Table III-1-2-1 (12/20)

Telephone Demand Forecast (Continued)

| Region IV | Province (LAGUNA) | | | | | |
|---|---|---|---|---|---|---|
| City/ Municipality | Number of Telephone Demands | | | | | Remarks |
| | 1986 | 1991 | 1996 | 2001 | 2006 | |
| Siniloan | 460 | 680 | 1,000 | 1,490 | 2,220 | ◉ ◉ |
| Victoria | 150 | 220 | 330 | 490 | 730 | ◉ ◉ |
| | | | | | | |
| Total | 21,480 | 32,500 | 49,440 | 75,250 | 115,480 | (30) |

Table III-1-2-1 (13/20)

Telephone Demand Forecast

| Region IV | Province (MARINDUQUE) | | | | | |
|---|---|---|---|---|---|---|
| City/ Municipality | Number of Telephone Demands | | | | | Remarks |
| | 1986 | 1991 | 1996 | 2001 | 2006 | |
| Boac | 330 | 470 | 690 | 1,010 | 1,480 | PILTEL (150) |
| Buenavista | 60 | 90 | 130 | 200 | 300 | Proposed by PILTEL |
| Gasan | 240 | 340 | 490 | 720 | 1,060 | Proposed by PILTEL |
| Mogpog | 440 | 610 | 880 | 1,280 | 1,860 | Proposed by PILTEL |
| Santa Cruz | 890 | 1,260 | 1,840 | 2,690 | 3,960 | PILTEL (75)<br>X-5 (Toll connection) |
| Torrijos | 95 | 130 | 190 | 280 | 410 | Proposed by PILTEL |
| | | | | | | |
| Total | 2,055 | 2,900 | 4,220 | 6,180 | 9,070 | (6) |

Table III-1-2-1 (14/20)

Telephone Demand Forecast

| Region IV | Province (OCCIDENTAL MINDORO) | | | | | |
|---|---|---|---|---|---|---|
| City/ Municipality | Number of Telephone Demands | | | | | Remarks |
| | 1986 | 1991 | 1996 | 2001 | 2006 | |
| Abra de Ilog | 55 | 80 | 110 | 160 | 220 | ◉ ◉ |
| Calintaan | 85 | 130 | 190 | 290 | 450 | ◉ ◉ |
| Looc | 130 | 200 | 310 | 470 | 720 | ◉ ◉ |
| Lubang | 190 | 300 | 450 | 690 | 1,060 | ◉ |
| Magsaysay | 220 | 330 | 510 | 280 | 1,190 | ◉ ◉ |
| Mamburao | 260 | 390 | 600 | 910 | 1,400 | BUTEL (300) ◉ |
| Paluan | 40 | 60 | 80 | 110 | 160 | ◉ ◉ |
| Rizal | 70 | 100 | 160 | 240 | 360 | ◉ ◉ |
| Sablayan | 320 | 500 | 780 | 1,210 | 1,900 | ◉ |
| San Jose | 980 | 1,510 | 2,310 | 3,560 | 5,510 | BUTEL (500) ◉ |
| Santa Cruz | 80 | 120 | 180 | 280 | 430 | ◉ ◉ |
| | | | | | | |
| Total | 2,430 | 3,720 | 5,680 | 8,700 | 13,400 | (11) |

Table III-1-2-1 (15/20)

Telephone Demand Forecast

| Region IV | Province (ORIENTAL MINDORO) | | | | | |
|---|---|---|---|---|---|---|
| City/ Municipality | Number of Telephone Demands | | | | | Remraks |
| | 1986 | 1991 | 1996 | 2001 | 2006 | |
| Baco | 60 | 90 | 130 | 190 | 280 | ◉ ◉ |
| Bansud | 140 | 210 | 320 | 500 | 770 | ◉ ◉ |
| Bongabong | 350 | 510 | 760 | 1,150 | 1,730 | X-4 (IPTS) ◉ |
| Bulalacao | 120 | 180 | 280 | 440 | 700 | ◉ ◉ |
| Calapan | 1,310 | 1,940 | 2,880 | 4,320 | 6,510 | Calapan Tel. Sys. (400) X-5 (Toll connection) |
| Gloria | 160 | 220 | 330 | 480 | 710 | ◉ |
| Mansalay | 120 | 180 | 260 | 380 | 550 | ◉ ◉ |
| Naujan | 310 | 460 | 690 | 1,040 | 1,570 | ◉ |
| Pinamalayan | 760 | 1,120 | 1,670 | 2,510 | 3,800 | X-4 |
| Pola | 140 | 220 | 330 | 510 | 780 | ◉ ◉ |
| Puerto Galera | 110 | 160 | 220 | 330 | 480 | ◉ |
| Roxas | 310 | 4 | 640 | 940 | 1,370 | ◉ |
| San Teodoro | 120 | 170 | 260 | 380 | 570 | ◉ ◉ |
| Socorro | 170 | 250 | 380 | 570 | 860 | ◉ |
| Victoria | 270 | 410 | 620 | 950 | 1,450 | ◉ |
| | | | | | | |
| Total | 4,450 | 6,560 | 9,770 | 14,690 | 22,130 | (15) |

Table III-1-2-1 (16 /20)

Telephone Demand Forecast

| Region IV | Province (PALAWAN) | | | | | |
|---|---|---|---|---|---|---|
| City/ Municipality | Number of Telephone Demands | | | | | Remarks |
| | 1986 | 1991 | 1996 | 2001 | 2006 | |
| Aborlan | 65 | 95 | 140 | 220 | 330 | ◉ ◉ |
| Agutaya | 15 | 25 | 35 | 50 | 75 | ◉ ◉ |
| Araceli | 30 | 45 | 60 | 90 | 130 | ◉ ◉ |
| Balabac | 260 | 380 | 580 | 870 | 1,320 | ◉ ◉ |
| Batarasa | 150 | 210 | 300 | 430 | 620 | ◉ ◉ |
| Brooke's Point | 290 | 430 | 640 | 960 | 1,460 | Proposed by PILTEL |
| Busuanga | 15 | 20 | 30 | 40 | 60 | ◉ ◉ |
| Cagayancillo | 15 | 25 | 35 | 50 | 75 | ◉ ◉ |
| Coron | 240 | 340 | 480 | 690 | 990 | ◉ ◉ |
| Cuyo | 65 | 95 | 140 | 220 | 330 | ◉ ◉ |
| Dumaran | 35 | 50 | 75 | 110 | 170 | ◉ ◉ |
| El Nido Bacuit | 35 | 55 | 90 | 140 | 210 | ◉ ◉ |
| Linapacan | 10 | 10 | 10 | 10 | 10 | ◉ ◉ |
| Magsaysay | 15 | 20 | 25 | 35 | 45 | ◉ ◉ |
| Narra Aborlan | 270 | 410 | 610 | 920 | 1,390 | ◉ ◉ |
| Puerto Princesa | 690 | 1,050 | 1,620 | 2,490 | 3,860 | PILTEL (250) |
| Quezon | 330 | 490 | 740 | 1,120 | 1,690 | ◉ ◉ |
| Roxas | 200 | 300 | 450 | 680 | 1,030 | Proposed by PILTEL |
| San Vicente | 45 | 65 | 100 | 150 | 220 | ◉ ◉ |
| Taytay | 150 | 230 | 350 | 540 | 850 | ◉ ◉ |
| Kalayaan | 10 | 10 | 10 | 10 | 10 | |
| Total | 2,935 | 4,355 | 6,520 | 9,825 | 14,875 | (20) |

Table III-1-2-1 ( 17/20)

Telephone Demand Forecast

| Pegion IV | Province (QUEZON) | | | | | |
|---|---|---|---|---|---|---|
| City/ Municipality | Number of Telephone Demands | | | | | Remarks |
| | 1986 | 1991 | 1996 | 2001 | 2006 | |
| Agdangan | 70 | 100 | 140 | 200 | 290 | ◉ ◉ |
| Alabat | 100 | 160 | 220 | 320 | 460 | ◉ ◉ |
| Atimonan | 340 | 490 | 700 | 1,030 | 1,500 | X-5 |
| Buenavista | 15 | 25 | 45 | 70 | 110 | ◉ ◉ |
| Burdeos | 240 | 390 | 630 | 1,010 | 1,640 | ◉ ◉ |
| Calauag | 330 | 480 | 700 | 1,020 | 1,500 | X-4 (IPTS)<br>X-5 |
| Candelaria | 1,020 | 1,500 | 2,210 | 3,210 | 4,870 | X-5 (Toll connection) |
| Catanauan | 140 | 220 | 340 | 520 | 810 | ◉ ◉ |
| Dolores | 70 | 110 | 160 | 240 | 360 | ◉ ◉ |
| General Luna | 40 | 60 | 95 | 140 | 220 | ◉ ◉ |
| General Nakar | 15 | 25 | 35 | 50 | 75 | ◉ ◉ |
| Guinayangan | 85 | 120 | 190 | 290 | 440 | ◉ ◉ |
| Gumaca | 380 | 540 | 780 | 1,120 | 1,640 | Jaime Ramos Tel. Co. (100) |
| Infanta | 340 | 500 | 760 | 1,140 | 1,740 | X-4 |
| Jumalig | 10 | 20 | 30 | 50 | 85 | ◉ ◉ |
| Lopez | 430 | 640 | 960 | 1,430 | 2,160 | X-5 |
| Lucban | 420 | 590 | 840 | 1,210 | 1,740 | Lucban Tel. Sys. (200)<br>X-5 |
| Lucena City | 4,590 | 6,860 | 10,330 | 15,610 | 23,760 | PLDT (2,100) |
| Macalelon | 95 | 130 | 200 | 290 | 440 | ◉ ◉ |
| Mauban | 80 | 860 | 1,290 | 1,930 | 2,930 | X-4 |
| Mulanay | 120 | 200 | 320 | 500 | 810 | ◉ ◉ |
| Padre Burgos | 110 | 160 | 250 | 370 | 570 | X-5 (IPTS) |
| Pagbilao | 230 | 340 | 500 | 750 | 1,130 | X-4 |
| Panukulan | 130 | 210 | 330 | 520 | 820 | ◉ ◉ |
| Patnanangan | 15 | 25 | 35 | 50 | 75 | ◉ ◉ |
| Perez | 30 | 45 | 65 | 95 | 140 | ◉ ◉ |
| Pitogo | 120 | 170 | 250 | 370 | 540 | ◉ ◉ |
| Plaridel | 55 | 80 | 110 | 150 | 220 | ◉ ◉ |

continue to next page

Table III-1-2-1 (18/20)

Telephone Demand Forecast (Continued)

| Region IV | Province (QUEZON) | | | | | |
|---|---|---|---|---|---|---|
| City/ Municipality | Number of Telephone Demands | | | | | Remarks |
| | 1986 | 1991 | 1996 | 2001 | 2006 | |
| Polillo | 180 | 270 | 410 | 610 | 930 | ◉ ◉ |
| Quezon | 55 | 75 | 110 | 160 | 230 | ◉ ◉ |
| Real | 390 | 650 | 1,080 | 1,770 | 2,920 | ◉ ◉ |
| Sampaloc | 85 | 130 | 190 | 290 | 440 | X-4 |
| San Andres | 25 | 40 | 70 | 110 | 180 | ◉ ◉ |
| San Antonio | 110 | 160 | 240 | 350 | 510 | ◉ ◉ |
| San Francisco | 95 | 150 | 240 | 370 | 580 | ◉ ◉ |
| San Narciso | 110 | 160 | 240 | 360 | 550 | ◉ ◉ |
| Sariaya | 760 | 1,100 | 1,600 | 2,350 | 3,450 | X-5 (Toll connection) |
| Tagkawayan | 340 | 480 | 680 | 970 | 1,390 | X-4 (IPTS)<br>X-5 |
| Tayabas | 420 | 600 | 880 | 1,290 | 1,890 | X-4 |
| Tiaong | 810 | 1,190 | 1,760 | 2,610 | 3,890 | X-5 |
| Unisan | 85 | 120 | 170 | 240 | 350 | ◉ ◉ |
| | | | | | | |
| (AURORA) | | | | | | |
| Baler | 370 | 540 | 780 | 1,150 | 1,690 | ◉ ◉ |
| Casiguran | 45 | 65 | 100 | 150 | 240 | ◉ ◉ |
| Dilasag | 15 | 25 | 40 | 65 | 100 | ◉ ◉ |
| Dinalongan | 15 | 20 | 30 | 45 | 70 | ◉ ◉ |
| Dingalan | 290 | 450 | 690 | 1,070 | 1,670 | ◉ ◉ |
| Dipaculao | 85 | 130 | 210 | 330 | 530 | ◉ ◉ |
| Maria Aurora | 410 | 640 | 1,010 | 1,580 | 2,510 | ◉ ◉ |
| San Luis | 130 | 200 | 290 | 450 | 680 | ◉ ◉ |
| | | | | | | |
| Total | 14,955 | 22,245 | 33,335 | 50,065 | 75,875 | (49) |

Table III-1-2-1 (19/20)

Telephone Demand Forecast

| Region IV | Province (RIZAL) | | | | | |
|---|---|---|---|---|---|---|
| City/ Municipality | Number of Telephone Demands | | | | | Remarks |
| | 1986 | 1991 | 1996 | 2001 | 2006 | |
| Angono | 530 | 790 | 1,170 | 1,730 | 2,570 | RETELCO (200) |
| Antipolo | 1,780 | 2,790 | 4,320 | 6,680 | 10,400 | From Cainta |
| Baras | 280 | 400 | 580 | 850 | 1,240 | Proposed by RETELCO |
| Binangonan | 870 | 1,280 | 1,870 | 2,750 | 4,070 | RETELCO (400) |
| Cainta | 5,080 | 8,550 | 14,090 | 23,080 | 38,040 | RETELCO (4,000) |
| Cardona | 170 | 240 | 330 | 470 | 680 | Proposed by RETELCO |
| Jala Jala | 35 | 50 | 75 | 110 | 160 | X-5 (IPTS) |
| Montalban | 530 | 830 | 1,300 | 2,030 | 3,190 | X-5 (IPTS) |
| Morong | 330 | 520 | 810 | 1,250 | 1,950 | Proposed by RETELCO |
| Pililla | 290 | 430 | 620 | 920 | 1,360 | From Tanay<br>Proposed by RETELCO |
| Tanay | 810 | 1,190 | 1,730 | 2,540 | 3,760 | RETELCO (300) |
| Taytay | 3,540 | 5,600 | 8,750 | 13,630 | 21,390 | From Cainta |
| Teresa | 270 | 410 | 630 | 950 | 1,460 | X-5 (IPTS) |
| San Mateo | 850 | 1,370 | 2,180 | 3,460 | 5,520 | |
| Total | 15,365 | 24,450 | 38,455 | 60,450 | 95,790 | (14) |

Table III-1-2-1 (20/20)

Telephone Demand Forecast

| Region IV | Province (ROMBLON) | | | | | |
|---|---|---|---|---|---|---|
| City/ Municipality | Number of Telephone Demands | | | | | Remarks |
| | 1986 | 1991 | 1996 | 2001 | 2006 | |
| Alcantara | 50 | 65 | 95 | 140 | 210 | ◉ ◉ |
| Banton | 65 | 90 | 130 | 190 | 290 | ◉ ◉ |
| Cajidiocan | 100 | 140 | 200 | 300 | 440 | ◉ ◉ |
| Calatrava | 20 | 25 | 40 | 55 | 80 | ◉ ◉ |
| Concepcion | 35 | 55 | 80 | 120 | 190 | ◉ ◉ |
| Corcuera | 55 | 80 | 110 | 170 | 240 | ◉ ◉ |
| Looc | 75 | 100 | 150 | 220 | 320 | ◉ ◉ |
| Magdiwang | 75 | 100 | 150 | 230 | 340 | ◉ ◉ |
| Odiongan | 210 | 300 | 430 | 640 | 940 | ◉ |
| Romblon | 240 | 340 | 510 | 750 | 1,120 | ◉ |
| San Agustin | 160 | 230 | 340 | 500 | 740 | ◉ |
| San Andres | 45 | 65 | 95 | 140 | 200 | ◉ ◉ |
| San Fernando | 95 | 140 | 200 | 290 | 430 | ◉ ◉ |
| San Jose | 15 | 20 | 25 | 40 | 60 | ◉ ◉ |
| Santa Fe | 15 | 20 | 30 | 45 | 65 | ◉ ◉ |
| Ferrol | 10 | 15 | 20 | 30 | 45 | |
| Total | 1,265 | 1,785 | 2,605 | 3,860 | 5,710 | (16) |

1-3 Telephone Density

The results of telephone demand forecast given in Table III-1-2-1 present estimated number of demands to be required in individual cities/municipalities in Regions III and IV in the respective forecast years. In making telephone density forecast in Regions III and IV for the respective forecast years, it is necessary to make correction to the results of telephone demand forecast given in Table III-1-2-1 by considering the scope of work to be implemented in Phases I and II, the time of commencing service and expansion schedule for the facilities to be operated by BUTEL and implementation schedules for facilities to be operated by private operating companies. The results of this correction are summarized in Table III-1-3-1 for the individual Regions.

Table III-1-3-1 Estimated Number of Subscribers in Regions III and IV

(Unit: thousand)

| Region \ Year | 1986 | 1991 | 1996 | 2001 | 2006 |
|---|---|---|---|---|---|
| Region III | 44 | 74 | 113 | 171 | 255 |
| Region IV | 50 | 87 | 134 | 201 | 298 |

From this table the estimated telephone density is obtained as given in Tables III-1-3-3 and III-1-3-4 together with the estimated population given in Table III-1-3-2.

Table III-1-3-2 Estimated Polulation in Regions III and IV

(Unit: thousand)

| Region \ Year | 1986 | 1991 | 1996 | 2001 | 2006 |
|---|---|---|---|---|---|
| Region III | 5,657 | 6,448 | 7,296 | 8,212 | 9,181 |
| Region IV | 6,873 | 7,534 | 8,219 | 8,934 | 9,662 |

Table III-1-3-3 Estimated Telephone Density in Regions III and IV (Estimated Number of Subscribers per 100 Inhabitants)

| Region \ Year | 1986 | 1991 | 1996 | 2001 | 2006 |
|---|---|---|---|---|---|
| Region III | 0.78 | 1.15 | 1.55 | 2.08 | 2.78 |
| Region IV | 0.73 | 1.15 | 1.63 | 2.25 | 3.08 |

Table III-1-3-4 Estimated Telephone Density in Regions III and IV (Estimated Telephone Sets per 100 Inhabitants)

| Region \ Year | 1986 | 1991 | 1996 | 2001 | 2006 |
|---|---|---|---|---|---|
| Region III | 1.09 | 1.49 | 2.00 | 2.68 | 3.59 |
| Region IV | 0.91 | 1.44 | 2.04 | 2.81 | 3.85 |

2. Telegraph Demand Forecast

2-1 Gentex

Telegraph demand forecast for gentex stations was made for gentex stations expected to handle more than 200 messages per month by using the telegraph traffic distribution of all existing telegraph offices in Regions III and IV. In 2001, about 80% of all telegraph traffic is to be processed by gentex stations. The estimated telegraph traffic distribution is shown in Fig. III-2-1-1.

The number of telegraph messages to be processed in future was estimated macroscopically in consideration of the tendency of population increase, the past rate of increase in the number of telegrams, and the features of individual cities/municipalities.

Note 1: The number of gentex telegrams in 1986 will be about 45% of the total number of telegrams.
The number of gentex telegrams in 2001 will be about 89% of the total number of telegrams.

Note 2: Total number of telegraph station: 330
Number of gentex stations to Commence Service in phase I: 38
Number of gentex stations to Commerce Service in phase II: 122

Note 3: Gentex stations are located in areas where more than 200 telegraph messages are to be processed a month.

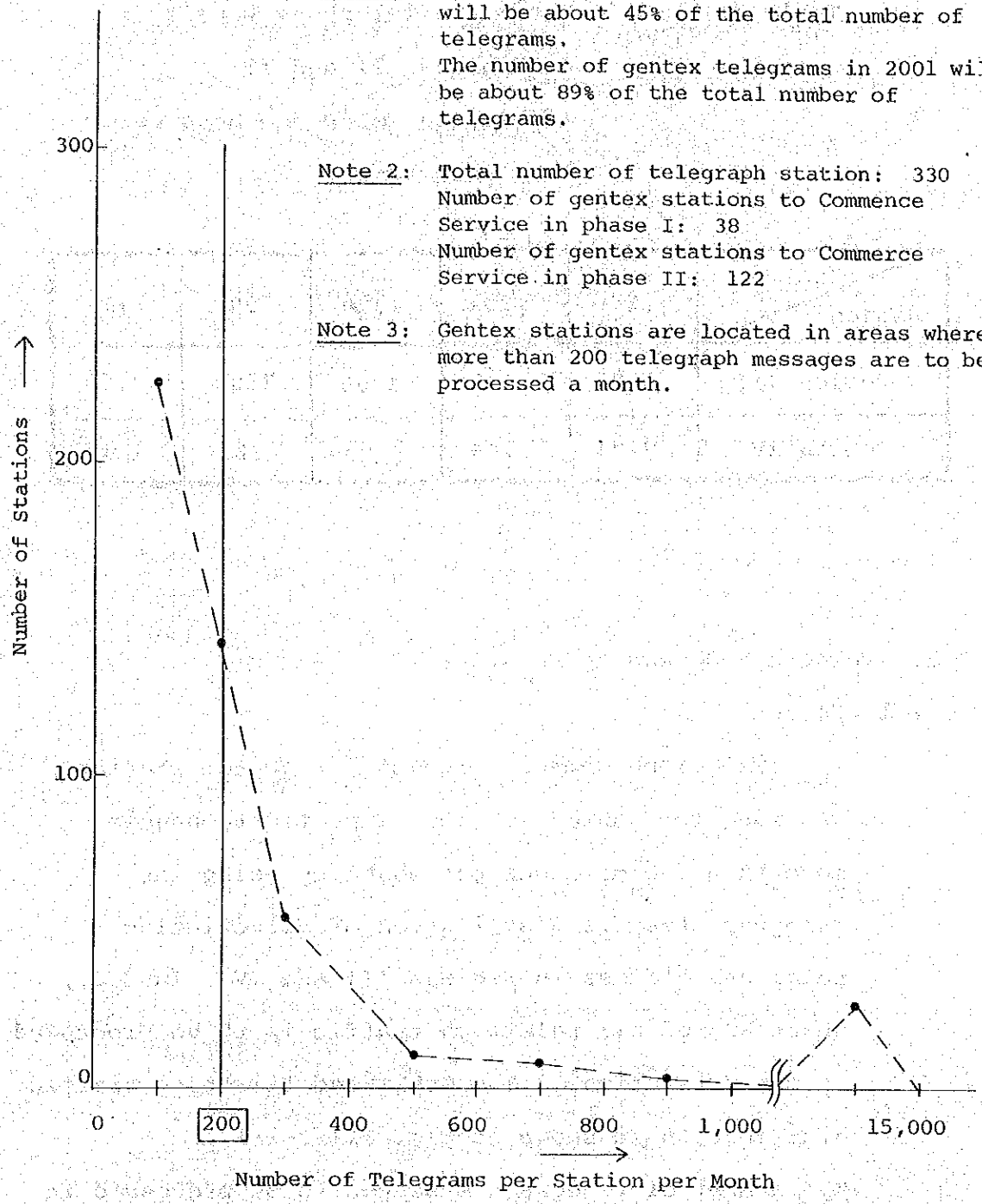



Fig. III-2-1-1 Estimated Telegraph Traffic Distribution (As for 1986)

The estimated number of telegraph messages to be processed in 1986 and 2001 are given in Table III-2-1-1. The trends of change in population and the number of telegrams in the Philippines are shown in Fig. III-2-1-2. It is generally said that the number of telegrams decreases with the spread or diffusion of telephone. In the case of Japan, for example, the rate of using telegram or the telegram transmission rate became saturated when the number of telephone sets per 100 inhabitants (telephone density) became about 6 and the telegram transmission rate decreased after the number of telephone sets per 100 inhabitants reached 7. The relationship between the telephone density and telegram transmission rate experienced in Japan is shown in Fig. III-2-1-3. By supposing that the same tendency as experienced in Japan will occur in the Philippines also and the current conditions of investment to telephone installation and population increment remain as they are, the number of telephone sets per 100 inhabitants to be reached in 2000 or so is estimated to be about 6. That is, the telegram transmission rate in the Philippines is estimated to increase until 2000 or so and then gradually decrease through a period of saturation.

It is recommendable to adjust the commencement of serivce at gentex stations to the commencement of service at telephone offices to be constructed in

Table III-2-1-1 (1/15) Telegraph Traffic Forecast

* α is a coefficient (1.0∿1.5) which depends on the features of the city/municipality. The figures of α are adopted as follows; 1st class = 1.5, 2nd = 1.4, 3rd = 1.3, 4th = 1.2, 5th = 1.1 and 6th class = 1.0.

** The estimation of parameter (1.2 or 1.5) is as under:
1.2 = (average population increment Rate per year from 1979 to 1985: 0.03) x 6 years + 1.0
1.5 = (average population increment Rate per year from 1979 to 1985: 0.03) x 6 years + (from 1985 to 1990: 0.025) x 5 years + (from 1990 to 2000: 0.02) x 10 years + 1.0

*** Upper figures are figures corresponding to 1986 and lower figures those corresponding to 2001.

**** o: Gentex station
x: Telegraph station to accept telegrams through telephone
-: Morse station

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 ** * Max[T1,T2]x1.2xα | 2001 ** * Max[T1,T2]x1.5xα | Total | O/G | I/C | I | II |
| Bataan | Abucay | 69 | 29 | 90 | 110 | - | - | - | x | |
| | Bagac | 81 | 109 | 140 | 180 | - | - | - | - | x |
| | Balanga | 1,178 | 1,508 | 2,350 | 2,940 | *** 0.36<br>0.45 | 0.20<br>0.25 | 0.16<br>0.20 | **** o | |
| | Dinalupihan | 285 | 273 | 410 | 510 | 0.07<br>0.09 | 0.04<br>0.05 | 0.03<br>0.04 | o | |
| | Hermosa | 54 | 52 | 70 | 90 | - | - | - | - | - |
| | Limay | 224 | 161 | 380 | 470 | 0.06<br>0.08 | 0.03<br>0.04 | 0.03<br>0.04 | - | o |
| | Mariveles | 994 | 572 | 1,310 | 1,640 | 0.22<br>0.28 | 0.12<br>0.15 | 0.10<br>0.13 | o | |
| | Morong | 73 | 33 | 100 | 120 | - | - | - | - | - |
| | Orani | 21 | 41 | 60 | 80 | - | - | - | - | - |
| | Pilar | 111 | 59 | 150 | 180 | - | - | - | - | x |
| | Samal | 78 | 22 | 100 | 130 | - | - | - | x | |
| | Orion | 159 | 111 | 210 | 260 | 0.04<br>0.04 | 0.02<br>0.02 | 0.02<br>0.02 | - | o |
| | 12 | (3,327) | (2,970) | (5,380) | (6,720) | 0.65<br>0.94 | 0.36<br>0.51 | 0.29<br>0.43 | o3<br>x2 | o2<br>x2 |

Table III-2-1-1 (2/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 ** * Max.[T1,T2]x1.2xα | 2001 ** * Max[T1,T2]x1.5xα | Total | O/G | I/C | I | II |
| Nueva Ecija | Bongabong | 119 | 46 | 160 | 200 | - | - | - | - | - |
| | Cabanatuan City | 2,039 | 2,015 | 3,430 | 4,280 | 0.52<br>0.65 | 0.28<br>0.35 | 0.24<br>0.3 | O | |
| | Cabiao | 83 | 219 | 290 | 360 | 0.05<br>0.06 | 0.03<br>0.03 | 0.02<br>0.03 | O | |
| | CLSU(munos) | 474 | 466 | 630 | 780 | 0.11<br>0.13 | 0.06<br>0.07 | 0.05<br>0.06 | O | |
| | Caranglan | 46 | 30 | 60 | 80 | - | - | - | - | X |
| | Cuyapo | 66 | 103 | 150 | 190 | - | - | - | - | |
| | Gabaldon | 22 | 29 | 40 | 50 | - | - | - | - | X |
| | Gapan | - | 207 | 320 | 400 | 0.05<br>0.07 | 0.03<br>0.04 | 0.02<br>0.03 | - | O |
| | Gen. Natividad | 58 | 65 | 90 | 110 | - | - | - | - | X |
| | Gen. Tinio | 106 | 69 | 140 | 180 | - | - | - | - | - |
| | Guimba | 391 | 291 | 610 | 760 | 0.10<br>0.13 | 0.06<br>0.07 | 0.04<br>0.06 | O | |
| | Jaen | 140 | 64 | 190 | 230 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | O | |
| | Laur | 114 | 37 | 150 | 190 | - | - | - | - | - |
| | Licab | 86 | 73 | 110 | 140 | - | - | - | - | - |
| | Llanera | 77 | 70 | 100 | 130 | - | - | - | - | - |
| | Lupao | 207 | 73 | 270 | 340 | 0.05<br>0.06 | 0.03<br>0.03 | 0.02<br>0.03 | - | O |
| | Munoz | 304 | 232 | 440 | 550 | 0.07<br>0.09 | 0.04<br>0.05 | 0.03<br>0.04 | - | O |
| | Nampicuan | 32 | 12 | 40 | 50 | - | - | - | - | X |
| | Palayan City | 158 | 98 | 210 | 260 | 0.04<br>0.04 | 0.02<br>0.02 | 0.02<br>0.02 | - | O |
| | Pantabangan | 65 | 35 | 90 | 110 | - | - | - | X | |
| | Penaranda | 83 | 118 | 160 | 200 | - | - | - | - | X |
| | Quezon | 129 | 80 | 170 | 210 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | O | |
| | Rizal | 123 | 114 | 180 | 220 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | San Antonio | 142 | 163 | 240 | 290 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | O | |

Table III-2-1-1 (3/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 ** * Max[T1,T2]x1.2xα | 2001 ** * Max[T1,T2]x1.5xα | Total | O/G | I/C | I | II |
| Nueva Ecija | San Isidro | 101 | 68 | 130 | 170 | - | - | - | - | - |
| | San Jose City | 380 | 314 | 590 | 740 | 0.10<br>0.12 | 0.05<br>0.07 | 0.05<br>0.05 | O | |
| | San Leonardo | 143 | 81 | 190 | 240 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Sta. Rosa | 211 | 123 | 280 | 350 | 0.05<br>0.06 | 0.03<br>0.03 | 0.02<br>0.03 | O | |
| | Sto. Domingo | 153 | 96 | 200 | 250 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Talavera | 264 | 123 | 380 | 480 | 0.06<br>0.08 | 0.03<br>0.04 | 0.03<br>0.04 | - | O |
| | Talugtog | 87 | 66 | 120 | 140 | - | - | - | - | - |
| | Aliaga | - | 31 | 40 | 50 | - | - | - | X | |
| | Zaragoza | 82 | - | 110 | 140 | - | - | - | X | |
| | 33 | (6,485) | (5,611) | (10,280) | (12,850) | 1.03<br>1.74 | 0.57<br>0.93 | 0.46<br>0.81 | O9<br>X3 | O8<br>X5 |
| Pampanga | Angeles City | 1,077 | 1,002 | 1,940 | 2,420 | 0.30<br>0.37 | 0.16<br>0.20 | 0.14<br>0.17 | O | |
| | Apalit | 101 | 162 | 230 | 290 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | - | O |
| | Arayat | 80 | 79 | 110 | 130 | - | - | - | - | - |
| | Bacolor | 96 | 69 | 140 | 170 | - | - | - | - | - |
| | Basa Air Base | 58 | 80 | 110 | 130 | - | - | - | - | - |
| | Candaba | 7 | - | 10 | 10 | - | - | - | - | - |
| | Florida Blanca | 153 | 379 | 550 | 680 | 0.09<br>0.11 | 0.05<br>0.16 | 0.04<br>0.05 | O | |
| | Guagua | 430 | 127 | 720 | 900 | 0.12<br>0.15 | 0.07<br>0.08 | 0.05<br>0.07 | O | |
| | Lubao | 158 | 147 | 250 | 310 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | - | O |
| | Mabalacat | 49 | 105 | 150 | 190 | - | - | - | - | - |
| | Macabebe | 31 | 28 | 50 | 60 | - | - | - | - | - |
| | Magalang | 51 | 30 | 70 | 80 | - | - | - | X | |
| | Masantol | 79 | 35 | 110 | 140 | - | - | - | - | - |

Table III-2-1-1 (4/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 ** * Max[T1,T2]x1.2xα | 2001 ** * Max[T1,T2]x1.5xα | Total | O/G | I/C | I | II |
| Pampanga | Mexico | 23 | 15 | 30 | 40 | - | - | - | - | - |
| | Minalin | 52 | 15 | 70 | 90 | - | - | - | - | - |
| | San Fernando | 564 | 3,351 | 6,030 | 7,540 | 0.92<br>1.15 | 0.50<br>0.63 | 0.42<br>0.52 | O | |
| | San Luis | - | - | 50 | 60 | - | - | - | - | - |
| | San Simon | 44 | 62 | 80 | 100 | - | - | - | - | x |
| | Sta.Ana | 36 | 37 | 50 | 60 | - | - | - | - | - |
| | Del Carmen | - | 1 | 1 | 1 | - | - | - | - | - |
| | Sto. Tomas | 36 | 33 | 50 | 60 | - | - | - | - | - |
| | PAC | 36 | 29 | 50 | 70 | - | - | - | - | - |
| | 22 | (3,161) | (5,786) | (10,840) | (13,540) | 1.43<br>1.88 | 0.78<br>1.03 | 0.65<br>0.85 | O4<br>x1 | O2<br>x1 |
| Tarlac | Anao | 8 | 2 | 10 | 10 | - | - | - | - | x |
| | Bamban | 63 | 58 | 80 | 100 | - | - | - | - | - |
| | Camiling | 255 | 189 | 400 | 500 | 0.07<br>0.08 | 0.04<br>0.05 | 0.03<br>0.03 | - | O |
| | Capas | 63 | 92 | 130 | 170 | - | - | - | - | - |
| | Concepcion | 137 | 50 | 210 | 270 | 0.04<br>0.04 | 0.02<br>0.02 | 0.02<br>0.02 | - | O |
| | Gerona | 257 | 142 | 370 | 460 | 0.06<br>0.08 | 0.03<br>0.04 | 0.03<br>0.04 | O | |
| | La Paz | 73 | 61 | 100 | 120 | - | - | - | x | |
| | Paniqui | 73 | 167 | 260 | 300 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | - | O |
| | Moncada | 94 | 111 | 160 | 200 | 0.03<br>0.03 | 0.02<br>0.02 | 0.01<br>0.01 | - | O |
| | Ramos | 22 | 27 | 40 | 50 | - | - | - | - | x |
| | San Manuel | 61 | 31 | 80 | 100 | - | - | - | - | x |
| | San Miguel | 62 | 81 | 120 | 150 | - | - | - | - | - |
| | Sta. Ignacia | 64 | 54 | 80 | 110 | - | - | - | - | - |

Table III-2-1-1 (5/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 ** * Max[T1,T2]x1.2xα | 2001 ** * Max[T1,T2]x1.5xα | Total | O/G | I/C | I | II |
| Tarlac | Mayantoc | - | 25 | 30 | 40 | - | - | - | - | x |
| | Tarlac | 1,365 | 1,973 | 3,550 | 4,440 | 0.54<br>0.68 | 0.30<br>0.37 | 0.24<br>0.31 | o | |
| | Victoria | 237 | 115 | 340 | 430 | 0.06<br>0.07 | 0.03<br>0.04 | 0.03<br>0.03 | - | o |
| | 16 | (2,834) | (3,178) | (5,970) | (7,460) | 0.60<br>1.03 | 0.33<br>0.57 | 0.27<br>0.46 | o2<br>x1 | o5<br>x4 |
| Zambales | Botolan | 113 | 58 | 150 | 190 | - | - | - | x | |
| | Cabangan | 74 | 29 | 100 | 120 | - | - | - | - | - |
| | Candelaria | 81 | 28 | 110 | 130 | - | - | - | - | x |
| | Iba | 1,269 | 785 | 1,680 | 2,090 | 0.26<br>0.32 | 0.14<br>0.17 | 0.12<br>0.15 | o | |
| | Castellejos | 81 | 62 | 110 | 130 | - | - | - | - | - |
| | Masinloc | - | 721 | 1,130 | 1,410 | 0.19<br>0.24 | 0.10<br>0.13 | 0.09<br>0.11 | - | o |
| | Olongapo City | 4,124 | 3,254 | 7,420 | 9,280 | 1.13<br>1.42 | 0.62<br>0.77 | 0.51<br>0.65 | o | |
| | Palauig | 74 | 52 | 100 | 120 | - | - | - | - | x |
| | San Antonio | 120 | 71 | 170 | 220 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | o |
| | San Felipe | 105 | 68 | 140 | 170 | - | - | - | - | - |
| | San Marcelino | 110 | 93 | 160 | 200 | - | - | - | - | - |
| | San Narciso | 31 | 15 | 40 | 50 | - | - | - | - | - |
| | Sta.Cruz | 212 | 32 | 310 | 380 | 0.05<br>0.06 | 0.03<br>0.04 | 0.02<br>0.02 | - | o |
| | Subic | 160 | 83 | 230 | 290 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | - | o |
| | 14 | (6,554) | (5,351) | (11,830) | (14,790) | 1.39<br>2.13 | 0.76<br>1.16 | 0.63<br>0.97 | o2<br>x1 | o4<br>x2 |
| Bulacan | Angat | 21 | 27 | 40 | 50 | - | - | - | x | |
| | Balagtas | 295 | 85 | 430 | 530 | 0.07<br>0.09 | 0.04<br>0.05 | 0.03<br>0.04 | - | o |
| | Baliuag | 533 | 303 | 900 | 1,120 | 0.15<br>0.19 | 0.08<br>0.10 | 0.07<br>0.09 | o | |

Table III-2-1-1 (6/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 Max[T1,T2]x1.2xα** * | 2001 Max[T1,T2]x1.5xα** * | Total | O/G | I/C | I | II |
| Bulacan | Bocaue | 244 | 230 | 350 | 440 | 0.06<br>0.07 | 0.03<br>0.04 | 0.03<br>0.03 | - | O |
| | Bulacan | 70 | 51 | 100 | 130 | - | - | - | X | |
| | Bustos | - | 63 | 90 | 110 | - | - | - | - | - |
| | Calumpit | 141 | 67 | 200 | 250 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Guiginto | 97 | 80 | 140 | 180 | - | - | - | - | - |
| | Hagonoy | 343 | 142 | 540 | 670 | 0.09<br>0.11 | 0.05<br>0.06 | 0.04<br>0.05 | O | |
| | Malolos | 688 | 1,487 | 2,500 | 3,120 | 0.38<br>0.48 | 0.21<br>0.26 | 0.17<br>0.22 | O | |
| | Marilao | 140 | 83 | 200 | 250 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Meycavayan | - | 230 | 390 | 480 | 0.06<br>0.08 | 0.03<br>0.04 | 0.03<br>0.04 | - | O |
| | Norzagaray | - | 43 | 70 | 80 | - | - | - | - | - |
| | Obando | 107 | 90 | 150 | 190 | - | - | - | - | - |
| | Pandi | 88 | 41 | 120 | 150 | - | - | - | X | |
| | Paombong | 60 | 21 | 90 | 120 | - | - | - | - | - |
| | Plaridel | 122 | 77 | 180 | 220 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Pulilan | 135 | 44 | 180 | 220 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | San Ildefonso | 263 | 120 | 320 | 470 | 0.05<br>0.08 | 0.03<br>0.04 | 0.02<br>0.04 | O | |
| | San Miguel | - | 151 | 240 | 290 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | - | O |
| | San Rafael | 103 | 75 | 150 | 190 | - | - | - | X | |
| | Sta. Maria | 168 | 129 | 260 | 330 | 0.04<br>0.06 | 0.02<br>0.03 | 0.02<br>0.03 | - | O |
| | Sapang palay | 87 | 51 | 120 | 140 | - | - | - | - | - |
| | 23 | (3,705) | (3,690) | (7,730) | (9,740) | 0.67<br>1.37 | 0.37<br>0.73 | 0.30<br>0.64 | O4<br>X4 | O9 |
| Batangas | Agoncillo | 34 | 22 | 50 | 60 | - | - | - | X | |
| | Alitagtag | 96 | 94 | 140 | 170 | - | - | - | - | X |

Table III-2-1-1 (7/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 Max[T1,T2]x1.2x$\alpha$ ** * | 2001 Max[T1,T2]x1.5x$\alpha$ ** * | Total | O/G | I/C | I | II |
| Batangas | Balayan | 94 | 137 | 210 | 270 | 0.04<br>0.04 | 0.02<br>0.02 | 0.02<br>0.02 | - | o |
| | Batangas City | - | 8,263 | 14,870 | 18,590 | 2.27<br>2.84 | 1.24<br>1.55 | 1.03<br>1.29 | o | |
| | Bauan | 268 | 287 | 520 | 650 | 0.09<br>0.11 | 0.05<br>0.06 | 0.04<br>0.05 | o | |
| | Calaca | 145 | 42 | 190 | 240 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | o | |
| | Calatagan | 79 | 79 | 110 | 140 | - | - | - | - | - |
| | Guenca | 92 | 19 | 130 | 170 | - | - | - | - | - |
| | Fernando Air Base | 92 | 212 | 280 | 350 | 0.05<br>0.06 | 0.03<br>0.03 | 0.02<br>0.03 | - | o |
| | Ibaan | 39 | 90 | 130 | 160 | - | - | - | x | |
| | Lipa City | - | 1,141 | 1,920 | 2,400 | 0.29<br>0.37 | 0.16<br>0.20 | 0.13<br>0.17 | o | |
| | Lobo | 56 | 73 | 100 | 120 | - | - | - | - | x |
| | Lian | 18 | 12 | 20 | 30 | - | - | - | - | - |
| | Mabini | 40 | 47 | 60 | 80 | - | - | - | - | - |
| | Maluar | 23 | 57 | 80 | 90 | - | - | - | - | - |
| | Lemery | 50 | 143 | 210 | 260 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | o |
| | Mataasna-kahoy | - | 40 | 50 | 70 | - | - | - | - | x |
| | Nasugubu | 130 | 449 | 750 | 940 | 0.13<br>0.16 | 0.07<br>0.09 | 0.06<br>0.07 | o | |
| | Rosario | 154 | 65 | 220 | 280 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | - | o |
| | San Jose | 121 | 136 | 180 | 220 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | o |
| | San Luis | 52 | 96 | 130 | 160 | - | - | - | - | x |
| | San Nicolas | 51 | 102 | 120 | 150 | - | - | - | - | x |
| | Sta Teresita | 5 | 33 | 40 | 50 | - | - | - | - | x |
| | Sto. Tomas | - | 58 | 90 | 110 | - | - | - | - | - |
| | Taal | 87 | 100 | 160 | 200 | - | - | - | - | - |

Table III-2-1-1 (8/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T1) | 1986 Max[T1,T2]x1.2xα ** * | 2001 Max[T1,T2]x1.5xα ** * | Total | O/G | I/C | I | II |
| Batangas | Talisay | 43 | 68 | 90 | 110 | - | - | - | - | - |
| | Taysan | 31 | 32 | 40 | 50 | - | - | - | - | x |
| | Tingloy | - | 61 | 70 | 90 | - | - | - | - | x |
| | Tanauan | 158 | - | 270 | 330 | 0.04<br>0.06 | 0.02<br>0.03 | 0.02<br>0.03 | - | o |
| | Tuy | 35 | 32 | 50 | 60 | - | - | - | - | x |
| | San Juan | 125 | 61 | 180 | 230 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | o |
| | San Pascual | - | 69 | 110 | 140 | - | - | - | - | - |
| | P. Garica | 15 | 19 | 30 | 30 | - | - | - | x | |
| | 33 | (2,133) | (12,139) | (21,600) | (26,990) | 2.81<br>3.85 | 1.54<br>2.09 | 1.27<br>1.76 | o5<br>x3 | o7<br>x9 |
| Laguna | Alaminos | - | 45 | 70 | 80 | - | - | - | - | - |
| | Bay | 31 | 35 | 50 | 60 | - | - | - | - | - |
| | Binan | 49 | 208 | 320 | 410 | 0.05<br>0.07 | 0.03<br>0.04 | 0.02<br>0.03 | - | o |
| | Cabuyao | 53 | 136 | 180 | 220 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | o |
| | Calamba | 2,224 | 8,464 | 14,220 | 17,770 | 2.17<br>2.72 | 1.18<br>1.48 | 0.99<br>1.24 | - | o |
| | Calauan | - | 22 | 30 | 40 | - | - | - | - | - |
| | Canlubang | 6 | 38 | 50 | 60 | - | - | - | - | - |
| | Cavinti | 4 | 3 | 10 | 10 | - | - | - | - | - |
| | (LOS. Banos) College | - | 722 | 950 | 1,190 | 0.16<br>0.20 | 0.09<br>0.11 | 0.07<br>0.09 | - | o |
| | Kalayaan | 43 | 204 | 250 | 310 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | - | o |
| | Liliw | 152 | 19 | 200 | 250 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | o |
| | Los Banos | 216 | 161 | 310 | 390 | 0.05<br>0.07 | 0.03<br>0.04 | 0.02<br>0.03 | - | o |
| | Luisiana | 9 | 30 | 40 | 50 | - | - | - | - | - |
| | Lumban | 24 | 75 | 100 | 120 | - | - | - | - | - |
| | Mabitac | 30 | 232 | 280 | 350 | 0.05<br>0.06 | 0.03<br>0.03 | 0.02<br>0.03 | - | o |

Table III-2-1-1 (9/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 Max[T1,T2]x1.2x$\alpha$ ** * | 2001 Max[T1,T2]x1.5x$\alpha$ ** * | Total | O/G | I/C | I | II |
| Laguna | Magdalena | 103 | 135 | 180 | 220 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Majayjay | 57 | 212 | 280 | 350 | 0.05<br>0.06 | 0.03<br>0.03 | 0.02<br>0.03 | - | O |
| | Nagcarlan | 27 | 38 | 50 | 60 | - | - | - | - | - |
| | Paete | 18 | 39 | 60 | 70 | - | - | - | - | - |
| | Pagsanjan | 42 | 66 | 100 | 120 | - | - | - | - | - |
| | Pakil | - | 30 | 40 | 50 | - | - | - | - | X |
| | Pangil | 23 | 30 | 40 | 50 | - | - | - | - | X |
| | Pila | - | 66 | 90 | 110 | - | - | - | - | X |
| | Rizal | 5 | 43 | 50 | 70 | - | - | - | - | X |
| | San Pablo City | 1,553 | 1,292 | 2,610 | 3,260 | 0.48<br>0.60 | 0.26<br>0.33 | 0.22<br>0.27 | - | O |
| | San Pedro | 58 | 204 | 320 | 400 | 0.05<br>0.07 | 0.03<br>0.04 | 0.02<br>0.03 | - | O |
| | Sta.Cruz | 190 | 408 | 640 | 800 | 0.09<br>0.11 | 0.05<br>0.06 | 0.04<br>0.05 | - | O |
| | Sta.Maria | 20 | 70 | 90 | 120 | - | - | - | - | - |
| | Sta.Rosa | 14 | 50 | 70 | 90 | - | - | - | - | - |
| | Siniloan | 32 | 44 | 60 | 70 | - | - | - | - | X |
| | Victoria | 48 | 39 | 60 | 80 | - | - | - | - | X |
| | 31 | (5,031) | (13,160) | (21,770) | (27,220) | -<br>4.13 | -<br>2.25 | -<br>1.88 | - | O13<br>X6 |
| Marinduque | Boac | 745 | 1,872 | 2,920 | 3,650 | 0.49<br>0.61 | 0.27<br>0.33 | 0.22<br>0.28 | O | |
| | Buenavista | - | 11 | 20 | 20 | - | - | - | - | - |
| | Gasan | 266 | 107 | 380 | 480 | 0.06<br>0.08 | 0.03<br>0.04 | 0.03<br>0.04 | - | O |
| | Mogbog | 88 | 88 | 140 | 170 | - | - | - | - | - |
| | Sta.Cruz | - | 10 | 20 | 20 | - | - | - | - | - |
| | Torrijos | 18 | 25 | 40 | 50 | - | - | - | - | - |
| | 6 | (1,117) | (2,113) | (3,510) | (4,390) | 0.49<br>0.69 | 0.27<br>0.37 | 0.22<br>0.32 | O1 | O1 |

Table III-2-1-1 (10/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 ** * Max[T1,T2]x1.2xα | 2001 ** * Max[T1,T2]x1.5xα | Total | O/G | I/C | I | II |
| Oriental Mindoro | Bansud | - | - | 40 | 50 | - | - | - | - | - |
| | Bongabon | 142 | 87 | 190 | 230 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | O | |
| | Bulalacao | 115 | 120 | 160 | 200 | - | - | - | - | X |
| | Calapan | 2,455 | 1,528 | 3,830 | 4,790 | 0.59<br>0.73 | 0.32<br>0.40 | 0.27<br>0.33 | O | |
| | Gloria | - | 34 | 50 | 60 | - | - | - | X | |
| | Mansalay | - | 29 | 40 | 50 | - | - | - | - | X |
| | Naujan | - | 54 | 80 | 100 | - | - | - | X | |
| | Pinamalayan | - | 89 | 130 | 160 | - | - | - | - | - |
| | Pola | - | - | 40 | 50 | - | - | - | - | - |
| | Puerto Galera | 92 | 31 | 120 | 150 | - | - | - | X | |
| | Roxas | - | 101 | 130 | 170 | - | - | - | X | |
| | San Teodoro | - | 16 | 20 | 20 | - | - | - | - | X |
| | Socorro | 27 | 52 | 70 | 90 | - | - | - | X | |
| | Victoria | 135 | 180 | 240 | 300 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | O | |
| | 14 | (2,966) | (2,321) | (5,120) | (6,410) | 0.66<br>0.82 | 0.36<br>0.45 | 0.30<br>0.37 | O3<br>X5 | X3 |
| Occidental Mindoro | Abra de Ilog | - | 3 | 4 | 5 | - | - | - | - | X |
| | Galintaan | 13 | 8 | 21 | 28 | - | - | - | - | X |
| | Lubang | - | 4 | 5 | 7 | - | - | - | X | |
| | Magsayasay | 16 | 6 | 20 | 30 | - | - | - | - | X |
| | Mamburao | 499 | 380 | 660 | 820 | 0.11<br>0.14 | 0.06<br>0.08 | 0.05<br>0.06 | O | |
| | Palauan | 96 | 164 | 220 | 270 | 0.04<br>0.04 | 0.02<br>0.02 | 0.02<br>0.02 | - | O |
| | Sablayan | 159 | 38 | 230 | 290 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | O | |
| | San Jose | 1,096 | 3 | 1,710 | 2,140 | 0.31<br>0.39 | 0.17<br>0.21 | 0.14<br>0.18 | O | |
| | Sta.Cruz | 79 | 177 | 210 | 270 | 0.04<br>0.04 | 0.02<br>0.02 | 0.02<br>0.02 | - | O |
| | 9 | (1,958) | (783) | (3,080) | (3,840) | 0.46<br>0.66 | 0.25<br>0.36 | 0.21<br>0.30 | O3<br>X1 | O2<br>X3 |

Table III-2-1-1 (11/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 Max[T1,T2]x1.2xα** * | 2001 Max[T1,T2]x1.5xα** * | Total | O/G | I/C | I | II |
| Quezon | Agdangan | 48 | 22 | 60 | 70 | - | - | - | - | X |
| | Alabat | 107 | 120 | 160 | 200 | - | - | - | - | X |
| | Aloneros | 111 | 14 | 150 | 180 | - | - | - | - | - |
| | Atimonan | - | - | 50 | 60 | - | - | - | - | - |
| | Buenavista | 69 | 119 | 140 | 180 | - | - | - | - | X |
| | Burdeos | - | - | 100 | 130 | - | - | - | - | - |
| | Calauag | 144 | 37 | 210 | 260 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Candelaria | 215 | 126 | 340 | 420 | 0.06<br>0.07 | 0.03<br>0.04 | 0.03<br>0.03 | - | O |
| | Catanauan | 536 | 315 | 710 | 880 | 0.12<br>0.15 | 0.06<br>0.08 | 0.06<br>0.07 | - | O |
| | Dolores | - | - | 100 | 130 | - | - | - | - | - |
| | Gen.Luna | 152 | 98 | 200 | 250 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Gen.Nakar | 77 | 4 | 100 | 130 | - | - | - | - | X |
| | Guinayangan | 98 | 467 | 730 | 840 | 0.12<br>0.14 | 0.07<br>0.08 | 0.05<br>0.06 | - | O |
| | Gumaca | 1,432 | 2,471 | 3,560 | 4,450 | 0.54<br>0.68 | 0.29<br>0.37 | 0.25<br>0.31 | - | O |
| | Hondagua | 57 | 25 | 80 | 90 | - | - | - | - | - |
| | Infanta | 325 | - | 430 | 540 | 0.07<br>0.09 | 0.04<br>0.05 | 0.03<br>0.04 | - | O |
| | Jumalig | - | - | 10 | 10 | - | - | - | - | - |
| | Lopez | 116 | 124 | 180 | 220 | 0.03<br>0.03 | 0.02<br>0.02 | 0.01<br>0.01 | - | O |
| | Lucban | - | 34 | 50 | 60 | - | - | - | - | - |
| | Lucena City | - | 6,704 | 11,260 | 14,080 | 1.72<br>2.15 | 0.94<br>1.17 | 0.78<br>0.98 | - | O |
| | Macalelon | 132 | 89 | 170 | 220 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Mauban | 309 | 226 | 410 | 510 | 0.07<br>0.09 | 0.04<br>0.05 | 0.03<br>0.04 | - | O |
| | Mulanay | 142 | 45 | 190 | 230 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Padre Burgos | 73 | 48 | 100 | 120 | - | - | - | - | - |
| | Pagbilao | 57 | - | 80 | 100 | - | - | - | - | - |

Table III-2-1-1 (12/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 ** * Max[T1,T2]x1.2xα | 2001 ** * Max[T1,T2]x1.5xα | Total | O/G | I/C | I | II |
| Quezon | Panukulan | 18 | 39 | 50 | 60 | - | - | - | - | X |
| | Patnanungan | - | 44 | 50 | 70 | - | - | - | - | X |
| | Perez | 85 | 65 | 100 | 130 | - | - | - | - | X |
| | Pitogo | 208 | 76 | 280 | 340 | 0.05<br>0.06 | 0.03<br>0.03 | 0.02<br>0.03 | - | O |
| | Plaridel | 67 | 49 | 80 | 100 | - | - | - | - | X |
| | Pollilo | 156 | 68 | 210 | 260 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | X |
| | Quezon | 81 | 39 | 110 | 130 | - | - | - | - | X |
| | Real | - | 1 | 1 | 1 | - | - | - | - | X |
| | Sampaloc | 88 | 105 | 140 | 170 | - | - | - | - | - |
| | San Andres | - | 53 | 60 | 80 | - | - | - | - | X |
| | San Antonio | - | 16 | 20 | 30 | - | - | - | - | X |
| | San Franciso | 61 | 55 | 80 | 100 | - | - | - | - | X |
| | San Narciso | 21 | 78 | 100 | 130 | - | - | - | - | X |
| | Sariaya | - | 12 | 20 | 20 | - | - | - | - | - |
| | Tagkawayan | 13 | 5 | 20 | 20 | - | - | - | - | - |
| | Tayabas | 8 | 31 | 50 | 60 | - | - | - | - | - |
| | Tiaong | 64 | 36 | 90 | 120 | - | - | - | - | - |
| | Unisan | 201 | 260 | 340 | 430 | 0.06<br>0.07 | 0.03<br>0.04 | 0.03<br>0.03 | - | O |
| | Baler | 363 | 407 | 540 | 670 | 0.09<br>0.11 | 0.05<br>0.06 | 0.04<br>0.05 | - | O |
| | Casiguran | - | 50 | 70 | 80 | - | - | - | - | X |
| | Dilasag | - | 2 | 3 | 3 | - | - | - | - | X |
| | Dinalungan | - | 6 | 8 | 10 | - | - | - | - | X |
| | Dingalan | - | 2 | 2 | 3 | - | - | - | - | X |
| | Dipaculao | 245 | 152 | 320 | 400 | 0.05<br>0.07 | 0.03<br>0.04 | 0.02<br>0.03 | - | X |

Table III-2-1-1 (13/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 ** * Max[T1,T2]x1.2xα | 2001 ** * Max[T1,T2]x1.5xα | Total | O/G | I/C | I | II |
| Quezon | Maria Aurora | - | 26 | 30 | 40 | - | - | - | - | X |
| | San Luis | 78 | 30 | 100 | 130 | - | - | - | - | X |
| | 51 | (5,693) | (12,857) | (22,410) | (27,950) | -<br>3.77 | -<br>2.07 | -<br>1.70 | - | O15<br>X22 |
| Palawan | Aborlan | - | 10 | 10 | 20 | - | - | - | - | X |
| | Agutaya | - | 9 | 10 | 10 | - | - | - | - | X |
| | Araceli | 44 | 14 | 50 | 70 | - | - | - | - | X |
| | Balabac | 72 | 50 | 100 | 120 | - | - | - | - | X |
| | B. Point | - | 27 | 40 | 50 | - | - | - | - | - |
| | Busuanga | 20 | 5 | 20 | 30 | - | - | - | - | X |
| | Cagayancillo | 80 | 114 | 140 | 170 | - | - | - | - | X |
| | Coron | 154 | 70 | 200 | 250 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Culion | 277 | 513 | 680 | 850 | 0.11<br>0.14 | 0.06<br>0.08 | 0.05<br>0.06 | - | O |
| | Cuyo | - | 9 | 10 | 20 | - | - | - | - | - |
| | El Nido | 101 | 143 | 190 | 240 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Linapacan | 42 | 58 | 70 | 90 | - | - | - | - | X |
| | Puerto Princesa | 2,072 | 1,563 | 3,480 | 4,350 | 0.53<br>0.66 | 0.29<br>0.36 | 0.24<br>0.30 | - | O |
| | Narra | - | 120 | 160 | 200 | - | - | - | - | - |
| | Quezon | 44 | 11 | 60 | 70 | - | - | - | - | - |
| | San Vicente | - | 16 | 20 | 30 | - | - | - | - | X |
| | Taytay | 50 | 30 | 70 | 80 | - | - | - | - | - |
| | 17 | (2,956) | (2,762) | (5,300) | (6,630) | -<br>0.88 | -<br>0.48 | -<br>0.40 | - | O4<br>X7 |
| Romblon | Alcantara | 155 | 47 | 190 | 230 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Banton | 203 | 114 | 240 | 310 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | - | O |
| | Cajidiocan | 15 | 2 | 20 | 30 | - | - | - | - | X |

Table III-2-1-1 (14/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 (T1) | 1979 (T2) | 1986 ** * Max[T1,T2]x1.2xα | 2001 ** * Max[T1,T2]x1.5xα | Total | O/G | I/C | I | II |
| Romblon | Calatrava | 57 | 8 | 80 | 90 | - | - | - | - | x |
| | Concepcion | 86 | 63 | 100 | 130 | - | - | - | - | x |
| | Corcuera | 63 | 32 | 80 | 100 | - | - | - | - | x |
| | Looc | 55 | 173 | 230 | 290 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | - | o |
| | Odiongan | 800 | 403 | 1,060 | 1,320 | 0.19<br>0.24 | 0.11<br>0.13 | 0.08<br>0.11 | o | |
| | Romblon | 2,412 | 715 | 3,180 | 3,980 | 0.49<br>0.61 | 0.27<br>0.33 | 0.22<br>0.28 | o | |
| | San Agustin | 96 | 52 | 130 | 160 | - | - | - | x | |
| | San Fernando | 279 | 1,114 | 1,340 | 1,670 | 0.25<br>0.31 | 0.13<br>0.17 | 0.12<br>0.14 | - | o |
| | San Jose | 83 | 62 | 100 | 130 | - | - | - | - | x |
| | San Andres | 23 | 16 | 30 | 40 | - | - | - | - | x |
| | San Vicente | - | 4 | 5 | 7 | - | - | - | - | - |
| | Sta.Fe | 46 | 7 | 60 | 80 | - | - | - | - | x |
| | Tugdan | 28 | 9 | 40 | 50 | - | - | - | - | - |
| | 16 | (4,401) | (2,821) | (6,860) | (8,580) | 0.98<br>1.30 | 0.68<br>0.71 | 0.30<br>0.59 | o2<br>x1 | o4<br>x7 |
| Cavite | Alfonso | 80 | 39 | 110 | 130 | - | - | - | - | - |
| | Amadeo | 17 | 8 | 20 | 30 | - | - | - | - | - |
| | Bacoor | 47 | 19 | 70 | 90 | - | - | - | - | - |
| | Cavite City | 430 | 975 | 1,640 | 2,050 | 0.25<br>0.31 | 0.14<br>0.17 | 0.11<br>0.14 | - | o |
| | Dasmarinas | 46 | 27 | 60 | 80 | - | - | - | - | - |
| | Gen.Emilio Againaldo | 23 | 14 | 30 | 40 | - | - | - | - | - |
| | Gen. Trias | 62 | 5 | 90 | 110 | - | - | - | - | - |
| | Imus | 211 | 209 | 330 | 410 | 0.06<br>0.07 | 0.03<br>0.04 | 0.03<br>0.03 | - | o |
| | Indang | 32 | 17 | 50 | 60 | - | - | - | - | - |
| | Kawit | 27 | 22 | 40 | 50 | - | - | - | - | - |

Table III-2-1-1 (15/15) Telegraph Traffic Forecast

| Province | Telegraph Station | No. of Current Telegraph Message/Month | | Estimated No. of Telegraph Messages/Month | | Estimated Traffic (erl) | | | Phase | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 1978 | 1979 | 1986 | 2001 | Total | O/G | I/C | I | II |
| Cavite | Maragondon | 39 | 4 | 50 | 60 | - | - | - | - | - |
| | Mendez | 37 | 12 | 50 | 60 | - | - | - | - | - |
| | Naic | 93 | 71 | 130 | 170 | - | - | - | - | - |
| | Noveleta | 46 | 29 | 60 | 80 | - | - | - | - | - |
| | Rosario | 53 | 59 | 90 | 120 | - | - | - | - | - |
| | Tagaytay | 3,886 | 1,296 | 5,600 | 7,000 | 1.03<br>1.28 | 0.56<br>0.70 | 0.47<br>0.58 | - | O |
| | Tanza | 224 | 64 | 300 | 370 | 0.05<br>0.06 | 0.03<br>0.03 | 0.02<br>0.03 | - | O |
| | Ternate | 72 | 8 | 90 | 110 | - | - | - | - | x |
| | Trece Martires | 57 | 4 | 80 | 90 | - | - | - | - | - |
| | 19 | (5,482) | (2,882) | (8,880) | (11,100) | -<br>1.72 | -<br>0.94 | -<br>0.78 | - | O4 |
| Rizal | Angono | 51 | 105 | 140 | 170 | - | - | - | - | - |
| | Antipolo | 166 | 95 | 280 | 350 | 0.05<br>0.06 | 0.03<br>0.03 | 0.02<br>0.03 | - | O |
| | Baras | 32 | 5 | 50 | 60 | - | - | - | - | x |
| | Binangonan | 102 | 89 | 160 | 200 | - | - | - | - | - |
| | Cainta | 152 | 75 | 260 | 320 | 0.04<br>0.05 | 0.02<br>0.03 | 0.02<br>0.02 | - | O |
| | Caradona | 55 | 58 | 80 | 100 | - | - | - | - | - |
| | Tala Jala | 39 | 22 | 50 | 60 | - | - | - | - | - |
| | Morong | 110 | 47 | 150 | 180 | - | - | - | - | - |
| | Pililla | 106 | 24 | 150 | 190 | - | - | - | - | - |
| | Sampaloc-Tanay | 117 | 52 | 150 | 190 | - | - | - | - | - |
| | Tanay | 130 | 85 | 200 | 250 | 0.03<br>0.04 | 0.02<br>0.02 | 0.01<br>0.02 | - | O |
| | Taytay | 606 | 701 | 1,180 | 1,470 | 0.22<br>0.27 | 0.12<br>0.15 | 0.10<br>0.12 | - | O |
| | Teresa | - | 27 | 40 | 50 | - | - | - | - | - |
| | Montalban | - | 11 | 20 | 20 | - | - | - | - | - |
| | 14 | (1,666) | (1,396) | (2,910) | (3,630) | -<br>0.42 | -<br>0.23 | -<br>0.19 | - | O4<br>x1 |
| Total | 330 PI | - | - | 69,290 | - | 11.17 | 6.27 | 4.90 | O38<br>x22 | - |
| | 330 PII | | | - | 171,330 | 27.33 | 14.88 | 12.45 | - | O84<br>x72 |
| | Total | 59,652 | 79,865 | 153,680 | 192,110 | | | | | |

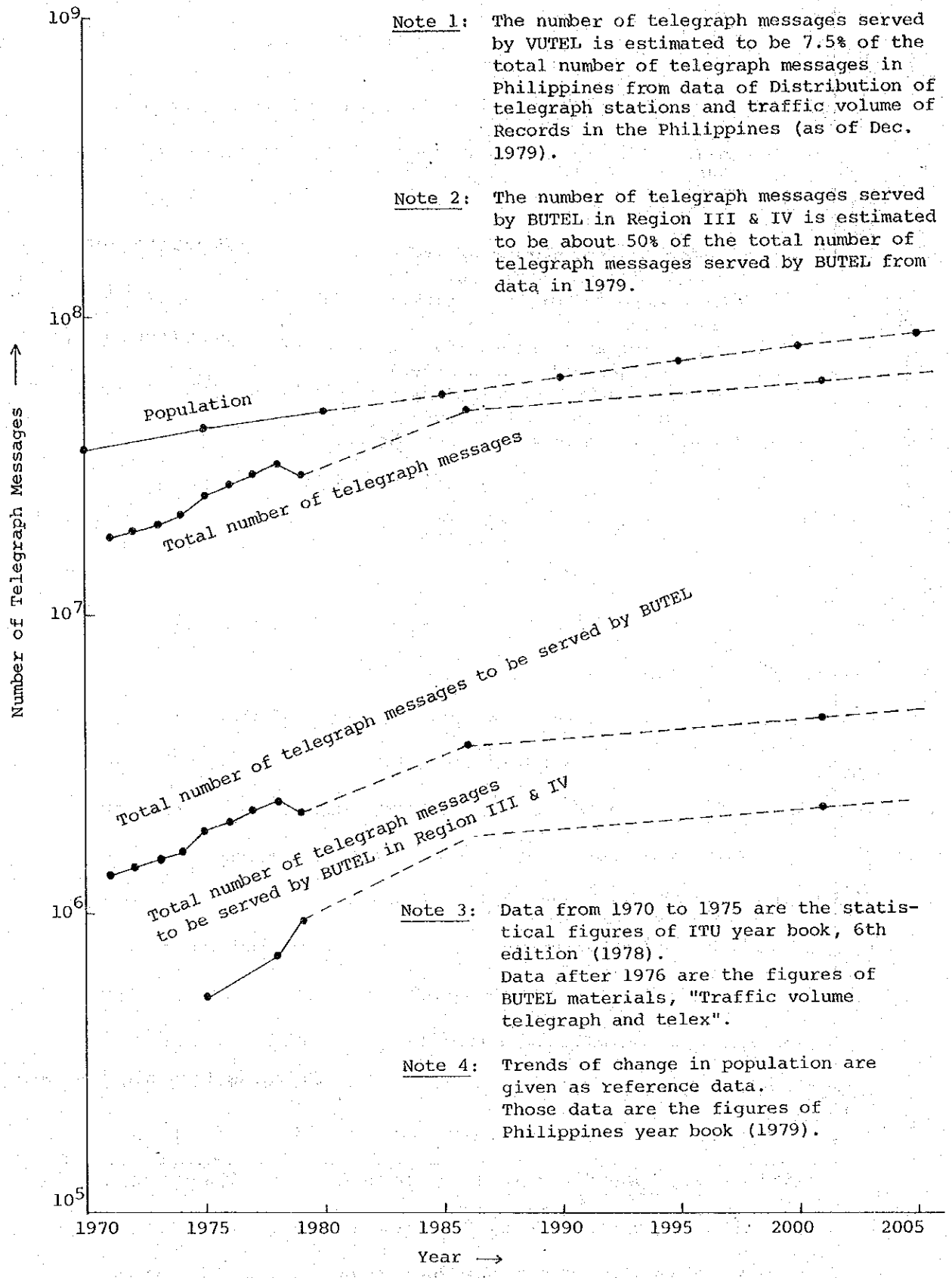



Fig. III-2-1-2 Trends of Change in Population and the Number of Telegraph Messages

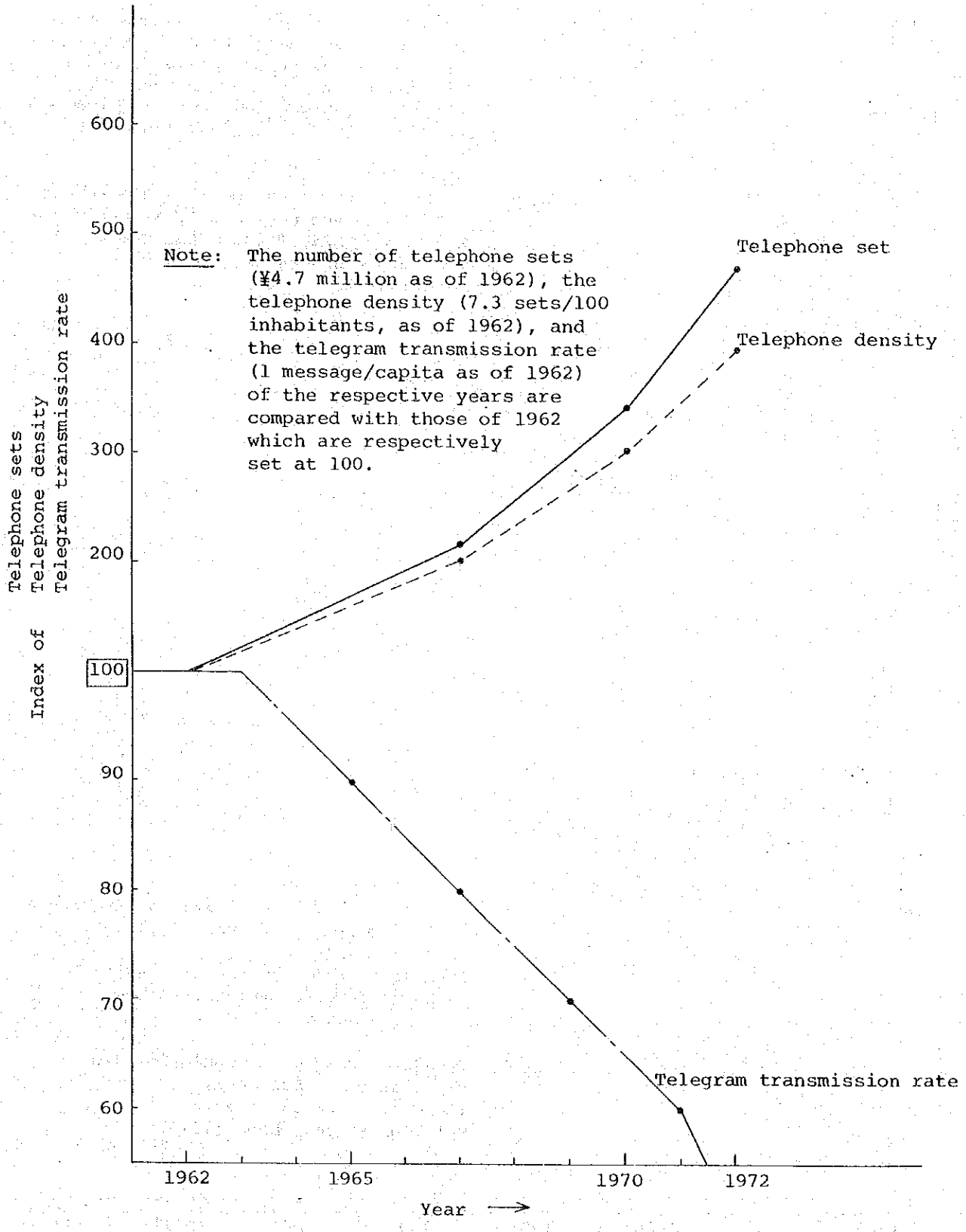



Fig. III-2-1-3 Telephone Density and Telegraph Transmission Rate Index Trends (in the case of Japan)

this project, in both period and area. Gentex stations to commence service in Phases I and II are enumerated in Table III-2-1-1.

In areas where the estimated number of telegraph messages is extremely small and telephone lines to be provided by this project can be used, the adoption of telegram transmission by telephone should be considered since the installation of telex subscriber equipment is not economical.

## 2-2 Telex

Telex service should be considered as one of BUTEL's services. Telex is to be used mainly by establishments such as business companies in the field of manufacturing and financial business. Business companies tends to concentrate to major cities/municipalities, so that introduction of telex should be considered in cities/minucipalities ranking higher than the third class.

Telex demand was estimated macroscopically in consideration of the number of large-scale establishments in the individual cities/municipalities, the increment in the number of establishments with the economic growth rate (annual 6%) being taken into consideration, the past increment of the number of telex subscribers and the market shares of private operating companies in competition. Table III-2-2-1 gives the estimated number of telex

## Table III-2-2-1 (1/3) Telex Demand

* The estimated number of companies to possess telex (T)
= The number of companies having more than 100 employees x (1.6 or 2.5) + those having more than 50 upto 99 employees x occurrence rate of the company to become more than 100 employees 0.5 x (1.6 or 2.5) + those having more than 20 upto 49 employees x occurrence rate of the company to become more than 100 employees 0.2 x (2.5).

The statistical data are obtained from NEDA, "The list of Establishment" (published in 1975).

Figures in ( ) indicate a coefficient, 1.6 in 1986, or 2.5 in 2001.

1.6 = (average National gross product growth rate per year: 0.06) x 10 years + 1.0

2.5 = (average National gross product growth rate per year: 0.06) x 25 years + 1.0

** Total number of Telex subscribers (U) = T x (0.5 or 0.8).

Figures in ( ) indicate a coefficient, telex introducing rate 0.5 corresponding to city class 2 and 3, or telex introducing rate 0.8 corresponding to city class 1.

BUTEL telex subscriber = U/Telex service-suppliers (BUTEL + Private Companies).
(The number of telex service suppliers in Rizal province is assumed 2 because data are unknown.)
The number of BUTEL telex sets = U x telex unit rate per user 1.8/Telex-service suppliers.

*** Mark o indicates a telex station.

Table III-2-2-1 (2/3) Telex Demand

| Province | City/ Municiparity | No. of Companies possessing telex* | | No. of BUTEL telex Users (Units) ** | | Remarks | | Phase *** | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1986 | 2001 | 1986 | 2001 | City Class | Private Operating Company | I | II |
| Bantaan | Limay | 10 | 16 | 3(5) | 4(7) | 2 | RCPI | | o |
| | Balanga | 2 | 9 | - | 2(3) | 3 | RCPI, PTT | o | |
| Nueva Ecija | Cabanatuan | 9 | 25 | 2(3) | 4(7) | 2 | RCPI, PTT | o | |
| Pampanga | Angeles City | 30 | 84 | 8(14) | 22(40) | 1 | RCPI, CWX | | o |
| | Guagua | 7 | 17 | 2(3) | 4(8) | 2 | RCPI | o | |
| | San Fernando | 22 | 49 | 9(16) | 20(35) | 1 | RCPI | o | |
| Tarlac | Tarlac | 6 | 22 | 2(3) | 6(11) | 1 | RCPI, PTT | o | |
| Zambales | Olongapo | 39 | 129 | 6(11) | 21(37) | 1 | RCPI, PTT, CRS, CWX | | o |
| Bulacan | Baliwag | 5 | 16 | 1(2) | 4(7) | 2 | RCPI | o | |
| | Hagonoy | 5 | 12 | 2(4) | 6(10) | 3 | - | o | |
| | Malolos | 11 | 22 | 3(5) | 6(10) | 2 | RCPI | o | |
| | Meycauayan | 20 | 39 | 5(9) | 10(17) | 2 | RCPI | | o |
| | Sta. Maria | 6 | 16 | 3(5) | 8(14) | 3 | - | | o |
| Batangas | Balayan | 5 | 8 | 1(1) | 1(2) | 3 | RCPI, ET | | o |
| | Batangas City | 18 | 38 | 3(5) | 6(11) | 1 | RCPI, PTT, CWX ET | o | |
| | Bauan | 3 | 9 | 1(2) | 3(6) | 1 | ET | o | |
| | Lipa City | 4 | 18 | 1(1) | 3(5) | 2 | RCPI, ET | o | |
| | Nasgubo | 6 | 11 | 2(3) | 3(5) | 2 | ET | o | |
| | Tanauan | 2 | 7 | - | 1(2) | 2 | RCPI, ET | | o |
| Quezon | Candelaria | 2 | 5 | 1(2) | 2(4) | 3 | - | | o |
| | Lucena City | 12 | 29 | 2(4) | 5(9) | 2 | RCPI, PTT | | o |

Table III-2-2-1 (3/3) Telex Demand

| Province | City/ Municiparity | No. of Companies possessing telex* | | No. of BUTEL telex Users (Units) ** | | Remarks | | Phase *** | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1986 | 2001 | 1986 | 2001 | City Class | Private Operating Company | I | II |
| Laguna | Binan | 6 | 17 | 1(3) | 4(8) | 3 | RCPI | | o |
| | Calamba | 24 | 43 | 4(7) | 7(13) | 2 | RCPI, PTT | | o |
| | San pablo | 18 | 43 | 3(6) | 7(13) | 2 | RCPI, PTT | | o |
| Cavite | Cavite City | 13 | 27 | 2(4) | 4(8) | 2 | RCPI, PTT | | o |
| | Imus | 2 | 7 | - | 2(3) | 3 | RCPI | | o |
| Rizal | Antipolo | 15 | 29 | 4(7) | 7(13) | 2 | | | o |
| | Cainta | 47 | 82 | 12(21) | 21(37) | 2 | | | o |
| | Tanay | 3 | 10 | 1(1) | 3(5) | 3 | | | o |
| | Taytay | 20 | 40 | 5(9) | 10(18) | 2 | | | o |
| Occ. Mindoro | San Jose | 2 | 6 | 1(1) | 2(3) | 3 | RCPI | o | |
| Palawan | P. Princesa | 3 | 8 | 1(1) | 2(3) | 2 | RCPI | | o |
| Total | 32 stations | - | - | 91 (158) | 210 (374) | - | - | 13 st. 29 U (48) | 32 st. 210 U (374) |

demands to BUTEL in individual cities/municipalities for 1986 and 2001.

Fig. III-2-2-1 shows the trends of the number of companies in the fields of manufacturing and financial business, the total number of telex subscriber lines, and the total number of BUTEL's telex lines in Regions III and IV. The period of the commencement of telex service is to be adjusted to that of the commencement of service at telegraph offices expected to control telex service. The number of gentex stations and that of telex subscribers to be introduced in individual provinces are given in Table III-2-2-2.

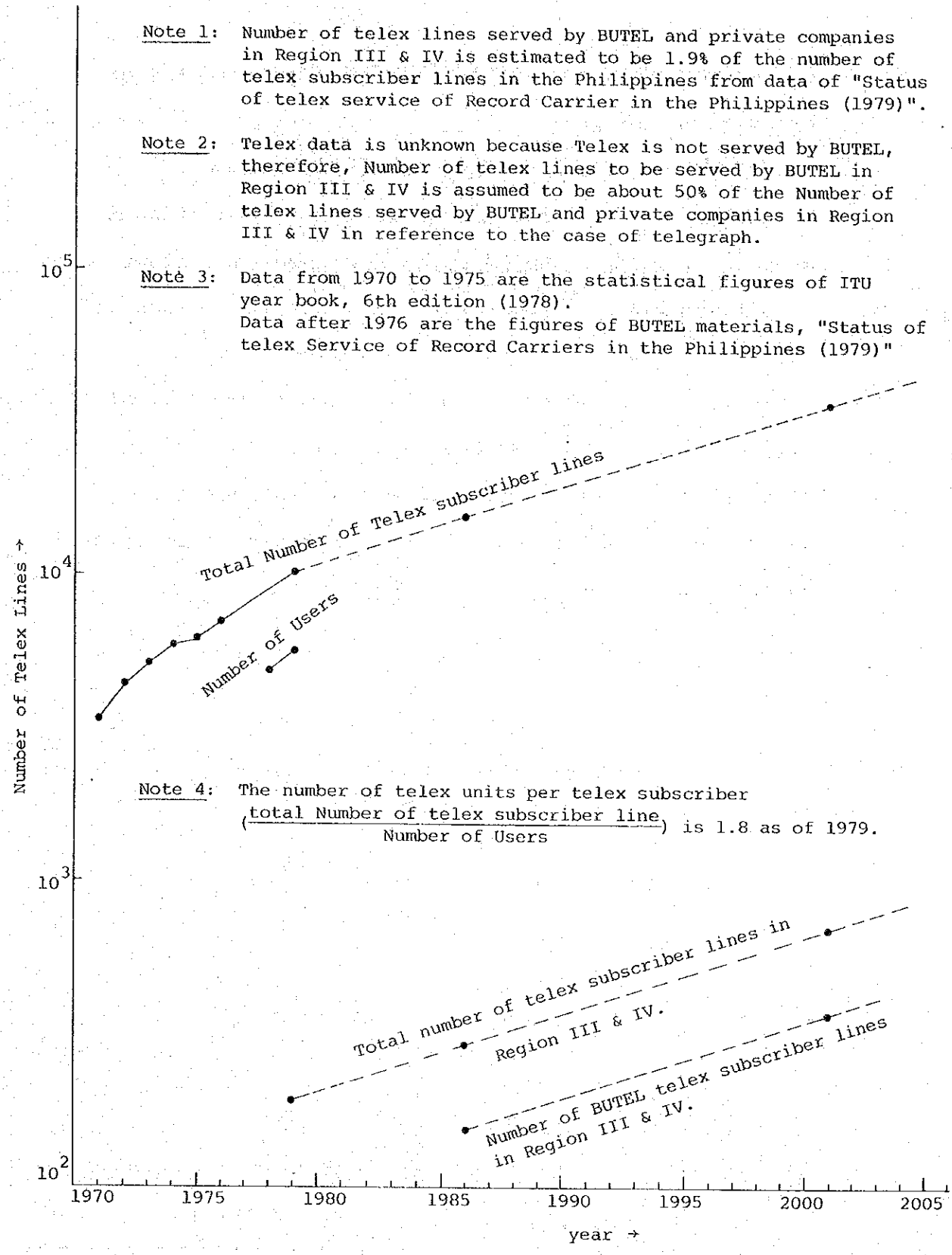



Fig. III-2-2-1 Trends of the Number of Telex Subsriver lines in the Philippines

Table III-2-2-2 (1/2) Number of Gentex Stations and Telex Subscribers in Individual Provinces

* Values noted elsewhere in 2001.

** Figures in ( ) in the "Gentex Station" column indicate the number of telegram messages/month and those in ( ) in the "Telex Users" column the number of telex calls/month.

The assumed number of calls is 190/Users/Month (1986) and 320/Users/Month (2001).

| Province | 1986 | | 2001 * | |
|---|---|---|---|---|
| | No. of Gentex Stations** | No. of Telex Users** | No. of Gentex Stations | No. of Telex Users |
| Bataan | 3 (4,070) | - | 2 (730) | 6 (1,920) |
| Nueva Ecija | 9 (6,430) | 2 (380) | 8 (2,740) | 2 (640) |
| Pampanga | 4 (9,240) | 11 (2,090) | 2 (600) | 35 (11,200) |
| Tarlac | 2 (3,920) | 2 (380) | 5 (1,700) | 4 (1,280) |
| Zambales | 2 (9,100) | - | 4 (2,300) | 21 (6,720) |
| Bulacan | 4 (4,260) | 6 (1,140) | 9 (3,010) | 28 (8,960) |
| Batangas | 5 (18,250) | 7 (1,330) | 7 (1,940) | 10 (3,200) |
| Laguna | - | - | 13 (25,920) | 18 (5,760) |
| Marindugue | 1 (2,920) | - | 1 (480) | - |
| Orr. Mindoro | 3 (4,260) | - | - | - |
| Occ. Mindoro | 3 (2,600) | 1 (190) | 2 (540) | 1 (320) |
| Quezon | - | - | 15 (24,340) | 7 (2,240) |
| Palawan | - | - | 4 (5,690) | 2 (640) |
| Romblon | 2 (4,240) | - | 4 (2,500) | - |
| Cavite | - | - | 4 (9,830) | 6 (1,920) |

Table III-2-2-2 (2/2) Number of Gentex Stations and Telex Subscribers in Individual Provinces

| Province | 1986 | | 2001 | |
|---|---|---|---|---|
| | No. of Gentex Stations | No. of Telex Users | No. of Gentex Stations | No. of Telex Users |
| Rizal | - | - | 4 (2,390) | 41 (13,120) |
| Region III | 24 (37,020) | 21 (3,990) | 30 (11,080) | 96 (30,720) |
| Region IV | 14 (32,270) | 8 (1,520) | 54 (73,630) | 85 (27,200) |
| Total | 38 (69,290) | 29 (5,510) | 84 (84,710) | 181 (57,920) |

# IV. TELEPHONE INSTALLATION PLAN

# IV. TELEPHONE INSTALLATION PLAN

## 1. Telephone Installation Plan of This Project

### 1-1 Amounts of Main Works

The amounts of main works, which are necessary for preparing a telephone installation plan, are shown in Table IV-1-1. Calculation for the amount of main works is described in SECTION VII "SYSTEM DESIGN AND AMOUNTS OF WORKS."

Table IV-1-1 Amounts of Works (End Offices)

| Exchange / Phase | LE | | IPTS | | Total | |
|---|---|---|---|---|---|---|
| | No. of Exchanges | No. of Subscribers | No. of Exchanges | No. of Subscribers | No. of Exchanges | No. of Subscribers |
| Phase I | 31 | 7,810 | 10 | 400 | 41 | 8,210 |
| Phase II | 5 | 1,390 | 103 | 4,120 | 108 | 5,510 |
| Total | 36 | 9,200 | 113 | 4,520 | 149 | 13,720 |

Service to subscribers is to be made by the above table. The number of subscribers given in the table indicates that to be served in five years after the commencement of service. That is, exchange offices to be constructed in Phase I will cover the number of subscribers to be served by 1991 and exchange offices to be constructed in Phase II will cover the number of subscribers to be served by 1994. For installation after that, expansion will be made in consideration of the exchange

capacity of each exchange office.

1-2 Installation Plan

The installation plan of this project is to be as follows.

(1) LE

Installation is to be accomplished for applicants in all years in principle. However, in order to maintain the balancing of installation, telephone installation for demands to be met by 1986 in Phase I and for demands to be met by 1989 in Phase II is to be accomplished step by step within three years after completion of outside plant construction in the individual phases.

(2) IPTS

Since IPTS is to have a line unit capacity of 40 subscribers, installation is to be made for a maximum of 40 subscribers irrespective of the number of applicants.

The number of installations to be accomplished in each year for subscribers given in Table IV-1-1 under the above-mentioned conditions is given in Table IV-1-2. The number of installations to be accomplished during the 6-year period of 1986 to 1991 is to amount to 1800 ~ 1900 per year. This number of installations per year is about 37% larger than the annual number of

Table IV-1-2 Telephone Installation Plan

| Year / Phase | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Phase I | 1,840 | 1,840 | 1,840 | 890 | 890 | 910 | - | - | - | 8,210 |
| Phase II | - | - | - | 1,030 | 1,030 | 1,010 | 860 | 790 | 790 | 5,510 |
| Total | 1,840 | 1.840 | 1,840 | 1,920 | 1,920 | 1,920 | 860 | 790 | 790 | 13,720 |

installations of the Northern Luzon Project (1300 ~ 1400).

In this project, a stress is given to the establishment of a solid foundation for the telecommunication network from the standpoint of making an effective investment in a long range. That is, toll centers (TC) and transmission equipment for offices ranked higher than local exchange (LE) are designed to allow future expansion. Further expansion and development can be anticipated on the basis of these facilities to be installed in this project.

# V. TRAFFIC FORECAST

# V. TRAFFIC FORECAST

## 1. Telephone Traffic Forecast

Telephone traffic has been forecast by using the following values as in the Northern Luzon Project.

(1) Busy hour originating calling rate

a) Large offices: 0.06 erlangs

b) Medium and small offices: 0.04 erlangs

(2) Traffic distribution

a) Local calls: 70%

b) Toll calls: 30%

(3) Toll call traffic distribution

a) Calls to Manila: 60% (including all areas but the home Region)

b) Calls within the Region: 20% (excluding the home PC service area)

c) Calls within the home PC area: 20%

d) Calls from Manila (including all areas but the home Region)

Large offices: 40% of calls to Manila

Medium and small offices: 32% of calls to Manila

e) Other terminating calls: Same as items b) and c).

The traffic forecast between PC offices and between SC offices is shown in Table V-1-1. The traffic forecast for LE offices and IPTS offices is shown in Table VI-1-1.

Table V-1-1 (1/3) Traffic Forecast between PCs and between SCs (for 1991)

(Unit: Erlang)

| Destination | Cabanatuan | | Pandi | | Dinalupihan | | Batangas | | Unison | | San Jose | | Calapan | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. |
| Cabanatuan | | | 0.35 | 0.35 | 0.70 | 1.39 | 0.50 | 0.52 | - | - | 0.07 | 0.05 | 0.14 | 0.14 |
| Tarlac | 2.44 | 2.44 | 0.30 | 0.30 | 0.61 | 0.61 | 0.44 | 0.17 | - | - | 0.06 | 0.04 | 0.12 | 0.05 |
| Olongapo | 4.53 | 4.53 | 0.57 | 0.57 | 1.14 | 1.14 | 0.81 | 0.32 | - | - | 0.11 | 0.05 | 0.23 | 0.09 |
| San Fernando | 6.96 | 6.96 | 0.87 | 0.87 | 1.75 | 1.75 | 1.25 | 0.49 | - | - | 0.17 | 0.07 | 0.35 | 0.13 |
| Malolos | 5.22 | 5.22 | 0.65 | 0.65 | 1.31 | 1.31 | 0.94 | 0.36 | - | - | 0.13 | 0.06 | 0.27 | 0.10 |
| Pandi | 0.35 | 0.35 | | | 0.09 | 0.17 | 0.06 | 0.07 | - | - | 0.01 | 0.01 | 0.02 | 0.02 |
| Dinalupihan | 1.39 | 0.70 | 0.17 | 0.09 | | | 0.25 | 0.14 | - | - | 0.03 | 0.01 | 0.07 | 0.04 |
| Dasmarinas | 0.47 | 0.23 | 0.07 | 0.02 | 0.13 | 0.04 | 6.72 | 6.72 | - | - | 0.73 | 0.73 | 1.59 | 1.59 |
| San Pablo | 0.80 | 0.35 | 0.11 | 0.04 | 0.21 | 0.07 | 11.42 | 11.42 | - | - | 1.24 | 1.24 | 2.70 | 2.70 |
| Batangas | 0.52 | 0.50 | 0.07 | 0.06 | 0.14 | 0.25 | | | - | - | 0.80 | 0.67 | 1.75 | 2.02 |
| Lucena | 0.52 | 0.25 | 0.07 | 0.02 | 0.14 | 0.04 | 7.39 | 7.39 | - | - | 0.80 | 0.80 | 1.75 | 1.75 |
| Unison | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| San Jose | 0.05 | 0.07 | 0.01 | 0.01 | 0.01 | 0.03 | 0.67 | 0.80 | - | - | | | 0.16 | 0.22 |
| Calapan | 0.14 | 0.14 | 0.02 | 0.02 | 0.04 | 0.07 | 2.02 | 1.75 | - | - | 0.22 | 0.16 | | |
| Manila | 60.16 | 29.25 | 8.44 | 2.72 | 16.11 | 4.09 | 80.34 | 30.86 | - | - | 10.83 | 4.87 | 22.65 | 8.20 |
| Total | 83.55 | 50.99 | 11.70 | 5.72 | 22.38 | 10.96 | 112.81 | 61.01 | - | - | 15.20 | 8.76 | 31.80 | 17.05 |

Table V-1-1 (2/3) Traffic Forecast between PCs and between SCs (for 1994)

(Unit: Erlang)

| Destination | Cabanatuan | | Pandi | | Dinalupihan | | Batangas | | Unisan | | San Jose | | Calapan | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. |
| Cabanatuan | | | 0.51 | 0.71 | 1.02 | 1.76 | 0.74 | 0.78 | 0.09 | 0.24 | 0.14 | 0.24 | 0.23 | 0.29 |
| Tarlac | 3.57 | 3.57 | 0.42 | 0.42 | 0.85 | 0.85 | 0.62 | 0.36 | 0.07 | 0.02 | 0.12 | 0.05 | 0.19 | 0.07 |
| Olongapo | 6.07 | 6.07 | 0.72 | 0.72 | 1.45 | 1.45 | 1.05 | 0.29 | 0.12 | 0.04 | 0.20 | 0.08 | 0.33 | 0.12 |
| San Fernando | 10.00 | 10.00 | 1.19 | 1.19 | 2.38 | 2.38 | 1.74 | 0.24 | 0.20 | 0.06 | 0.34 | 0.13 | 0.54 | 0.20 |
| Malolos | 7.14 | 7.14 | 0.85 | 0.85 | 1.70 | 1.70 | 1.24 | 0.41 | 0.15 | 0.05 | 0.24 | 0.10 | 0.39 | 0.14 |
| Pandi | 0.71 | 0.51 | | | 0.17 | 0.21 | 0.12 | 0.10 | 0.01 | 0.03 | 0.02 | 0.03 | 0.04 | 0.04 |
| Dinalupihan | 1.76 | 1.02 | 0.21 | 0.17 | | | 0.31 | 0.20 | 0.04 | 0.06 | 0.06 | 0.06 | 0.10 | 0.08 |
| Dasmarinas | 0.63 | 0.24 | 0.08 | 0.03 | 0.16 | 0.05 | 7.26 | 7.26 | 0.74 | 0.74 | 1.22 | 1.22 | 1.98 | 1.98 |
| San Pablo | 1.07 | 0.41 | 0.14 | 0.05 | 0.27 | 0.09 | 12.29 | 12.29 | 1.25 | 1.25 | 2.07 | 2.07 | 3.34 | 3.34 |
| Batangas | 0.78 | 0.74 | 0.10 | 0.12 | 0.20 | 0.31 | | | 0.91 | 1.79 | 1.50 | 2.79 | 2.43 | 3.35 |
| Lucena | 0.78 | 0.30 | 0.10 | 0.03 | 0.20 | 0.06 | 9.94 | 8.94 | 0.91 | 0.91 | 1.50 | 1.50 | 2.43 | 2.43 |
| Unisan | 0.24 | 0.09 | 0.03 | 0.01 | 0.06 | 0.04 | 1.79 | 0.91 | | | 0.47 | 0.28 | 0.76 | 0.34 |
| San Jose | 0.24 | 0.14 | 0.03 | 0.02 | 0.06 | 0.06 | 2.79 | 1.50 | 0.28 | 0.47 | | | 0.76 | 0.56 |
| Calapan | 0.29 | 0.23 | 0.04 | 0.04 | 0.08 | 0.10 | 3.35 | 2.43 | 0.34 | 0.76 | 0.56 | 0.76 | | |
| Manila | 83.69 | 32.52 | 11.20 | 3.30 | 21.63 | 5.75 | 106.40 | 45.05 | 12.52 | 2.19 | 20.63 | 6.61 | 33.08 | 11.77 |
| Total | 116.97 | 62.98 | 15.62 | 7.66 | 30.23 | 14.81 | 149.64 | 80.78 | 17.63 | 8.61 | 29.07 | 15.92 | 46.60 | 24.71 |

Table V-1-1 (3/3) Traffic Forecast between PCs and between SCs (for 2001)

(Unit: Erlang)

| Destination | Cabanatuan | | Pandi | | Dinalupihan | | Batangas | | Unisan | | San Jose | | Calapan | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. | O.G. | I.C. |
| Cabanatuan | | | 1.05 | 1.43 | 2.35 | 4.29 | 2.50 | 2.64 | 0.65 | 0.99 | 0.55 | 0.74 | 0.76 | 0.82 |
| Tarlac | 8.11 | 8.11 | 0.69 | 0.69 | 1.54 | 1.54 | 1.63 | 1.63 | 0.42 | 0.42 | 0.36 | 0.36 | 0.50 | 0.50 |
| Olongapo | 13.83 | 13.83 | 1.17 | 1.17 | 2.62 | 2.62 | 2.79 | 2.79 | 0.72 | 0.72 | 0.62 | 0.62 | 0.85 | 0.85 |
| San Fernando | 22.89 | 22.89 | 1.94 | 1.94 | 4.34 | 4.34 | 4.61 | 4.61 | 1.20 | 1.20 | 1.02 | 1.02 | 1.41 | 1.41 |
| Malolos | 16.22 | 16.22 | 1.38 | 1.38 | 3.08 | 3.08 | 3.27 | 3.27 | 0.85 | 0.85 | 0.72 | 0.72 | 1.00 | 1.00 |
| Pandi | 1.43 | 1.05 | | | 0.27 | 0.36 | 0.29 | 0.26 | 0.07 | 0.10 | 0.06 | 0.07 | 0.09 | 0.08 |
| Dinalupihan | 4.29 | 2.35 | 0.36 | 0.27 | | | 0.86 | 0.56 | 0.22 | 0.21 | 0.19 | 0.16 | 0.26 | 0.18 |
| Dasmarinas | 1.90 | 1.90 | 0.19 | 0.19 | 0.40 | 0.40 | 15.12 | 15.12 | 3.37 | 3.37 | 2.81 | 2.81 | 3.91 | 3.91 |
| San Pablo | 3.22 | 3.22 | 0.32 | 0.32 | 0.68 | 0.68 | 25.64 | 25.64 | 5.71 | 5.71 | 4.77 | 4.77 | 6.64 | 6.64 |
| Batangas | 2.64 | 2.50 | 0.26 | 0.29 | 0.56 | 0.86 | | | 4.68 | 7.89 | 3.91 | 5.92 | 5.44 | 6.57 |
| Lucena | 2.15 | 2.14 | 0.21 | 0.21 | 0.46 | 0.46 | 17.09 | 17.09 | 3.81 | 3.81 | 3.18 | 3.18 | 4.42 | 4.42 |
| Unisan | 0.99 | 0.65 | 0.10 | 0.07 | 0.21 | 0.22 | 7.89 | 4.68 | | | 1.47 | 1.32 | 2.04 | 1.46 |
| San Jose | 0.74 | 0.55 | 0.07 | 0.06 | 0.16 | 0.19 | 5.92 | 3.91 | 1.32 | 1.47 | | | 1.53 | 1.22 |
| Calapan | 0.82 | 0.76 | 0.08 | 0.09 | 0.18 | 0.26 | 6.57 | 5.44 | 1.46 | 2.04 | 1.22 | 1.53 | | |
| Manila | 187.74 | 64.51 | 18.57 | 4.82 | 39.99 | 8.54 | 218.73 | 78.24 | 56.88 | 11.08 | 48.46 | 13.97 | 66.95 | 21.10 |
| Total | 266.97 | 140.68 | 26.39 | 12.93 | 56.84 | 27.84 | 312.91 | 165.88 | 81.36 | 39.86 | 69.34 | 36.99 | 95.80 | 50.16 |

## 2. Telegraph Traffic Forecast

### 2-1 Gentex

For the numbers of telegraphic messages of the individual telegraph offices which are necessary for estimating gentex traffic, forecast number of telegram demands given in Table III-2-1-1 is used. Other conditions used are as those used in the Northern Luzon Project. These conditions comprise the following.

(1) Holding time  Sending: 120 seconds
Receiving: 100 seconds

(2) Busy-hour concentration factor: 12.5%

(3) Traffic fluctuate factor
Major center: 1.2
Minor center: 1.1

(4) Busy-hour traffic (T):

$$T = Bx(1/25)x(1/8)x(120+100)x(1/7200) \times (1.2 \text{ or } 1.1) \text{ (erlangs)}$$

B: Estimated number of telegrams per month

Outgoing traffic = Tx120/220 (erlangs)

Incoming traffic = Tx100/220 (erlangs)

Traffic forecast for individual telegraph offices in Phases I and II are obtained from the above-mentioned equations and are shown in Table III-2-1-1. Traffic forecast for individual telex exchange office and telex concentrator station is shown in Table V-2-1-1.

Table V-2-1-1 Traffic Forecast of Regional Telex Centers and Telex Concentrator Sations

* Outgoing traffic to Manila is assumed to be about 85% of traffic of Regional Telex Center because telex data are unknown.

(Erlangs)

| Telex Exchange | Telex Cencentrator Station | Phase I | | | Phase II | | | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | Total | Gentex | Telex | Total | Gentex | Telex | |
| San Fernando Station | Balanga | 0.58 | 0.58 | 0 | 1.81 | 0.85 | 0.96 | |
| | Cabanatuan | 1.32 | 1.03 | 0.29 | 2.52 | 1.85 | 0.67 | |
| | Tarlac | 0.89 | 0.60 | 0.29 | 2.09 | 1.03 | 1.06 | |
| | Malolos | 1.73 | 0.67 | 1.06 | 6.94 | 1.37 | 5.57 | |
| | Olongapo | 1.13 | 1.13 | 0 | 5.06 | 1.51 | 3.55 | |
| | Iba | 0.26 | 0.26 | - | 0.62 | 0.62 | - | |
| | San Fernando (San Fernando Area) | 3.32 | 1.50 | 1.82 | 9.94 | 1.97 | 7.97 | |
| | Total | 9.23 | 5.77 | 3.46 | 28.98 | 9.20 | 19.78 | |
| | For Manila* | 7.84 | 4.90 | 2.94 | 24.63 | 7.82 | 16.81 | |
| Batangas Station | Taytay | 0 | 0 | 0 | 7.43 | 0.42 | 7.01 | |
| | Calamba | 0 | 0 | 0 | 7.48 | 4.22 | 2.69 | |
| | Calapan | 0.66 | 0.66 | - | 0.82 | 0.82 | - | |
| | Cavite | 0 | 0 | 0 | 2.78 | 1.72 | 0.87 | |
| | Romblon | 0.68 | 0.68 | - | 1.30 | 1.30 | - | |
| | P. Princesa | 0 | 0 | 0 | 1.17 | 0.88 | 0.38 | |
| | Lucena | 0.49 | 0.49 | 0 | 5.54 | 4.29 | 1.05 | |
| | San Jose | 0.56 | 0.46 | 0.10 | 0.96 | 0.67 | 0.10 | |
| | Batangas (Batangas Area) | 3.87 | 2.81 | 1.06 | 6.83 | 3.85 | 2.99 | |
| | Total | 6.26 | 5.10 | 1.16 | 34.31 | 18.17 | 14.89 | |
| | For Manila* | 5.33 | 4.34 | 0.99 | 29.16 | 15.44 | 12.66 | |

## 2-2 Telex

At present, BUTEL does not provide telex service to general companies, so that traffic data of telex subscribers has not been obtained. For the basic traffic values of telex, the following are used in consideration of past data such as the total number of telex calls, the total number of telex users, and the total number of subscriber lines in the Philippines and values employed in the Northern Luzon Project.

(1) Busy-hour traffic (sending and receiving):
0.08 erlangs/line

(2) Average holding time per telex call: 100 seconds

(3) Total number of telex calls = n x 0.08 x 1.2
(n: Number of lines)

The estimated traffic of telex exchange and telex concentrator stations calculated from the above-mentioned values is given in Table V-2-1-1.
Fig. V-2-1-1 shows the telex traffic tendency estimated from the past data.

# VI. CIRCUIT ESTIMATION

# VI. CIRCUIT ESTIMATION

## 1. Telephone Circuit Estimation

Telephone circuit estimation has been made by using the following tables, loss probability, waiting propability, and cost ratio in consideration of values used in the Northern Luzon Project.

(1) LE

1) Incoming and outgoing lines

Table of Erlang B formula (for random calls)

Loss probability: 0.01

2) Intra-office trunk

Table of Erlang B formula (for random calls)

Loss probability: 0.02

(2) PC

1) Basic circuit

a) When overflow calls are not included:

Table of Erlang B formula (for random calls)

Loss probability: 0.01

b) When overflow calls are included:

Table of Erlang B formula modified for non-random calls

Loss probability: 0.01

2) High-usage circuit

a) When overflow calls are transferred to basic circuit:

Table of high-usage circuit (for toll calls)

Cost ratio: 1.5

b) When overflow calls are treated as lost:

Table of Erlang B formula (for random calls)

Loss probability: 0.01

(3) IPTS

1) Both-way circuit:

Table of delayed service

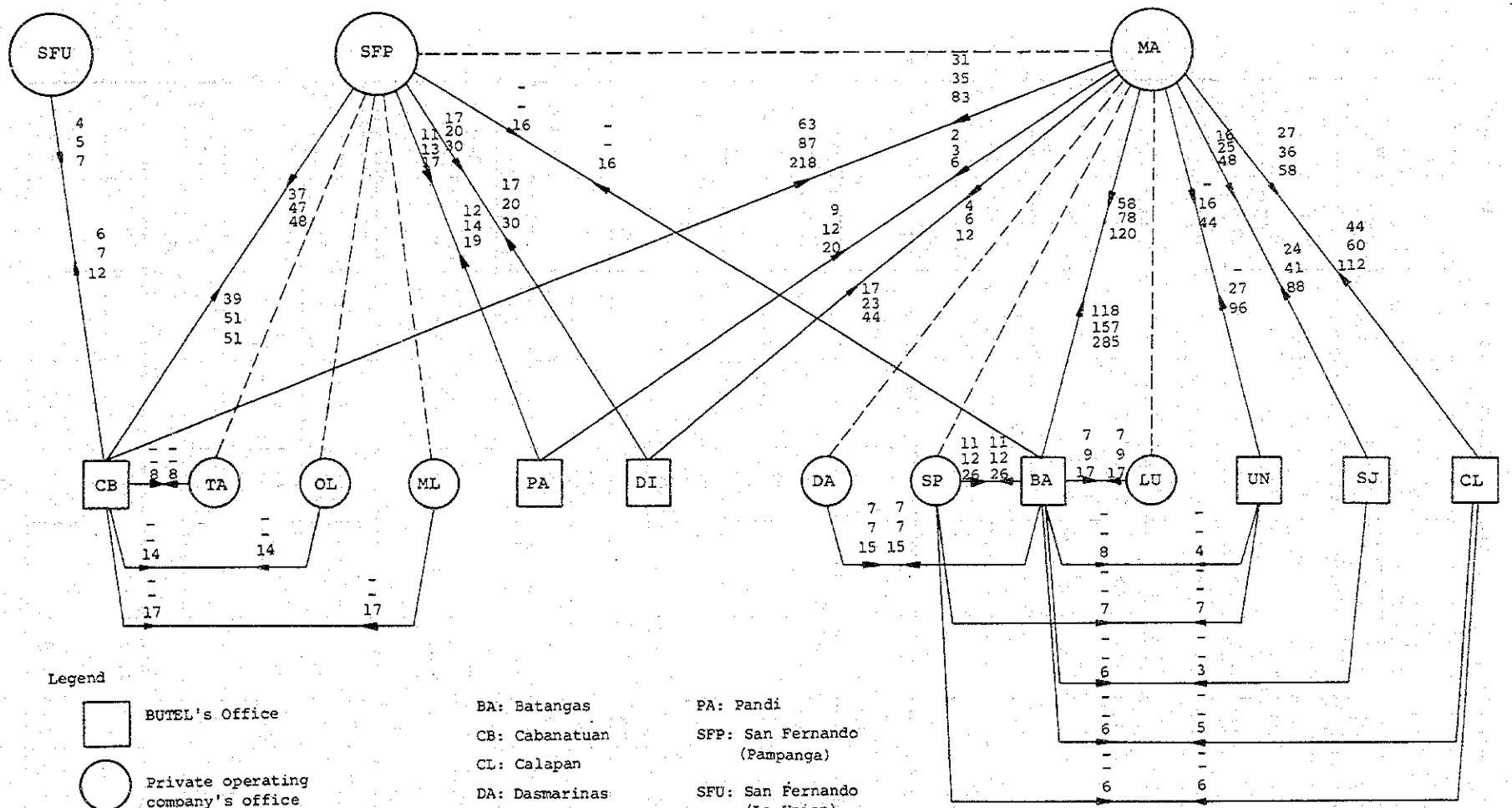
Waiting probability: 0.06

2) Intra-office trunk

Table of Erlang B formula (for random calls)

Loss probability: 0.02

The numbers of circuits between LE and PC and between IPTS and PC are given in Table VI-1-1 and the numbers of toll circuits between TSs are shown in Fig. VI-1-1 and Table VI-1-2.




Legend

- BUTEL's Office
- Private operating company's office
- ——— Circuits between BUTEL offices
- - - - - Circuits between private operating companys' offices
- Upper: Number of circuits to be set up by 1991
- Intermediate: Number of circuits to be set up by 1994
- Lower: Number of circuits to be set up by 2000

BA: Batangas
CB: Cabanatuan
CL: Calapan
DA: Dasmarinas
DI: Dinalupihan
LU: Lucena
MA: Manila
ML: Malolos
OL: Olongapo
PA: Pandi
SFP: San Fernando (Pampanga)
SFU: San Fernando (La Union)
SJ: San Jose
SP: San Pablo
TA: Tarlac
UN: Unisan

Fig. VI-1-1 Numbers of Circuits between TSs

Table VI-1-1 (1/12) Number of Trunk Circuits Year: 1991

| PC | Phase | Name of Exchange Office | Capacity | O. G. | | I. C. | | | Total No. of Circuits | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Traffic (erl) | No. of Circuits | General | | No. of Misc. Circuits | | |
| | | | | | | Traffic (erl) | No. of Circuits | | | |
| Cabanatuan | I | Aliaga | 200 | 2.40 | 7 | 1.44 | 6 | 3 | 16 | |
| | I | Cabiao | 200 | 2.28 | 7 | 1.37 | 6 | 3 | 16 | |
| | I | Jaen | 300 | 3.12 | 8 | 1.87 | 6 | 4 | 18 | |
| | I | Pantabangan | 200 | 2.40 | 7 | 1.44 | 6 | 3 | 16 | |
| | I | San Antonio | 300 | 3.00 | 8 | 1.80 | 6 | 4 | 18 | |
| | I | Sta Rosa | 300 | 2.52 | 8 | 1.51 | 6 | 4 | 18 | |
| | I | Quezon | 40 | - | | - | - | - | 6 | IPTS |
| | I | Zaragosa | 40 | - | | - | - | - | 6 | IPTS |
| | | Private Co.'s | | | 149 | | 105 | 36 | 290 | |
| Tarlac | I | Gerona | 300 | 3.48 | 9 | 2.09 | 8 | 4 | 21 | |
| | I | La Paz | 300 | 3.00 | 8 | 1.80 | 6 | 4 | 18 | |
| Olongapo | I | Botolan | 300 | 2.76 | 8 | 1.66 | 6 | 4 | 18 | |
| | I | Iba | 300 | 3.60 | 9 | 2.16 | 7 | 4 | 20 | |
| S. F. P. | I | Magalang | 200 | 2.28 | 7 | 1.37 | 6 | 3 | 16 | |
| | I | Porac | 300 | 3.24 | 9 | 1.94 | 7 | 4 | 20 | |
| | I | Sexmoan | 40 | - | - | - | - | - | 6 | IPTS |
| Pandi | I | Bulacan | 300 | 3.12 | 8 | 1.87 | 6 | 4 | 18 | |
| | I | San Ildefonso | 400 | 3.84 | 10 | 2.30 | 7 | 4 | 21 | |
| | I | San Rafael | 200 | 2.40 | 7 | 1.44 | 6 | 3 | 16 | |
| | I | Angat | 300 | 3.36 | 9 | 2.02 | 7 | 4 | 20 | |
| | I | Pandi | 200 | 1.92 | - | 1.15 | - | - | - | TS + LE |
| Dinalupihan | I | Abucay | 300 | 2.64 | 8 | 1.58 | 6 | 4 | 18 | |
| | I | Dinalupihan | 400 | 4.32 | - | 2.59 | - | - | - | TS + LE |
| | I | Samal | 200 | 2.40 | 7 | 1.44 | 6 | 3 | 16 | |
| | | Private Co.'s | | | 42 | | 32 | 16 | 90 | |
| Batangas | I | Agoncillo | 40 | - | - | - | - | - | 6 | IPTS |
| | I | Calaca | 200 | 2.04 | 7 | 1.22 | 5 | 3 | 15 | |
| | I | Ibaan | 300 | 3.60 | 9 | 2.16 | 7 | 4 | 20 | |
| | I | Padre Garcia | 40 | - | - | - | - | - | 6 | IPTS |
| | I | Lubang | 40 | - | - | - | - | - | 6 | IPTS |
| | | Private Co.'s | | | 201 | | 138 | 32 | 371 | |
| San Jose | I | Mamburao | 200 | 1.92 | 7 | 1.15 | 5 | 3 | 15 | |
| | I | Sablayan | 300 | 3.60 | 9 | 2.16 | 7 | 4 | 20 | |
| | I | San Jose | 800 | 13.50 | - | 8.10 | - | - | - | TS + LE |

Table VI-1-1 (2/12) Number of Trunk Circuits Year: 1991

| PC | Phase | Name of Exchange Office | Capacity | O. G. | | I. C. | | | Total No. of Circuits | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Traffic (erl) | No. of Circuits | General | | No. of Misc. Circuits | | |
| | | | | | | Traffic (erl) | No. of Circuits | | | |
| Calapan | I | Bongabong | 400 | 3.72 | 9 | 2.23 | 7 | 4 | 20 | |
| | I | Naujan | 300 | 2.76 | 8 | 1.66 | 6 | 4 | 18 | |
| | I | Roxas | 200 | 2.40 | 7 | 1.44 | 6 | 3 | 16 | |
| | I | Victoria | 200 | 2.40 | 7 | 1.44 | 6 | 3 | 16 | |
| | I | Odiongan | 200 | 2.16 | 7 | 1.30 | 5 | 3 | 15 | |
| | I | Romblon | 200 | 3.06 | 8 | 1.84 | 6 | 3 | 17 | |
| | I | Gloria | 40 | - | - | - | - | - | 6 | IPTS |
| | I | Puerto Galera | 40 | - | - | - | - | - | 6 | TPTS |
| | I | Socorro | 40 | - | - | - | - | - | 6 | IPTS |
| | I | San Agustin | 40 | - | - | - | - | - | 6 | IPTS |
| | | Private Co.'s | | | 37 | | 26 | 8 | 71 | |

Table VI-1-1 (3/12) Number of Trunk Circuits Year: 1994

| PC | Phase | Name of Exchange Office | Capacity | O. G. | | I. C. | | No. of Misc. Circuits | Total No. of Circuits | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Traffic (erl) | No. of Circuits | General | | | | |
| | | | | | | Traffic (erl) | No. of Circuits | | | |
| Cabanatuan | I | Aliaga | 300 | 3.12 | 8 | 1.87 | 6 | 4 | 18 | |
| | I | Cabiao | 300 | 3.00 | 8 | 1.80 | 6 | 4 | 18 | |
| | I | Jaen | 400 | 4.08 | 10 | 2.45 | 7 | 4 | 21 | |
| | I | Pantabangan | 300 | 3.36 | 9 | 2.02 | 7 | 4 | 20 | |
| | I | San Antonio | 400 | 3.96 | 10 | 2.38 | 7 | 4 | 21 | |
| | I | Sta Rosa | 300 | 3.36 | 9 | 2.02 | 7 | 4 | 20 | |
| | I | Quezon | 40 | - | - | - | - | - | 6 | IPTS |
| | I | Zaragosa | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Carranglan | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Gabaldon | 40 | - | - | - | - | - | 6 | IPTS |
| | II | G.M. Natividad | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Nampicuan | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Penaranda | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Baler | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Casiguran | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Dilasag | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Dinalongan | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Dingalan | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Dipaculao | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Maria Aurora | 40 | - | - | - | - | - | 6 | IPTS |
| | II | San Luis | 40 | - | - | - | - | - | 6 | IPTS |
| | | Private Co.'s | | | 184 | | 128 | 36 | 348 | |
| Tarlac | I | Gerona | 400 | 4.44 | 10 | 2.66 | 8 | 4 | 22 | |
| | I | La Paz | 400 | 3.96 | 10 | 2.38 | 7 | 4 | 21 | |
| | II | Anao | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Mayantoc | 40 | - | - | - | - | - | 6 | IPTS |
| | II | Ramos | 40 | - | - | - | - | - | 6 | IPTS |
| | II | San Manuel | 40 | - | - | - | - | - | 6 | IPTS |
| Olongapo | I | Botolan | 400 | 3.72 | 9 | 2.23 | 7 | 4 | 20 | |
| | I | Iba | 400 | 4.68 | 11 | 2.81 | 8 | 4 | 23 | |
| S. F. P. | I | Magalang | 300 | 2.88 | 8 | 1.73 | 6 | 4 | 18 | |
| | I | Porac | 400 | 4.32 | 10 | 2.59 | 8 | 4 | 22 | |
| | I | Sexmoan | 40 | - | - | - | - | - | 6 | IPTS |
| | II | San Simon | 40 | - | - | - | - | - | 6 | IPTS |