Staff reported that all training wings had been instructed to prepare their contributions to the said edition which includes the brief description of their course content, brief description of their training equipment installed at their respective laboratories and a list of instructor under each wing together with their line of specialization. Draft is expected to be submitted on or before September 15, 1984 to the Chief, Training Section which in turn will be turn over to the Administrative Section for compilation. Each wing were given three (3) pages of (A-4 size) (back to back) for the purpose. However, the Chairman, General Committee (Japanese Team) suggested to hold another meeting on the 17th day of September to further stress out some plans for the brochure.

2. With respect to the energy conservation measure, the TTI panel informed the Committee that only four (4) air-con are working in the Institute as a move to cut down electric bill. The present cost of electric bill is more than ₱31,000.00. However, if the cost of the bill should drastically dropped to the barest minimum, maybe they will have a time to reconnect some air conditioning units.

3. In the case of the preparation for the forthcoming visit of Japanese Mutual Consultative Team, TTI panel informed the body that every section of TTI was instructed by the Chief of TTI to prepare necessary documents needed in this visit.

Positive measure had been undertaken to clean the TTI premises in connection with this visit, in short, TTI is already prepared for this affair. Also, representation had been made for the plant visit of the Team to PLDT Makati Station on 13th of September.

4. Lastly, the Chairman, General Committee (JICA Team) suggested to prepare also a Technical Journal of TTI. However, the TTI panel suggested that this plan be moved after the completion of TTI Brochure considering that the TTI Staff are very busy in their task especially they are so tied up in the revision of their handouts, preparation of their laboratories, gathering data for the 2nd edition of TTI brochre and many others. The preparation of TTI Journal will be covered through the Chief of TTI for approval before the draft could be done. However, hand in hand with many task the preparation of the TTI Technical Journal will be given due consideration in the near future.

The Committee agreed to hold the next meeting on September 17, 1984.

SUBMITTED BY:

ROBERTO G. EVANGELISTA
Chairman, General Committee (TTI)

SETSUO TAKEMOTO
Chairman, General Committee (JICA)

APPROVED:

MIGUEL O. CORDERO
Chief, Telecom. Training Institute

SHOZHO HAYAMI
Chief, JICA Advisor

付属資料－8　ＪＩＣＡコース卒業生数

NUMBER OF GRADUATES

1983 JICA COURSE

A. Engineer's Course — 94 Graduates

No.	Course	Distribution	Number of Graduates
1.	Outside Plant Engineering	17 - Butel 10 - PLDT 1 - Domsat 2 - Recruits	30
2.	Telegraph and Telex System Engineer	31 - Butel 2 - PT&T 2 - AFP	35
3.	PCM System Engineer's Course	17 - Butel 10 - PLDT 2 - PT&T	29

B. Technician Course — 31 Graduates

No.	Course	Distribution	Number of Graduates
1.	Power Plant	7 - Butel 4 - PLDT	11
2.	PCM-30 System Tech. Course	8 - Butel 3 - PLDT 1 - Domsat	12
3.	Radio PCM Tech.	Butel	8

Grand Total = 125

NUMBER OF GRADUATES

1984 JICA COURSE

A. Engineers Course 34 Graduates

No.	Course	Distribution	Number of Graduates
1.	PCM System Engr'g. Course	9 - Butel 1 - NTC 6 - Recruits	16
2.	Radio PCM Engr'g. Course	10 - Butel 1 - NTC 6 - Recruits 1 - AFP	18

B. Technician Course 114 Graduates

No.	Course	Distribution	Number of Graduates
1.	PCM-30 System	7 - Butel 2 - Domsat 5 - PLDT 7 - AFP	21
2.	Radio PCM Techn. Course	6 - Butel 2 - Domsat 5 - PLDT 7 - AFP	20
3.	Power Plant	12 - Butel 3 - AFP 6 - Recruits 4 - Butel 10 - AFP 1 - Recruit	36
4.	Telegraph & Telex Terminal Equip. Techn. Course	5 - Butel 4 - AFP 5 - Recruit	14
5.	Telephony Digital Switching Techn. Course	9 - Butel 5 - PLDT 2 - Tesco. 1 - Phil. Heart Center 6 - Recruits	23

Grand Total = 148

付属資料－9　JICAコース　出身別訓練者数　1983

Engineer Courses in Year 1983

Course Title	Duration	Times of Training	Number of Trainees		Member of Trainees						
					BUTEL	PLDT	PTT	DOMSAT	AFP	TTI	RECRUIT
Radio	-										
	-										
Carrier	Feb. 21 - Apr. 11	2	20	29	8	5	2			5	
	June 6 - July 22		9		3	5				1	
Telephony	-										
	-										
Outside Plant	Feb. 21 - Apr. 11	2	15	30	9	5				1	
	Aug. 29 - Oct. 14		15		6	5		1		1	2
Telegraphy	Feb. 21 - Apr. 11	2	17	27	11		2			4	
	Oct. 10 - Dec. 2		10		8				2		
Power Plant	-										
	-										
	Total	6	86	86	45	20	4	1	2	12	2

Technician Courses in Year 1983

Course Title	Duration	Times of Training	Number of Trainees		Member of Trainees						
					BUTEL	PLDT	PTT	DOMSAT	AFP	TTI	
Radio	Nov. 7 - Dec. 23	1	8	8	8						
	-										
Carrier	Nov. 7 - Dec. 9	1	12	12	8	3		1			
	-										
Telephony	-										
	-										
Outside Plant	-										
	-										
Telegraphy	July 18 - Sept. 9	1	12	12	10					2	
	-										
Power Plant	Oct. 3 - Nov. 11	1	11	11	4	4				3	
	-										
	-										
	-										
	-										
	Total	4	43	43	30	7		1		5	

Engineer Courses in Year 1984

Course Title	Duration	Times of Training	Number of Trainees		Member of Trainees						
					BUTEL	NTC	RECRUIT				
Radio	Aug. 27 - Oct. 5	1		16	9	1	6				
Carrier	July 9 - Aug. 24	1		16	9	1	6				
Telephony	Oct. 22 - Dec. 14	1									
Outside Plant											
Telegraphy											
Power Plant	Oct. 29 - Dec. 14	1									
	Total	4		32	18	2	12				

Technician Courses in 1984

Course Title	Duration	Times of Training	Number of Trainees		Member of Trainees								
					BUTEL	PLDT	COMMEL	DOMSAT	NTC	TESCO	HEART CENTER	RECRUIT	TTI
Radio	Feb. 6 - Mar. 16	2	20	20	6	5	7	2					
	Nov. 5 - Dec. 14												
Carrier	Jan. 9 - Feb. 6	2	21	21	7	5	7	2					
	Oct. 1 - Nov. 2												
Telephony	July 16 - Oct. 12	1	23	23	9	5				2	1	6	
Outside Plant	Oct. 1 - Dec. 14	1											
Telegraphy	Apr. 16 - June 15	2	14	14	5		4						5
	Oct. 1 - Dec. 14												
Power Plant	Apr. 16 - May 18	3	12	34	4		3					3	2
	June 25 - July 27		9		6							3	
	Aug. 27 - Dec. 14		13		2		10					1	
	Total	11		112	39	15	31	4		2	1	18	2

Counterpart Courses in 1984

Course Title	Duration	Times of Training	Number of Trainees		Member of Trainees						
					TTI						
Radio											
Carrier											
Telephony											
Outside Plant											
Telegraphy	Sept. 3 - Nov. 12	1	4	4	4						
Power Plant											
	Total	1	4	4	4						

付属資料－１１　ＴＴＩ訓練活動

TRAINING ACTIVITIES FOR THE YEAR 1983 (JICA COURSES)

COURSES	NO. OF TRAINEES	DATE	MAN/HOURS
TELEGRAPHY WING			
Telegraph & Telex System Engineer Course	15	Feb. 21 - Apr. 8/83	198
Telegraph & Telex Terminal Course (Tech.)	10	July 25 - Sept.9/83	210
Telegraph & Telex Switching Engineer Course	10	Oct. 10 - Dec. 2/83	242
RADIO WING			
Radio PCM Technician Course	8	Nov. 7 - Dec.16/83	174
POWER PLANT WING			
Power Plant Course JICA Tech.	11	Oct. 3 - Nov.11/83	168
CARRIER WING			
PCM System Engineer Course	20	Feb. 21 - Apr. 8/83	198
PCM System Engineer Course	9	June 6 - July 22/83	204
PCM Technician Course (Tec.)	12	Nov. 7 - Dec. 9/83	144
OUTSIDE PLANT WING			
Telecom. Outside Plant Engineer	15	Feb. 21 - Apr. 8/83	198
Outside Plant Eng'g Course	15	Aug. 29 - Oct. 14/83	210

TRAINING ACTIVITIES FOR THE YEAR 1984 (JICA COURSES)

COURSE	NO. OF TRAINEES	DATE	MAN/HOURS
TELEGRAPHY WING			
Telegraph & Telex Terminal Equipment (Tech.)	14	Apr. 16 - June 15/84	240
RADIO WING			
Radio PCM Technician Course	20	Feb. 6 - Mar. 16/84	180
Radio PCM JICA Engr. Course	18	Aug. 27 - Oct. 5/84	(As scheduled)
POWER PLANT WING			
Power Plant Course Tech.	12	Oct. 3 - Nov. 11/84	150
Power Plant JICA	9	June 25 - July 27/84	150
Power Plant	15	Aug. 27 - Sept.28/84	(On-going)
CARRIER WING			
Carrier PCM Technician	21	Jan. 3 - Feb. 3/84	120
Carrier PCM JICA Course	16	July 9 - Aug. 24/84	(on-going)
TELEPHONY WING			
Telephony JICA Tech. Course	23	July 16 - Oct.12/84	(On-going)

NOTE: As of August 1984

付属資料－１２　ＴＴＩレギュラーコース卒業生数

NUMBER OF GRADUATES

1983 REGULAR COURSE

A. Technician Course — 100 Graduates

	Course	Distribution	Number of Graduates
1.	Radio	22 - Butel 2 - AFP 4 - Recruits	28
2.	Telephony	20 - Butel 3 - Recruits	23
3.	Power Plant	20 - Butel 1 - AFP	21
4.	Outside Plant	16 - Butel 3 - AFP 2 - Recruits	21
5.	Siemens T-100	Butel	7

B. Non-Technical Course — 135 Graduates

	Course	Distribution	Number of Graduates
1.	Re-Orientation Course	Butel	27
2.	Supervision and Office Management	Butel	39
3.	NTTS Seminar Workshop	Butel	69

Grand Total = 235

NUMBER OF GRADUATES

1984 REGULAR COURSE

A. Technician Course 76 Graduates

	Course	Distribution	Number of Graduates
1.	Radio	11 - Butel 1 - AFP 6 - Recruits	18
2.	Telephony	12 - Butel 6 - AFP 6 - Recruits	24
3.	Power Plant	2 - Butel	2
4.	Carrier & Transmission	2 - Butel 5 - Recruits	7
5.	Siemens T-100 & T-1000	7 - Butel	7
6.	Outside Plant	7 - Butel	7
7.	Outside Plant	10 - Butel 1 - Recruit	11 (on-going)

B. Non-Technical Course 180 Graduates

	Course	Distribution	Number of Graduates
1.	Re-Orientation	Butel	52
2.	Supervision & Office Mgt.	Butel	59
3.	NTTS Seminar Workshop	Butel	69

Grand Total = 256

List of Text Used in JICA Telephone Course

Telephone Wing (1/2)

No.	Title of Text	Contents	App. No. of Page	Date of Completion	Author or Editor	Remarks
1	Fundamentals of Digital Switching	History of Telephone Switching, Fundamental Concept of ESS, Logic & Logic Circuits, Theory of PCM, Principle of Digital Switching, Digital Switching Elements	70	July '85	M. Miyata	
2	Network Planning	Hierarchical Arrangement, Numbering Plant, Signalling System, Charging Plan, Engineering Standard	45	"	"	
3	Telephone Traffic	Mode of Call, Characteristic of Traffic, Basic Theory & Computation Examples, Alternate Routing	50	"	"	
4	The Regional Telecommunication Development Project	Planning, Project Contents Appendix: NEAX61 Digital Switching System	60	"	"	NEC's Original Documents are supplemented with some inteligible drawings, etc.
5	NEAX61K: Hardware System Description	Application Subsystem, Switching Subsystem, Processor Subsystem	App. 290	Mar. '85	O. Felarca	
6	CC Instruction and Programming Language	CC Instruction, Assembler Language, High Level Language	150	"	E. Verano	
7	NEAX61K: Software System Description - 1 (Operating System)	Executive Control Program (EP) Fault Processing Program (FP) Diagnosis Program (DP)	100	"	"	
8	NEAX61K: Software System Description - 2 (Application Program)	Call Processing Program (CP) Administration Program (AP) Appendix: Call Through Chart	200	"	"	
9	NEAX61K: Office Data Description	Explanation of Import Office Data, Updating of Office Data	130	"	O. Felarca	
10	NEA61: Remote & Small System Description	Remote Switching System (System Configuration Call Control System, Testing Method) Small Switching System (Hardware Configuration, Operation & Maintenance)	100	"	M. Miyata	
11	Operation & Maintenance Policies	Operation Work, Maintenance Work, Traffic Managment, Organization & Personnel, Maintenance Equipment	56	"	"	

List of Manuals Used in JICA Telephone Course

Telephone Wing (2/2)

No.	Title of Text	No. of Pages	Date of Completion	Original Publisher	Remarks (No.): No. of Books to be supplied by TOKYO JICA.
1	Command Manual	290	Already Completed	NEC	(10) NEC Manual is used as it is.
2	Message Manual	130	"	"	(10) "
3	Emergency Manual	45	"	"	(10) "
4	Traffic Data Recording Manual	150	"	"	(13) "
5	Traffic Data Control Manual	42	"	"	(10) "
6	Service Order Processing Manual	124	"	"	(10) "
7	Office Data Modification Manual	320	"	"	(10) "
8	Routine Task Manual	110	"	"	(10) "
9	STC Operation Manual	138	"	"	(10) "
10	LTC Operation Manual	137	"	"	(10) "
11	CC Console Operation Manual	28	"	"	(10) "
12	Maintenance Manual	320	"	"	(10) "
13	Diagnosis Procedure Manual	72	"	"	(10) "
14	Subscriber Data Assignment Manual	76	"	"	(10) "
15	Preparation & Maintenance of Office File	109	"	"	(10) "
16	TTY Handling Manual	171	"	"	(4) "
17	CGMTU Handling Manual	31	"	"	(4) "
18	MTU Handling Manual	25	"	"	(4) "
19	Maintenance Manual for Remote Switching Equipment	170	"	"	(10) "
20	Diagnosis Dictionary	Vol. 1~10	"	"	"
21	Manual Recovery Procedure	30	"		NEC's hand writing is referred.
22	Simplified Operation Manual	44	"		"

LIST OF HANDOUTS AND MANUALS ON PCM ENGINEERING AND TECHNICIAN COURSE

NO.	TITLE	CONTENTS	NO. OF PAGES	NO. OF TIMES USED
1	LOGIC CIRCUIT TRAINER TRAINING MANUAL	LOGIC CIRCUITS: AND, OR, NAND, NOT GATES, EXCLUSIVE OR, HALF ADDER CIRCUITS, FULL ADDER CIRCUITS, ENCODER, DECODER, SEQUENTIAL LOGIC CIRCUITS R-S FLIP-FLOP CKT, J-K FLIP-FLOP CKT, BINARY COUNTER CKT.	33	3
2	PULSE CIRCUIT TRAINER TRAINING MANUAL	RC CIRCUITS, DIFFERENTIATION CKT, INTEGRATION CKT, CLIPPING CKT, CLAMPING CKT, LOGIC CKT, MILLER INTEGRATION CKT, BOOTSTRAP CKT, MULTIVIBRATORS, T-FLIP-FLOP CKT, SCHMITT TRIGGER CIRCUITS.	34	3
3	ELECTRONIC CIRCUIT TRAINER TRAINING MANUAL	OSCILLATOR CKT, MODULATION CKT, FREQUENCY CONVERSION CKT, WAVE DETECTION CKT, RC COUPLED AMPLIFIER, OTL POWER AMPLIFIER CKT.	55	3
4	TRANSMISSION STANDARDS	SPEECH AND TRANSMISSION QUALITIES, REFERENCE EQUIVALENT, ARTICULATION REFERENCE EQUIVALENT TRANSMISSION LOSS, DESIGN FACTORS FOR TRANSMISSION LOSS, LOSS ASSIGNMENT, CROSSTALK, NOISE ALLOCATION, PCM-24 SYSTEM TRANSMISSION CHARACTERISTIC	28	3

NO.	TITLE	CONTENTS	NO. OF PAGES	NO. OF TIMES USED
5	INTRODUCTION TO PCM SYSTEM	PRINCIPLES OF PCM, SAMPLING, QUANTIZING, COMPANDING, CODING, CODER, DECORDER, CODING LAWS TIMING, SYNCHRONIZATION, PCM MULTIPLEXING, FRAME ALIGNMENT, SIGNALING, DIGITAL HIERARCHY REGENERATIVE REPEATERS, LINE TRANSMISSION CODE, AMI, HDB-3 CODE.	80	5
6	PCM-30 LINE TERMINAL EQUIPMENT	LINE TERMINAL MODURACK, SUPERVISORY MODURACK ORDER WIRE MODURACK, MAINTENANCE PROCEDURE, DIAGRAM.	62	5
7	PCM-30 TERMINAL EQUIPMENT	YF-MUX, SIG. B. MUX MAINTENANCE PROCEDURE, PHYSICAL AND ELECTRICAL CHARACTERISTICS, CIRCUIT DESCRIPTION, DIAGRAMS	116	5
8	PRACTICAL MEASUREMENT	PCM-30 TEST PROCEDURES, LOOPBACK TEST, FREQUENCY CHAR. DEVIATION, IDLE CHANNEL NOISE MEASUREMENT, SAMPLING AND SMOOTH NOISE QUANTIZING NOISE, PULSE TRIO MARGINAL TEST, BIT ERROR RATE, NET LOSS VARIATION.	17	5
9	OPTICAL FIBER TRANSMISSION	GENERAL DESCRIPTION, OPTICAL FIBER CABLE, OPTICAL LOSS CHARACTERISTIC, OPTICAL DEVICES OPTICAL FIBER TRANSMISSION SYSTEM CONCEPT.	11	5

NO.	TITLE	CONTENTS	NO. OF PAGES	NO. OF TIMES USED
10	DIGITAL TRANSMISSION TECHNIQUE	ANALOGUE & DIGITALS, HISTORY OF PAM, TECHNIQUE BASIC PRINCIPLES, SAMPLING THEOREM SAMPLING NOISE, APPERTURE EFFECT, SMOOTH NOISE, QUANTIZING, COMPANDING, CODING SYNCRONIZATION, LINE TRANSMISSION CODES, REPEATER SYSTEM, DIGITAL MULTIPLEXING.	63	5
11	8M DIGITAL MULTIPLEXER	DIGITAL HIERARCHIES, ELECTRICAL SPECIFICATIONS, DESCRIPTION OF 2M CHANNEL UNIT, 8M INTERFACE UNIT, MULTIPLEX UNIT, 8M DEMULTIPLEX UNIT, POWER UNIT, JUSTIFICATION	39	1
	T O T A L		538	

JICA RADIO COURSE テキスト改版方針

JICA RADIO COURSE

No.	Title	種別	進捗	備考
1	The Regional Telecommunication Development Program Aiming at the Advanced Information Society	既	(%) –	
2	Digital Radio System	改	0	もっと平易にする(Eng Tech共用)
3	Microwave Propagation and Path Design	既	–	
4	Practical Microwave Comm. Sys. Design	既	–	
5	Microwave Waveguide Components, Feeder and Antenna	改	0	5.6合本とし平易にする。
6	Microwave Components, Device & Circuits	改	0	
7-1	SHF System Outline	新	50	System構成から回線設計まで概要
7-2	Instruction Manual for TRP-6G68MB -500B TX-RX	改	0	既製のものはHandbookのdead copyである。全面的に改版し要点をはっきりさす。
7-3	Instruct, Manual for MDP-68MB MODEM	改	0	同上
8-1	UHF System Outline		30	7－1に同じ
8-2	Inst. Manual for TR5PC60 TX-RX	新	0	7－2に同じ
9-1	" " " NAR-500 シリーズ	改		同上
9-2	" " " NAL-500 シリーズ	改		同上
11-1 11-8	TEST DATA for each equipment	既	—	試験結果を記入するノートである。このまゝ用いる。
12-1	Waveguide実習手引	新	30	12－2は手引になってない。12－2は参考書にして，12－1をもって手引とする。
12-2	Experiment guide of Microwave Technique Trainer	改		
13 ∫ 15	上記機器の補助としての図面等			参考として活用する。

基本方針

- 機器マニュアルはメーカの取説のコピーではテキストとして不向きである。テクニシャンがよんでわかるような大事なことと，どうでもよいことをはっきり区別して改版する。
- 機器以外はEngineerクラスの人向けが多いので，1部の変更でまに合わせる。
- システムを説明したものがないので新規につくる。

TEXT BOOK (Engineer Course)

OUTSIDE PLANT

TITLE	CONTENTS	NO. OF PAGES	DATE OF COMPLETION	AUTHOR
1. Telecommunication Outside Plant Outline	1.1 Introduction 1.2 Outside Plant Classification 1.3 Requirement for Outside Plant 1.4 Kinds of Cable	8	Dec. 1982	Mr. IWABUCHI
2. Outline of Telecommunication Outside Plant Design	2.1 General Description 2.2 Aerial Line Construction Design 2.3 Aerial Cable Distribution Design 2.4 Toll PEF Cable 2.5 PCM Cable	50	"	"
3. Line Construction Method	3.1 Telephone Pole and Guy 3.2 Installing and Splicing CCP Cable 3.3 Installing, Laying and Splicing PEF-LAP Cable 3.4 Cable Jointing Method with Heat Shrinkable Sleeve	102	"	"
4. Outside Plant Maintenance	4.1 General Description 4.2 Preliminary Arrangement for Fault Recovery 4.3 Plant Records 4.4 Protection against Environment Degradation	30	"	"
5. Line Transmission Theory	5.1 Uniform Line 5.2 Composite Line 5.3 Loaded Line 5.4 Crosstalk	28	"	"

TITLE	CONTENTS	NO. OF PAGES	DATE OF COMPLETION	AUTHOR
6. Outside Plant Measurement	6.1 Final Test 6.2 Trouble Measurement 6.3 Insulation Resistance Measurement 6.4 Conductor Resistance and Conductor Unbalance Measurement 6.5 Measurement of Faulty Conductors with a No.3 Portable Tester 6.6 Measurement of Faulty Conductors with a Cable Fault Locator 6.7 Cable Trouble Shooting Method 6.8 Burried Cable Location Method 6.9 Earth Resistance Tester 6.10 Electrostatic Coupling Measurement Method	82	Dec. 1982	Mr. IWABUCHI
7. Outline of Optical Fiber Cable	7.1 Optical Fiber 7.2 Optical Cable 7.3 Techniques Related to Optical Cable 7.4 Optical Cable Transmission System 7.5 Introduction of Optical Cable Transmission Systems for Telecommunication Network: Future View	12	"	"
T O T A L		312		

TEXT BOOK (Technician Course)

OUTSIDE PLANT

TITLE	CONTENTS	NO. OF PAGES	DATE OF COMPLETION	AUTHOR
1. Telecommunication Outside Plant Outline	1.1 Introduction 1.2 Outside Plant Classification 1.3 Outside Plant Requirement 1.4 Outside Plant Development 1.5 Kind of Cable	14	Aug. 1984	Mr. KIOKA Mr. BORJA
2. Cable Composition	2.1 Principal Cable Engineering Establishment 2.2 Local and Junction Cable Structure and Characteristics 2.3 Toll Cable Structure and Characteristics 2.4 Submarine Cable 2.5 Optical Fiber 2.6 Foam/Skin Insulated, Pair Type, Jelly Filled and LAP Sheathed Cable 2.7 Foam/Skin Insulated, Pair Type, Jelly Filled and LAP Sheathed PCM Cable	62	"	Mr. KIOKA Mr. DE GUZMAN Mr. BORJA
3. Pole Construction	3.1 Telephone Poles 3.2 Guy 3.3 Pole Brace 3.4 Guy Pole	62	"	"
4. Cable Installing and Splicing	4.1 Installing and Splicing CCP Cable 4.2 Installing Laying and Splicing PEF - LAP Cable 4.3 Installing Laying and Splicing 9.5mm Coaxial Cable 4.4 Splicing PEF - JF - LAP Cable	191	"	"

TITLE	CONTENTS	NO. OF PAGES	DATE OF COMPLETION	AUTHOR
5. Outside Plant Maintenance	5.1 General Description 5.2 Maintenance Control System 5.3 Work Control 5.4 Preliminary Arrangement for Fault Recovery 5.5 Plant Records	62	Aug. 1984	Mr. KIOKA
6. Outside Plant Measurement	6.1 Final Test 6.2 Trouble Measurement 6.3 Insulation Resistance and Conductor 6.4 Conductor Resistance and Conductor Unbalance Measurement 6.5 Measurement of Faulty Conductors with a No.3 Portable Tester 6.6 Measurement of Fulty Conductors with a Cable Fault Locator 6.7 Cable Trouble Shooting Method 6.8 Burried Cable Locating Method 6.9 Earth Resistance Tester 6.10 Electrostatic Conpling Measurement Method	79	"	Mr. KIOKA Mr. DE GUZMAN Mr. BORJA
7. Subscriber Telephone Installation	7.1 Outline 7.2 From Terminal Box to Subcriber's House 7.3 From Anchor Point to Protection Device 7.4 Wiring from Protector to Telephone Set	26	"	Mr. KIOKA
8. Civil Engineering Work Designing in Telecommunication	8.1 General 8.2 Planning Underground Conduit Line 8.3 Planning Underground 8.4 Designing a Manhole Inside an Exchange Building 8.5 Cable Tunnel 8.6 Direct Burried Cable	29	"	"
T O T A L		525		

Text Book

1 PCM-30 Terminal Equipment (VF-MUX)

2 PCM-30 Terminal Equipment (Line Terminal)

3 Practical Measurement

4 Optical Fiber Transmission

5 Transmission Standard

6 Logic Circuit Trainer

7 Pulse Circuit Trainer

8 Digital Transmission Technique

9 Digital Multiplexer

List of Telegraph and Telex JICA Course' Text

April, 1984

No.	Title of Test	Contents	No.of Page	Date of Completion	Author	Remarks
1	Telecommunications History in Telegraph and Telex, Philippines	———	25	Dec.'82	Pagca-liwagan	Engr./Technician Switching Terminal Course
2	Basic Theory for Telegraph and Telex System	Telegraph Code, Speed, Signalling System, Numbering Scheme, Telegraph format, Distortion, Grade of Service, Charging etc.	45	Oct.'82	Haraguchi	" "
3	Telegraph Basic Technology	Logic Circuit: Expression, Fundamental, Basic/Application of logic Circuit. Memory Devices: Requirements,Functions, Magnetic Disk, Drum Memories.	43	Dec.'82	Pagcali-wagan Haraguchi	" "
4	Telegraph and Telex Switching System and Equipment (Vol. 1)	System: Function, Network Processing. Equipment: Specification,Configuration, Features. Hardware. Software. Maintenance	50	Nov.'82	Haraguchi	Terminal Course
5	Telegraph and Telex Switching System and Equipment (Vol. 2)	System: Function, Network, Processing, Equipment: Specification, Configuration, Features. Hardware. Software, Operation. Maintenance, System/Circuit Control etc.	154	Sep."83	Haraguchi	Eng./Technician Switching Course
6	Telegraph and Telex Terminal Equipment (Vo. 1)	Technical Data, Installation, Construction. System Configuration, Module Description, Maintenance	40	Oct.'82	Haraguchi	" "
7	Telegraph and Telex Terminal Equipment (Vol. 2)	Technical Data, Installation, Construction, System Configuration, Module Description, Circuit operation, Maintenance.	120	Jun.'83	Pagca-liwagan Haraguchi	Terminal Course

No.	Title of Test	Contents	No.of Page	Date of Completion	Author	Remarks
8	Telegraph Transmission (VFT and T.D.M.)	VFT: Introduction, Transmission, Maintenance, VFT System. T.D.M.: Features, Applications, Maintenance, Interface Composition etc.	51	Dec.'82	Pagcaliwagan Haraguchi	Engr./Technician Switching Course
9	Telex plans, New System and Maintenance	Plans: Technical Plans, Operational Plans. New System: Installation, Numbering, Singalling, Network, Routing, Maintenance: Maintenance Principle/System Managements.	78	Jan.'83	Haraguchi	Engr./Technician Switching/Terminal Course
	T o t a l	———	606	—	—	———

POWER PLANT WING

NO.	TITLE OF TEXT	CONTENTS	NO.OF PAGES	REMARKS
1.	STANDBY ENGINE GENERATING SET	General, Performance Specification, Operation Maintenance, Adjustment, Trouble Shooting, Technical Description.	206	Engineering, Technician Course
2.	RECTIFIER SYSTEM	General Description, Construction & Performance, Operation, Adjustment, Trouble Shooting & Corrective Action, Appendix:	39	"
3.	SOLAR SYSTEM	General Description, Principles of Operation, Installation, Checking & Maintenance, Catalog:	29	Engineering Course

LESSON PLAN FOR JICA TELEPHONE COURSE

Telephone Wing

Subject	Module	Training Hours			Text to be used	Equipment to be used
		Eng. (General)	Eng. (Sw.)	Tech. (Sw.)		
Basic Knowledge for Switching			48	54		
	Fundamentals for Digital Switching		27	33	Fundamentals for Digital	
	Basic Requirement of Switching Network		21	21	Network Planning Telephone Traffic	
Hardware			48	72		
	NEAX61K Application Subsystem		12	18	NEAX61K Hardware Description	NEAX61 Switching Observation
	NEAX61K Switching Subsystem		12	18		
	NEAX61K Processor Subsystem		18	24		
	Outline of NEAX61 Remote & Small System		6	12	Outline of NEAX61 Remote and Small System	
Software			42	54		
	CC Instruction and Programming Language		6	12	CC Instruction & Programing Language	
	General Information of NEAX61 Software		6	6	NEAX61 Operating System	
	Operating System		12	12		
	Application Program		12	12	NEAX61 Application Program	
	Office Data Configuration		6	12	NEAX61 Office Data Description	

Subject	Module	Training Hours			Text to be used	Equipment to be used
		Eng. (General)	Eng. (Sw.)	Tech. (Sw.)		
			54	150		
	Outline of Command Manual		6	12	Command ML	
	Service Order Processing		6	18	Service Order Processing ML	
	Office Data Modification		6	12	Office Data Modification ML	
	Traffic Control & Recording		6	18	Traffic Contrl ML Traffic Data Recording ML	
	System Test Console		6	6	STC Operation ML	
	Line Test Console		6	6	LTC Operation ML	NEAX61 Switching System (Operation)
Practice	Assistance Service Console		3	6	Assistance Service Console	
	TTY Handling			6	TTY Handling ML	
	CGMTU Handling			6	CGMTU Handling ML	
	MTU Handling			6	MTU Handling ML	
	Operation/Maintenance Procedure and Practice		15	54	Operation & Maintenance Policies Diagnosis Processing ML Preparation & Maintenance of Office File Emergnecy ML Manual Recovery Procedure CC-Console ML	

Subject	Module	Training Hours			Text to be used	Equipment to be used
		Eng. (General)	Eng. (Sw.)	Tech. (Sw.)		
					Maintenance ML Service Feature Command Command ML Message ML Maintenance Manual for Remote Switching Equipment Diagnosis Dictionary	
Others	Visting, Special Lecture, etc.		18	30		
		90	210	360		

LESSON PLAN FOR JICA RADIO COURSE

Sep. 1984

Subject	Item	Training Hours Engineer		Training Hours Technician		Text	Equipment
FEEDER AND ANTENNA	(1) Waveguide Component	18	6	18	2	No. 5	W/G測定一式(供与)
	(2) Feeder and Antenna		6		2	No. 6 No. 12-1	
	(3) Practice		6		14	No. 12-2	
DIGITAL RADIO FUNDAMENTAL	(1) Dig. Radio Transmission (General)	18	8	12	3		
	(2) Modulator-Demodulator		3		1	No. 2	———
	(3) Differential Sum/Subtraction		3		1		
	(4) Transmission Quality		4		1		
SYSTEM OUTLINE	(1) SHF System (Comp. Perform. Eq't)	12		12	3	No. 7-1	UHF. SHF System
	(2) UHF System				2	No. 8-1	
	(3) Practice				1		
SHF EQUIP-MENT	(1) TRP-6G68MB TX-RX	36		60		No. 7-2	TX-RX,MODEM
	. Lecture (Comp. Theory of Operation)		10		10	No. 7-3	
	. Practice(Oper. Adjust. Test. Troubleshoot)		8		14	No. 11-1	
	(2) MDP-68MB MODEM . Lecture		10		10		
	. Practice		8		14		
UHF EQUIP-MENT	TR5PC60 . Lecture	18	12	30	6	No. 8	
	. Practice		6		18	No. 11-3	
SUPERVISORY AND CONTROL	NAR·NAS·NAL . Lecture	12	9	12	3	No. 9-1 No. 9-2	
	. Practice		3		9	No. 11-6 to 11-8	
SYS DESIGN	(1) Design Procedure (2) 6GHz (3) 800MHz	30		0		No. 4	
NORTH LUZON	Project Outline	6		6		No. 1	
SPECIAL LECTURES (Power, TP Switching, etc.)		12		12			
OTHERS	Observation, Test, Closing Ceremony	18		18			
TOAL		180		180			

OUTSIDE PLANT TECHNICIAN COURSE

1. Telecommunication Outside Plant Outline (6 hrs.)

   1.1 Introduction
   1.2 Outside Plant Classification
   1.3 Outside Plant Requirement
   1.4 Outside Plant Development
   1.5 Kind of Cable

2. Cable Composition (12 hrs.)

   2.1 Principal Cable Engineering Establishment
   2.2 Local and Junction Cable Structure and Characteristics
   2.3 Toll Cable Structure and Characteristics
   2.4 Submarine Cable
   2.5 Optical Fiber
   2.6 Foam/Skin Insulated, Pair Type, Jelly Filled and LAP Sheathed Cable
   2.7 Foam/Skin Insulated, Pair Type, Jelly Filled and LAP Sheathed PCM Cable

3. Pole Construction (66 hrs.)

   3.1 Telephone Poles
   3.2 Guy
   3.3 Pole Brace
   3.4 Guy Pole

4. Cable Installing and Splicing (84 hrs.)

   4.1 Installing and Splicing CCP Cable
   4.2 Installing, Laying and Splicing PEF - LAP Cable
   4.3 Installing, Laying and Splicing 9.5 mm Coaxial Cable
   4.4 Splicing PEF - JF - LAP Cable

5. Outside Plant Maintenance (12 hrs.)

   5.1 General Description
   5.2 Maintenance Control System
   5.3 Work Control
   5.4 Preliminary Arrangement for Fault Recovery
   5.5 Plant Records

6. Outside Plant Measurement (78 hrs.)

6.1 Final Test

6.2 Trouble Measurement

6.3 Insulation Resistance Measurement

6.4 Conductor Resistance and Conductor Unbalance Measurement

6.5 Measurement of Faulty Conductors with a No.3 Portable Tester

6.6 Measurement of Faulty Conductors with a Cable Fault Locator

6.7 Cable Trouble Shooting Method

6.8 Burried Cable Locating Method

6.9 Earth Resistance Tester

6.10 Electrostatic Coupling Measurement Method

7. Subscriber Telephone Installation (6 hrs.)

7.1 Outline

7.2 From Terminal Box to Subscriber's House

7.3 From Anchor Point to Protection Device

7.4 Wiring from Protector to Telephone Set

8. Civil Engineering Work Designing in Telecommunication (6 hrs.)

8.1 General

8.2 Planning Underground Conduit Line

8.3 Planning Underground Conduit

8.4 Designing a Manhole inside an Exchange Building

8.5 Cable Tunnel

8.6 Direct Burried Cable

9. On the Job Training - at Bayombong (36 hrs.)

9.1 Outside Plant Measurement

9.2 Outside Plant Construction

10. Free Discussion and Closing Ceremony (6 hrs.)

PCM COURSE LESSON PLAN

Sub.	Chapter	Content	Text book	No. of day	
				Eng.	Tech.
Digital Basic circuit	Electronic Circuit	. Review of Diode, Transistor . Pulse Circuit (Clipper, Limiter, Slicer, etc.) . Multivibrater . Practice	7	12	3
	Logic Circuit	. Logic Circuit (AND,OR,NOT,NAND,NOR,EOR,ETC.) . Logic Combination Circuit . Adder, Encoder . Sequential Logic . Practice	6	12	3
Basic PCM	Basic Principle of PCM	. Analog and Digital . Five Different pulse Model . Converting to PCM process . Simple Block Diagram	8	12	3
	Sampling	. Several Basic Formular . Physical Meaning of Sampling Theorem . Other Relative Formula . Sampling and Smooth Noise	8	6	6
	Quantizing	. Uniform and Non-Uniform Quantizing . Merit of Non-Uniform Quantizing . Quantizing Noise . Companding . Compression Characteristics . Alow and μ-low	8	6	3
	Coding	. Review of PCM Principle . Binary to Decimal . 3 Kinds Coding Rules . Coding Process . Uniform Coder . Non-Uniform Coder	8	6	3
	Sychronization	. Frame Alignment of PCM 30 and Compare PCM 24 . Bit Synchronization . Frame Synchronization	8	6	3

Subj.	Chapter	Contents	Text book	No. of day	
				Eng.	Tech.
	Line Transmission Code	. Principle of HDB-3 Code . Merit of HDB-3 Code . Regenerative Repeater . 3R of Repeater	8	6	3
	Digital Multiplexing	. 8M 34M Multiplexer . Block Diagram . Frame Alignment . Pulse Stuff	8 9	6	6
Practice	Digital Measuring Instrument	. Principle of Trans. Meas. Test. Set Universal S.L.M. Synchroscope Ch Test Set Line Test Set EMR Rate Meas. Send and Receive	1 3	12	12
	Familiarization	. Line Terminal Equipment . Power Voltage Check . LPB Test . Level Setting . Alarm and Test Check . Wave Observation	1 3	12	12
	Practice	. Net Loss Variation . Freq. Char. Variation . Idle Channel Noise Test . Sampling Noise . Continuation of Sampling and Smooth Noise . Quantizing Noise a) 1-Link 4W/2W b) 2-Link 4W c) 4-Link 4W . Pulse Trio Margin Test . Fault - Location . 2nd & 3rd Order Hierarchy MUX Equipment . DC Fault-Location	1 3	42	36

Subj.	Chapter	Contents	Text book	No. of day	
				Eng.	Tech.
Others	OJT	FIELD TRIP	-	6	
	Special Lecture	. General Telecommunication . Digital Switching System . Telegraph and Telex System . Optical Fiber	4	12	12
	Others	. Examination . Orientation . Evalvation . Closing Ceremony	-	18	12

Telegraph Basic Theory

LESSON PLAN FOR JICA TELEGRAPH AND TELEX COURSES

Wing: Telegraph

	Module	Training Hours (General)	Engineer (Switching)	Technician (Switching)	Technician (Terminal)	Text Reference	Equipment, Measuring-Set. Tools
Basic Theory		9	21	27	15	.Basic Theory for TG/Telex (JICA) .C.C.I.T.T Rec'ns F.S.T.U.R Series	.MT-100 .T-1000 .NEDLX-510AS
	Telegraphy Code and Speed	0.5	1.0	1.5	1.0		
	Signalling System	1.5	3.0	3.0	3.0		
	Numbering Scheme/Destination Code	1.0	1.5	2.0	1.0		
	Telegraph Format/Observation Data	1.0	2.0	2.0	1.5		
	Service Signal/Answerback Code	1.0	2.0	3.0	1.5		
	Standardized Text	0.5	1.0	1.5	1.0		
	Grade of Service and Quality	1.0	2.0	3.0	3.0		
	Message Routing	0.5	1.0	1.5	-		
	Basic Traffic Theory	1.0	2.0	3.0	1.5		
	Telegraph Distortion	0.5	2.0	3.0	1.5		
	Charging	0.5	1.5	1.5	-		
	Conference	-	3.0	3.0	-		
Technology		6	12	12	-	Telegraph Technology (JICA)	.MT-100 .NEDIX-510AS
	Components Requirements	1.0	1.5	1.5			
	Function of Memories	1.0	1.5	1.5			
	Paper Tape	0.5	0.5	0.5			
	Magnetic Memories	0.5	1.0	1.0			
	Drum Memories	0.5	1.0	1.0			
	Disk Memories	0.5	1.0	1.0			
	Floppy Disk Memories	0.5	1.0	1.0			
	Memory System	1.5	4.5	4.5			
Logic Circuits		6	12	15	12	Logic Circuit (JICA)	
	Expression of Numbers	1.5	3.0	3.0	3.0		
	Fundamental of Logic Circuits	1.5	3.0	3.0	3.0		
	Basic of Logic Circuits	1.5	3.0	4.5	3.0		
	Application of Logic Circuits	1.5	3.0	4.5	3.0		

LESSON PLAN FOR JICA TELEGRAPH AND TELEX COURSES

Switching and Terminal Equipment

Wing: Telegraph

Subject	Module	Training Hours				Text Reference	Equipment, Measuring-Set, Tools
		Engineer (General)	Engineer (Switching)	Technician (Switching)	Technician (Terminal)		
Switching System		3	6	9	6	.Telegraph/ Telex Switching System	.NEDIX-510AS .MT-100
	Function of Telex Switching	1.0	2.0	3.0	2.0		
	Network	0.5	1.0	1.0	1.0		
	Processing of Telex Switching	1.5	3.0	5.0	3.0		
Telex Switch-ing Equip-ment		15	72	111	42	.Telegraph/ Telex Switching Equipt. (JICA) .C.C.I.T.T.Rec'ns. F.S.T.U.R. Series. .NEDIX-510 AS .Training Manual	.NEDIX-510AS .MT-100 .T-1000 .Maintenance Tool
	Summary of Specifications	1.5	3.0	4.5	3.0		
	System Configuration	1.5	3.0	4.5	3.0		
	System Features	1.0	3.0	3.0	1.5		
	System Specification	1.5	4.5	6.0	1.5		
	Hardware System	3.0	12.0	15.0	12.0		
	Software System	2.0	9.0	12.0	9.0		
	System Reliability	1.5	3.0	6.5	3.0		
	Operation and Maintenance	1.5	4.5	12.0	-		
	System Control	-	3.0	6.0	-		
	Circuits Control	-	3.0	6.0	-		
	Trouble Shooting	-	3.0	6.0	-		
	Conference	-	3.0	6.0	-		
	Practice	1.5	18.0	25.5	9.0		
Terminal Equip-ment		12	36	36	105	.Telegraph/Telex Terminal Equipt.(JICA) .C.C.I.T.T. Rec'ns. F.S.T.U.R. Series .MT-100 Manual	.MT-100 .NEDIX-510AS .WD-100 .FD-100 .Tools for workshop field.
	Summary of Technical Data	1.5]	3.0	3.0	4.5		
	Installation	1.5	3.0	3.0	6.0		
	Construction and Layout	1.5	3.0	3.0	6.0		
	System Configuration	1.5	4.5	4.5	9.0		
	Module Description	1.5	4.5	4.5	6.0		
	Principle of Operation	-	3.0	3.0	9.0		
	Circuit Description	-	-	-	19.5		
	Maintenance	1.5	3.0	1.5			
	Practice	3.0	12.0	12.0	30.0		

LESSON PLAN FOR JICA TELEGRAPH AND TELEX COURSES

Telegraph Transmission

Wing: Telegraph

Subject	Module	Training Hours				Text Reference	Equipment, Measuring-Set, Tools
		Engineer (General)	Engineer (Switching)	Technician (Switching)	Technician (Terminal)		
T.D.M.		4.5	9	12	9	.T.D.M.(JICA)	.T.D.M.(R-II)
	General	0.5	1.0	1.0	1.0	.C.C.I.T.T.	.MT-100
	Features	0.5	1.0	1.0	1.0	Rec'ns	.NEDIX-510
	System Applications	1.0	1.5	1.5	1.5	R.V.X. Series	AS
	Maintenance	0.5	1.0	1.5	1.0	.R-II(TDM)	
	Low Speed Interface	0.5	1.0	1.0	1.0	Manual	
	Technical Data	0.5	1.0	1.5	1.0		
	Mechanical Composition	0.5	1.0	1.5	1.0		
	Practice	0.5	1.5	3.0	1.5		
V.F.T.		4.5	9	12	9	.V.F.T.(JICA)	.R.C.P.I.
	Introduction	0.5	1.0	1.5	1.0	.C.C.I.T.T.	-V.F.T.
	Telegraph Transmission	1.5	3.0	3.0	3.0	Rec'ns R	
	C.C.I.T.T. Recommendation Related to AM/FM V.F.T.	0.5	1.0	1.5	1.0	Series	
	Maintenance	0.5	2.0	3.0	2.0		
	One Model of V.F.T. System	-	2.0	3.0	2.0		
P.C.M.		-	6	6	-		.P.C.M. (T.T.I)

LESSON PLAN FOR JICA TELEGRAPH AND TELEX COURSES

Telex Plans and Maintenance

Wing: Telegraph

Subject	Module	Training Hours				Text Reference	Equipment, Measuring-Set, Tools
		Engineer (General)	Engineer (Switching)	Technician (Switching)	Technician (Terminal)		
Telex Plans		6	12	12	-	.Telex Plans (JICA) .Telecom Plans (I.T.U.)	
	Telex Technical Plans	3.0	6.0	6.0			
	Telex Operational Plans	3.0	6.0	6.0			
New Gentex Network		3	12	12	9	.New System (JICA) .Nationwide Gentex Spec.	
	Outline of System	0.5	2.0	2.0	1.5		
	Installation	0.25	1.5	1.5	1.5		
	Numbering, Signalling Facilities	0.25	1.0	1.0	1.0		
	Service Signal	0.25	1.0	1.0	0.5		
	Network and Routing Facilities	0.25	1.5	1.5	1.5		
	Interconnection	0.25	1.0	1.0	1.0		
	Subscriber/Charging Facilities	0.25	1.0	1.0	1.0		
	Administrative Facilities	0.25	1.5	1.5	0.5		
	Maintenance	0.25	1.5	1.5	0.5		
Maintenan		4.5	15	12	9	.TG/Telex Maintenance .Quality Control (N.T.T.)	
	Maintenance Principle	1.5	4.5	6.0	4.5		
	Maintenance System	1.5	6.0	6.0	4.5		
	Maintenance Management	1.5	4.5	-	-		

Training Standard Hours for JICA Telegraph and Telex Courses

August 1, 1984

Course Title / Subject	Telecom. Administ-ration	Engineer (General)	Engineer (Switching)	Technician (Switching)	Technician (Terminal)	Remarks
Duration	3 Days (18 H)	3 weeks (84H)	2 months (255 H)	2.5 months (315 H)	2 months (255 H)	Not-incl'd. Non-Tech.
Telecom History in Philippines	-	1.5	3	3	3	
Basic Theory	3	9	21	27	15	Incl'd Practice
Telegraph/Telex Technology	-	6	12	12	-	
Logic Circuit	-	6	12	15	12	
Telegraph/Telex System	1.5	3	6	9	6	Incl'd Practice
Telegraph/Telex Switching Equipt.	6	15	72	111	42	Incl'd Practice
Telegraph/Telex. Terminal	6	12	36	36	105	Incl'd Practice
Telegraph Trans-mission(VFT/TDM)	1.5	9	24	30	18	Incl'd Practice
New System	-	3	12	12	9	
Plans	-	6	12	12	-	
Maintenance	-	4.5	15	12	9	
Others	-	9	33	36	36	Exam's Visits Reviews Ceremonies
Total (Hrs.)	18	84	255	315	255	

LESSON PLAN FOR POWER PLANT COURSE

Subject	Module	Training Hours		Text Reference	Equipment
		Engineer	Technician		
General Power Plant Technique	Power Plant Device AC Generation Transformer, Battery	36	18	Standby Engine Generating Set Rectifier System Solar System	Engine AC Generator AC Exciter Rectifier Control Cubicle Battery Charger Load Battery Solar Battery
Power Plant System	Engine Generater Rectifier Lead Battery Charger, Voltage Regulator Solar Battery	36 12 12 12 15	30 6 3 6 6		
Maintenance	Engine Generator Control Cubicle Battery Charger Rectifier	18	12		
Others	OJT Special Lecture Examination Calculation, Closing Ceremony	12 9 12 9	12 9 9 9		