

第 8 章 費用便益分析

第8章 費用便益分析

以下に行う費用便益分析は、PedregalサイトとTalangaサイトの相対的評価を行なうことを目的とする。

費用便益分析は、“With and without test”，すなわち、当該プロジェクトの投資が行なわれた場合と行なわれなかった場合との比較の原則に基づく。

ここでは、Toncontín 空港を第2章2.3.3で述べた現施設水準のまま新規投資をせずに維持使用していく場合(Without)をベース・ケースとし、これと新空港候補地であるPedregalサイト及びTalangaサイトにおける新空港建設計画(With)との比較によって行なう。

8.1 前提条件

- a. プロジェクト・ライフを空港供用開始後20年とする。
- b. 費用及び便益の算出は1978年3月時点の実勢価格に基づくものとする。
すなわち、外貨・内貨の区分、熟練労働・非熟練労働の賃金区分及び税金の控除等は考慮しない。
- c. 建設費用は、プロジェクト・ライフの最終年次の需要に対応する施設規模の空港を計画当初に建設するものとして算出する。すなわち、段階施工は考えない。
- d. 評価基準は、内部収益率(IRR)によって行なうものとするが、ホンデュラスの社会的割引率12%に基づく純現在価値及び費用便益比率についても算出する。
- e. 感度分析は、費用推計値の30%増減について行なう。
なお、便益推計値の変動は、両サイトに等しく影響を及ぼすので、これについての感度分析は行なわない。

8.2 ベース・ケース

8.2.1 ベース・ケースの考え方

ベース・ケースは Toncontin 空港を現施設水準のまま、新規投資をせずに維持使用していくと想定したケースであって、費用便益計算の基準となるものである。ベース・ケースにおいては、将来ある時点において、Toncontin 空港の処理能力が限界に達することが予想され、それ以降、同空港においては、第4章において予測された航空需要がオーバー・フローすることになる。同空港の処理能力の限界年次の推定及びオーバー・フローする航空需要の推定は以下の通りである。

8.2.2 Toncontin 空港の処理能力の限界年次の推定

(1) 旅客ローディングエプロン

現エプロンの大きさは $50m \times 210m$ で、B737 2機、L188 1機の同時駐機が可能である。

一方、航空需要予測値に基づく各年の日当り便数は Table 8-1 に示す通りとなる。

可能な限り離着陸が空港運用時間帯内で平均されるように、即ち最も効率よくエプロンが使用されるよう各年のフライトスケジュールを想定し、スポットの割り当てを行くと、現エプロンで処理可能な日当り便数は国内線は1スポットで22便/日、国際線は2スポットで41便/日である。

従って、現エプロンは Fig. 8-1 に示すように1988年以降の日当り便数は処理できずオーバー・フローすることになる。

Table 8-1 . DAILY PASSENGER FLIGHT MOVEMENTS AT TONCONTIN

Origin ↔ Via ↔ Destination			Movements			
			1980	1985	1990	1995
TGU	BZE	-	1	1	1	1
		MIA	4	6	9	13
		MSY	3	5	7	11
		IAH	3	4	5	7
			11	16	22	32
TGU	GUA	-	1	2	2	3
		MEX	1	2	2	3
			2	4	4	6
TGU	SAL	-	2	3	4	6
		GUA	2	2	2	2
			4	5	6	8
TGU	MGA	-	2	2	3	4
		SJO	3	3	5	7
		PTY	2	3	4	6
			7	8	12	17
TGU	ADZ	-	1	1	3	4
Sub Total			25	34	47	67
TGU	SAP	-	4	5	8	10
"	LCE	-	3	5	7	9
"	OAN	-	2	4	5	7
"	PLD	-	1	1	2	2
Sub Total			10	15	22	28
Total			35	49	69	95

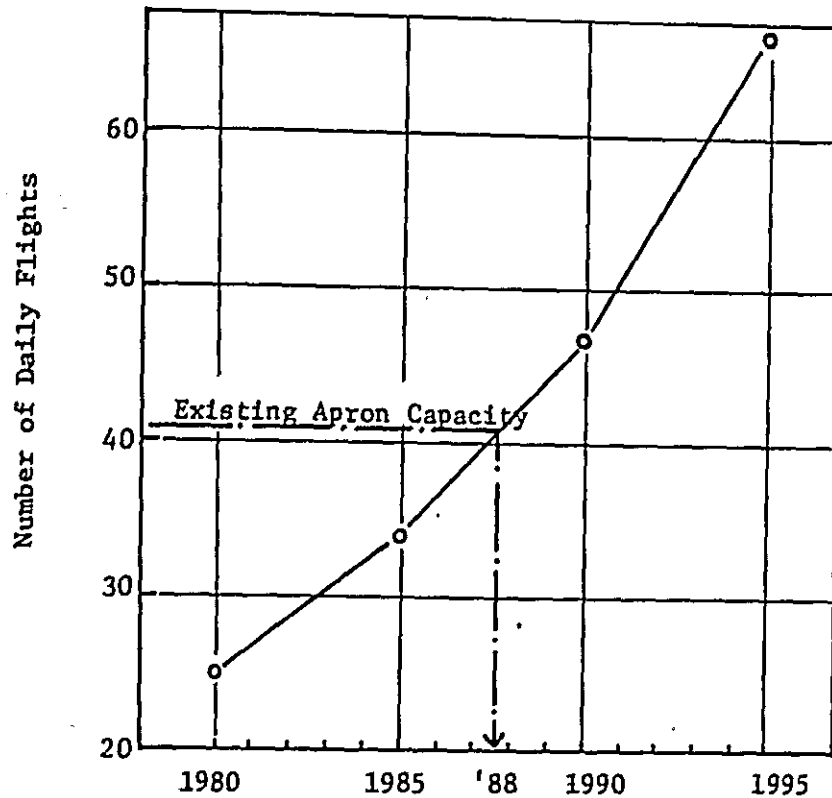


Fig. 8-1 PROJECTED DAILY INTERNATIONAL PASSENGER FLIGHT MOVEMENTS AT TONCONTIN AIRPORT

(2) 旅客及び貨物処理施設

現旅客ターミナルビルディングの処理能力は、Table 8-2に示すように、1時間当たり230人と推定される。前項8.2.2述べたように、旅客ローディングエプロンが運用時間中その処理能力(B737 2機, L188 1機)一杯に使用される1987年には、旅客ターミナルビルディングは、ほとんどその処理能力の限度に達することになる。

一方、国際線貨物処理施設の処理能力の限界は、現在、建築中の新貨物ターミナルビルディングを含めても、Table 8-3に示すように年間7,800トンと推定される。従って、1980年以降、国際線貨物はオーバー・フローすることになる。しかし、Table 8-3に示すように、国内線貨物処理施設は、2005年の貨物需要を処理することが可能である。

8.2.3 Toncontin 空港でオーバー・フローする航空輸送需要の推定

第4章に基づく年次別サイト別航空旅客需要予測値及び航空貨物需要予測値は、

それぞれ Table 8-4 及び Table 8-5 に示す通りである。前項 8.2 の検討結果によれば、Toncontín 空港において 1988 年以降の航空旅客需要はオーバー・フローすることになる。また、国際線貨物は、1980 年以降オーバー・フローすることになる (Fig. 8-2)。従って、ベース・ケースの航空需要及び Toncontín 空港においてオーバー・フローし、Pedregal サイト及び Talanga サイトにおいて処理される航空旅客需要 (乗降客) 及び航空貨物需要は、それぞれ Table 8-6 及び Table 8-7 に示される通りとなる。

Table 8-2 HOURLY HANDLING CAPACITY OF THE EXISTING PASSENGER TERMINAL BUILDING

Facility	Area	Hourly Handling Capacity
	m ²	person/hour
Departure Facility	820	130
Arrival Facility	325	100
Total	1,125	230

Table 8-3 ANNUAL HANDLING CAPACITY AT THE EXISTING CARGO TERMINAL BUILDINGS

Facility	Area	Annual Handling Capacity
	m ²	tons/year
International Cargo	2,800	7,800
Domestic Cargo	924	4,800
Total	3,724	12,600

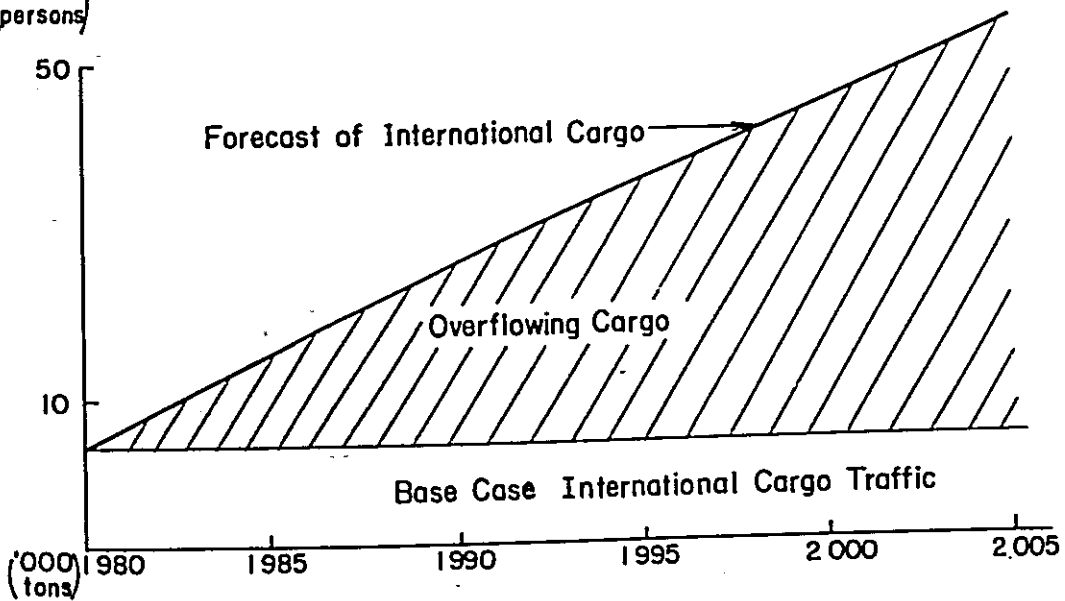
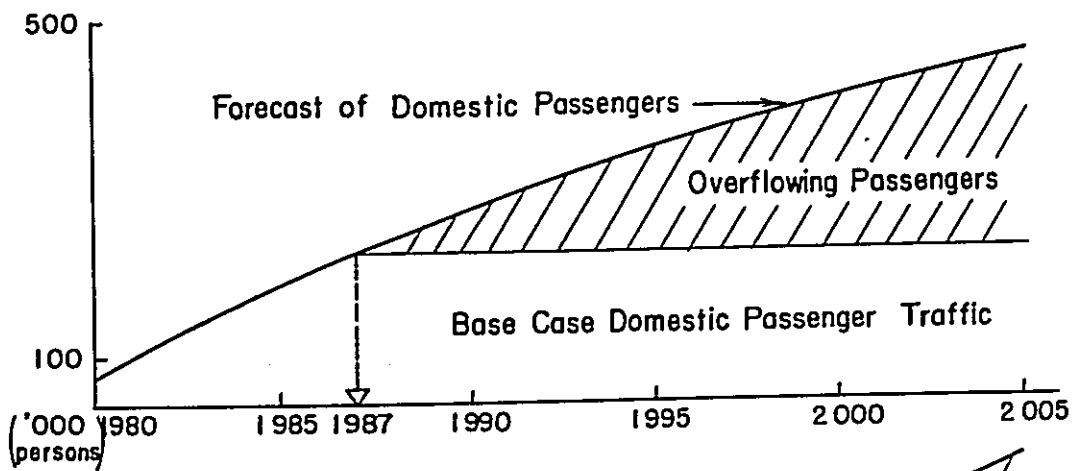
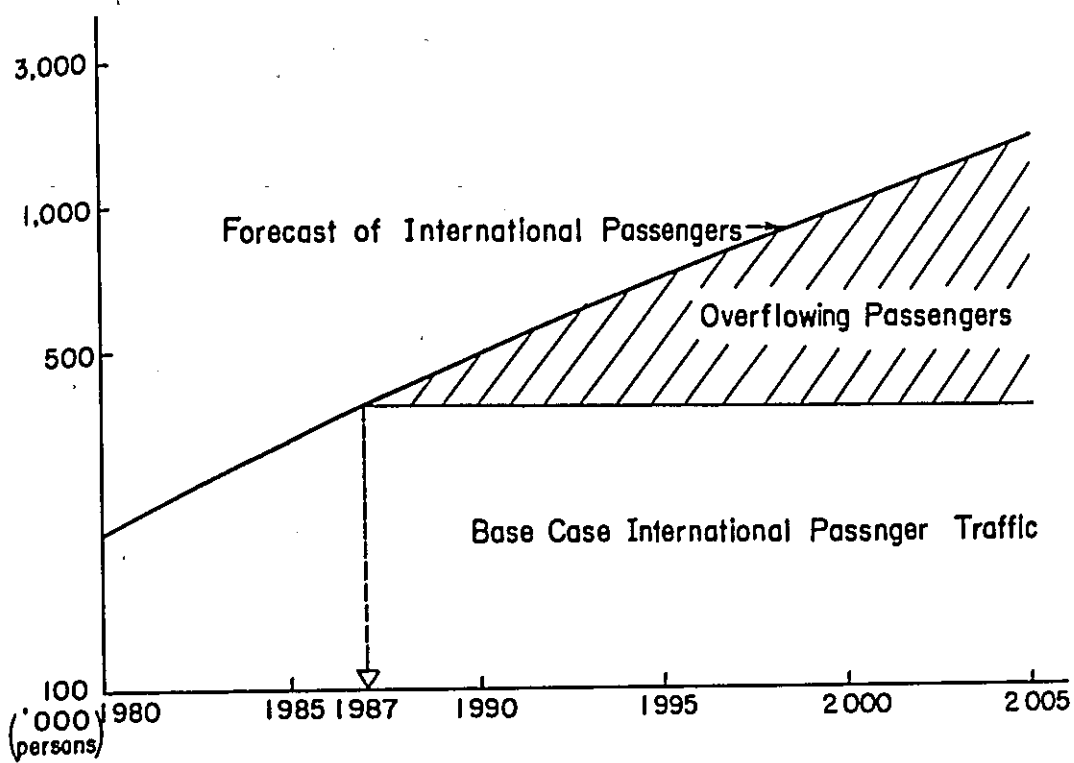


Fig.8-2 BASECASE DEMAND AND OVERFLOWING TRAFFIC AT TONCONTIN AIRPORT

Table 8-4 FORECASTS OF ANNUAL EMBARKING & DISEMBARKING PASSENGERS BY SITE
(In thousand persons)

Year	Toncontán Airport			Pedregal Site			Talanga Site		
	International	Domestic	Total	International	Domestic	Total	International	Domestic	Total
	1985	325	147	472	325	139	464	312	123
1986	353	157	510	353	149	502	339	132	471
1987	383	169	552	383	159	542	369	141	510
1988	416	181	597	416	170	586	401	151	552
1989	452	193	645	452	181	633	436	162	598
1990	491	207	698	491	194	685	474	174	648
1991	527	219	746	527	205	732	509	184	693
1992	566	231	797	565	216	781	547	195	742
1993	608	244	852	607	229	836	587	206	793
1994	653	258	911	652	241	893	630	218	848
1995	701	272	973	700	255	955	677	230	907
1996	752	285	1,037	751	267	1,018	726	240	966
1997	806	298	1,104	805	279	1,084	779	251	1,030
1998	864	312	1,176	863	292	1,155	835	263	1,098
1999	927	327	1,254	925	306	1,231	895	275	1,170
2000	994	342	1,336	992	320	1,312	960	287	1,247
2001	1,066	356	1,422	1,063	333	1,396	1,029	299	1,328
2002	1,143	370	1,513	1,139	347	1,486	1,102	311	1,413
2003	1,225	385	1,610	1,221	361	1,582	1,181	324	1,505
2004	1,313	400	1,713	1,308	376	1,684	1,265	337	1,602
2005	1,408	416	1,824	1,402	391	1,793	1,356	351	1,707

Table 8-5 FORECASTS OF ANNUAL INTERNATIONAL LOADED & UNLOADED CARGO TRAFFIC BY SITE

(In tons)

Year	Toncontin Airport	Pedregal Site	Talanga Site
1980	8,100	8,350	8,000
1981	8,830	9,090	8,730
1982	9,620	9,910	9,520
1983	10,480	10,790	10,380
1984	11,420	11,750	11,320
1985	12,450	12,800	12,350
1986	13,610	13,980	13,500
1987	14,880	15,270	14,750
1988	16,270	16,680	16,120
1989	17,790	18,220	17,610
1990	19,400	19,900	19,250
1991	20,980	21,530	20,800
1992	22,690	23,290	22,470
1993	24,540	25,200	24,280
1994	26,540	27,270	26,240
1995	28,700	29,500	28,350
1996	30,930	31,790	30,560
1997	33,330	34,270	32,950
1998	35,910	36,930	35,520
1999	38,700	39,800	38,300
2000	41,700	42,900	41,290
2001	44,920	46,220	44,460
2002	48,390	49,800	47,880
2003	52,130	53,660	51,560
2004	56,160	57,820	55,530
2005	60,500	62,300	59,800

Table 8-6 FORECASTS OF BASE CASE DEMAND AND OVERFLOWING PASSENGER TRAFFIC ACCOMMODATED AT ALTERNATIVE SITES

(In thousand persons)

Year	Base Case Passenger Traffic			Overflying Passengers Handled at Pedregal Site			Overflying Passengers Handled at Talanga Site			Total
	International Passenger	Domestic Passenger	Total	International Passenger	Domestic Passenger	Total	International Passenger	Domestic Passenger	Total	
1985	325	147	472	0	0	0	0	0	0	0
1986	353	157	510	0	0	0	0	0	0	0
1987	383	169	552	0	0	0	0	0	0	0
1988	383	169	552	33	1	34	18	0	18	18
1989	383	169	552	69	12	81	53	0	53	53
1990	383	169	552	108	25	133	91	5	96	96
1991	383	169	552	144	36	180	126	15	141	141
1992	383	169	552	182	47	229	164	26	190	190
1993	383	169	552	224	60	284	204	37	241	241
1994	383	169	552	269	72	341	247	49	296	296
1995	383	169	552	317	86	403	294	61	355	355
1996	383	169	552	368	98	466	343	71	414	414
1997	383	169	552	422	110	532	396	82	478	478
1998	383	169	552	480	123	603	452	94	546	546
1999	383	169	552	542	137	679	512	106	618	618
2000	383	169	552	609	151	760	577	118	695	695
2001	383	169	552	680	164	844	646	130	776	776
2002	383	169	552	756	178	934	719	142	861	861
2003	383	169	552	838	192	1,030	798	155	953	953
2004	383	169	552	925	207	1,132	882	168	1,050	1,050
2005	383	169	552	1,019	222	1,241	973	182	1,155	1,155

Table 8-7 FORECASTS OF BASE CASE DEMAND AND OVERFLOWING CARGO TRAFFIC ACCOMMODATED AT ALTERNATIVE SITES

Year	Base Case Cargo Traffic	(In tons)	
		Overflowing Cargo Handled at Pedregal Site	Overflowing Cargo Handled at Talanga Site
1986	8,100	5,880	5,400
1987	8,100	7,170	6,650
1988	8,100	8,580	8,020
1989	8,100	10,120	9,510
1990	8,100	11,800	11,150
1991	8,100	13,430	12,700
1992	8,100	15,190	14,370
1993	8,100	17,100	16,180
1994	8,100	19,170	18,140
1995	8,100	21,400	20,250
1996	8,100	23,690	22,460
1997	8,100	26,170	24,850
1998	8,100	28,830	27,420
1999	8,100	31,700	30,200
2000	8,100	34,800	33,190
2001	8,100	38,120	36,360
2002	8,100	41,700	39,780
2003	8,100	45,560	43,460
2004	8,100	49,720	47,430
2005	8,100	54,200	51,700

8.3 費用の計測

8.3.1 年次別空港建設費

Table 7-1~2 に示す工程表に基づいた年次別空港建設費は Table 8-8 の通りとなる。

Table 8-8 ESTIMATE OF ANNUAL CONSTRUCTION COST OF NEW AIRPORT AT PEDREGAL SITE AND TALANGA SITE

(In 1978 thousand lempiras)

Year	Pedregal Site	Talanga Site
1979	4,260	2,400
1980	10,040	9,690
1981	105,730	7,320
1982	104,300	21,330
1983	113,620	53,070
1984	130,270	59,070
1985	26,080	30,920
Total	494,300	183,800

8.3.2 年次別空港維持管理費

年次別空港維持管理費は、Pedregal サイトについては Table 8-9, Talanga サイトについては Table 8-10 にそれぞれ示す通りであり、つぎの算出基準にもとづく。

- a. 土木施設、建物施設、都市設備及び給油施設については、各工事費の1%を年間維持費として見込む。ただし、土木工事のうち、土工事費を除く。
- b. 航行援助施設については、工事費の5%を年間維持費として見込む。
- c. 人件費については、全空港従業員予測値(第4章 補2参照)のうち、空港管理要員を10%とし、平均年間給与を6,000 レンピーラと推定する。
- d. その他の管理費については、年間維持費及び年間人件費の合計の5%を見込む。

Table 8-9 ESTIMATE OF MAINTENANCE & OPERATION COST AT PEDREGAL SITE

(In 1978 thousand lempiras)

Year	Maintenance					Operation			Total
	Civil Works	Building	Nav-Aids	Sub Total	Others	Wages			
						Wages	Others		
1986	516.4	605.6	620.0	1,742	122	706		2,570	
1987	516.4	605.6	620.0	1,742	125	755		2,622	
1988	516.4	605.6	620.0	1,742	128	808		2,678	
1989	516.4	605.6	620.0	1,742	130	864		2,736	
1990	516.4	605.6	620.0	1,742	133	924		2,799	
1991	516.4	605.6	620.0	1,742	136	976		2,854	
1992	516.4	605.6	620.0	1,742	139	1,030		2,911	
1993	516.4	605.6	620.0	1,742	141	1,087		2,970	
1994	516.4	605.6	620.0	1,742	145	1,148		3,035	
1995	516.4	605.6	620.0	1,742	148	1,212		3,102	
1996	516.4	605.6	620.0	1,742	151	1,274		3,167	
1997	516.4	605.6	620.0	1,742	154	1,339		3,235	
1998	516.4	605.6	620.0	1,742	157	1,407		3,306	
1999	516.4	605.6	620.0	1,742	161	1,479		3,382	
2000	516.4	605.6	620.0	1,742	165	1,554		3,461	
2001	516.4	605.6	620.0	1,742	169	1,631		3,542	
2002	516.4	605.6	620.0	1,742	173	1,712		3,627	
2003	516.4	605.6	620.0	1,742	177	1,797		3,716	
2004	516.4	605.6	620.0	1,742	181	1,886		3,809	
2005	516.4	605.6	620.0	1,742	186	1,980		3,908	

Table 8-10 ESTIMATE OF MAINTENANCE & OPERATION COST AT TALANGA SITE

Year	(In 1978 thousand Lempiras)						Total
	Maintenance			Operation			
	Civil Works	Building	Nav-Aids	Sub-total	Wages	Others	
1986	505.2	595.4	613	1,714	675	119	2,508
1987	505.2	595.4	613	1,714	723	122	2,559
1988	505.2	595.4	613	1,714	774	124	2,612
1989	505.2	595.4	613	1,714	829	127	2,670
1990	505.2	595.4	613	1,714	888	130	2,732
1991	505.2	595.4	613	1,714	938	133	2,785
1992	505.2	595.4	613	1,714	992	135	2,841
1993	505.2	595.4	613	1,714	1,048	138	2,900
1994	505.2	595.4	613	1,714	1,107	141	2,962
1995	505.2	595.4	613	1,714	1,170	144	3,028
1996	505.2	595.4	613	1,714	1,230	147	3,091
1997	505.2	595.4	613	1,714	1,292	150	3,156
1998	505.2	595.4	613	1,714	1,358	154	3,226
1999	505.2	595.4	613	1,714	1,427	157	3,298
2000	505.2	595.4	613	1,714	1,500	161	3,375
2001	505.2	595.4	613	1,714	1,576	165	3,455
2002	505.2	595.4	613	1,714	1,656	169	3,539
2003	505.2	595.4	613	1,714	1,739	173	3,626
2004	505.2	595.4	613	1,714	1,828	177	3,719
2005	505.2	595.4	613	1,714	1,920	182	3,816

8.4 便 益 の 計 測

8.4.1 Toncontín 空港でオーバー・フローする航空旅客需要の充足による便益

前項 8.2 で検討したように、Pedregal サイト及び Talanga サイトの新空港は、ベース・ケースの Toncontín 空港でオーバー・フローする航空旅客需要を充足する。

航空旅客は、一般に時間価値の高い人々であり、航空のもたらす時間短縮、快適性、安全性等の効用に対して、航空運賃を支払うものと考えられる。従って、Toncontín 空港のオーバー・フロー航空旅客は、新空港を利用することにより、少くとも支払う意図のあった航空運賃に相当する便益を享受するものと考えられる。

現状の路線別運賃は Table 8-11 に示す通りである。Table 8-6 の路線別シェアを Table 4-3~4 と同じと考えると、路線別に Toncontín 空港でオーバー・フローする航空旅客の需要充足による便益の計測結果は Table 8-12 の通りである。なお、この結果は航空旅客の内国人対外国人の比率を現状と同じく、国際線旅客については、1 : 1 とし、国内線旅客については 9 : 1 とし、内国人の享受する便益についてのみ計測したものである。

8.4.2 Toncontín 空港でオーバー・フローする航空貨物の需要充足による便益

Pedregal サイト及び Talanga サイトの新空港においては、ベース・ケースの Toncontín 空港でオーバー・フローする国際線航空貨物需要が充足される。

航空貨物は一般に、貴重品、腐敗しやすい貨物、緊急性及び安全性を要求される貨物等の運賃負担力の高い貨物であり、荷送人は、これらの貨物の輸送に際して、航空のもたらす時間短縮効果、緊急性及び安全性の確保等の効用に対して航空運賃を支払って航空を利用すると考えられる。従って、新空港で充足される国際線航空貨物需要に対しては、少くとも荷送人が支払う意図のあった航空運賃に相当する便益を享受すると考えられる。

航空貨物運賃は原則として総重量によって計算されるが、一般貨物運賃、品目別運賃、大口割引運賃等に分かれており、その運賃体系は旅客運賃と比べてかなり複雑である。

本分析においては、国際線航空貨物 1 個当りの平均重量を 45 Kg とし、Table

Table 8-11 · INTERNATIONAL & DOMESTIC AIR FARE BY ROUTE

(In 1978 lempiras)

Route	Fare
<u>International Route</u>	
Tegucigalpa - Miami	250
Tegucigalpa - Mexico	250
Tegucigalpa - Panama	240
Tegucigalpa - San Andres	132
Tegucigalpa - San José	144
Tegucigalpa - Managua	76
Tegucigalpa - Guatemala	100
Tegucigalpa - Belize	110
Tegucigalpa - New Orleans	250
Tegucigalpa - Houston	250
Tegucigalpa - San Salvador	76
<u>Domestic Route</u>	
Tegucigalpa - San Pedro Sula	30
Tegucigalpa - La Ceiba	40
Tegucigalpa - Roatán	55
Tegucigalpa - Trujillo	55
Tegucigalpa - Olanchito	35
Tegucigalpa - Puerto Lempira	60

Source: TAN & SAHSA (As of March 1978)

Table 8-12 ESTIMATE OF BENEFITS OF SATISFIED TRIP DEMAND OF OVERFLOWING PASSENGERS

(In 1978 thousand lempiras)

Year	Pedregal Site				Talanga Site				Total
	International Passenger		Domestic Passenger	Total	International Passenger		Domestic Passenger	Total	
	Existing Routes	New Routes			Existing Routes	New Routes			
1986	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0
1988	2,568	324	39	2,892	1,388	193	1,581	1,581	1,581
1989	5,432	649	425	6,506	4,156	531	4,687	4,687	4,687
1990	8,942	906	891	10,739	7,619	757	8,376	8,376	8,376
1991	11,982	1,181	1,283	14,446	10,454	1,089	11,543	11,543	12,081
1992	15,035	1,497	1,674	18,206	13,614	1,422	15,036	15,036	15,967
1993	18,584	1,862	2,140	22,586	16,959	1,755	18,714	18,714	20,058
1994	22,352	2,223	2,565	27,140	20,521	2,134	22,655	22,655	24,411
1995	26,933	2,490	3,075	32,498	24,960	2,414	27,374	27,374	29,574
1996	31,271	2,888	3,505	37,664	29,098	2,830	31,928	31,928	34,486
1997	35,803	3,335	3,845	42,983	33,631	3,248	36,879	36,879	39,840
1998	40,743	3,777	4,400	48,920	38,385	3,713	42,098	42,098	45,488
1999	46,015	4,269	4,899	55,183	41,443	4,221	45,664	45,664	49,484
2000	52,432	4,602	5,394	62,428	49,714	4,527	54,241	54,241	58,477
2001	58,583	5,121	5,858	69,562	55,658	5,068	60,726	60,726	65,395
2002	65,042	5,731	6,358	77,131	61,914	5,659	67,573	67,573	70,672
2003	72,124	6,336	6,855	85,315	68,677	6,295	74,972	74,972	80,554
2004	79,627	7,112	7,392	94,131	75,985	6,926	82,911	82,911	88,941
2005	88,473	7,463	7,955	103,891	84,491	7,450	91,941	91,941	98,506

8-13の路線別最低運賃を適用する。さらにTable 8-7の路線別シェアはTable 4-11~12と同じとする。以上に基づいて、Toncontín空港でオーバー・フローする国際線航空貨物の需要充足による便益の計測結果はTable 8-14の通りとなる。

8.4.3 観光収入の付加価値額の増大

Pedregal サイト及び Talanga サイトの新空港においては、ベース・ケースに比べ Toncontín 空港でオーバー・フローする航空旅客需要が充足されるが、このうち国際線旅客の1/2は外国人旅客である。従って、新空港建設による外国人旅客の増加に伴ない、ホンデュラス国における観光消費が増大することになる。

1972年~1976年の期間の、ホンデュラスにおける外国人観光客1人当りの平均消費額(名目)はTable 8-15の通りに推移しており、年平均増加率は10%である。同様の傾向で推移したとすれば1978年の外国人観光客1人当りの平均消費額(名目)は285 レンビーラであると推定される。国家観光開発計画によれば、1974年の観光客1人当り滞在日数は4.2日であり、将来観光インフラストラクチャーの整備によって、滞在日数は年平均0.5日ずつ増大すると見込まれている。従って、2005年までに外国人観光客1人当りの平均消費額は、滞在日数の増加によって年平均5%増加するものと推計される。

ホンデュラスの観光産業の付加価値率を全産業の平均値である50%(世銀推計)として、外国人到着旅客の増加に伴ない観光収入の付加価値額を算出するとTable 8-16の通りとなる。

8.4.4 就航率向上による便益

Pedregal サイト及び Talanga サイトの新空港においては、ILSを設置することにより、Toncontín 空港に比べて航空機の就航率が向上する。各空港サイトの就航率は以下の通りである。

Toncontín 空港	80%	(実績)
Pedregal サイト	95%	(予想)
Talanga サイト	95%	(予想)

すなわち、新空港においては、Toncontín 空港に比べ、悪天候によって航空機

Table 8-13 MINIMUM CHARGES OF INTERNATIONAL AIR
CARGO BY ROUTE

(In 1978 lempiras)

Route	Minimum Charge
Tegucigalpa - Miami	52
Tegucigalpa - Mexico	46
Tegucigalpa - Panama	46
Tegucigalpa - San Andres	46
Tegucigalpa - San José	46
Tegucigalpa - Managua	46
Tegucigalpa - Guatemala	46
Tegucigalpa - Belize	46
Tegucigalpa - New Orleans	52
Tegucigalpa - Houston	52
Tegucigalpa - San Salvador	46

Table 8-14 ESTIMATE OF BENEFITS OF SATISFIELD TRANSPORT DEMAND OF OVERFLOWING INTERNATIONAL CARGO
(In 1978 lempiras)

Year	Pedregal Site			Talanga Site			Total
	Existing Routes	New Routes	Total	Existing Routes	New Routes	Total	
1986	4,936	789	5,725	4,699	638	5,337	
1987	5,878	931	6,809	5,643	759	6,402	
1988	7,000	1,098	8,098	6,778	903	7,681	
1989	8,337	1,296	9,633	8,140	1,075	9,215	
1990	9,928	1,529	11,457	9,776	1,279	11,055	
1991	11,160	1,734	12,894	11,007	1,446	12,453	
1992	12,545	1,967	14,512	12,393	1,634	14,027	
1993	14,101	2,230	16,331	13,953	1,847	15,800	
1994	15,851	2,530	18,381	15,710	2,087	17,797	
1995	17,818	2,869	20,687	17,688	2,359	20,047	
1996	19,618	3,173	22,791	19,511	2,612	22,123	
1997	21,599	3,509	25,108	21,521	2,891	24,412	
1998	23,780	3,881	27,661	23,738	3,201	26,939	
1999	26,182	4,292	30,474	26,184	3,544	29,728	
2000	28,826	4,747	33,573	28,882	3,923	32,805	
2001	31,455	5,213	36,668	31,511	4,312	35,823	
2002	34,323	5,725	40,049	34,380	4,739	39,119	
2003	37,453	6,287	43,740	37,509	5,209	42,718	
2004	40,868	6,905	47,774	40,924	5,725	46,649	
2005	44,595	7,583	52,178	44,649	6,292	50,941	

Table 8-15 VALUE CONSUMED PER VISITORS

Year	Number of Visitors	Total Income of Tourism (thousand lempiras)	Value Consumed Per Tourist (lempiras)
1972	61,923	9,841	159
1973	74,857	14,665	196
1974	90,815	16,337	180
1975	80,850	17,655	218
1976	98,906	23,200	235

Source: INSTITUTO HONDURENO DE TURISMO

Table 8-16 ESTIMATE OF INCREASED VALUE-ADDED OF TOURISM INCOME

(In 1978 prices)

Year	Pedregal Site				Talanga Site			
	Number of In- creased Arriv- ing Non-resident Passengers	Value Con- sumed per Passenger (lempiras)	Increased Tour- ism Income (thousand lemp- iras)	Value-Added Increase of Tourism In- come (thousand lempiras)	Number of In- creased Arriv- ing Non-resident Passengers	Value Con- sumed per Passenger (lempiras)	Increased Tourism Income (thousand lempiras)	Value Added Increase of Tourism In- come (thousand lempiras)
1986	0	421	0	0	0	421	0	0
1987	0	442	0	0	0	442	0	0
1988	8,250	464	3,828	1,914	4,500	464	2,088	1,044
1989	17,250	487	8,401	4,201	13,250	487	6,453	3,226
1990	27,000	512	13,824	6,912	22,750	512	11,648	5,824
1991	36,000	537	19,332	9,666	31,500	537	16,916	8,458
1992	45,500	564	25,662	12,831	41,000	564	23,124	11,562
1993	56,000	592	33,152	16,576	51,000	592	30,192	15,096
1994	67,250	622	41,830	20,915	61,750	622	38,409	19,204
1995	79,250	653	51,750	25,875	73,500	653	47,996	23,998
1996	92,000	686	63,112	31,556	85,750	686	58,825	29,412
1997	105,500	720	75,960	37,980	99,000	720	71,280	35,640
1998	120,000	756	90,720	45,360	113,000	756	85,428	42,714
1999	135,500	794	107,587	53,794	128,000	794	101,632	50,816
2000	152,250	834	126,977	63,489	144,250	834	120,305	60,152
2001	170,000	875	148,750	74,375	161,500	875	141,313	70,656
2002	189,000	919	173,691	86,846	179,750	919	165,190	82,595
2003	209,500	965	202,168	101,084	199,500	965	192,518	96,259
2004	231,250	1,013	234,256	117,128	220,500	1,013	223,367	111,683
2005	254,750	1,064	271,054	135,527	243,250	1,064	258,818	129,409

が空港に着陸できないケースが年間15%減少する。従って、新空港建設によって、Tegucigalpaを目的地とする航空旅客は、Toncontín空港に着陸できない場合に代替空港であるSan Pedro Sula空港に到着し、そこから道路輸送を利用してTegucigalpaまで来るのに要する時間費用が節約されることになる。この就航率向上による便益は次式で表わされる。

$$B = (v T_T + C_T) n$$

ここで B : 就航率向上による便益

T_T : San Pedro Sula-Tegucigalpa間のバス輸送時間

C_T : San Pedro Sula-Tegucigalpa間のバス運賃

v : 航空旅客の時間価値

n : 対象航空旅客数

上式に基く便益は、Table 8-17の通り計測される。

なお、San Pedro Sula-Tegucigalpa間のバス輸送時間は4時間、バス運賃は平均6レンピーラとする(1978年実績)。対象航空旅客は、ベース・ケースの到着航空旅客の15%とし、かつ内国人のみとする。また内国人の航空旅客の時間価値は1976年のホンデュラスの工業部門及びサービス部門の就業者1人当たり付加価値額に基き、かつ、予測期間中、国内総生産の実質成長率に等しく増大するものとして以下のものとする。

年	レンピーラ
1978	5.0
1980	5.5
1985	7.0
1990	9.0
1995	11.0
2000	13.0
2005	16.0

8.4.5 航空機騒音対策費の節約による便益

第2章2.4.4項において述べたように、Toncontín空港を継続使用していく場合には、航空機騒音に対する補償が必要となってくる。しかし、この費用は Ped-

Table 8-17 ESTIMATE OF BENEFITS DERIVED FROM IMPROVEMENT OF RUNWAY USABILITY AT NEW SITES

Year	Number of Passengers Benefited ('000)			Benefit (In 1978 thousand lempiras)
	International	Domestic	Total	
1986	13.2	10.7	23.9	837
1987	14.4	11.4	25.8	955
1988	14.4	11.4	25.8	1,006
1989	14.4	11.4	25.8	1,032
1990	14.4	11.4	25.8	1,084
1991	14.4	11.4	25.8	1,122
1992	14.4	11.4	25.8	1,162
1993	14.4	11.4	25.8	1,203
1994	14.4	11.4	25.8	1,246
1995	14.4	11.4	25.8	1,290
1996	14.4	11.4	25.8	1,329
1997	14.4	11.4	25.8	1,369
1998	14.4	11.4	25.8	1,410
1999	14.4	11.4	25.8	1,452
2000	14.4	11.4	25.8	1,496
2001	14.4	11.4	25.8	1,553
2002	14.4	11.4	25.8	1,613
2003	14.4	11.4	25.8	1,675
2004	14.4	11.4	25.8	1,739
2005	14.4	11.4	25.8	1,806

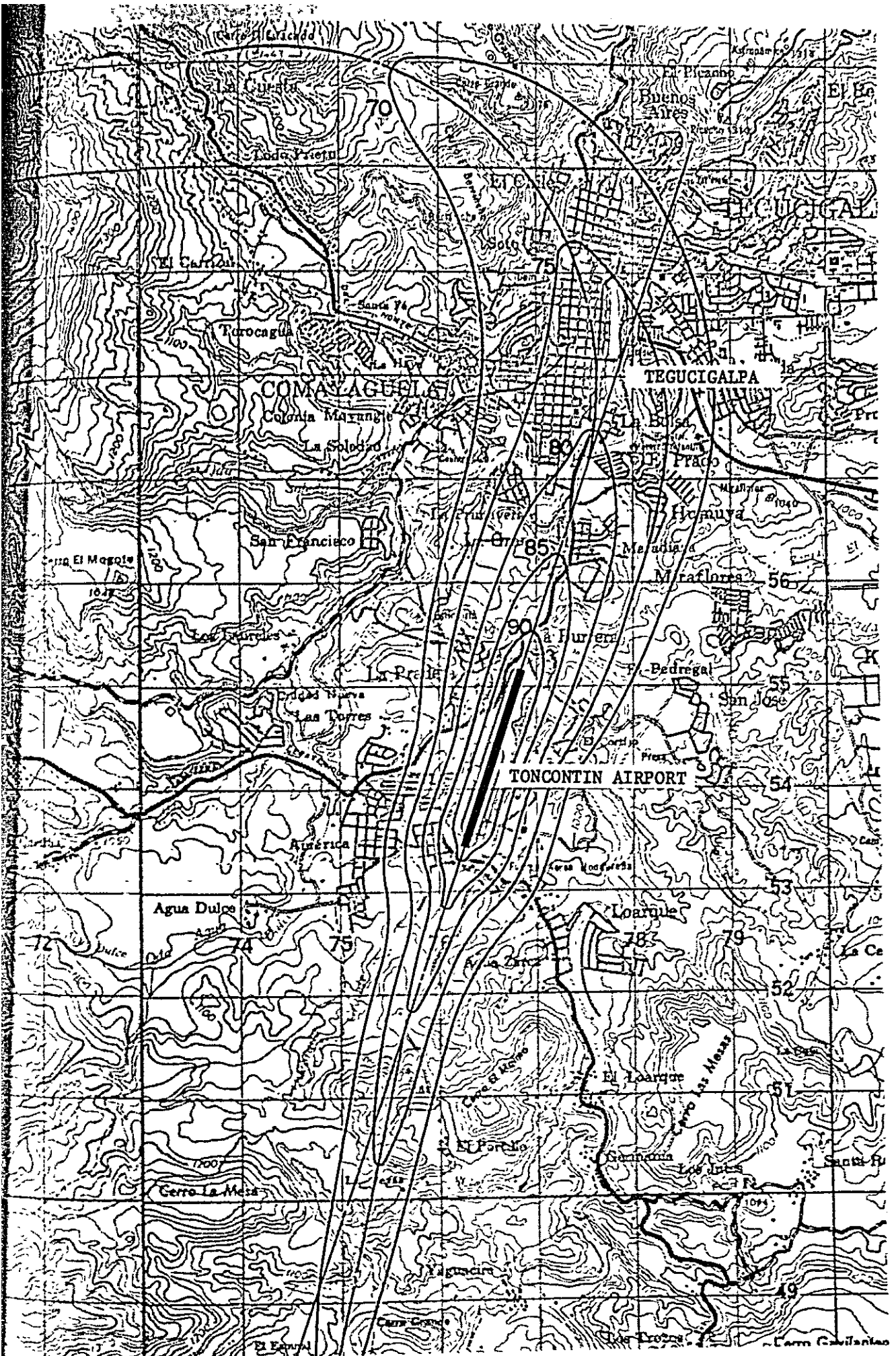


Fig. 8-3 WECPNL NOISE CONTOURS (YEAR 1987)

regal サイトあるいは Talanga サイトに新空港が建設された場合には節約されることになる。

ICAO ANNEX 16 に準拠して、WECPNL を騒音の計測単位として使用することとし、Toncontín 空港が処理能力に達する 1987 年の航空機発着回数に基づく WECPNL コンター図を作成すると Fig. 8-3 に示すものとなる。

ホンデュラスにおいては、まだ航空機騒音に対する補償基準はない。本章においては、日本はじめ各国において法律に基づいて補償する基準を参考とした次の基準に基づいて便益を計測する。

WECPNL	80-90	家屋防音工事費
WECPNL	90 以上	家屋移転補償費

対象地域の面積は、1 万分 1 市街地図により算定し、1978 年現在の補償対象世帯数は、1974 年の国勢調査に基づく。すなわち、1978 年以降の対象地域内への新規移入世帯に対する補償は考慮しない。

この基準によって、Toncontín 空港における航空機騒音対策費を計測すると、Table 8-18 の通りとなる。ただし、ベース・ケースにおいては、1988 年以降の航空機発着回数の増大は見込まれないので、1988 年以降の騒音対策費は必要としない。

Table 8-18 ESTIMATE OF COUNTER NOISE COST

	Number of Households	Unit Cost (In 1978 lempiras)	Total Cost
Cost of Noise Insulation Work	1,601	4,000	6,404,000
Cost of House Relocation	141	35,000	4,935,000
Total	1,742		11,339,000

8.4.6 Toncontín 空港の維持管理費の節約

新空港の供用開始にともない、現空港の維持に要する費用は節約されることになり、これも新空港の建設による便益として計測する。なお、年平均維持費としては現空港における 1971 年～1977 年の実績を参考に 90,000 レンピーラとする。

なお、この費用には人件費は含まれていない。

8.5 費用便益分析結果

前項 8.3 及び 8.4 で得た新空港建設計画の費用及び便益に基づく費用便益分析の結果を Pedregal サイトについては Table 8-20, Talanga サイトについては Table 8-21 にそれぞれ示す。すなわち, Pedregal サイトの IRR は 9.2%, Talanga サイトの IRR は 16.9% となり, Pedregal サイトに比べ, Talanga サイトの方が経済的に有利であると判定される。また, 費用及び便益のそれぞれについて, 投資規模の大きい Pedregal サイトから Talanga サイトを減じて得られたキャッシュ・フローについて, IRR を算出すると, 負の値となる。(Table 8-22)。

なお, 費用推計値の 30% 増減について行った感度分析の結果は Table 8-19 の通りである。すなわち, なんらかの技術的要因の変化によって Pedregal サイトの費用推計値が 30% 減となり, Talanga サイトの費用推計値が 30% 増になったとしても, なお, Talanga サイトが有利と判定される。

Table 8-19 SENSITIVITY ANALYSIS

Cost Fluctuation	IRR	
	Pedregal Site	Talanga Site
+30% of Estimated Cost	7.3%	14.6%
-30% of Estimated Cost	11.9%	20.4%

Table 8-20

COST-BENEFIT ANALYSIS OF NEW AIRPORT CONSTRUCTION AT PEDREGAL SITE

(In 1978 thousand lempiras)

No.	Year	Costs			Benefits						Present Value Discounted at 12%		
		Construction Cost	Maintenance & Operation Cost	Total Costs	Accommodated Overflying Passengers	Accommodated Overflying Cargo	Increased Value-Added of Tourism Income	Improved Runway Usability	Counter Noise Cost Saved	Maintenance & Operation Cost Saved	Total Benefits	Total Costs	Total Benefits
0	1978	0	0	0	0	0	0	0	0	0	0	0	0
1	1979	4,260	0	4,260	0	0	0	0	0	0	0	3,804	0
2	1980	10,040	0	10,040	0	0	0	0	0	0	0	8,002	0
3	1981	105,730	0	105,730	0	0	0	0	0	0	0	75,280	0
4	1982	104,300	0	104,300	0	0	0	0	0	0	0	66,335	0
5	1983	113,620	0	113,620	0	0	0	0	0	0	0	64,423	0
6	1984	130,270	0	130,270	0	0	0	0	0	0	0	66,047	0
7	1985	26,080	0	26,080	0	0	0	0	0	0	0	11,788	0
8	1986	0	2,570	2,570	0	5,725	0	837	0	0	0	1,038	2,687
9	1987	0	2,622	2,622	0	6,809	0	955	0	0	0	1,947	6,929
10	1988	0	2,678	2,678	2,931	8,099	1,914	1,006	0	0	0	862	4,521
11	1989	0	2,736	2,736	6,506	9,633	4,201	1,032	0	0	0	785	6,160
12	1990	0	2,799	2,799	10,739	11,457	6,912	1,084	0	0	0	719	7,782
13	1991	0	2,854	2,854	14,446	12,894	9,666	1,122	0	0	0	654	8,752
14	1992	0	2,911	2,911	18,206	14,512	12,831	1,162	0	0	0	597	9,594
15	1993	0	2,970	2,970	22,586	16,331	16,576	1,203	0	0	0	544	10,392
16	1994	0	3,035	3,035	27,140	18,381	20,915	1,246	0	0	0	495	11,047
17	1995	0	3,102	3,102	32,498	20,687	25,875	1,290	0	0	0	453	11,744
18	1996	0	3,167	3,167	37,664	22,791	31,556	1,329	0	0	0	412	12,146
19	1997	0	3,235	3,235	42,983	25,108	37,980	1,369	0	0	0	375	12,473
20	1998	0	3,306	3,306	48,920	27,661	45,360	1,410	0	0	0	344	12,838
21	1999	0	3,382	3,382	55,183	30,474	53,794	1,452	0	0	0	315	13,112
22	2000	0	3,461	3,461	62,428	33,573	63,489	1,496	0	0	0	287	13,369
23	2001	0	3,542	3,542	69,562	36,668	74,375	1,553	0	0	0	262	13,486
24	2002	0	3,627	3,627	77,131	40,049	86,846	1,613	0	0	0	239	13,578
25	2003	0	3,716	3,716	85,315	43,740	101,084	1,675	0	0	0	219	13,682
26	2004	0	3,809	3,809	94,131	47,774	117,128	1,739	0	0	0	202	13,826
27	2005	0	3,908	3,908	103,891	52,178	135,527	1,806	0	0	0	184	13,794
Total		494,300	63,430	557,730	812,260	484,544	846,029	26,379	11,339	1,800	2,182,351	305,612	211,912
Internal Rate of Return = 9.2%													
Net Present Value											-93,700		
Benefit-Cost Ratio											0.693		

Table 8-21 COST-BENEFIT ANALYSIS OF NEW AIRPORT CONSTRUCTION AT TALANGA SITE

(In 1978 thousand Lempiras)

No.	Year	Costs			Benefits						Present Value Dis-		
		Construc- tion Cost	Maintenance & Operation Cost	Total Costs	Accommoda- ted Overflying Passengers	Accommoda- ted Overflying Cargo	Increased Value-Added of Tourism Income	Improved Runway Usability	Counter Noise Cost Saved	Mainte- nance & Operation Cost Saved	Total Benefits	Total Costs	Total Benefits
0	1978	0	0	0	0	0	0	0	0	0	0	0	0
1	1979	2,400	0	2,400	0	0	0	0	0	0	0	2,143	0
2	1980	9,690	0	9,690	0	0	0	0	0	0	0	7,723	0
3	1981	7,320	0	7,320	0	0	0	0	0	0	0	5,212	0
4	1982	21,330	0	21,330	0	0	0	0	0	0	0	13,566	0
5	1983	53,070	0	53,070	0	0	0	0	0	0	0	30,091	0
6	1984	59,070	0	59,070	0	0	0	0	0	0	0	29,948	0
7	1985	30,920	0	30,920	0	0	0	0	0	0	0	13,976	0
8	1986	0	2,508	2,508	0	5,337	0	837	0	90	0	1,013	6,264
9	1987	0	2,559	2,559	0	6,402	0	955	11,339	90	0	924	18,786
10	1988	0	2,612	2,612	1,581	7,681	1,044	1,006	0	90	0	841	11,402
11	1989	0	2,670	2,670	4,687	9,215	3,226	1,032	0	90	0	766	18,250
12	1990	0	2,732	2,732	8,561	11,055	5,824	1,084	0	90	0	702	26,614
13	1991	0	2,785	2,785	12,081	12,453	8,458	1,122	0	90	0	638	34,204
14	1992	0	2,841	2,841	15,967	14,027	11,562	1,162	0	90	0	582	42,808
15	1993	0	2,900	2,900	20,058	15,800	15,096	1,203	0	90	0	531	52,247
16	1994	0	2,962	2,962	24,411	17,797	19,204	1,246	0	90	0	483	62,748
17	1995	0	3,028	3,028	29,574	20,047	23,998	1,290	0	90	0	442	74,999
18	1996	0	3,091	3,091	34,486	22,123	29,412	1,329	0	90	0	402	87,440
19	1997	0	3,156	3,156	39,840	24,412	35,640	1,369	0	90	0	336	101,351
20	1998	0	3,226	3,226	45,488	26,939	42,714	1,410	0	90	0	336	116,641
21	1999	0	3,298	3,298	49,484	29,728	50,816	1,452	0	90	0	307	131,570
22	2000	0	3,375	3,375	58,477	32,805	60,152	1,496	0	90	0	280	153,020
23	2001	0	3,455	3,455	65,395	35,823	70,656	1,553	0	90	0	256	173,517
24	2002	0	3,539	3,539	70,672	39,119	82,595	1,613	0	90	0	234	194,089
25	2003	0	3,626	3,626	80,554	42,718	96,259	1,675	0	90	0	214	221,296
26	2004	0	3,719	3,719	88,941	46,649	111,683	1,739	0	90	0	197	249,102
27	2005	0	3,816	3,816	98,506	50,941	129,409	1,806	0	90	0	179	280,752
Total		183,800	61,898	245,698	748,763	471,071	797,748	26,379	11,339	1,800	2,057,100	112,322	197,705
Internal Rate of Return = 16.9%											Net Present Value		85,383
											Benefit-Cost Ratio		1.760

Table 8-22 CASH FLOW DIFFERENCES BETWEEN NEW AIRPORT CONSTRUCTION AT PEDREGAL OVER TALANGA

(In 1978 thousand lempiras)

No.	Year	Costs			Benefits						Present Value			
		Construction Cost	Maintenance & Operation Cost	Total Costs	Accommodated Overflooding Passengers	Accommodated Overflooding Cargo	Increased Value-Added of Tourism Income	Improved Runway Usability	Counter Noise Saved	Maintenance & Operation Cost Saved	Total Benefits	Total Costs	Discounted at 12%	Total Benefits
0	1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1979	1,860	0	1,860	0	0	0	0	0	0	0	0	1,661	0
2	1980	350	0	350	0	0	0	0	0	0	0	0	279	0
3	1981	98,410	0	98,410	0	0	0	0	0	0	0	0	70,068	0
4	1982	82,970	0	82,970	0	0	0	0	0	0	0	0	52,769	0
5	1983	60,550	0	60,550	0	0	0	0	0	0	0	0	34,332	0
6	1984	71,200	0	71,200	0	0	0	0	0	0	0	0	36,098	0
7	1985	-4,840	0	-4,840	0	0	0	0	0	0	0	0	-2,188	0
8	1986	0	62	62	0	388	0	0	0	0	388	0	25	157
9	1987	0	63	63	0	407	0	0	0	0	407	0	23	147
10	1988	0	66	66	1,350	418	870	0	0	0	2,638	0	21	849
11	1989	0	66	66	1,819	418	975	0	0	0	3,212	0	19	922
12	1990	0	67	67	2,178	402	1,088	0	0	0	3,668	0	17	943
13	1991	0	69	69	2,365	441	1,208	0	0	0	4,014	0	16	919
14	1992	0	70	70	2,239	485	1,269	0	0	0	3,993	0	14	819
15	1993	0	70	70	2,528	531	1,480	0	0	0	4,539	0	13	831
16	1994	0	73	73	2,729	584	1,711	0	0	0	5,024	0	12	819
17	1995	0	74	74	2,924	640	1,877	0	0	0	5,441	0	11	794
18	1996	0	76	76	3,178	668	2,144	0	0	0	5,990	0	10	779
19	1997	0	79	79	3,143	696	2,340	0	0	0	6,179	0	9	717
20	1998	0	80	80	3,432	722	2,646	0	0	0	6,800	0	8	707
21	1999	0	84	84	5,699	746	2,978	0	0	0	9,423	0	8	876
22	2000	0	86	86	3,951	768	3,337	0	0	0	8,056	0	7	669
23	2001	0	87	87	4,167	845	3,719	0	0	0	8,731	0	6	646
24	2002	0	88	88	6,459	930	4,251	0	0	0	11,640	0	6	768
25	2003	0	90	90	4,761	1,022	4,825	0	0	0	10,608	0	5	626
26	2004	0	90	90	5,190	1,125	5,445	0	0	0	11,760	0	5	623
27	2005	0	92	92	5,385	1,237	6,118	0	0	0	12,740	0	4	599
Total		310,500	1,532	312,032	63,497	13,473	48,281	0	0	0	125,251	193,258		14,210
Internal Rate of Return = Minus												Net Present Value		
												- 179,048		
												Benefit-Cost Ratio		
												0.074		

第9章 総合評価

第9章 総合評価

各候補地に関する以上の分析調査にもとずき技術および経済の両面から総合的な評価を行なり。

9.1 技術面の評価

Pedregalサイトは、特にその土工事の性格および膨大な土工量のために Talanga サイトに比べて難工事が予想され、従って工期も長くなる。

航空機の離発着方式については、Pedregalサイトの方が制限が若干少ないが、滑走路が狭い台地の上に位置し、かつ航空機の離発着方向である南北側共に急峻な斜面となるためパイロットに与える心理的影響が危惧される。さらに Pedregal サイトにおける新空港は現 Toncontín 空港が軍用機あるいは小型機用に運用を続ける場合には管制上の調整を要し、処理能力の低下をきたすおそれもある。

Talanga サイトは将来必要となれば拡張の余地は十分あるが、一方 Pedregal サイトは地形条件がきびしく拡張は困難である。

以上、技術的な観点から判断すると、新空港建設用地としては Talanga サイトが Pedregal サイトに比してより適していると考えられる。

9.2 経済面の評価

前章の費用便益分析の結果から明らかな様に Talanga サイトが Pedregal サイトに比して有利である。

9.3 総合評価

新テグシカルバ空港建設のための最適地は Talanga サイトと考えられる。

A P P E N D I X

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- Appendix 2B. ANNUAL RECORDS OF TRANSPORT
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- Appendix 5A. STAGE LENGTH-PAYLOAD RELATIONSHIP
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APPENDIX 1A
SCOPE OF WORKS

SCOPE OF WORK

THE FEASIBILITY STUDY

FOR

THE NEW INTERNATIONAL AIRPORT CONSTRUCTION PROJECT

IN

TEGUCIGALPA, HONDURAS

I. INTRODUCTION

In response to the request of the Government of the Republic of Honduras, the Government of Japan has decided to conduct a feasibility study for the New International Airport in Tegucigalpa in accordance with laws and regulations in force in Japan, and the Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of technical cooperation programs of the Government of Japan, will carry out the study.

The present document sets forth the scope of work in regard to the above mentioned study which is to be carried out in close cooperation with the Government of the Republic of Honduras and authorities concerned.

II. OBJECTIVE

The objective is to study technical and economic feasibility of the New International Airport construction project in Tegucigalpa so as to contribute to optimum planning.

III. OUTLINE OF THE STUDY

This feasibility study will be divided into two stages as shown below.

First Stage: New airport site selection

Second stage: New airport basic planning

The second stage study will be started after the New airport site is selected by the Government of Honduras.

First stage study consists of the following:

- 1) Narrow down of choice of airport potential sites
- 2) Aviation demand forecasts
- 3) Facility requirements & planning criteria
- 4) Tentative airport layout planning
- 5) Aeronautical & engineering analysis
- 6) Economic analysis
- 7) Evaluation & conclusion as to sites

Second stage study consists of the following:

- 1) Airport layout plan
- 2) Air Navigation planning
- 3) Schedule & cost estimates
- 4) Financial analysis

IV. REPORTS

JICA will prepare and submit the following reports in course of the study. All documents are written in English and with Metric System.

- 1) Inception Report
- 2) Progress Report
- 3) Interim Report
- 4) Draft Final Report
- 5) Final Report

V. UNDERTAKING OF THE GOVERNMENT OF THE REPUBLIC OF HONDURAS

- 1) to provide the study team with data and information necessary for the study, including soil boring information and topographical maps as required scale.
- 2) to exempt the taxes and duties on the materials and personal effects which the study team will bring into the Republic of Honduras.
- 3) to assign the counterpart officials for the study team.
- 4) to provide suitable office spaces for the team.
- 5) to collaborate in collecting the necessary data and reference material, and also in ensuring that such documents are smoothly carried out of the country.
- 6) to make necessary arrangements for visiting the authorities and facilities concerned.
- 7) to provide the necessary means or equipments for the study team, for their business such as vehicles, airplane (use for evaluation flight), etc.

VI. TIME SCHEDULE

STAGES	MONTHS																							
	1	2	3	4	5	6	7	8	9	10	11	12												
Submission of; FIRST STAGE	<div style="display: flex; justify-content: space-between;"> <div style="width: 70%; border-bottom: 1px solid black;"></div> <div style="width: 30%;"></div> </div>																							
Inception Report													○											
Progress Report															○									
Interim Report							○																	
SECOND STAGE	<div style="display: flex; justify-content: space-between;"> <div style="width: 70%;"></div> <div style="width: 30%; border-bottom: 1px solid black;"></div> </div>																							
Draft Final Report																						○		
Final Report																							○	

- Notes:
- indicates the submission of Report.
 - indicates Home work in Japan.
 - ===== indicates Field work in Honduras.

APPENDIX 2A

ECONOMIC AND TRANSPORT DATA

Table 2A-1 PAST DEVELOPMENT OF GROSS DOMESTIC PRODUCT,
POPULATION AND PER CAPITA GDP IN THE REPUBLIC
OF HONDURAS

Year	Gross Domestic Product *1 (Milliones of Lempiras in 1966 Prices)	Population *2 (thousand)	Par capita GDP (Lempiras in 1966 Prices)
1960	797	1,943	410
1961	819	2,020	405
1962	861	2,096	411
1963	889	2,169	410
1964	942	2,238	421
1965	1,039	2,304	451
1966	1,100	2,384	461
1967	1,151	2,466	467
1968	1,235	2,552	484
1969	1,239	2,638	470
1970	1,278	2,639	484
1971	1,351	2,717	497
1972	1,406	2,801	502
1973	1,469	2,892	508
1974	1,478	2,990	494
1975	1,486	3,093	480
1976	1,584	3,203	495
1977	1,709	3,318	515

* 1 Source: BANCO CENTRAL DE HONDURAS

* 2 Source: DIRECCION GENERAL DE ESTADISTICA Y CENSOS

Table 2A-2

POPULATION OF HONDURAS BY DEPARTMENT

Department	1961 Census				1974 Census							
	Total	%	Urban*	%	Rural	%	Total	%	Urban*	%	Rural	%
TOTAL	1,884,765	100.0	437,818	23.2	1,446,947	76.8	2,656,948	100.0	909,848	34.2	1,747,100	65.8
Francisco Morazán	284,428	15.1	140,375	49.4	144,053	50.6	453,597	17.1	297,844	65.7	155,753	34.3
Atlántida	92,914	4.9	39,645	42.7	53,269	57.3	148,285	5.6	63,371	42.7	84,914	57.3
Colón	41,904	2.2	4,499	10.7	37,405	89.3	77,750	2.9	15,142	19.5	62,608	80.5
Comayagüa	96,442	5.1	14,466	15.0	81,976	85.0	136,619	5.1	42,958	31.4	93,661	68.6
Copán	126,183	6.7	12,241	9.7	113,942	90.3	151,859	5.7	39,507	26.0	112,352	74.0
Cortés	200,099	10.6	106,992	53.5	93,107	46.5	369,616	13.9	207,138	56.0	162,478	44.0
Choluteca	149,175	7.9	17,933	12.0	131,242	88.0	193,336	7.3	37,426	19.4	155,910	80.6
El Paraíso	106,823	5.7	13,770	12.9	93,053	87.1	140,793	5.3	26,052	18.5	114,741	81.5
Gracias a Dios	10,905	0.6	0	0.0	10,905	100.0	20,738	0.8	0	0.0	20,738	100.0
Intibucá	73,138	3.9	6,027	8.2	67,111	91.8	81,815	3.1	8,309	10.2	73,506	89.8
Islas de la Bahía	8,961	0.5	2,844	31.7	6,117	68.3	13,194	0.5	6,185	46.9	7,009	53.1
La Paz	60,600	3.2	6,533	10.8	54,067	89.2	66,046	2.5	11,190	16.9	54,856	83.1
Lempira	111,546	5.9	1,854	1.7	109,692	98.3	127,782	4.8	6,255	4.9	121,527	95.1
Ocotopeque	52,540	2.8	5,702	10.9	46,838	89.1	51,038	1.9	7,749	15.2	43,289	84.8
Olancho	110,744	5.9	14,048	12.7	96,696	87.3	151,436	5.7	29,387	19.4	122,049	80.6
Santa Bárbara	146,909	7.8	17,101	11.6	129,808	88.4	186,106	7.0	35,349	19.0	150,757	81.0
Valle	80,907	4.3	8,119	10.0	72,788	90.0	91,901	3.5	21,069	22.9	70,832	77.1
Yoro	130,547	6.9	25,669	19.7	104,878	80.3	195,037	7.3	54,917	28.2	140,120	71.8

* Refers to localities with 1,000 or more inhabitants.

Source: POBLACION Y VIVIENDA POR DEPARTAMENTO Y MUNICIPIO, 1976

Table 2A-3 POPULATION OF PRINCIPAL CITIES IN
HONDURAS

(In Census year)

City	1961	1974	Average Annual Growth Rate (%)
Tegucigalpa	134,075	273,894	5.6
San Pedro Sula	58,632	150,991	7.5
La Ceiba	24,863	38,788	3.5
Choluteca	11,483	26,152	6.5
Puerto Cortés	17,048	25,817	3.2
Tela	13,619	19,055	2.6
Comayagua	8,473	15,941	5.0
Siguatepeque	5,993	12,456	5.8
Santa Rosa de Copán	7,946	12,413	3.5
Danlí	6,325	10,825	4.2

Source: DIRECCION GENERAL DE ESTADISTICA Y CENSOS

Table 2A-4 GROSS DOMESTIC PRODUCT OF HONDURAS BY INDUSTRIAL ORIGIN

(In millions of current lempiras)

Item	1973	1974	1975	1976 ^P	1977 ^P
Agriculture, Forestry, Fishing and Hunting	563	578	562	687	852
Mining	44	64	53	50	58
Manufacturing	244	280	314	375	457
Construction	73	96	108	118	142
Electricity, Gas and Water	27	27	36	39	46
Transport and Telecommunications	114	124	138	159	194
Trade	197	216	242	280	341
Banking, Insurance & Real Estate	53	64	68	74	90
Ownership of Dwellings	118	127	137	148	161
Public Administration and Defense	58	62	68	79	95
Services	153	157	166	176	212
GDP at Factor Cost	1,644	1,795	1,892	2,185	2,648
Net Indirect Taxes	169	200	220	253	292
GDP at Market Prices	1,813	1,995	2,112	2,438	2,940
Annual Growth Rate (%)	-	10.0	5.9	15.4	20.6

(As percentage of GDP at factor cost)

Agriculture, Forestry, Fishing and Hunting	34.2	32.2	29.7	31.4	32.2
Mining	2.7	3.6	2.8	2.3	2.2
Manufacturing	14.8	15.6	16.6	17.2	17.3
Construction	4.4	5.3	5.7	5.4	5.4
Electricity, Gas and Water	1.6	1.5	1.9	1.8	1.7
Transport and Telecommunications	6.9	6.9	7.3	7.3	7.3
Trade	12.0	12.0	12.8	12.8	12.9
Banking, Insurance and Real Estate	3.2	3.6	3.6	3.4	3.4
Ownership of Dwellings	7.2	7.1	7.2	6.8	6.1
Public Administration and Defense	3.5	3.5	3.6	3.7	3.4
Services	9.5	8.7	8.8	7.9	8.1
GDP at Factor Cost	100.0	100.0	100.0	100.0	100.0

P: Preliminary Estimate

Source: BANCO CENTRAL DE HONDURAS

Table 2A-5 GROSS DOMESTIC PRODUCT OF HONDURAS BY INDUSTRIAL ORIGIN

(In millions of 1966 lempiras)

Item	1973	1974	1975	1976 ^P	1977 ^P
Agriculture, Forestry, Fishing and Hunting	468	427	401	440	476
Mining	34	45	33	28	30
Manufacturing	192	190	195	218	243
Construction	58	72	76	80	83
Electricity, Gas and Water	15	16	17	18	20
Transport and Telecommunications	83	84	84	90	97
Trade	166	174	176	188	200
Banking, Insurance and Real Estate	34	38	39	43	47
Ownership of Dwellings	96	100	105	111	116
Public Administration and Defense	43	42	45	50	55
Services	143	142	158	160	177
GDP at Factor Cost	1,332	1,330	1,329	1,426	1,544
Net Indirect Taxes	137	148	157	158	165
GDP at Market Prices	1,469	1,478	1,486	1,584	1,709
Annual growth rate (%)	-	0.6	0.5	6.6	7.9

(As percentage of GDP at factor cost)

Agriculture, Forestry, Fishing and Hunting	35.1	32.1	30.2	30.9	30.8
Mining	2.6	3.4	2.5	2.0	1.9
Manufacturing	14.4	14.3	14.7	15.3	15.7
Construction	4.4	5.4	5.7	5.6	5.4
Electricity, Gas and Water	1.1	1.2	1.3	1.2	1.3
Transport and Telecommunications	6.2	6.3	6.3	6.3	6.3
Trade	12.5	13.1	13.2	13.2	13.0
Banking, Insurance and Real Estate	2.6	2.9	2.9	3.0	3.0
Ownership of Dwellings	7.2	7.5	7.9	7.8	7.5
Public Administration and Defense	3.2	3.1	3.4	3.5	3.6
Services	10.7	10.7	11.9	11.2	11.5
GDP at Factor Cost	100.0	100.0	100.0	100.0	100.0

P: Preliminary Estimate

Source: BANCO CENTRAL DE HONDURAS

Table 2A-6 VALUE OF PRINCIPAL EXPORTS OF HONDURAS

(In thousands of current lempiras)

Item	1972	1973	1974	1975	1976
Bananas	181,312	187,983	159,415	122,932	213,366
Coffee	54,505	95,636	88,009	113,845	200,631
Lumber	54,218	78,176	81,481	77,602	76,053
Beef	31,921	43,566	33,415	36,472	51,168
Silver	10,399	13,886	26,209	22,063	27,090
Lead	8,182	8,269	12,914	8,000	12,719
Zinc	7,540	14,624	20,982	32,160	23,836
Shrimps & Lobsters	4,680	4,460	8,138	20,580	24,506
Cotton	1,342	2,922	6,273	9,007	8,730
Sugar	4,098	24	9,044	13,836	4,415
Soap	307	2,481	5,314	7,941	13,229
Tobacco	4,394	5,720	8,503	11,138	11,794
Wooden Products	1,944	2,811	3,844	3,029	7,245
Others	44,246	56,924	112,104	107,920	108,880
Total	409,088	517,482	575,645	586,525	783,662
Annual growth rate(%)	-	26.5	11.2	1.9	33.6

(As percentage of Exports)

Bananas	44.3	36.3	27.7	21.0	27.2
Coffee	13.3	18.5	15.3	19.4	25.6
Lumber	13.3	15.1	14.2	13.2	9.7
Beef	7.8	8.4	5.8	6.2	6.5
Silver	2.5	2.7	4.6	3.8	3.5
Lead	2.0	1.6	2.2	1.4	1.6
Zinc	1.8	2.8	3.6	5.5	3.0
Shrimps & Lobsters	1.1	0.9	1.4	3.5	3.1
Cotton	0.3	0.6	1.1	1.5	1.1
Sugar	1.0	0.0	1.6	2.4	0.6
Soap	0.1	0.5	0.9	1.4	1.7
Tobacco	1.1	1.1	1.5	1.9	1.5
Wooden Products	0.5	0.5	0.7	0.5	0.9
Others	10.9	10.9	19.4	18.3	14.0
Total	100.0	100.0	100.0	100.0	100.0

Source: BANCO CENTRAL DE HONDURAS

Table 2A-7 VALUE OF PRINCIPAL IMPORTS OF HONDURAS

(In thousand of current lempiras)

	1972	1973	1974	1975	1976
Food	34,749	44,483	62,338	90,371	74,424
Beverage and Tobacco	1,457	1,916	2,890	2,790	4,493
Raw Materials	6,588	5,374	11,235	12,460	17,129
Fuel and Lubric	38,351	52,139	126,862	136,996	96,417
Oil & Grease of Vegetables and Animals	3,634	4,301	9,331	8,880	11,199
Chemical Products	62,007	79,422	112,350	116,505	148,017
Intermediate Goods	111,639	150,879	209,180	172,805	236,097
Machinery & Material of Transport	100,789	151,475	204,637	213,510	261,725
Other Manufacturing Goods	25,060	32,629	38,183	43,250	54,172
Others	1,312	1,868	6,293	2,451	2,491
Total	385,586	524,486	783,299	800,018	906,164
Annual growth rate (%)	-	36.0	49.3	2.1	13.3

(As percentage of Imports)

Food	9.0	8.5	8.0	11.3	8.2
Beverage and Tobacco	0.4	0.4	0.4	0.3	0.5
Raw Materials	1.7	1.0	1.4	1.6	1.9
Fuel and Lubric	9.9	9.9	16.2	17.1	10.6
Oil & Grease of Vegetables and Animals	0.9	0.8	1.2	1.1	1.2
Chemical Products	16.1	15.1	14.3	14.6	16.3
Intermediate Goods	29.0	28.8	26.7	21.6	26.1
Machinery & Material of Transport	26.1	28.9	26.1	26.7	28.9
Other Manufacturing Goods	6.5	6.2	4.9	5.4	6.0
Others	0.4	0.4	0.8	0.3	0.3
Total	100.0	100.0	100.0	100.0	100.0

Source: BANCO CENTRAL DE HONDURAS

Table 2A-8 PAST DEVELOPMENT OF LENGTH OF ROADS IN
HONDURAS

Year	(1960 - 1976)			
	Total	Paved Road	All-Weather Road	Road only for Dry Season
1960	3,229	110	2,184	935
1961	3,385	345	2,097	943
1962	3,406	380	2,106	920
1963	3,437	380	2,125	932
1964	3,595	382	1,805	1,408
1965	3,639	407	1,852	1,380
1966	4,048	407	1,982	1,713
1967	4,349	416	1,978	1,955
1968	4,570	472	2,120	1,978
1969	4,728	622	2,102	2,004
1970	4,940	745	2,162	2,033
1971	5,589	1,168	2,988	1,433
1972	5,746	1,228	3,028	1,490
1973	5,943	1,228	3,225	1,490
1974	6,136	1,240	3,406	1,490
1975	6,595	1,327	3,670	1,598
1976	7,249	1,408	4,121	1,720

Source: ANUARIO ESTADISTICO 1975 & SECOPT

Table 2A-9 PAST DEVELOPMENT OF NUMBER OF REGISTERED
CARS IN HONDURAS

(1960 - 1976)

Year	Total	Automobile	Bus	Truck	Others
1960	10,989	5,505	1,269	3,914	301
1961	11,338	5,680	1,334	4,001	323
1962	11,606	5,850	1,407	4,025	324
1963	14,329	7,476	1,661	4,881	311
1964	16,002	8,759	1,217	5,909	117
1965	18,797	10,273	1,526	6,682	316
1966	21,609	11,786	1,784	7,871	168
1967	22,570	12,042	1,704	8,784	40
1968	24,748	11,045	1,982	11,617	104
1969	27,527	12,254	2,198	12,950	125
1970	28,706	12,630	2,296	13,492	288
1971	30,733	13,765	2,066	14,874	28
1972	34,139	16,701	2,399	15,039	-
1973	33,982	15,713	2,690	15,567	12
1974	37,661	16,077	4,323	17,194	67
1975	43,838	18,152	5,103	20,583	-
1976	47,337
Average Annual Growth Rate (%)					
1960 - 1970	10.1	8.7	6.1	13.2	-0.4
1970 - 1975	8.9	7.5	17.3	8.8	-

Source: ANUARIO ESTADISTICO 1975

(....) : NOT AVAILABLE

Table 2A-10 PAST DEVELOPMENT OF INTERNATIONAL PASSENGERS TRAFFIC AT INTERNATIONAL AIRPORTS IN CENTRAL AMERICA

	(1960 - 1975)					(persons)	
	Guatemala *1	El Salvador *1	San Pedro Sula *2	Tegucigalpa *2	Managua *1		San Jose *1
1960	111,265	82,800	13,814	49,583	45,298	89,793	392,553
1961	120,232	91,500	13,668	45,342	49,017	93,609	413,368
1962	110,777	85,000	14,206	45,130	52,977	94,840	402,930
1963	122,714	94,500	26,510	39,116	61,588	101,858	446,286
1964	134,744	90,000	19,493	43,434	68,212	101,072	456,955
1965	156,197	98,509	25,514	48,650	78,025	122,008	528,903
1966	180,372	128,215	38,516	46,744	92,841	139,568	626,256
1967	199,851	127,939	36,808	46,622	95,166	155,476	661,862
1968	208,723	144,590	49,547	65,922	101,468	166,400	736,650
1969	244,362	139,824	56,708	70,804	113,497	197,024	822,219
1970	246,250	148,930	61,775	70,654	140,566	225,168	893,343
1971	260,422	156,516	54,910	75,957	148,922	252,130	948,857
1972	292,374	162,782	52,743	80,440	161,738	278,050	1,028,127
1973	347,462	186,160	62,201	85,308	150,718	336,054	1,167,903
1974	380,952	211,052	65,945	91,777	178,496	382,564	1,310,786
1975	406,490	224,968	66,313	95,885	177,806	409,428	1,380,890
Average Annual Growth Rate (%)							
1960 - 1970	8.3	6.1	16.2	3.6	12.0	9.6	8.6
1970 - 1975	10.5	8.6	1.4	6.3	4.8	12.7	9.1

Source: *1 ESTUDIO CENTROAMERICANO DE TRANSPORTE
 *2 DIRECCION GENERAL DE AERONAUTICA CIVIL, REPUBLICA DE HONDURAS

Table 2A-11 PAST DEVELOPMENT OF DOMESTIC PASSENGERS TRAFFIC AT INTERNATIONAL AIRPORTS IN CENTRAL AMERICA

	(1965 - 1975)				Total (persons)	
	Guatemala*1	San Pedro Sula*2	Tegucigalpa*2	Managua*1		San Jose*1
1965	42,350	55,591	63,171	31,882	94,154	287,148
1966	44,900	70,561	77,935	32,733	97,887	324,016
1967	47,812	75,262	86,432	34,006	103,850	347,362
1968	42,535	87,515	101,789	19,234	122,000	373,073
1969	36,432	110,585	112,255	18,954	130,893	409,119
1970	29,464	138,591	133,126	25,991	150,651	477,823
1971	24,043	94,952	93,739	30,252	185,259	428,245
1972	34,808	56,126	64,532	22,477	196,950	374,893
1973	47,754	40,973	57,436	20,324	202,332	368,819
1974	66,670	42,769	56,486	24,309	212,507	402,741
1975	79,500	35,591	42,899	27,963	242,817	428,770
Average Annual Growth Rate (%)						
1965 - 1970	-7.0	20.0	16.1	-4.0	9.9	10.7
1970 - 1975	22.0	-23.8	-20.3	1.5	10.0	-2.1

Source: *1 ESTUDIO CENTROAMERICANO DE TRANSPORTE

*2 DIRECCION GENERAL DE AERONAUTICA CIVIL, REPUBLICA DE HONDURAS

Table 2A-12 PAST DEVELOPMENT OF INTERNATIONAL CARGO TRAFFIC AT INTERNATIONAL AIRPORTS IN CENTRAL AMERICA

	(1965 - 1975)						(tons)
	Guatemala *1	El Salvador *1	San Pedro Sula *2	Tegucigalpa *2	Managua *1	San Jose *1	Total
1965	7,991	4,154	1,514	1,433	5,748	3,430	24,270
1966	7,927	5,004	2,251	1,811	6,008	3,821	26,822
1967	8,975	4,605	1,798	2,439	5,881	9,081	32,779
1968	10,166	4,667	2,496	2,678	11,086	6,086	37,179
1969	13,128	6,502	4,093	3,400	7,264	6,466	40,853
1970	9,788	9,656	3,333	3,874	10,159	8,818	45,628
1971	9,995	7,020	3,609	3,059	10,508	9,569	43,760
1972	17,192	7,995	3,342	2,764	11,078	10,511	52,882
1973	13,065	7,083	3,193	2,753	14,094	11,157	51,345
1974	14,455	11,232	3,326	3,409	16,565	13,690	62,677
1975	15,407	11,098	3,523	3,182	16,552	15,300	65,062
Average Annual Growth Rate (%)							
1965 - 1970	4.1	18.4	17.0	22.0	12.1	20.8	13.5
1970 - 1975	9.5	2.8	1.1	-3.9	10.3	11.7	7.4

Source: *1 ESTUDIO CENTROAMERICANO DE TRANSPORTE

*2 DIRECCION GENERAL DE AERONAUTICA CIVIL, REPUBLICA DE HONDURAS

Table 2A-13 PAST DEVELOPMENT OF DOMESTIC CARGO TRAFFIC AT INTERNATIONAL AIRPORTS IN CENTRAL AMERICA

	(1965 - 1975)					(tons)
	Guatemala *1	San Pedro Sula *2	Tegucigalpa *2	Managua *1	San Jose *1	
1965	3,647	1,832	2,404	3,327	6,400	17,610
1966	4,477	2,897	3,107	3,547	6,430	20,458
1967	4,533	2,922	4,338	3,336	6,040	21,169
1968	4,611	2,770	4,202	3,560	6,680	21,823
1969	3,955	3,887	4,829	3,483	8,100	24,254
1970	3,840	4,288	4,304	4,708	10,880	28,020
1971	2,453	3,340	3,581	3,267	8,200	20,841
1972	1,567	1,926	2,216	2,264	4,460	12,433
1973	855	1,275	1,873	2,292	5,430	11,725
1974	830	900	1,491	2,880	4,960	11,061
1975	...	550	859
Average Annual Growth Rate (%)						
1965-74	-15.2	-7.6	-5.2	-1.6	-2.8	-5.0

Source: *1 ESTUDIO CENTROAMERICANO DE TRANSPORTE

*2 DIRECCION GENERAL DE AERONAUTICA CIVIL, REPUBLICA DE HONDURAS (.....) Not Available

Table 2A-14: PAST DEVELOPMENT OF INTERNATIONAL EMBARKING & DISEMBARKING PASSENGER TRAFFIC IN THE REPUBLIC OF HONDURAS

Year	(1960 - 1977)			(persons)
	Air- port Tegucigalpa	San Pedro Sula	La Ceiba	Total
1960	49,583	13,814	-	63,397
1961	45,342	13,668	-	59,010
1962	45,130	14,206	-	59,336
1963	39,116	26,510	30	65,656
1964	43,434	19,493	68	62,995
1965	48,650	25,514	1,235	75,399
1966	46,744	38,516	1,717	86,977
1967	46,622	36,808	1,590	85,020
1968	65,922	49,547	1,784	117,253
1969	70,804	56,708	1,848	129,360
1970	70,654	61,775	2,119	134,548
1971	75,957	54,910	2,765	133,632
1972	80,440	52,743	6,066	139,249
1973	85,308	62,201	9,062	156,571
1974	91,777	65,945	8,224	165,946
1975	95,885	66,313	7,886	170,084
1976	98,032	74,396	7,857	180,285
1977	112,473	77,580	12,897	202,950

Average Annual Growth Rate (%)		('65- '70)		
1960 - 1970	3.6	16.2	11.4	7.8
1970 - 1977	6.9	3.3	29.4	6.0

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-15 PAST DEVELOPMENT OF DOMESTIC EMBARKING & DISEMBARKING PASSENGER TRAFFIC IN THE REPUBLIC OF HONDURAS

Year	(1960 - 1977)				(persons)
	Airport Tegucigalpa	San Pedro Sula	La Ceiba	Others	Total
1960	41,857	36,942	23,629	29,679	132,107
1961	41,077	35,717	21,577	27,648	126,019
1962	39,155	30,706	18,845	29,701	118,407
1963	47,045	40,063	29,593	34,036	150,737
1964	54,284	45,478	31,479	40,275	171,516
1965	63,171	55,591	44,421	45,601	208,784
1966	77,935	70,561	49,668	48,223	246,387
1967	86,432	75,262	48,612	48,565	258,871
1968	101,789	87,515	55,531	44,320	289,155
1969	112,255	110,585	83,962	75,122	381,924
1970	133,126	138,591	123,452	111,976	507,145
1971	93,739	94,952	94,576	98,264	381,531
1972	64,532	56,126	74,065	93,547	288,270
1973	57,436	40,973	73,483	106,362	278,254
1974	56,486	42,769	70,921	97,467	267,643
1975	42,899	35,591	54,011	69,483	201,984
1976	44,753	38,064	75,126	90,645	248,588
1977	53,275	38,979	87,806	102,468	282,528
Average Annual Growth Rate (%)					
1960 - 1970	12.2	14.1	18.0	14.2	15.2
1970 - 1977	-12.3	-16.6	-4.8	-1.3	-8.0

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-16 PAST DEVELOPMENT OF INTERNATIONAL LOADED &
UNLOADED CARGO IN THE REPUBLIC OF HONDURAS

(1960 - 1977)					(tons)
Airport					
Year	Tegucigalpa	San Pedro Sula	La Ceiba	Total	
1960	1,545	651	-	2,196	
1961	1,396	972	-	2,368	
1962	1,587	1,127	-	2,714	
1963	1,477	2,281	-	3,758	
1964	1,589	1,345	-	2,934	
1965	1,433	1,514	25	2,972	
1966	1,811	2,251	26	4,088	
1967	2,439	1,798	22	4,259	
1968	2,678	2,496	54	5,228	
1969	3,400	4,093	54	7,547	
1970	3,874	3,333	56	7,263	
1971	3,059	3,609	103	6,771	
1972	2,764	3,342	188	6,294	
1973	2,753	3,193	192	6,138	
1974	3,409	3,326	263	6,998	
1975	3,182	3,523	148	6,853	
1976	4,665	4,384	289	9,338	
1977	5,112	5,261	397	10,770	
Average Annual Growth Rate (%)					
			('65-'70)		
1960 - 1970	9.6	17.7	17.5	12.7	
1970 - 1977	4.0	6.7	32.3	5.8	

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-17. PAST DEVELOPMENT OF DOMESTIC LOADED & UNLOADED CARGO IN THE REPUBLIC OF HONDURAS

Year	(1960 - 1977)					(tons)
	Airport Tegucigalpa	San Pedro Sula	La Ceiba	Others	Total	
1960	2,307	1,706	2,274	1,199	7,486	
1961	2,267	1,756	1,925	1,226	7,174	
1962	2,157	1,581	2,179	952	6,869	
1963	2,288	2,137	2,382	915	7,722	
1964	2,641	2,110	2,446	1,242	8,439	
1965	2,404	1,832	2,478	1,225	7,939	
1966	3,107	2,897	2,997	1,203	10,204	
1967	4,338	2,922	2,785	840	10,885	
1968	4,202	2,770	2,589	2,931	12,492	
1969	4,829	3,887	3,588	9,763	22,067	
1970	4,304	4,228	3,639	3,154	15,325	
1971	3,581	3,340	3,762	2,835	13,518	
1972	2,216	1,926	2,065	5,804	12,011	
1973	1,873	1,275	1,719	3,128	7,995	
1974	1,491	900	1,446	3,592	7,429	
1975	859	550	870	1,411	3,690	
1976	759	426	837	1,214	3,236	
1977	578	338	868	1,440	3,224	
Average Annual Growth Rate (%)						
1960 - 1970	6.4	9.5	4.8	10.2	7.4	
1970 - 1977	-25.0	-30.3	-18.5	-10.6	-20.0	

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-18 INTERNATIONAL EMBARKING, DISEMBARKING & TRANSIT PASSENGERS BY ROUTE AT TONCONTIN AIRPORT

(1970 - 1977)
(persons)

Route	1970	1971	1972	1973	1974	1975	1976	1977
Toncontín - Miami	11,405	11,492	14,605	16,245	17,698	18,626	19,705	23,069
Embarking & Disembarking								
Transit								
Total	11,405	11,492	14,605	16,245	17,698	18,626	19,705	23,069
Toncontín - Mexico	6,774	6,944	7,404	7,493	7,344	7,817	7,611	8,943
Embarking & Disembarking								
Transit	6,057	6,000	5,900	5,412	5,343	5,506	5,340	4,770
Total	12,831	12,944	13,304	12,905	12,687	13,323	12,951	13,713
Toncontín - Panama	2,478	4,199	5,074	5,823	7,195	8,033	9,561	10,793
Embarking & Disembarking								
Transit	690	1,254	1,732	2,005	3,281	3,310	3,546	3,922
Total	3,168	5,453	6,806	7,828	10,476	11,343	13,107	14,715
Toncontín - San Andres	1,721	2,110	2,076	2,553	2,597	3,015	4,023	4,260
Embarking & Disembarking								
Transit	1,885	2,264	2,261	2,720	3,954	5,531	4,565	4,472
Total	3,606	4,374	4,337	5,273	6,551	8,546	8,588	8,732
Toncontín - San Jose	10,436	10,087	9,482	10,457	11,327	10,671	10,242	11,693
Embarking & Disembarking								
Transit	7,201	9,942	9,649	9,907	13,104	12,866	12,967	14,258
Total	17,637	20,029	19,131	20,364	24,431	23,537	23,209	25,951
Toncontín - Managua	9,017	10,359	10,281	7,199	8,806	9,619	9,759	10,342
Embarking & Disembarking								
Transit	3,629	3,113	2,783	1,966	5,038	6,001	6,845	8,287
Total	12,646	13,472	13,064	9,165	13,844	15,620	16,604	18,629
Toncontín - Guatemala	21,652	22,650	22,871	25,258	25,029	24,386	22,684	26,072
Embarking & Disembarking								
Transit	7,987	8,014	6,548	7,823	12,738	9,044	6,653	5,576
Total	29,639	30,664	29,419	32,081	37,767	33,430	29,337	31,648
Toncontín - Belize	1,193	1,207	1,599	1,660	1,928	1,961	1,760	1,188
Embarking & Disembarking								
Transit	2,089	1,913	1,947	1,656	1,821	2,125	1,962	1,356
Total	3,282	3,120	3,546	3,316	3,749	4,086	3,722	2,544
Toncontín - New Orleans	5,972	6,903	7,000	7,859	9,019	11,724	12,627	15,895
Embarking & Disembarking								
Transit	2,393	3,127	3,768	3,115	5,053	8,704	10,525	12,467
Total	8,365	10,030	10,768	10,974	14,072	20,428	23,152	28,362
Non-Scheduled	6	6	48	761	834	33	60	218
Embarking & Disembarking								
Total	70,654	75,957	80,440	85,308	91,777	95,885	98,032	112,473
Embarking & Disembarking								
Transit	31,931	35,627	34,588	34,604	50,332	53,087	52,403	55,108
Total	102,585	111,584	115,028	119,912	142,109	148,972	150,435	167,581

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-19 DOMESTIC EMBARKING, DISEMBARKING & TRANSIT PASSENGERS BY ROUTE AT TONCONTIN AIRPORT

Route	1970	1971	1972	1973	1974	1975	1976	1977
(persons)								
Toncontin - San Pedro Sula								
Embarking & Dis-								
embarking	78,751	49,349	25,698	22,260	20,914	20,353	21,922	23,720
Transfer*	10,902	10,999	9,750	11,618	13,782	15,019	15,320	16,435
Total	89,653	60,348	35,448	33,878	34,696	35,372	37,242	40,155
" - La Ceiba								
Embarking & Dis-								
embarking	23,860	17,305	15,233	12,548	13,353	10,035	11,377	16,126
Transfer *	113	198	304	1,132	674	786	803	1,241
Total	23,973	17,503	15,537	13,680	14,027	10,821	12,180	17,367
" - Tela								
Embarking & Dis-								
embarking	2,383	1,880	761	34	145	54	4	-
"	85	400	503	578	314	216	342	603
" - Roatan	1,709	786	1,427	1,846	2,103	1,428	1,754	2,635
" - Guanaja	1,009	811	911	1,185	836	792	682	824
" - Tocoa	292	361	947	1,083	988	861	953	1,221
" - Trujillo	1,524	1,241	1,575	1,618	1,347	928	899	1,013
" - Coyoles	628	2,517	2,584	2,591	1,812	377	1,552	3,390
" - Victoria	998	886	902	1,069	988	397	197	-
" - Sulaco	1,000	800	570	877	725	223	-	-
" - Yoro	1,047	1,040	698	642	903	150	-	-
" - Juticalpa	2,461	2,170	2,423	2,685	2,596	1,557	1,053	-
" - Catacamas	1,276	1,354	1,134	1,087	1,053	662	453	-
" - San Esteban	220	249	233	249	357	156	113	-
" - Limas	-	-	103	80	68	17	-	-
" - La Union	40	44	36	39	34	36	74	20
" - Olanchito	1,809	1,055	748	624	1,157	1,141	667	422
" - Gualaco	66	93	47	84	50	8	-	-
" - Ahuas	307	383	320	347	457	376	189	53
" - Brus Laguna	575	643	662	946	912	706	549	679
" - PTO. Lempira	1,275	1,273	1,170	1,237	1,411	1,268	1,388	1,582
" - Isletas	278	137	53	50	-	-	-	-
" - Occidente	6,484	3,317	1,068	148	20	-	-	176
Non-Scheduled	5,049	5,645	4,726	3,529	3,943	1,158	585	811
Total								
Embarking & Dis-								
embarking	113,126	93,739	64,532	57,436	56,486	42,899	44,753	53,275
Transfer*	11,015	11,197	10,054	12,750	14,456	15,805	16,123	17,676
Total	144,141	104,936	74,586	70,186	70,942	58,704	60,876	70,951

* Transfer Passengers to/from International Route

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-20 INTERNATIONAL LOADED & UNLOADED CARGO BY ORIGIN/DESTINATION AT TONCONTIN AIRPORT

Origin/Destination	(1970 - 1976)							(tons)
	1970	1971	1972	1973	1974	1975	1976	
Toncontín/Miami	2,132.5	1,646.4	1,520.9	1,572.0	1,717.0	1,599.6	2,115.0	
" /Mexico	161.0	258.0	216.7	193.8	245.9	223.5	240.2	
" /Panama	428.5	358.5	340.8	190.9	510.2	570.9	881.5	
" /San Andres	44.0	30.7	17.4	6.9	2.5	12.3	64.1	
" /San José	189.4	145.8	152.8	175.8	173.6	113.1	217.2	
" /Managua	69.9	44.3	56.2	28.9	51.4	48.5	55.9	
" /Guatemala	628.2	451.2	368.5	374.9	497.6	388.6	720.9	
" /Belize	7.6	11.7	12.9	29.4	9.4	19.6	7.2	
" /New Orleans	212.3	112.7	78.1	180.3	201.6	205.7	363.4	
Total	3,873.4	3,059.3	2,764.3	2,752.9	3,409.2	3,181.8	4,665.4	

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-21

INTERNATIONAL LOADED CARGO BY ORIGIN-DESTINATION AT TONCONTIN AIRPORT

Origin - Destination	(1970 - 1976)							(tons)
	1970	1971	1972	1973	1974	1975	1976	
Toncontín - Miami	569.7	366.7	288.6	379.3	429.4	312.0	366.0	
" - Mexico	11.1	7.1	16.5	16.1	12.6	7.7	9.1	
" - Panama	52.8	52.4	39.9	23.0	46.4	19.6	40.4	
" - San Andres	24.2	10.5	10.3	3.5	2.5	1.0	63.8	
" - San José	41.6	28.3	26.2	21.4	44.6	30.6	45.0	
" - Managua	38.9	20.3	13.7	21.5	31.1	33.5	29.5	
" - Guatemala	160.4	37.4	31.2	35.7	31.8	30.5	40.1	
" - Belize	5.0	7.6	11.1	28.2	7.1	16.6	3.0	
" - New Orleans	12.6	8.8	9.6	10.2	13.0	21.9	12.1	
Total	916.3	539.1	447.1	538.9	618.5	473.4	609.0	

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-22 INTERNATIONAL UNLOADED CARGO BY ORIGIN-DESTINATION AT TONCONTIN AIRPORT

Origin - Destination	(1970 - 1976)							
	1970	1971	1972	1973	1974	1975	1976	(tons)
Miami - Toncontin	1,562.8	1,279.7	1,232.3	1,192.7	1,287.6	1,287.6	1,749.0	
Mexico - "	149.9	250.9	200.2	177.7	233.3	215.8	231.1	
Panama - "	375.7	306.1	300.9	167.9	463.8	551.3	841.1	
San Andres - "	19.8	20.2	7.1	3.4	-	11.3	0.3	
San Jose - "	147.8	117.5	126.6	154.4	129.0	82.5	172.2	
Managua - "	31.0	24.0	42.5	7.4	20.3	15.0	26.4	
Guatemala - "	467.8	413.8	337.3	339.2	465.8	358.1	680.8	
Belize - "	2.6	4.1	1.8	1.2	2.3	3.0	4.2	
New Orleans - "	199.7	103.9	68.5	170.1	188.6	183.8	351.3	
Total	2,957.1	2,520.2	2,317.2	2,214.0	2,790.7	2,708.4	4,056.4	

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-23 DOMESTIC LOADED & UNLOADED CARGO BY ORIGIN/DESTINATION AT TONCONTIN AIRPORT

Origin/Destination	(1970 - 1976)							(tons)
	1970	1971	1972	1973	1974	1975	1976	
Toncontin/San Pedro Sula	2,033.4	1,362.7	776.1	523.8	294.4	146.8	174.9	
" /La Ceiba	1,035.4	972.4	426.7	304.0	303.1	176.5	155.2	
" /Tela	60.4	68.5	41.8	3.8	13.9	4.8	2.3	
" /Utila	0.9	2.7	2.4	5.6	4.0	3.4	11.1	
" /Roatan	11.6	16.0	27.9	23.5	29.6	21.1	39.0	
" /Guanaja	26.6	23.0	32.9	55.2	63.2	37.5	39.2	
" /Tocoa	15.6	19.1	31.8	57.5	37.1	20.9	17.6	
" /Trujillo	54.1	70.1	86.7	82.1	72.3	37.3	26.5	
" /Coyoles	5.0	37.4	30.9	39.1	32.2	20.0	61.1	
" /Victoria	114.3	107.9	100.4	85.4	67.9	41.6	17.4	
" /Sulaco	39.1	24.1	11.4	24.0	10.0	3.4	-	
" /Yoro	44.5	38.6	31.5	35.6	33.9	8.7	-	
" /Juticalpa	130.8	129.0	104.9	91.0	64.1	44.8	27.9	
" /Catacamas	63.7	75.0	63.6	75.0	54.6	35.2	19.7	
" /San Esteban	72.1	78.9	49.1	39.8	46.3	19.0	10.1	
" /Limas	1.9	8.0	4.1	6.5	3.3	0.4	-	
" /La Union	6.2	5.4	3.3	1.9	1.2	1.2	2.6	
" /Olanchito	125.3	123.1	121.2	164.3	146.9	101.8	73.5	
" /Gualaco	28.2	33.7	31.2	24.3	12.4	0.3	-	
" /Ahuas	71.0	59.3	52.7	76.9	51.0	42.3	19.5	
" /Brus Laguna	45.9	35.1	33.4	37.2	43.6	17.4	7.3	
" /PTO. Lempira	84.4	107.5	66.7	87.5	94.4	66.6	45.8	
" /Isletas	1.6	1.4	0.3	6.0	7.0	8.6	8.5	
" /Occidente	233.2	181.1	85.2	22.9	4.8	-	-	
Total	4,305.2	3,580.0	2,216.2	1,872.9	1,491.2	859.6	759.2	

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-24 DOMESTIC LOADED CARGO BY ORIGIN/DESTINATION AT TONCONTIN AIRPORT

Origin - Destination	(1970 - 1976)										(tons)
	1970	1971	1972	1973	1974	1975	1976				
Toncontin - San Pedro Sula	1,020.3	698.1	439.7	238.7	162.2	76.3	112.3				
" - La Ceiba	641.6	532.4	267.1	182.3	151.3	101.5	125.1				
" - Tela	33.5	45.4	27.8	3.1	9.4	2.4	1.9				
" - Utila	0.0	1.8	1.0	2.0	1.6	0.8	6.2				
" - Roatan	7.8	11.2	15.3	13.2	15.6	13.1	26.3				
" - Guanaja	13.8	10.1	16.2	20.2	29.0	19.0	28.3				
" - Tocoa	8.8	14.3	25.9	44.6	19.3	8.8	7.1				
" - Trujillo	36.0	51.2	67.7	61.1	48.1	22.3	17.1				
" - Coyoles	2.1	12.7	16.0	21.1	12.7	7.4	23.6				
" - Victoria	85.6	67.7	64.8	61.4	41.2	28.9	13.8				
" - Sulaco	34.1	16.6	8.9	19.8	8.8	3.2	-				
" - Yoro	32.0	29.3	23.2	25.3	26.6	6.8	-				
" - Juticalpa	62.5	64.1	68.7	65.1	52.4	39.3	25.4				
" - Catacamas	34.3	23.2	22.5	43.6	26.9	17.1	14.2				
" - San Esteban	34.3	30.8	23.8	27.4	15.1	9.7	8.7				
" - Limas	0.8	3.3	3.2	4.4	2.2	0.2	-				
" - La Union	6.1	3.8	2.5	1.6	1.0	1.1	2.2				
" - Olanchito	98.3	92.8	91.9	103.0	67.0	53.7	35.1				
" - Gualaco	18.8	15.2	15.5	13.4	11.2	0.2	-				
" - Ahuas	52.0	47.8	40.9	61.1	43.4	24.9	13.1				
" - Brus Laguna	36.9	27.0	27.8	27.9	29.0	13.1	6.2				
" - PTO. Lempira	61.4	72.2	59.9	53.0	68.1	42.1	40.3				
" - Isletas	-	-	-	4.1	7.0	8.6	8.5				
" - Occidente	173.6	135.8	74.1	20.2	4.5	-	-				
Total	2,494.6	2,007.8	1,404.4	1,117.6	853.6	500.5	515.4				

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-25 DOMESTIC UNLOADED CARGO BY ORIGIN-DESTINATION AT TONCONTIN AIRPORT

Origin - Destination	(1970 - 1976)							
	1970	1971	1972	1973	1974	1975	1976	(tons)
San Pedro Sula - Toncontin	1,013.1	664.6	336.4	285.1	132.2	70.5	62.6	
La Ceiba	393.8	440.0	159.6	121.7	151.8	75.0	30.1	
Tela	26.9	23.1	14.0	0.7	4.5	2.4	0.4	
Utiia	0.9	0.9	1.4	3.6	2.4	2.6	4.9	
Roatan	3.8	4.8	12.6	10.3	14.0	8.0	12.7	
Guanaja	12.8	12.9	16.7	35.0	34.2	18.5	10.9	
Tocoa	6.8	4.8	5.9	12.9	17.8	12.1	10.5	
Trujillo	18.1	18.9	19.0	21.0	24.2	15.0	9.4	
Coyoles	2.9	24.7	14.9	18.0	19.5	12.6	37.5	
Victoria	28.7	40.2	35.6	24.0	26.7	12.7	3.6	
Sulaco	5.0	7.5	2.5	4.2	1.2	0.2	-	
Yoro	12.5	9.3	8.3	10.3	7.3	1.9	-	
Juticalpa	68.3	64.9	36.2	25.9	11.7	5.5	2.5	
Catacamas	29.4	51.8	41.1	31.4	27.7	18.1	5.5	
San Esteban	37.8	48.1	25.3	12.4	31.2	9.3	1.4	
Limas	1.1	4.7	0.9	2.1	1.1	0.2	-	
La Union	0.1	1.6	0.8	0.3	0.2	0.1	0.4	
Olanchito	27.0	30.3	29.3	61.3	79.9	48.1	38.4	
Gualaco	9.4	17.5	15.7	10.9	1.2	0.1	-	
Ahuas	19.0	11.5	11.8	15.8	7.6	17.4	6.4	
Brus Laguna	9.0	8.1	5.6	9.3	14.6	4.3	1.1	
PTO. Lempira	23.0	35.3	6.8	34.5	26.3	24.5	5.5	
Isletas	1.6	1.4	0.3	1.9	-	-	-	
Occidente	59.6	45.3	11.1	2.7	0.3	-	-	
Total	1,810.6	1,572.2	811.8	755.3	637.6	359.1	243.8	

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-26 INTERNATIONAL TRANSIT PASSENGER TRAFFIC BY ORIGIN/DESTINATION AT TONCONTIN AIRPORT

		(1977)											(persons)
O	D	MGA	SJO	PTY	ADZ	GUA	MEX	MSY	MIA	SAP	LCE	BZE	TOTAL
MGA					198	167		2,600		1,280	160	34	4,349
SJO						728		4,331		2,350	224	32	7,665
PTY						121		87		1,642	112	52	2,014
ADZ		148				1,537		115		558	142	36	2,536
GUA		131	476	237	1,240			4		757	65		2,910
MEX										2,113		395	2,508
MSY		2,078	3,186	52	14								5,330
MLA													
SAP		1,398	2,604	1,345	511	90	1,787						7,735
LCE		143	242	69	63	21							538
BZE		40	85	205	-	2	475						807
TOTAL		3,938	6,593	1,908	1,936	2,666	2,262	7,137	8,700	703	549		36,392

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-27 PRESENT AIRLINES' OPERATIONS BY ROUTE TO/FROM TONCONTIN AIRPORT

Route	Aircraft Type	Number of weekly Operations by Route	Number of weekly Aircraft Movements at Toncontin Airport
1. SJO ↔ MGA ↔ TGU ↔ SAP ↔ BZE ↔ MSY	B 737	10	20
2. SJO ↔ MGA ↔ TGU ↔ LCE ↔ SAP ↔ MSY	B 737	4	8
3. TGU ↔ MGA ↔ SJO	L-188	6	6
4. GUA ↔ TGU ↔ PTY	L-188	4	8
5. GUA ↔ TGU ↔ ADZ ↔ PTY	L-188	10	20
6. MIA → BZE → TGU → MEX	B 737	3	6
7. MEX → TGU → SAP → BZE → MIA	B 737	3	6
8. MIA ↔ SAP ↔ LCE ↔ TGU	B 737	4	4
9. MIA ↔ BZE ↔ SAP ↔ LCE ↔ TGU	B 737	2	2
10. MIA → SAP → TGU → LCE → SAP → MIA	L-188	1	2
11. MIA ↔ BZE ↔ TGU	B 737	2	2
12. TGU ↔ LCE ↔ SAP	CV-580	8	8
13. TGU ↔ LCE ↔ SAP ↔ TGU	CV-580	2	4
14. LCE ↔ OAN ↔ TGU	DC-3	2	2
15. TGU ↔ AHU ↔ BRL ↔ PLP ↔ TGU	DC-3	2	2
16. LCE ↔ COY ↔ TGU	DC-3	8	8
Total		71	108
	B 737	28	48
	L-188	21	36
	CV-588	10	12
	DC-3	12	12

Source: Flight Schedules of TAN, SAHSA, AHNSA & LANSAs as of February 1978

Table 2A-28

PRESENT AIRCRAFT MOVEMENTS BY TIME PERIOD AT TONCONTIN AIRPORT

Time Period	Sunday		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Total					
	Arr.	Dep.	Total	Arr.	Dep.	Total	Arr.	Dep.	Total	Arr.	Dep.	Total	Arr.	Dep.	Total	Arr.	Dep.	Total		
7:00 - 7:59	1	1	2	1	2	3	1	2	3	1	3	4	1	2	1	2	7	12	19	
8:00 - 8:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	1	
9:00 - 9:59	2	1	3	2	3	2	2	2	2	2	2	2	2	2	2	2	13	1	14	
10:00 - 10:59	1	1	2	3	5	2	4	1	3	4	2	4	2	3	1	2	3	10	14	24
11:00 - 11:59	-	-	-	-	1	1	-	-	-	-	1	1	1	2	2	1	1	-	6	
12:00 - 12:59	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	-	1	-	1	
13:00 - 13:59	-	-	-	-	1	1	-	1	1	-	-	-	-	-	-	-	-	3	3	
14:00 - 14:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15:00 - 15:59	-	-	4	2	6	-	4	2	6	-	-	-	-	-	1	1	2	9	5	14
16:00 - 16:59	2	4	1	1	2	2	4	1	2	2	4	3	2	5	2	4	13	12	25	
17:00 - 17:59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	1	
Total	5	5	10	10	20	8	8	16	9	18	8	16	6	12	8	16	54	54	108	

Source: FLIGHT SCHEDULES OF TAN, SAHSH, AHNSA & LANSA AS OF FEBRUARY, 1978

Table 2A-29 MONTHLY EMBARKING & DISEMBARKING INTERNATIONAL PASSENGERS AT TONCONTIN AIRPORT

	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
(1975 - 1977)													
1975													
Embarking	4,086	3,695	3,632	3,532	3,474	4,228	4,369	4,308	3,799	3,659	4,015	4,894	47,691
Disembarking	4,654	3,646	3,881	3,440	3,632	4,179	4,386	4,880	4,049	3,566	3,694	4,187	48,194
Total	8,740	7,341	7,513	6,972	7,106	8,407	8,755	9,188	7,848	7,225	7,709	9,081	95,885
Monthly													
Coefficient*	1.094	0.919	0.940	0.873	0.889	1.052	1.096	1.150	0.982	0.904	0.965	1.137	12.000
1976													
Embarking	3,845	3,903	3,288	3,729	3,621	3,877	4,834	4,904	3,767	3,764	3,819	5,662	49,013
Disembarking	4,211	3,669	3,300	3,705	3,910	4,417	4,947	4,904	4,043	3,604	4,060	4,246	49,016
Total	8,056	7,572	6,588	7,434	7,531	8,294	9,781	9,808	7,810	7,368	7,879	9,908	98,029
Monthly													
Coefficient*	0.986	0.927	0.806	0.910	0.922	1.015	1.197	1.201	0.956	0.902	0.964	1.213	12.000
1977													
Embarking	4,447	4,128	4,256	4,186	3,680	4,751	5,475	5,191	4,104	4,241	4,749	6,271	55,479
Disembarking	4,752	4,278	4,790	4,298	3,955	4,757	5,781	5,679	4,600	4,226	4,917	5,737	57,770
Total	9,199	8,406	9,046	8,484	7,635	9,508	11,256	10,870	8,704	8,467	9,666	12,008	113,249
Monthly													
Coefficient*	0.975	0.891	0.959	0.899	0.809	1.008	1.193	1.152	0.922	0.897	1.024	1.272	12.000
Averaged													
Monthly													
Coefficient	1.018	0.912	0.902	0.894	0.873	1.025	1.162	1.168	0.953	0.901	0.984	1.207	12.000

* Average Number of Monthly Passengers = 1.000

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-30 MONTHLY EMBARKING & DISEMBARKING DOMESTIC PASSENGERS AT TONCONTIN AIRPORT

	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
(1975 - 1977)													
1975													
Embarking	2,619	2,210	2,040	2,140	1,857	1,569	1,813	1,955	1,861	1,998	1,816	1,887	23,765
Disembarking	2,308	2,089	2,196	2,107	1,813	2,046	2,046	1,940	1,864	1,906	1,994	2,193	24,502
Total	4,927	4,299	4,236	4,247	3,670	3,615	3,859	3,895	3,725	3,904	3,810	4,080	48,267
Monthly Coefficient*	1.225	1.069	1.053	1.056	0.912	0.899	0.959	0.968	0.926	0.971	0.947	1.014	12.000
1976													
Embarking	1,628	1,769	1,880	1,840	2,127	1,977	1,921	2,007	1,845	1,698	1,962	2,114	22,768
Disembarking	1,659	1,938	1,919	1,834	2,288	2,069	2,127	2,033	1,852	1,740	1,905	2,462	23,826
Total	3,287	3,707	3,799	3,674	4,415	4,046	4,048	4,040	3,697	3,438	3,867	4,576	46,594
Monthly Coefficient*	0.847	0.955	0.978	0.946	1.137	1.042	1.042	1.040	0.952	0.885	0.996	1.178	12.000
1977													
Embarking	2,237	2,221	2,366	2,310	2,313	2,314	2,339	2,498	2,360	2,438	2,638	2,623	28,657
Disembarking	1,789	2,082	2,183	1,832	2,043	2,101	2,154	2,399	2,123	2,201	2,391	2,698	25,996
Total	4,026	4,303	4,549	4,142	4,356	4,415	4,493	4,897	4,483	4,639	5,029	5,321	54,653
Monthly Coefficient*	0.884	0.945	0.999	0.910	0.957	0.969	0.987	1.075	0.984	1.019	1.104	1.168	12.000
Averaged Monthly Coefficient	1.985	0.990	1.010	0.971	1.002	0.970	0.996	1.028	0.954	0.958	1.016	1.120	12.000

* Average Number of Monthly Passengers = 1.000

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-31 PAST DEVELOPMENT OF NUMBER OF SMALL AIRCRAFT REGISTERED
AT TONCONTIN AIRPORT

Year	Number
1966	41
1967	48
1968	53
1969	54
1970	56
1971	64
1972	68
1973	71
1974	76
1975	85
1976	102

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

Table 2A-32 NUMBER OF EMPLOYEES AT TONCONTIN AIRPORT

(As of March 15, 1978)

Name of the Office	Number
General Direction of Civil Aviation	221
COCESNA	65
TAN-SAHSA	42
AEROSERVICIOS	16
LANSA	2
Post Office	7
Public Health Office	2
Police	23
Immigration Office	11
Customs	48
Quarantine Office	4
Turism Office	4
Cargo Agent	11
Airport Radio Service	3
Gift Shop	7
Restaurant	6
Total	472

Source: DIRECCION GENERAL DE AERONAUTICA CIVIL

APPENDIX 2B

ANNUAL RECORDS OF TRANSPORT

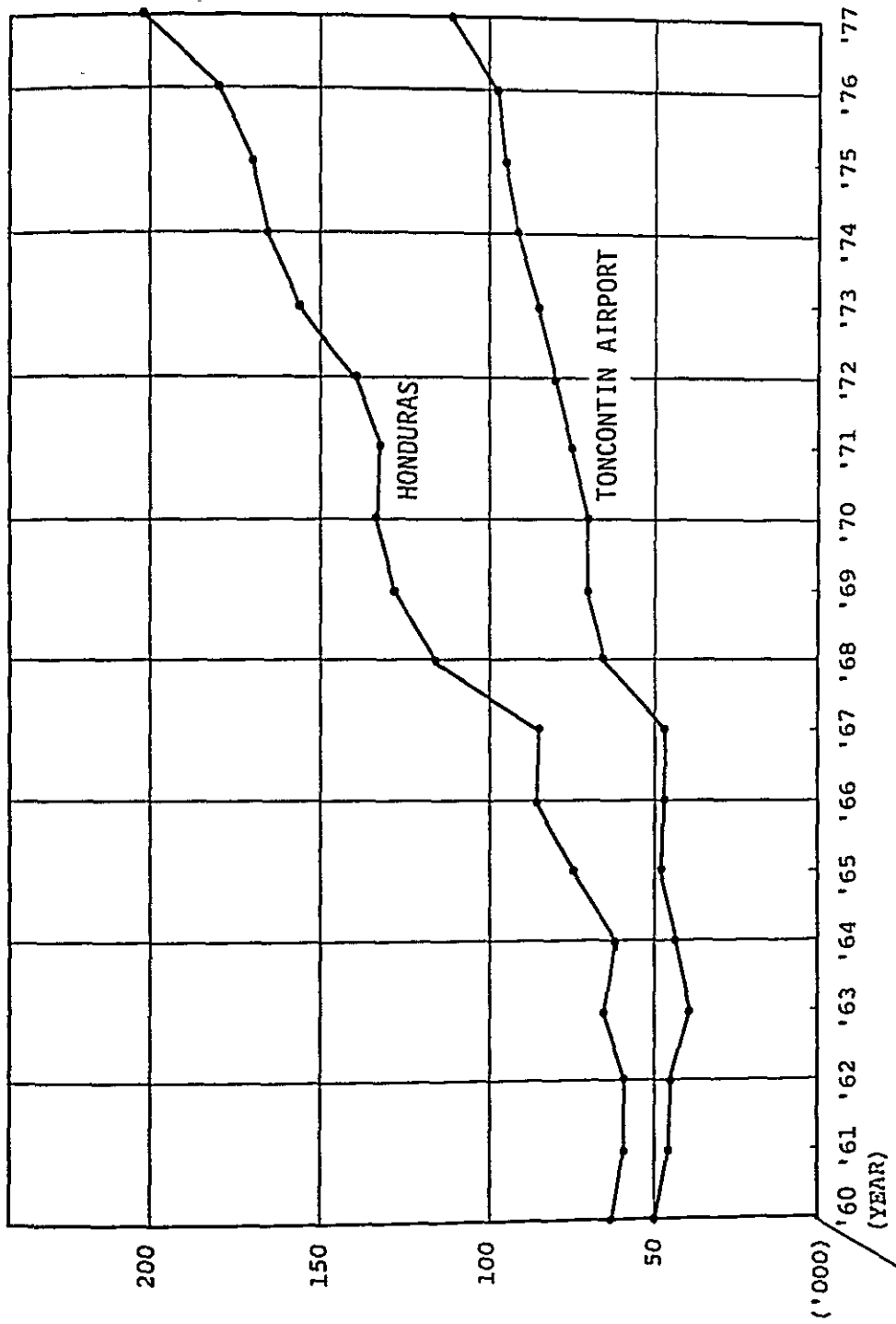


FIG. 2B-1 PAST DEVELOPMENT OF INTERNATIONAL EMBARKING & DISEMBARKING PASSENGER TRAFFIC IN THE REPUBLIC OF HONDURAS

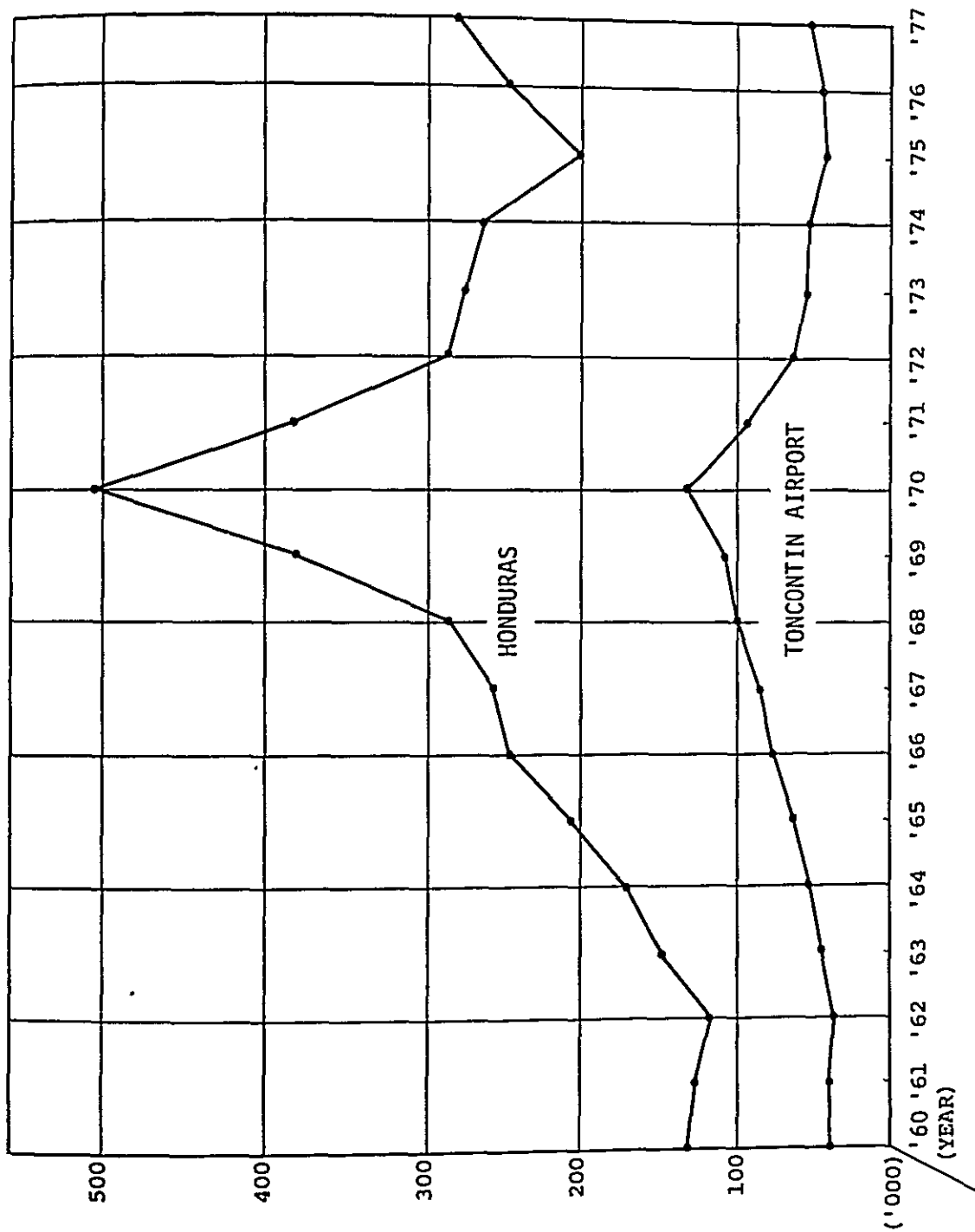


Fig. 2B-2 PAST DEVELOPMENT OF DOMESTIC EMBARKING & DISEMBARKING PASSENGER TRAFFIC IN THE REPUBLIC OF HONDURAS

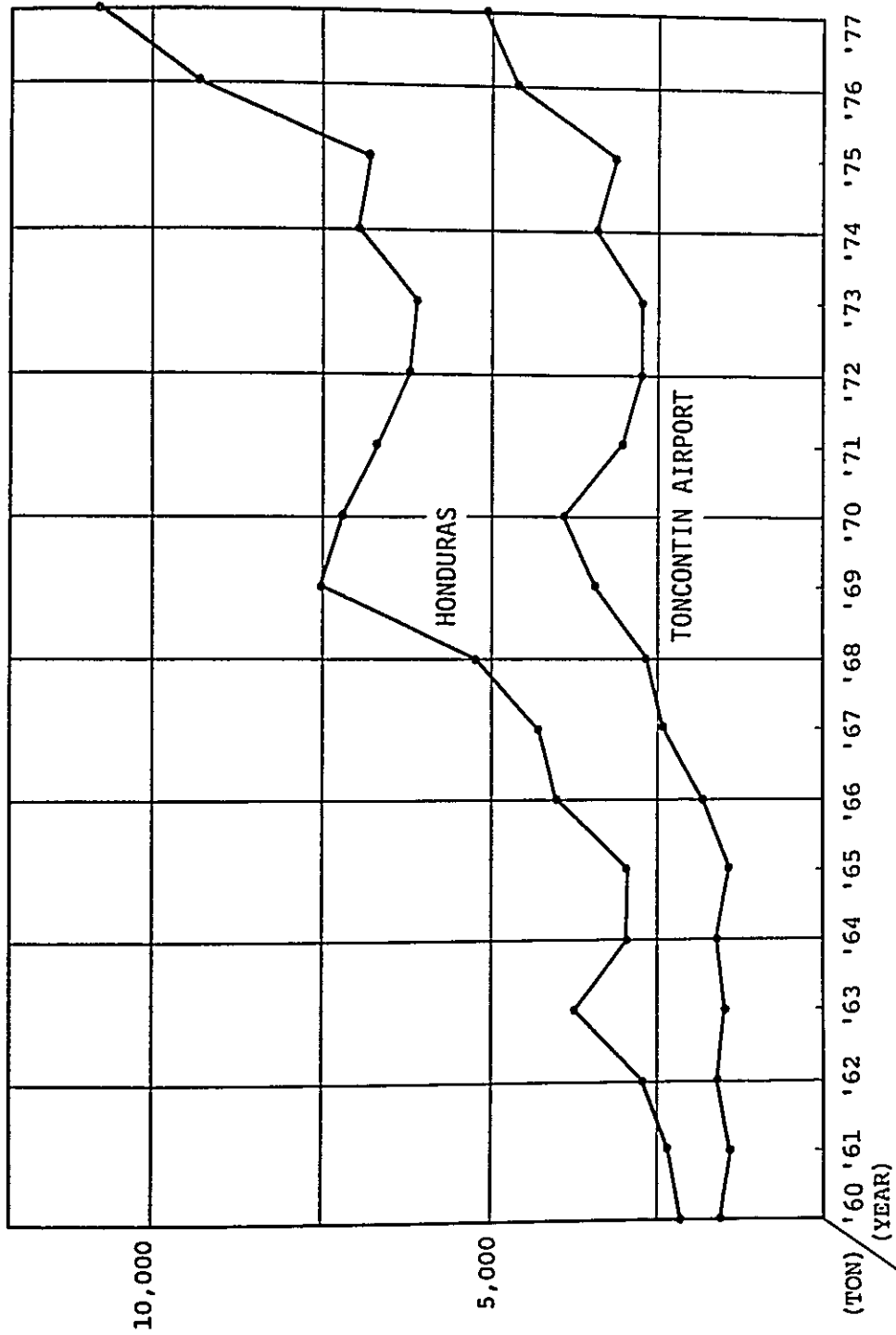


FIG. 2B-3 PAST DEVELOPMENT OF INTERNATIONAL LOADED & UNLOADED CARGO TRAFFIC IN THE REPUBLIC OF HONDURAS

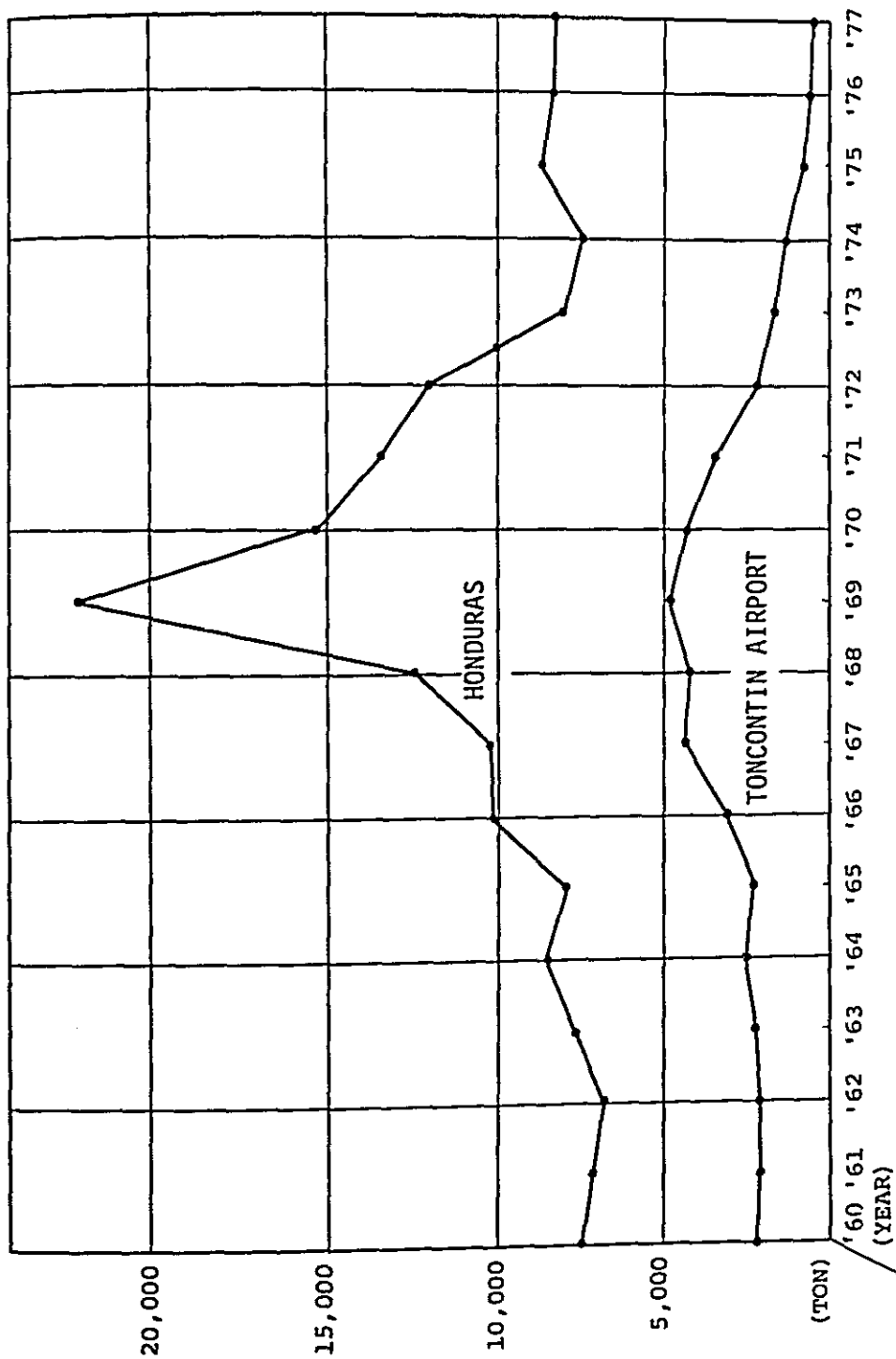


FIG. 2B-4 PAST DEVELOPMENT OF DOMESTIC LOADED & UNLOADED CARGO TRAFFIC IN THE REPUBLIC OF HONDURAS

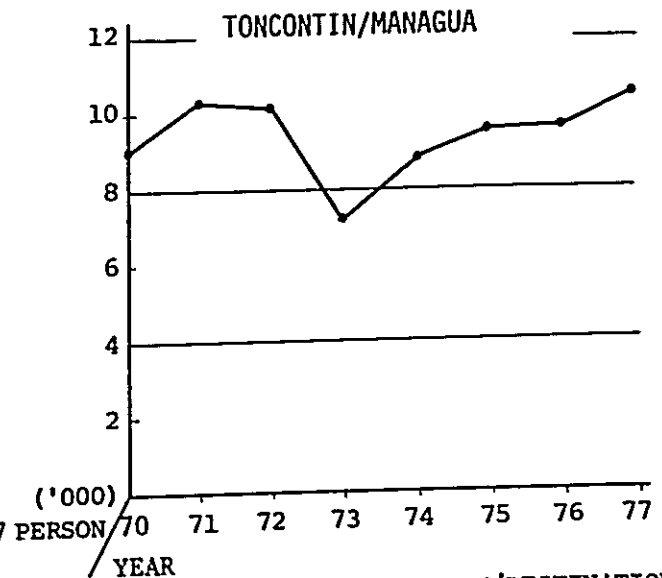
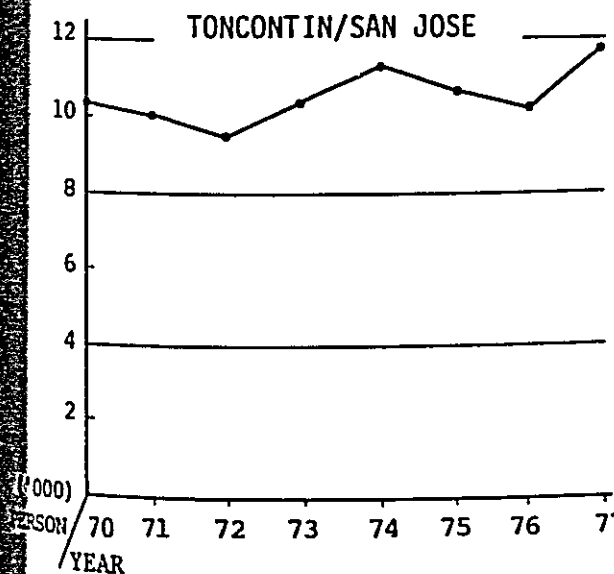
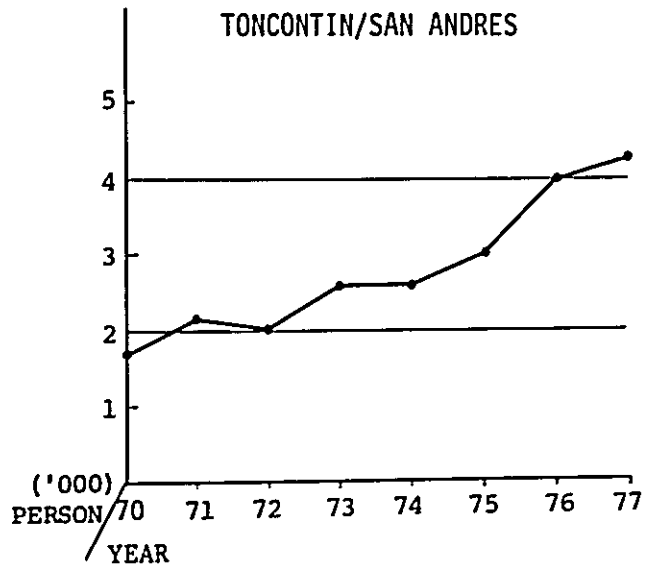
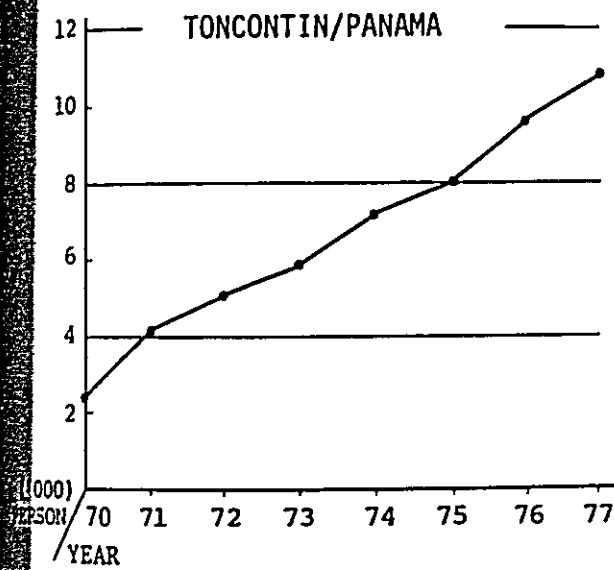
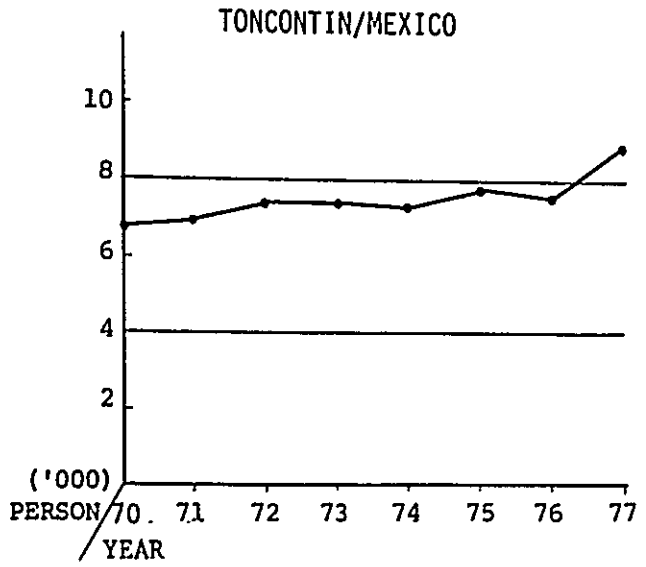
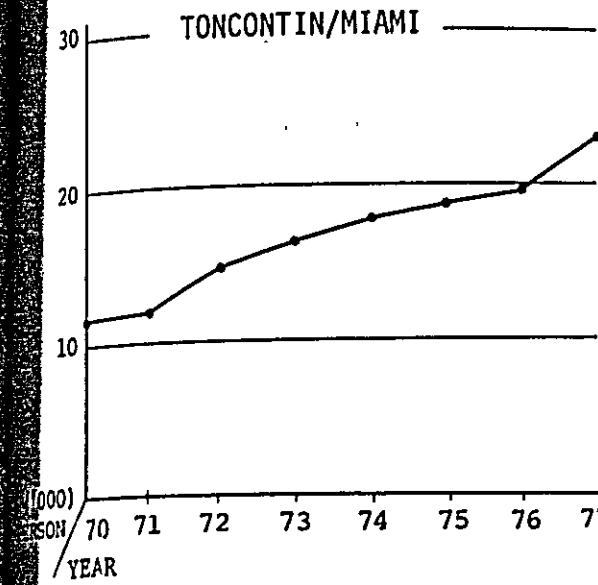


Fig 2B-5 (1) INTERNATIONAL EMBARKING & DISEMBARKING PASSENGERS BY ORIGIN/DESTINATION AT TONCONTIN AIRPORT [1970 - 1977]

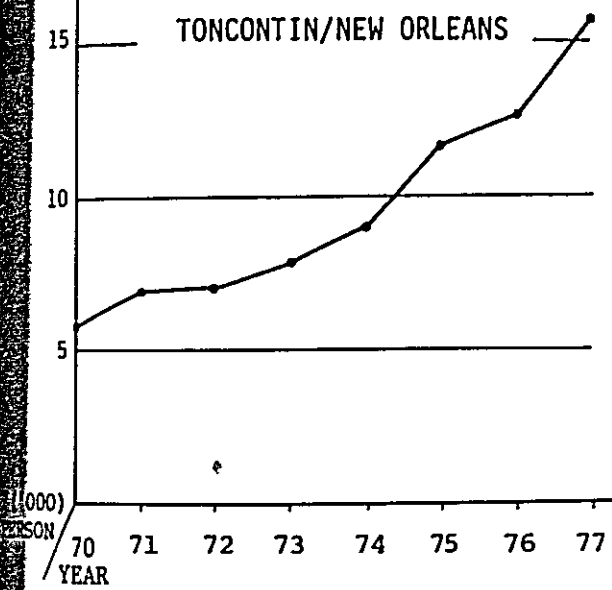
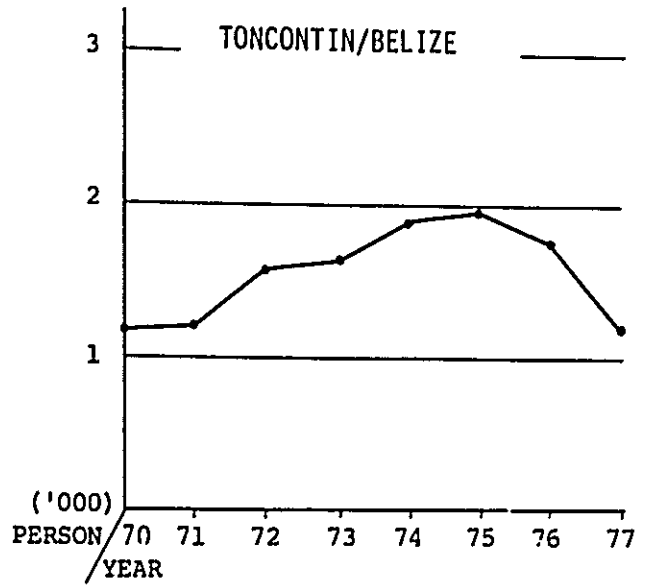
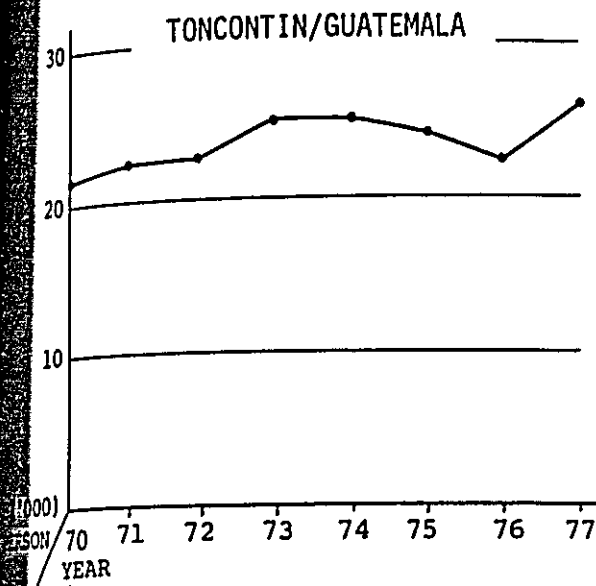
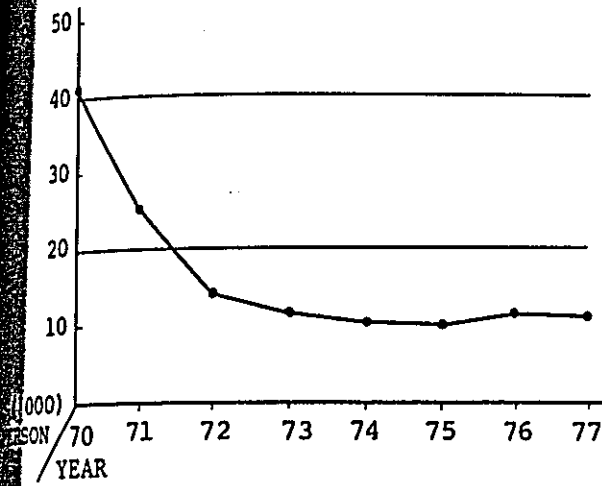
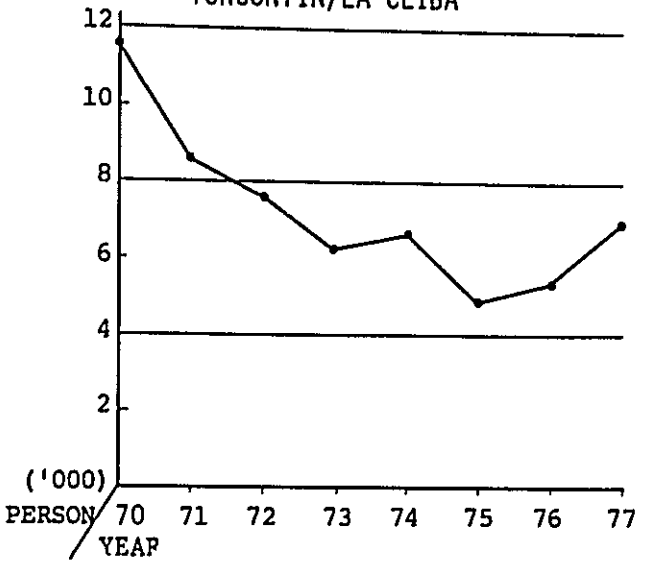


Fig. 2B-5 (2) INTERNATIONAL EMBARKING & DISEMBARKING PASSENGERS BY ORIGIN/DESTINATION AT TONCONTIN AIRPORT [1970 - 1977]

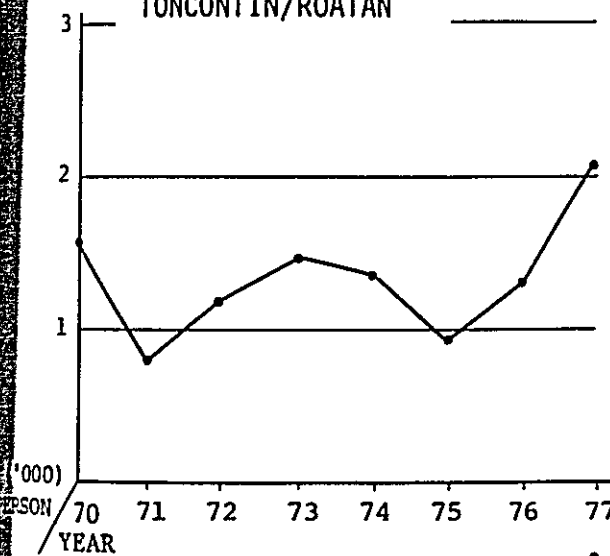
TONCONTIN/SAN PEDRO SULA



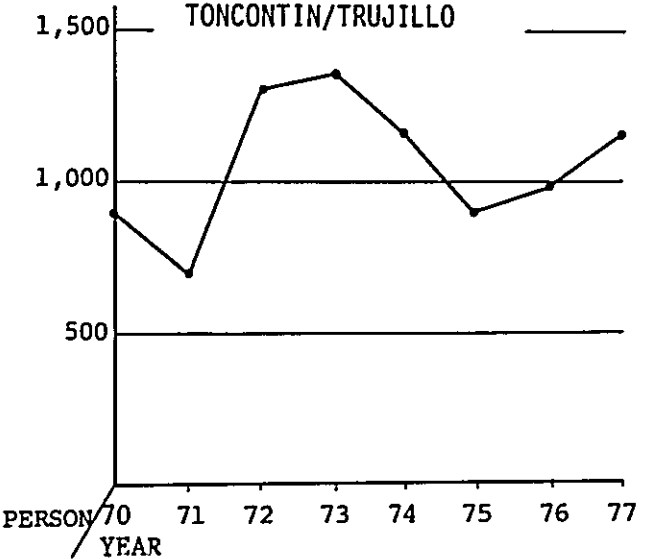
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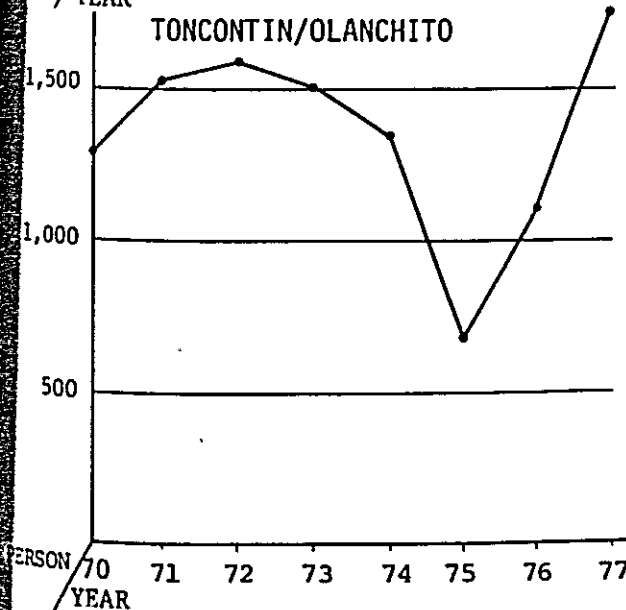
TONCONTIN/ROATAN



TONCONTIN/TRUJILLO



TONCONTIN/OLANCHITO



TONCONTIN/PTO. LEMPRA

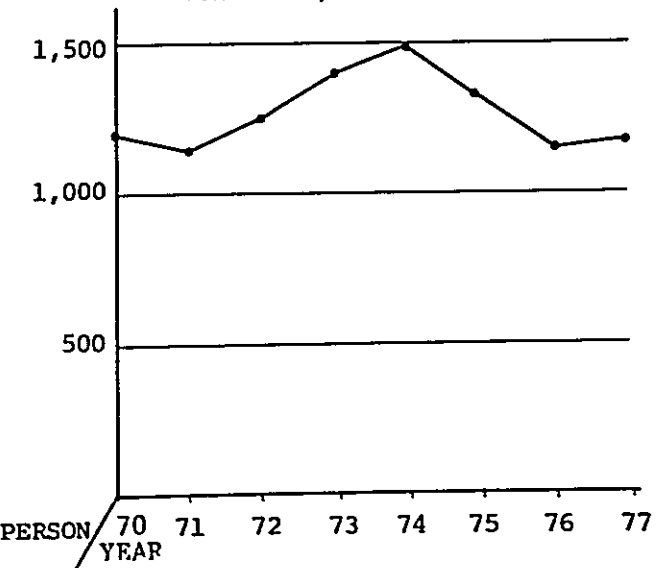


Fig. 2B-6 DOMESTIC EMBARKING & DISEMBARKING PASSENGERS BY ORIGIN/DESTINATION AT TONCONTIN AIRPORT [1970 - 1977]

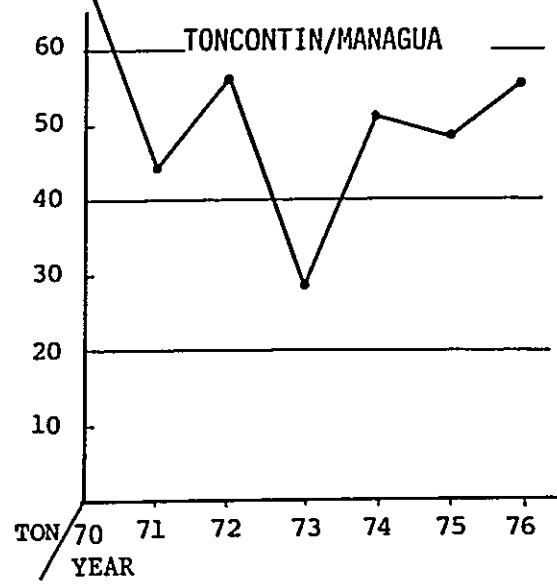
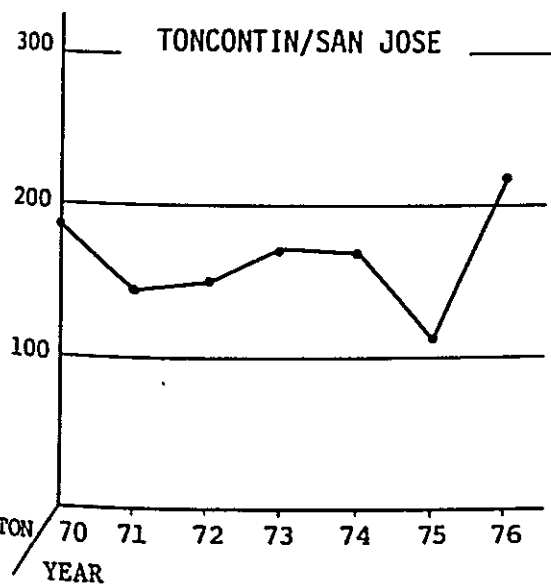
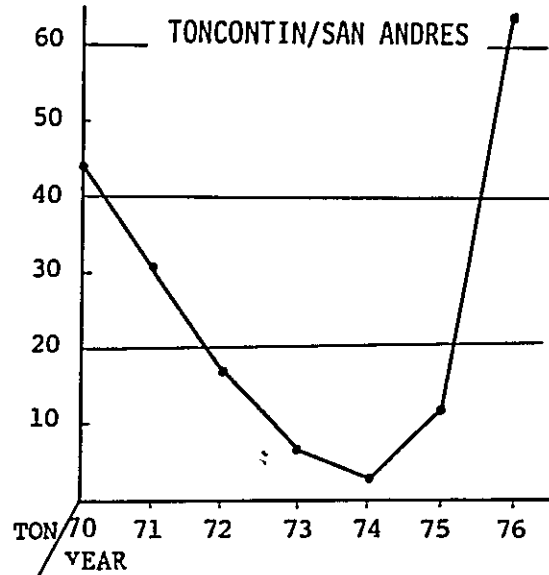
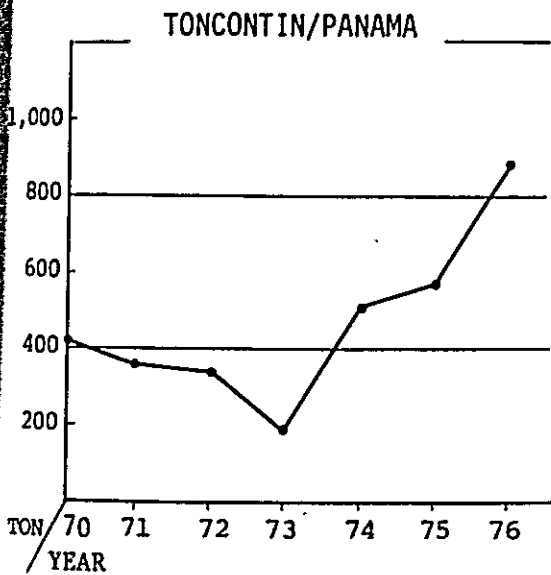
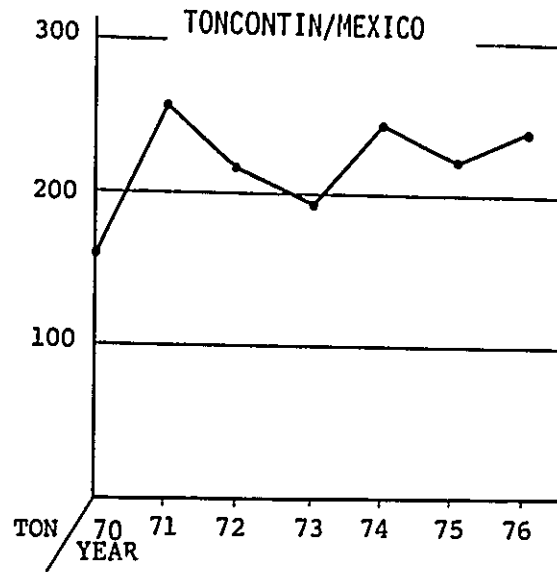
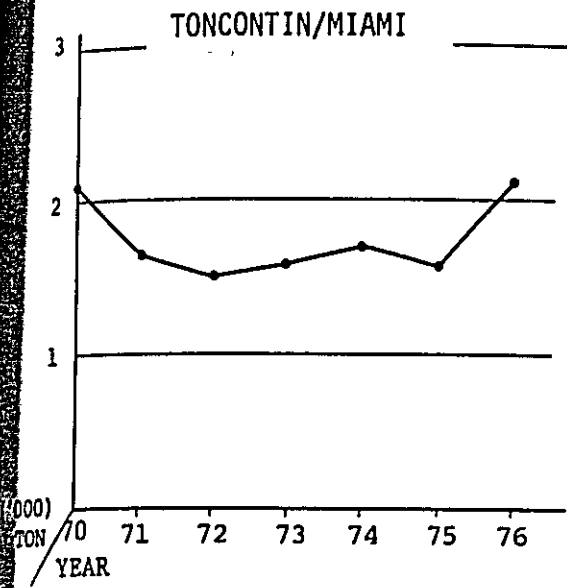


Fig. 2B-7 (1) INTERNATIONAL LOADED & UNLOADED CARGO BY ORIGIN/DESTINATION AT TONCONTIN AIRPORT [1970 - 1976]

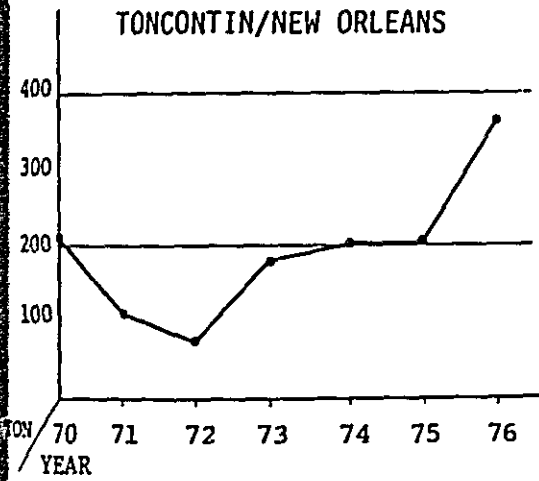
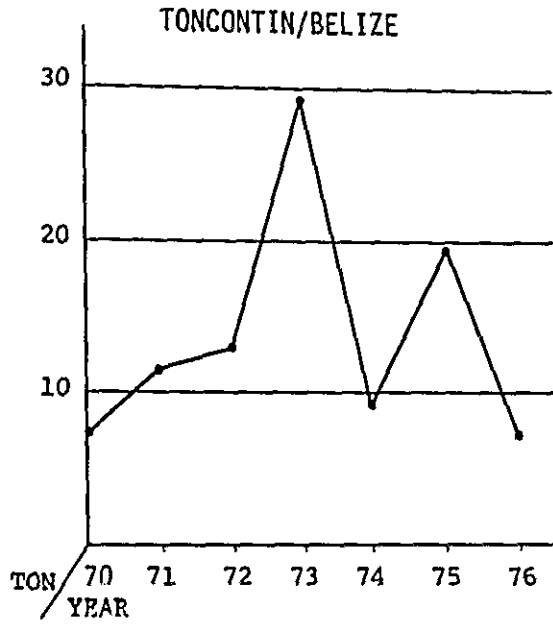
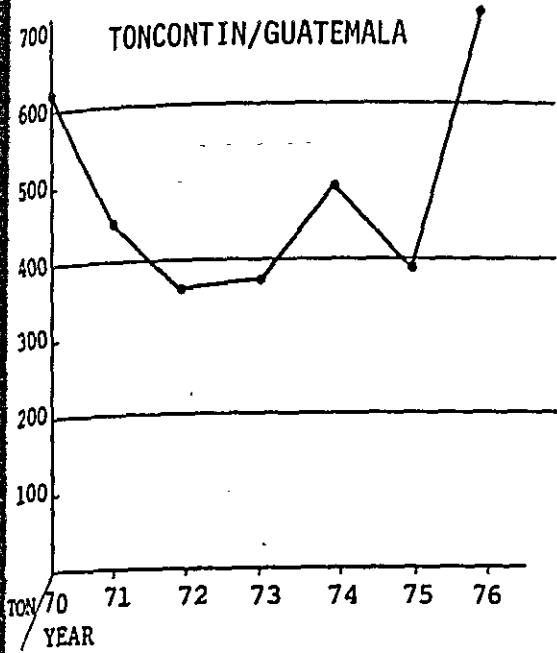


Fig. 2B-7 (2) INTERNATIONAL LOADED & UNLOADED CARGO BY ORIGIN/DESTINATION AT TONCONTIN AIRPORT [1970 - 1976]

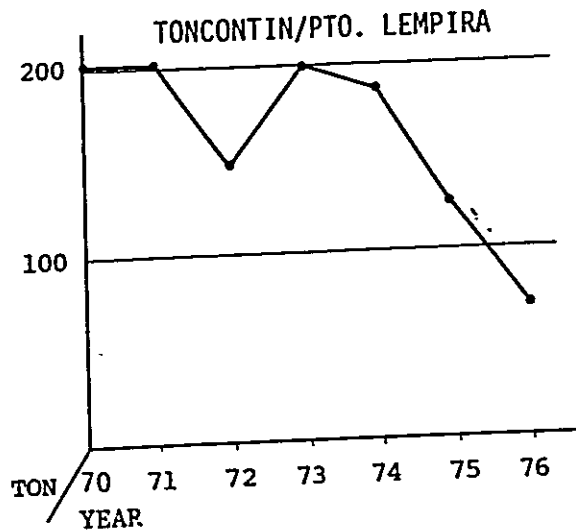
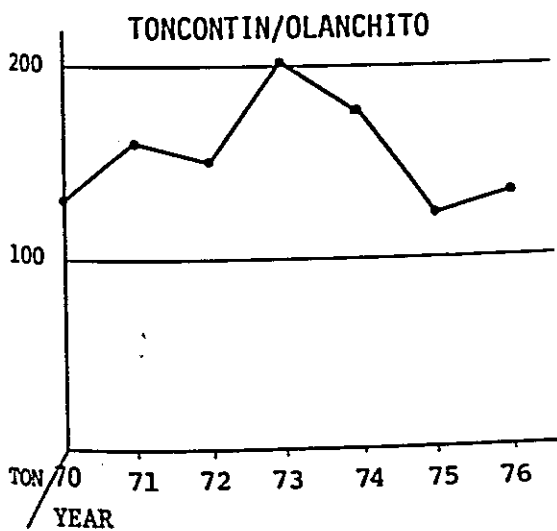
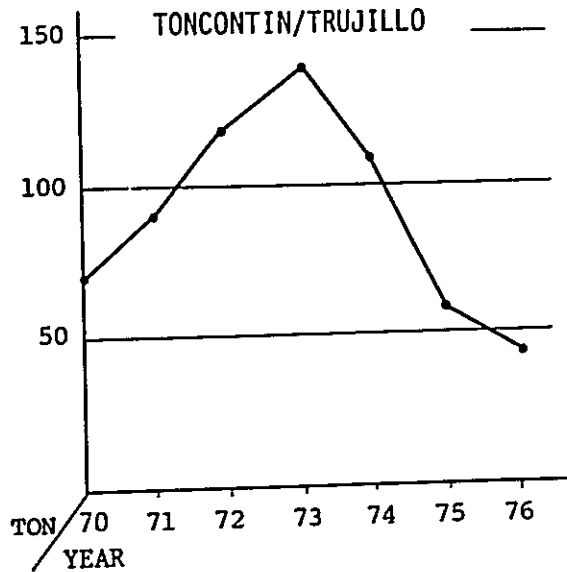
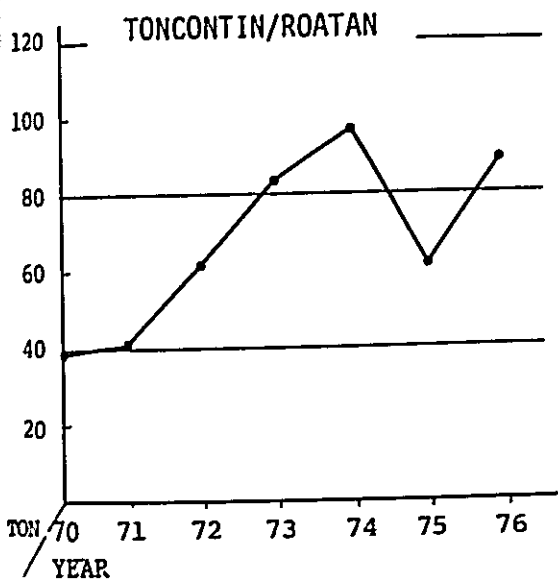
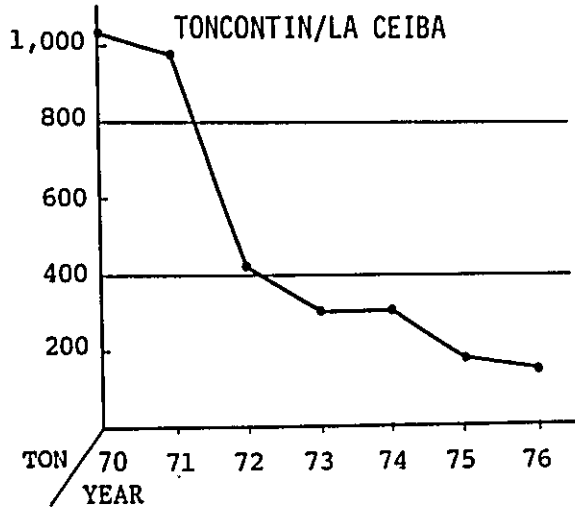
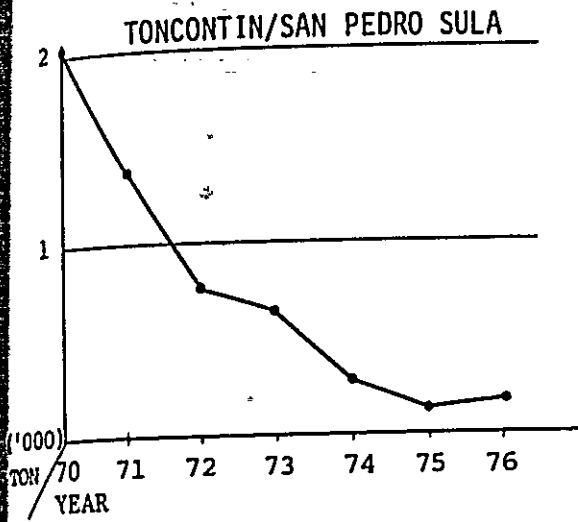


Fig. 2B-8 DOMESTIC LOADED & UNLOADED CARGO BY ORIGIN/DESTINATION AT TONCONTIN AIRPORT [1970 - 1976]

APPENDIX 3A

ILS OPERATIONAL REQUIREMENT

Appendix 3A ILS OPERATIONAL REQUIREMENTS

Operational requirements of ICAO by category of Instrument Landing System (ILS) are as follows:

Table 3A-1 ICAO ILS OPERATIONAL REQUIREMENTS BY CATEGORY

Category	Decision Height		Runway Visual Range	
	meter	(ft.)	meter	(ft.)
I	60	(200)	800	(2600)
II	30	(100)	400	(1200)
III	-	-	Below 200	(700)

The frequency of occurrence of below Cat-I operational minima at each meteorological observation point based on data obtained 24 times a day for a 12-month period are as follows:

Table 3A-2 PERCENTAGE OF OCCURRENCE OF WEATHER CONDITIONS BELOW CAT-I OPERATIONAL MINIMA

	Toncontin	Pedregal	Hule	Talanga
Average for 12-month period	0.7%	4.4%	11.5%	
Jan	0	12.1	5.0	
Feb	0	0.5	5.0	
Mar	0	1.6	3.5	0
Apr	0	1.9	14.6	0.15
May	0.7	0.9	6.1	0
Jun	3.1	4.3	14.7	0.15
Jul	0.7	7.7	13.2	
Aug	1.3	1.8	13.3	
Sep	0	0.5	16.7	
Oct	2.2	3.2	19.5	
Nov	0	11.3	13.4	
Dec	0	13.6	8.0	

Provision of ILS at airports regularly handling international jet flights is generally required by international airlines. ILS is often an economic necessity where its absence could result in excessive delays and diversions of traffic. As Tegucigalpa area is surrounded by mountains and is elevated high, it has low cloud height and poor visibility as shown in Table 3A-2 above.

Notwithstanding the fact that according to the ICAO recommendation as stipulated in the "Requirements of ILS at New Tegucigalpa International Airport, ANP 1977", ILS Category I operation with Category II ILS equipment and appropriate airfield lighting system are recommended, in this site selection study Category I equipment is selected for economic reasons, especially of cost-effectiveness considerations based on (1) expected number of flight movements and (2) costs of equipment, operation and maintenance.

APPENDIX 3B

AERONAUTICAL METEOROLOGICAL ANALYSIS

Appendix 3B . AERONAUTICAL METEOROLOGICAL ANALYSIS

1. Observation Data Obtained

1) Source

Dirección General de Aeronautica Civil, Servicio Meteorologico Nacional

2) Observation Points, Period, Time and Interruption

i) Toncontin (Existing Airport Site) - Elev. 1000m

January to December, 1976 (12 months)
Hourly observation (24 times a day)
No interruption of observation

ii) El Pedregal - Elev. 1500m

January to December, 1976 (12 months)
Hourly observation (24 times a day)
Interruption 23%

iii) Cerro de Hule - Elev. 1500m

a) January, 1962 (1 month)
Hourly observation (12 times a day)
No interruption of observation

b) February, 1962 to January, 1963 (12 months)
Hourly observation (24 times a day)
Interruption %

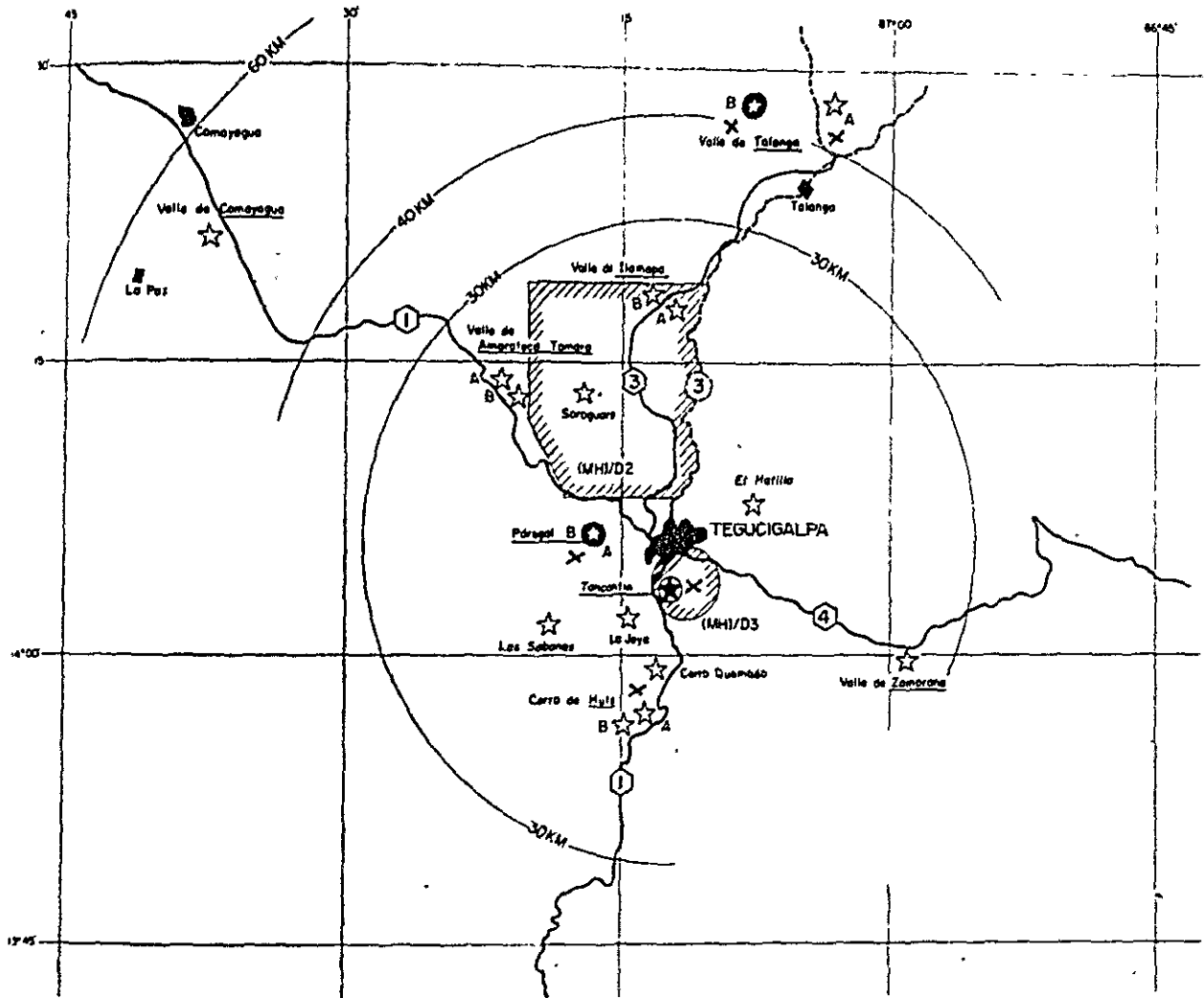
c) April to December, 1970 (9 months)
Hourly observation (12 times a day)
Interruption 24%

iv) Talanga - La Ermita - Elev. 760m

March, 1978 to present
Hourly observation (24 times a day)
No interruption of observation

v) Talanga - El Espino - Elev. 760m

April, 1978 to present
Anemocinograph recording (24 hours a day)
No interruption of observation



x Weather observation point

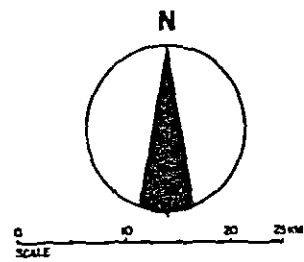


Fig. 3B-1 LOCATION OF WEATHER OBSERVATION POINTS

2. Results of Analysis

1) Toncontin

i) Prevailing wind direction : N to NNE

ii) Frequency of occurrence of calm wind:

39% of the total number of observations

25% of the number of daytime observations only

iii) Annual frequency of occurrence of weather conditions below weather minimum (ceiling/visibility):

	<u>Below 200ft - 800m</u>	<u>Below 1200ft - 2800m (Operating minima for the existing runway)</u>
Out of the total number of observations	0.7%	17%
Out of the number of daytime observations only	0.8%	21%

iv) Wind coverage

	<u>Maximum cross-wind component :</u>	
	<u>10kts</u>	<u>15kts</u>
RWY 01/19	95.2%	99.8%
RWY 06/24	89.5%	99.3%
RWY 13/31	85.3%	98.7%

2) El Pedregal

i) Prevailing wind direction : N to NNE

ii) Frequency of occurrence of calm wind:

52% Whole year

44% Dry season

58% Wet season

iii) Frequency of occurrence of weather conditions below weather minimum (ceiling/visibility, 24 hours):

	<u>Below 200ft - 800m</u>	<u>Below 200ft - 1200m</u>
Whole year	4%	7%
Dry season	4%	6%
Wet season	4%	7%

iv) Wind coverage

Not less than 99% for any direction under the maximum cross-wind component of 15kts.

3) Cerro de Hule

i) Prevailing wind direction : N

ii) Frequency of occurrence of calm wind:

32% Whole year

27% Dry season

35% Wet season

- iii) Frequency of occurrence of weather conditions below weather minimum (ceiling/visibility, 24 hours):

	<u>Below 200ft - 800m</u>	<u>Below 200ft - 1200m</u>
Whole year	12%	12%
Dry season	7%	7%
Wet season	15%	15%

- iv) Wind coverage:

	<u>Max. cross-wind component</u>	
	<u>10kts</u>	<u>15kts</u>
RWY 04/22		
Whole year	74.8%	93.1%
Dry season	73.1%	92.0%
Wet season	75.9%	94.4%
RWY 18/36		
Whole year	97.3%	99.7%
Dry season	97.0%	99.7%
Wet season	97.5%	99.6%

- v) Other findings:

During January, 1962, wind of over 30kts was observed, with frequency of occurrence of 57%.

4) Valle de Talanga

- i) Prevailing wind direction : E

ii) Frequency of occurrence of calm wind:

More than 50%

iii) Frequency of occurrence of weather conditions below weather minimum (Ceiling 200ft, Visibility 800m)

No more than 1%

Table 3B-1 SUMMARY (1)

Observation Point	Year	D.S	W.S.	Dry Season (D.S.)					Wet Season (W.S.)				
				Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep

a) Prevailing Wind Direction

Toncontin 12 hrs 24 hrs	N,NNE	N,NNE	N	NNE	NNE	NNE	NW	N,NE	NW	N,NW	NW	NW	NW	NW	N	NNE
	N,NNE	N	NNE	NNE	NNE	NW	N	N	NW	N	N	N	NW	NW	N	NNE
Pedregal	N	N	N,NNE	NE	N	N	N	N	N	E	NNE	NNE	NNE	NNE	N	N
Hule 1962*1 1970	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Talanga La Ermita El Espino						E	E	E	E	E	E	E	E	E	E	E

*1 March to December only

b) Frequency of Occurrence of Calm Wind

		Frequency of Occurrence of Calm Wind (%)													
Toncontin 12 hrs 24 hrs	25.4	24.6	26.3	18.4	15.4	14.1	29.0	32.3	38.2	51.8	15.6	21.1	26.2	26.8	16.7
	39.0	34.4	43.7	30.9	23.3	24.0	40.1	40.6	47.0	63.1	34.7	41.7	46.3	44.8	31.5
Pedregal	51.9	44.4	58.3	32.5	22.4	28.2	43.5	51.3	68.8	83.6	38.6	51.4	64.1	60.1	48.4
Hule 1962*1 1970	31.6	27.4	35.2	11.5	13.6	24.6	46.3	31.5	25.9	58.8	7.1	36.7	52.4	43.1	13.8
Talanga La Ermita El Espino							66.1	56.6	59.7	62.2					
								54.9	45.1	52.5					

*1 March to December only

Table 3B-1 SUMMARY (2)

Observation Point	Year	D.S.	W.S.	Frequency of Occurrence of Wind Velocity More Than 20 kts (%)											
				Dry Season (D.S.)						Wet Season (W.S.)					
				Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Toncontin 12 hrs 24 hrs	0.36	0.50	0.21	0.25	1.49	1.06	0.25	0	0	0	0	0.25	0.26	0	0.77
	0.33	0.52	0.14	0.40	0.81	0.57	1.07	0.14	0.13	0.14	0	0.13	0.14	0	0.42
Pedregal	0.09	0.19	0	0	0.40	1.00	0	0	0	0	0	0	0	0	0
Hule 1962*2 1970	6.85	8.36	5.56	*1	75.53										
	13.58	20.53	9.09	17.69	11.53	12.63	6.33	7.50	0.94	0.42	5.91	3.36	0.28	0.95	22.79
Talanga La Ermita El Espino															

*1 12 hrs. 1962 only

*2 March to December, 1970

Table 3B-1 SUMMARY (3)

Observation Point	Year	D.S.	W.S.	Dry Season (D.S.)			Wet Season (W.S.)										
				Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
Toncontin (12hrs) 200ft - 800m 1200ft - 2800m*1	0.76	0.08	1.47	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	20.55	12.99	24.30	34.99	17.87	9.28	1.99	5.90	7.69	3.85	0	22.58	1.24	13.85	29.53	26.92	
(24hrs) 200ft - 800m 1200ft - 2800m	0.74	0.11	1.25	0	0	0	0	0	0.67	3.14	0.68	1.34	0	2.15	0	0	0
	17.06	12.48	21.65	33.91	18.01	7.89	1.47	4.43	8.74	34.67	19.35	9.66	11.20	31.95	23.19		
Pedregal 200ft - 800m 200ft - 1200m	4.38	4.34	4.34	13.61	12.10	0.50	1.59	1.87	0.94	4.28	7.69	1.82	0.46	3.23	11.29		
	6.70	6.32	7.10	24.17	14.48	0.75	2.07	2.43	1.75	8.22	9.74	3.33	1.98	7.22	15.21		
Hule (1962) 200ft - 800m 200ft - 1200m (1970)*3 200ft - 800m 200ft - 1200m	11.46	7.14	15.11	8.97	12.20*2			14.58	6.05	14.71	13.17	13.31	16.67	19.50	13.36		
	11.71	7.28	15.46	8.97	5.03	5.02	3.50	14.72	6.32	15.13	13.31	13.31	16.81	19.86	14.35		
	13.63	9.67	16.01		5.36	5.02	3.50										
Talanga - La Ermita 200ft - 800m 200ft - 1200m																	
							0	0.15	0	0.15							
							0	0.58	1.11	0.15							

d) Frequency of Occurrence of Ceiling/Visibility Minimum (%)

*1 Existing Runway Operation Minimum

*2 12hrs, 1962 only

*3 March to December only

Table 3B-1 SUMMARY (4)

e) Wind Coverage (%)

Observation Point	RWY	Cross Wind Components of					
		10kts			15kts		
		Year	Dry Season	Wet Season	Year	Dry Season	Wet Season
Toncontin	01/19	91.6 x	91.2 x	92.2 x	99.7	99.6	99.8
	06/24	84.6 x	82.8 x	85.4 x	98.9	98.6	99.3
	13/31	79.8 x	75.5 x	83.6 x	98.0	97.3	99.2
	01/19	95.2	94.6	95.4	99.8	99.8	99.9
	06/24	89.5 x	88.7 x	90.7 x	99.3	99.0	99.5
	13/31	85.3 x	82.0x	89.0 x	98.7	97.9	99.8
Pedregal	01/19	99.6	100.0	99.7	99.99	99.4	99.97
Hule (1962)	04/22	74.8 x	73.1 x	75.9 x	93.1 x	92.0 x	94.4 x
	18/36	97.3	97.0	97.5	99.7	99.7	99.6
Talanga *1 La Ermita	17/35		90.1 x	87.1 x		98.2	94.5 x
	10/28		96.7	97.9		99.5	99.5
El Espino *2	17/35		88.9 x	86.3 x		99.7	99.4
	10/28		98.2	99.5		99.9	100.0

Notes to Observation Period: *1 March to June, 1978 *2 April to June, 1978

Mark x indicates wind coverage less than 95%

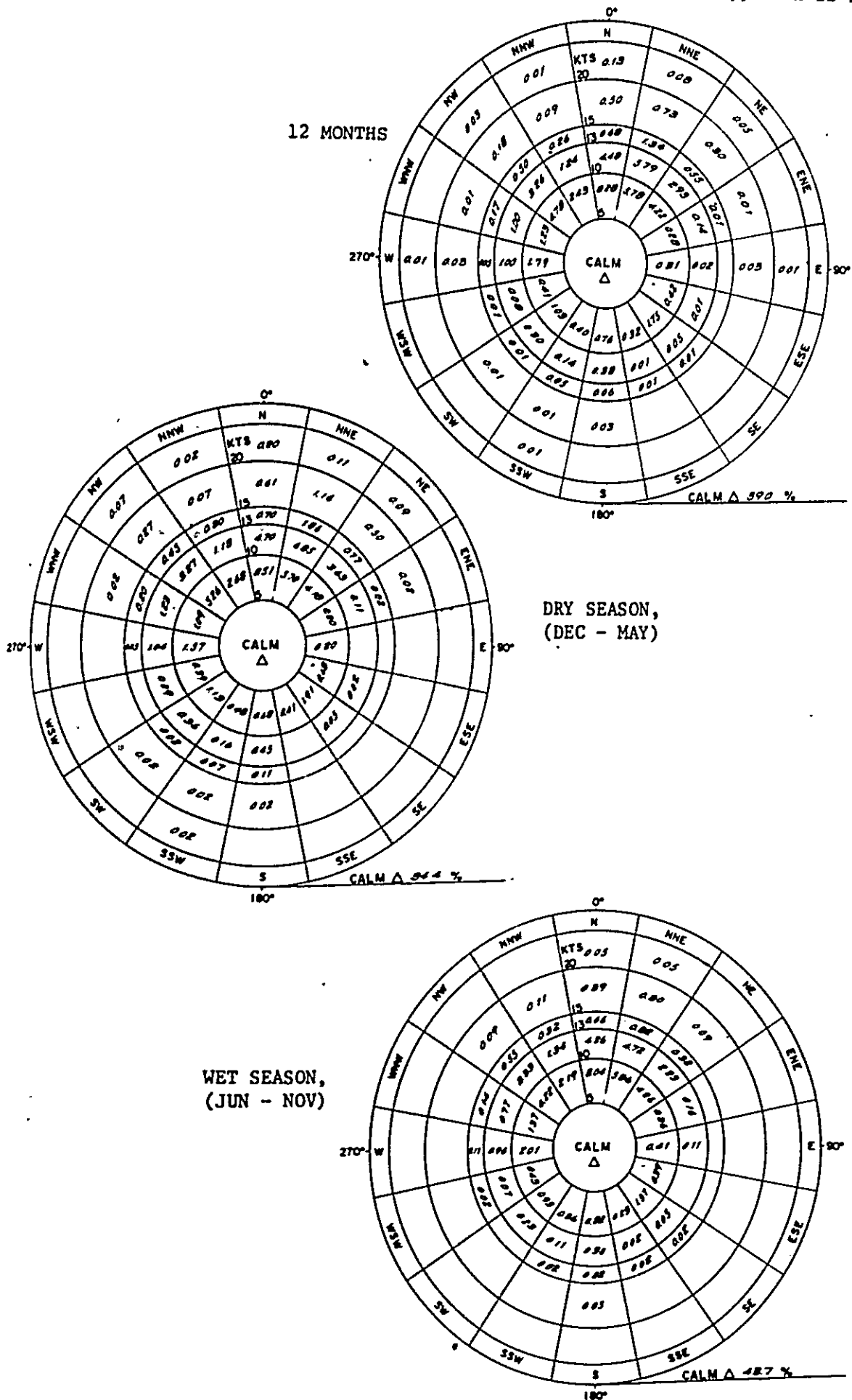


Fig. 3B-2 (a) TONCONTIN WIND ROSE, 1976

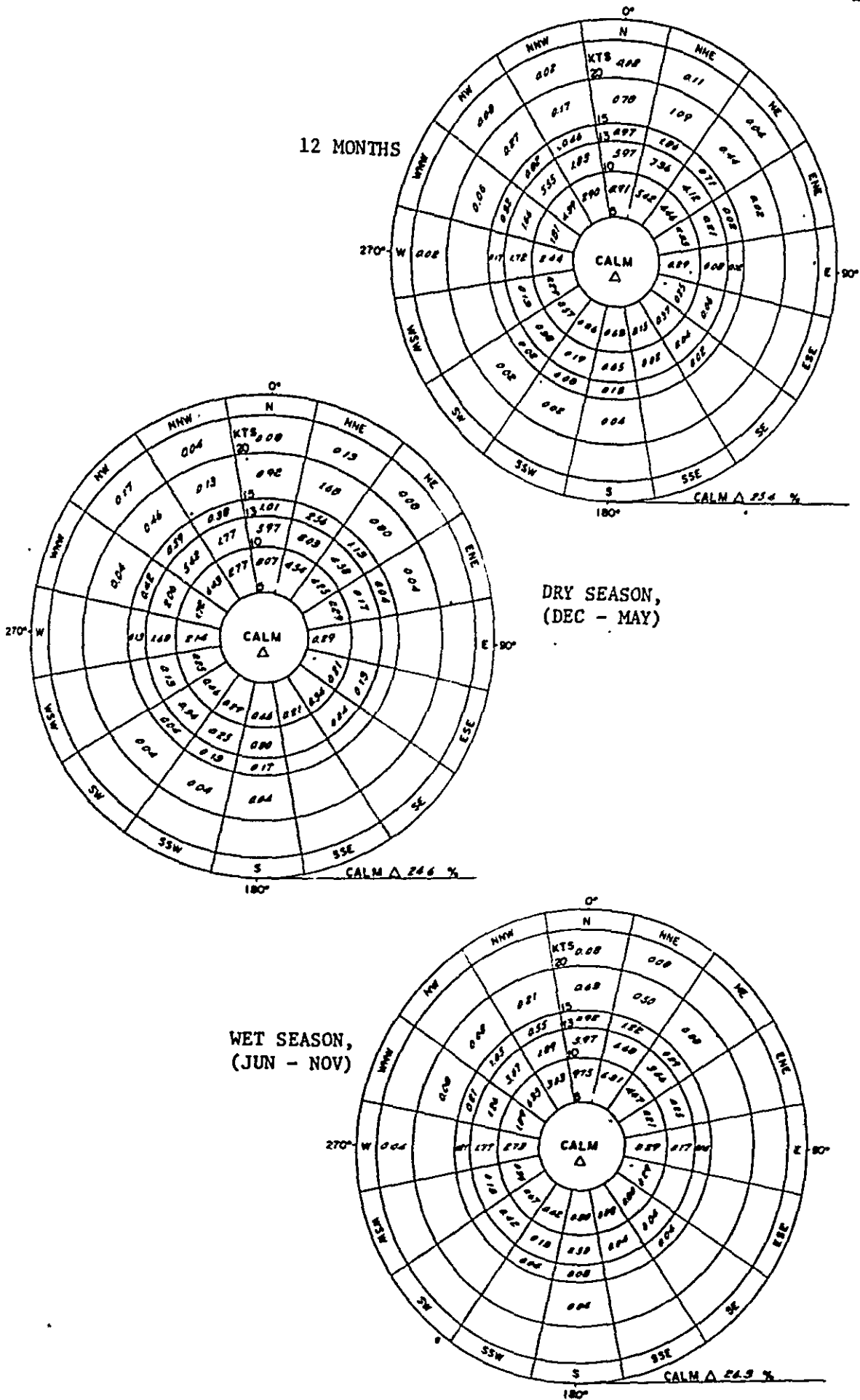
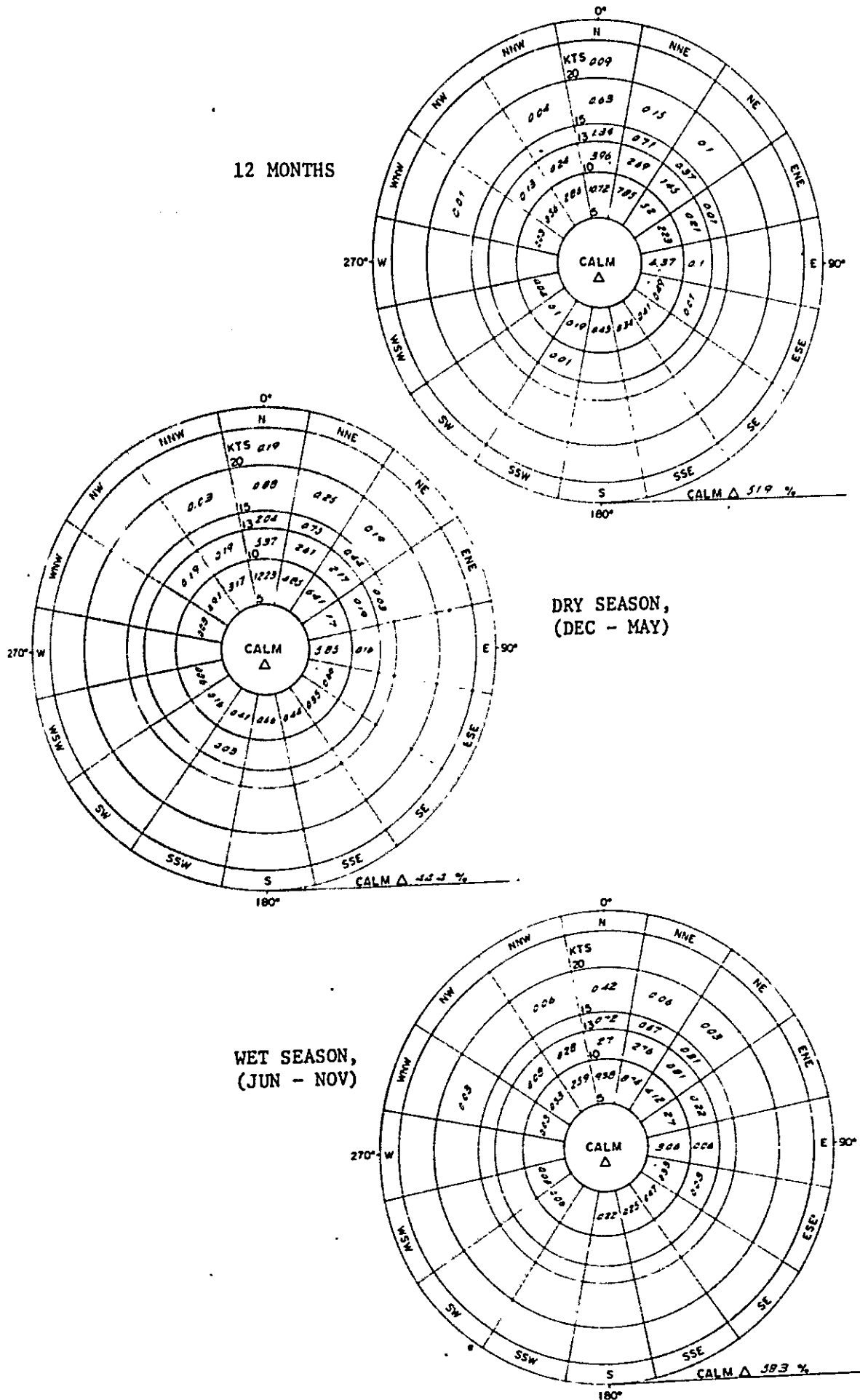


Fig. 3B-2 (b) TONCONTIN-DAYTIME WIND ROSE, 1976



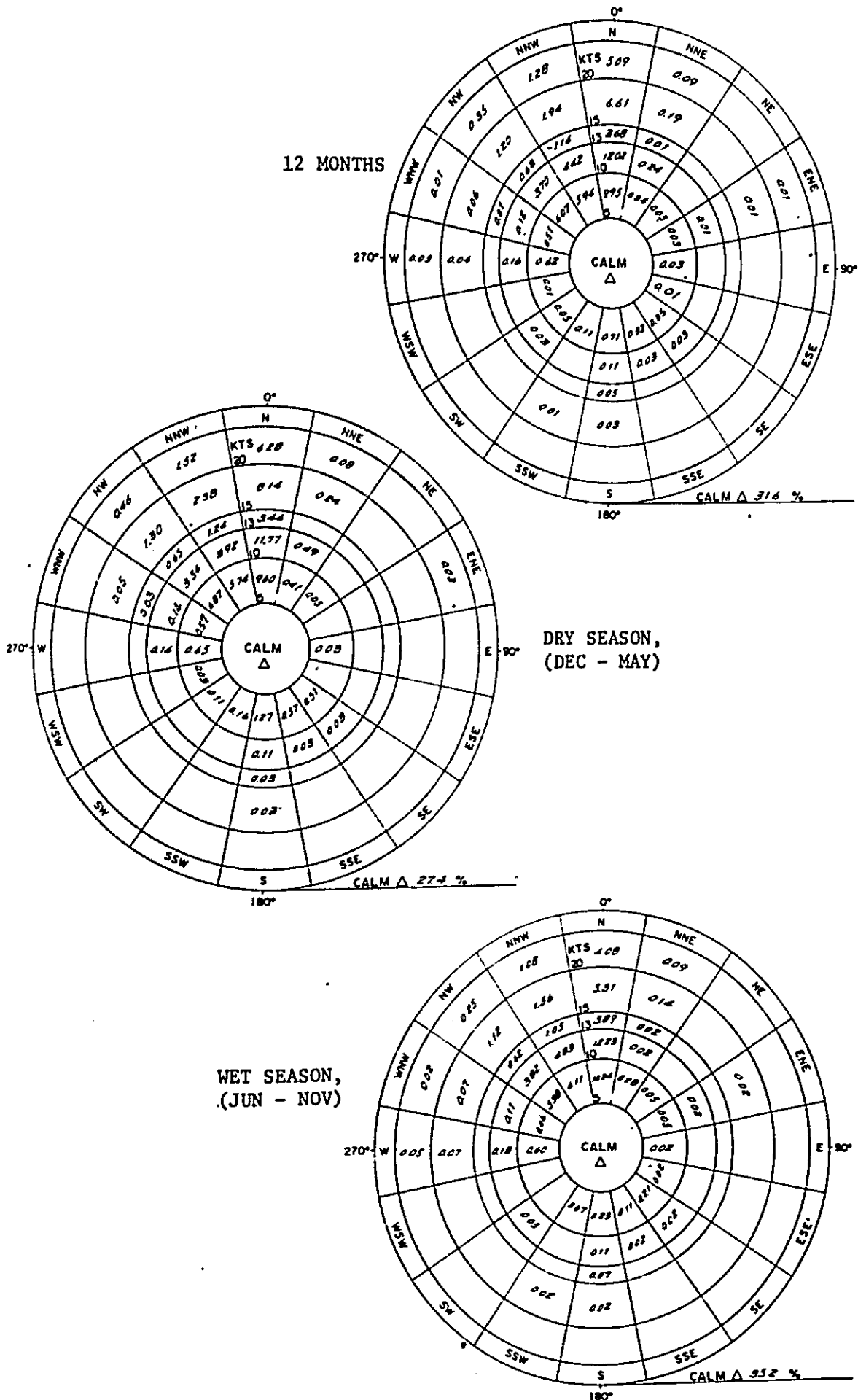


Fig. 3B-4 HULE WIND ROSE, 1962 - 1963

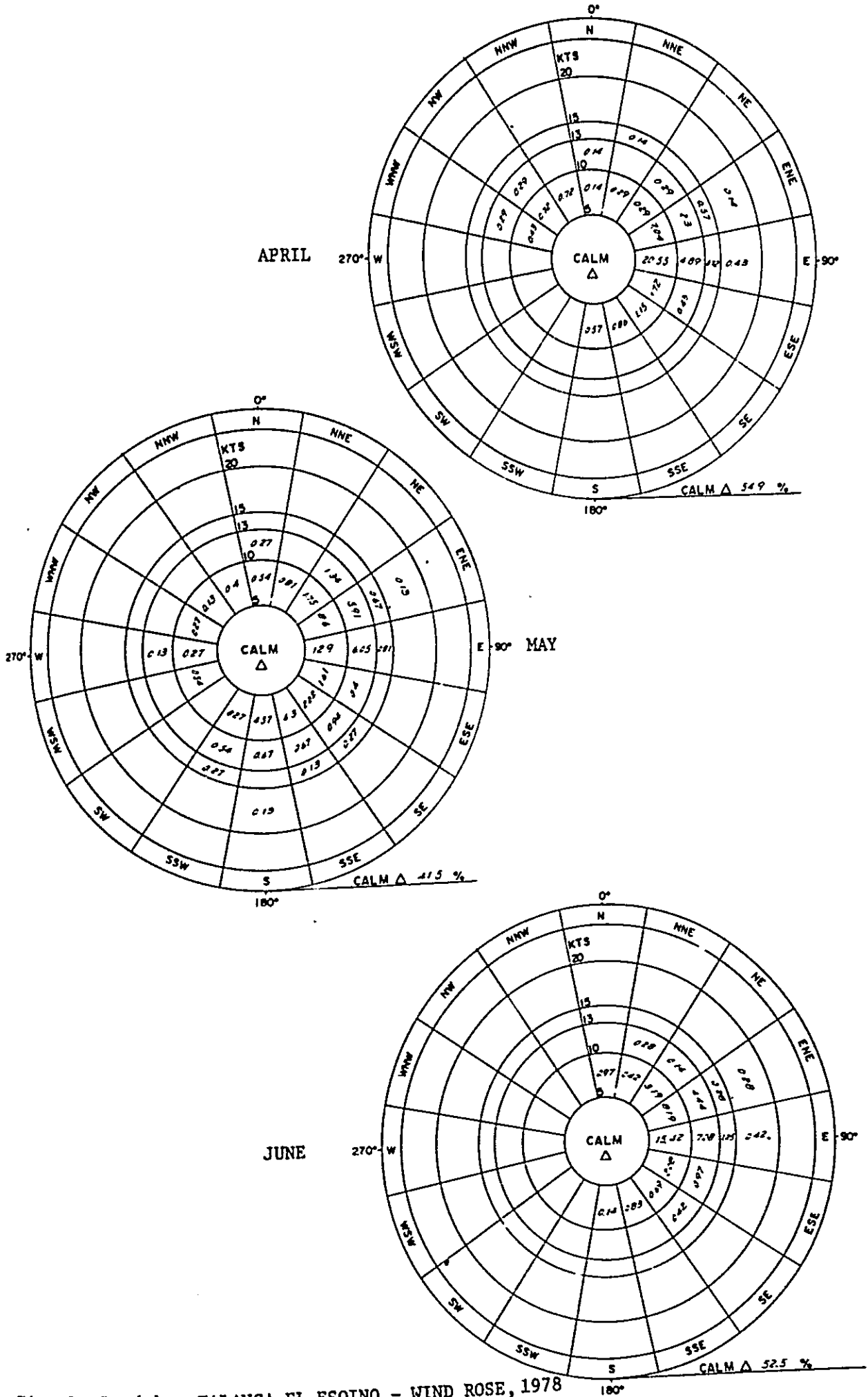
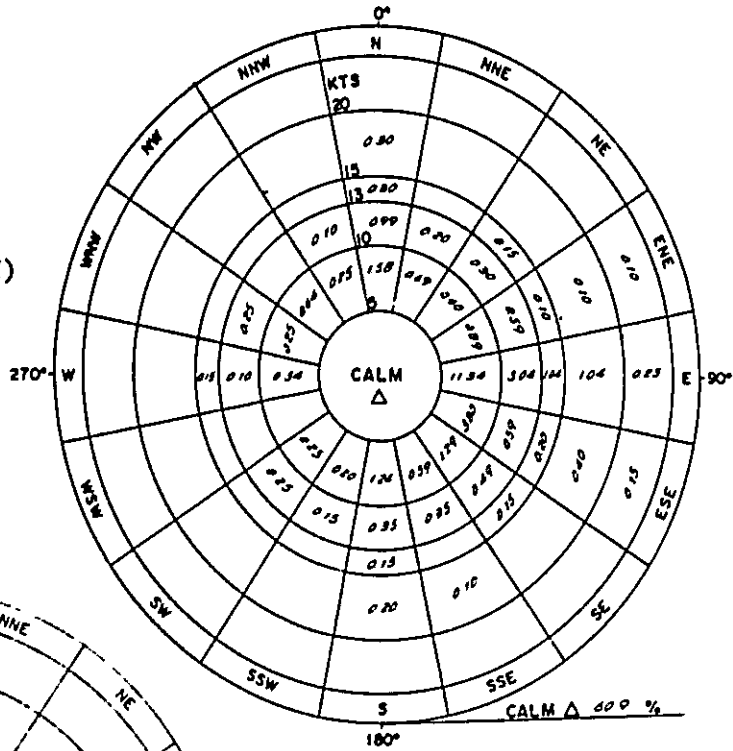


Fig. 3B-5 (a) TALANGA EL ESINO - WIND ROSE, 1978

DRY SEASON
(MAR. APR. MAY ONLY)



WET SEASON
(JUNE ONLY)

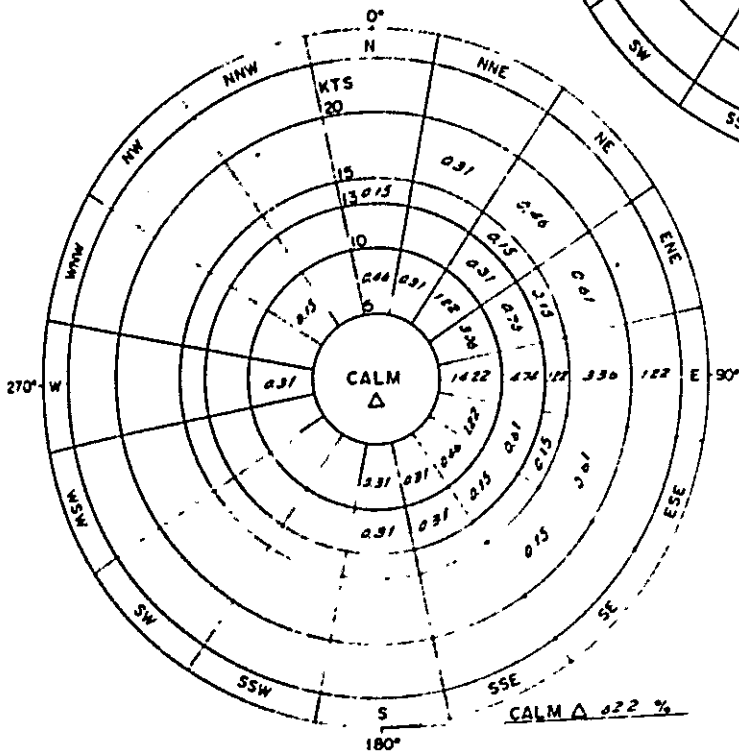


Fig. 3B-5 (6) TALANGA LA ERMITA - WIND ROSE, 1978

STATION: TONCONTIN 12 MONTHS YEAR: 1976

CEILING (meter)	VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	2,000	3,000	6,000 or more	TOTAL	%
			2,000	3,000	5,000	more																	
Unknown																							
50 or less												1									2	5	8 009
50 ~ 100												4							3	3	7	32	51 059
100 ~ 200																			11	16	55	214	290 318
200 ~ 300								1				5							7	19	30	835	897 1220
300 ~ 600													3						2	3	13	409	424 482
600 ~ 1,000								2	1		1	4	1					1	10	17	36	3915	3389 3852
1,000 ~ 1,500																							
1,500 ~ 2,000																			1	3	9	781	794 909
2,000 ~ 2,500																							
2,500 or more																							
Cloud layer 5/8 or more																			1				27 28 032
Cloud layer 4/8 or less								2											2	3	13	205	2925 3326
TOTAL								5	1		3	21	1						2	3	13	205	2925 3326
%								006	001		003	024	001						1	37	64	143	8317 8795
																			001	042	073	163	9184

STATION: TONCONTIN DRY SEASON, (DEC - MAY) YEAR: 1976

CEILING (meter)	VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	2,000	3,000	6,000 or more	TOTAL	%
			2,000	3,000	5,000	more																	
Unknown																							
50 or less																							
50 ~ 100																					2	3	5 011
100 ~ 200																			2	3	13	47	65 147
200 ~ 300								1				4							1	5	5	338	354 803
300 ~ 600												1							2	2	3	188	196 443
600 ~ 1,000								1	1		1	2							4	9	19	1325	1362 5091
1,000 ~ 1,500																							
1,500 ~ 2,000																					1	5	397 403 914
2,000 ~ 2,500																							
2,500 or more																			1				6 7 016
Cloud layer 5/8 or more																							
Cloud layer 4/8 or less								2											1	3	11	1998	2015 4572
TOTAL								4	1		1	7							11	23	58	4302	4407
%								029	022		002	016							11	23	58	4302	4407

STATION: TONCONTIN WET SEASON, (JUN - NOV) YEAR: 1976

CEILING (meter)	VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	2,000	3,000	6,000 or more	TOTAL	%	
			2,000	3,000	5,000	more																		
Unknown																								
50 or less												1									2	5	8 018	
50 ~ 100												6							3	3	5	29	46 105	
100 ~ 200																			9	15	22	1671	215 490	
200 ~ 300												2												
300 ~ 600												1							6	14	25	497	543 1237	
600 ~ 1,000												2								1	10	215	228 520	
1,000 ~ 1,500								1				2	1											
1,500 ~ 2,000																								
2,000 ~ 2,500																								
2,500 or more																								
Cloud layer 5/8 or more																								
Cloud layer 4/8 or less																			1		2	907	910 2224	
TOTAL								1			2	14	1						1	26	41	87	4215	4388
%								002			003	032	002						002	059	003	198	910	

Table 3B-2 (a) TONCONTIN-CEILING/VISIBILITY 1976

STATION: TONCONTIN-DAYTIME 12 MONTHS YEAR: 1976

CEILING (meter)	VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600-2,000	2,000-3,000	3,000-5,000	6,000 or more	TOTAL	%	
Unknown																								
50 or less																								
50 ~ 100											6							3	1	4	21	35	0.74	
100 ~ 200										1	2							7	8	17	110	145	3.05	
200 ~ 300											5							4	17	23	486	595	11.84	
300 ~ 600											1							1	3	6	238	249	5.23	
600 ~ 1,000							1				4						1	7	14	18	1234	1379	39.49	
1,000 ~ 1,500																			3	8	399	610	12.82	
1,500 ~ 2,000																								
2,000 ~ 2,500																								
2,500 or more																						5	5	0.11
Cloud layer 5/8 or more																								
Cloud layer 4/8 or less							1											1	3	7	1288	1300	27.82	
TOTAL							2		1	18							1	23	49	83	4581	4758		
%							0.04		0.02	0.38							0.02	0.48	1.03	1.74	96.28			

STATION: TONCONTIN-DAYTIME DRY SEASON, (DEC - MAY) YEAR: 1976

CEILING (meter)	VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600-2,000	2,000-3,000	3,000-5,000	6,000 or more	TOTAL	%	
Unknown																								
50 or less																								
50 ~ 100																								
100 ~ 200																		1	1	3	27	32	1.35	
200 ~ 300												4						1	6	3	178	194	8.15	
300 ~ 600											1							1	2	1	115	120	5.04	
600 ~ 1,000							1				2							3	9	13	731	739	31.82	
1,000 ~ 1,500																			1	4	284	289	12.15	
1,500 ~ 2,000																								
2,000 ~ 2,500																								
2,500 or more																						5	5	0.21
Cloud layer 5/8 or more																								
Cloud layer 4/8 or less							1											1	3	6	919	920	41.9	
TOTAL							2			7								7	22	32	2349	2379		
%							0.03			0.29								0.29	0.92	1.35	97.04			

STATION: TONCONTIN-DAYTIME WET SEASON, (JUN - NOV) YEAR: 1976

CEILING (meter)	VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600-2,000	2,000-3,000	3,000-5,000	6,000 or more	TOTAL	%	
Unknown																								
50 or less																								
50 ~ 100											6							3	1	4	21	35	1.47	
100 ~ 200										1	2							6	7	14	83	113	4.75	
200 ~ 300											1							3	11	18	308	341	14.33	
300 ~ 600																			1	5	123	129	5.42	
600 ~ 1,000											2						1	4	5	5	1103	1120	47.08	
1,000 ~ 1,500																			2	4	315	321	13.49	
1,500 ~ 2,000																								
2,000 ~ 2,500																								
2,500 or more																								
Cloud layer 5/8 or more																								
Cloud layer 4/8 or less																					1	319	320	13.45
TOTAL										1	11							1	16	27	51	2272	2379	
%										0.04	0.46							0.04	0.67	1.13	2.14	95.51		

Table 3B-2 (a) TONCONTIN-DAYTIME CEILING/VISIBILITY 1976

STATION: HULE 12 MONTHS YEAR: 1962, 1963

CEILING (meter)	VISIBILITY (meter)	100 or less	12 MONTHS																TOTAL	%		
			100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600-2,000			2,000-3,000	3,000-5,000
Unknown					1													1		4	6	0.2
50 or less	218		1		79					12								18	5	33	165	4.5
50 ~ 100	9		2		1	1				3								2	1	8	12	0.7
100 ~ 200	34		2		48					4								10	1	18	123	4.8
200 ~ 300	35		1	1	23					1								3		2	60	2.1
300 ~ 600	4				9													1		4	87	2.7
600 ~ 1,000	33				20					3								6		25	632	18.1
1,000 ~ 1,500	6				6													1		1	354	9.7
1,500 ~ 2,000																						0
2,000 ~ 2,500	1																					0
2,500 or more	8				2					1								3		3	37	1.5
Cloud layer 5/8 or more																						
Cloud layer 4/8 or less	4				2					4	2	3	1					1		4	205	5.9
TOTAL	384		6	1	191	1				28	2	4	1	4				42	2	40	3097	80.6
%		49	0.1	-	24	-				0.4	-	0.1	-	0.1	-	-	-	11	0.1	14	98.0	

STATION: HULE DRY SEASON, (DEC - MAY) YEAR: 1962, 1963

CEILING (meter)	VISIBILITY (meter)	100 or less	DRY SEASON, (DEC - MAY)																TOTAL	%		
			100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600-2,000			2,000-3,000	3,000-5,000
Unknown					1													1		4	6	0.2
50 or less	39		1		48					1								18	5	33	165	4.5
50 ~ 100	5									2								2	1	8	12	0.7
100 ~ 200	13		2		12					2								10	1	18	123	4.8
200 ~ 300	2		1		8													3		2	60	2.1
300 ~ 600					7													1		4	87	2.7
600 ~ 1,000	1				6													6		25	632	18.1
1,000 ~ 1,500	2				2													1		1	354	9.7
1,500 ~ 2,000																						0
2,000 ~ 2,500																						0
2,500 or more	6									1								3		3	37	1.5
Cloud layer 5/8 or less	3				2					2								1		4	205	5.9
TOTAL	91		4		86					8								42	2	40	3097	80.6
%		25	0.1		23					0.2								11	0.1	14	98.0	

STATION: HULE WET SEASON, (JUN - NOV) YEAR: 1962

CEILING (meter)	VISIBILITY (meter)	100 or less	WET SEASON, (JUN - NOV)																TOTAL	%			
			100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600-2,000			2,000-3,000	3,000-5,000	6,000 or more
Unknown	4																			3	7	0.8	
50 or less	199				31					11								33	3	34	183	45.6	
50 ~ 100	4		2		1	1				1										9	7	2.5	
100 ~ 200	21				36					2								31		38	228	57.8	
200 ~ 300	33			1	15					1								1	17	35	169	42.2	
300 ~ 600	4				2													2		6	79	9.9	
600 ~ 1,000	32				16					3	1							21		29	145	36.2	
1,000 ~ 1,500	4				4													1		11	374	94.6	
1,500 ~ 2,000																						1	
2,000 ~ 2,500	1																				21	2.2	
2,500 or more	2				2													2		3	32	4.1	
Cloud layer 5/8 or less	1									2	2	3	1					1	7	27	794	83.8	
TOTAL	303		2	1	103	1				20	2	4	1					2	2	134	3	212	53.9
%		20	-	-	24	-				0.5	-	0.1	-	-	-	-	-	0.1	0.1	49	91.0		

Table 3B-4 HULE-CEILING/VISIBILITY 1962 - 1963

STATION: LA ERMITA

JUNE

YEAR: 1978

CEILING (feet)	VISIBILITY (meters)																	240 or more	TOTAL	%										
		1	2	4	6	8	10	12	14	16	20	24	28	32	36	40	48				64	80	90	112	160					
50 or less																														
100																														
200																														
300																														
400																														
500																														
600																														
700																														
800																														
900																														
1,000																														
1,100																														
1,200																														
1,300 ~ 1,500																														
1,600 ~ 2,000			/																											
2,100 ~ 3,000										/																14	17	260		
3,100 ~ 5,000																										219	266	3731		
5,100 ~ 10,000																											38	36	530	
10,000 or more																											48	52	775	
Cloud layer 4/8 or less																												118	118	1806
TOTAL			/							/																		611	636	
%			0/3																											

Table 3B-5(b) TALANGA -- LA ERMITA-CEILING/VISIBILITY 1978

APPENDIX 3C

DRAWINGS OF SITES SCREENING

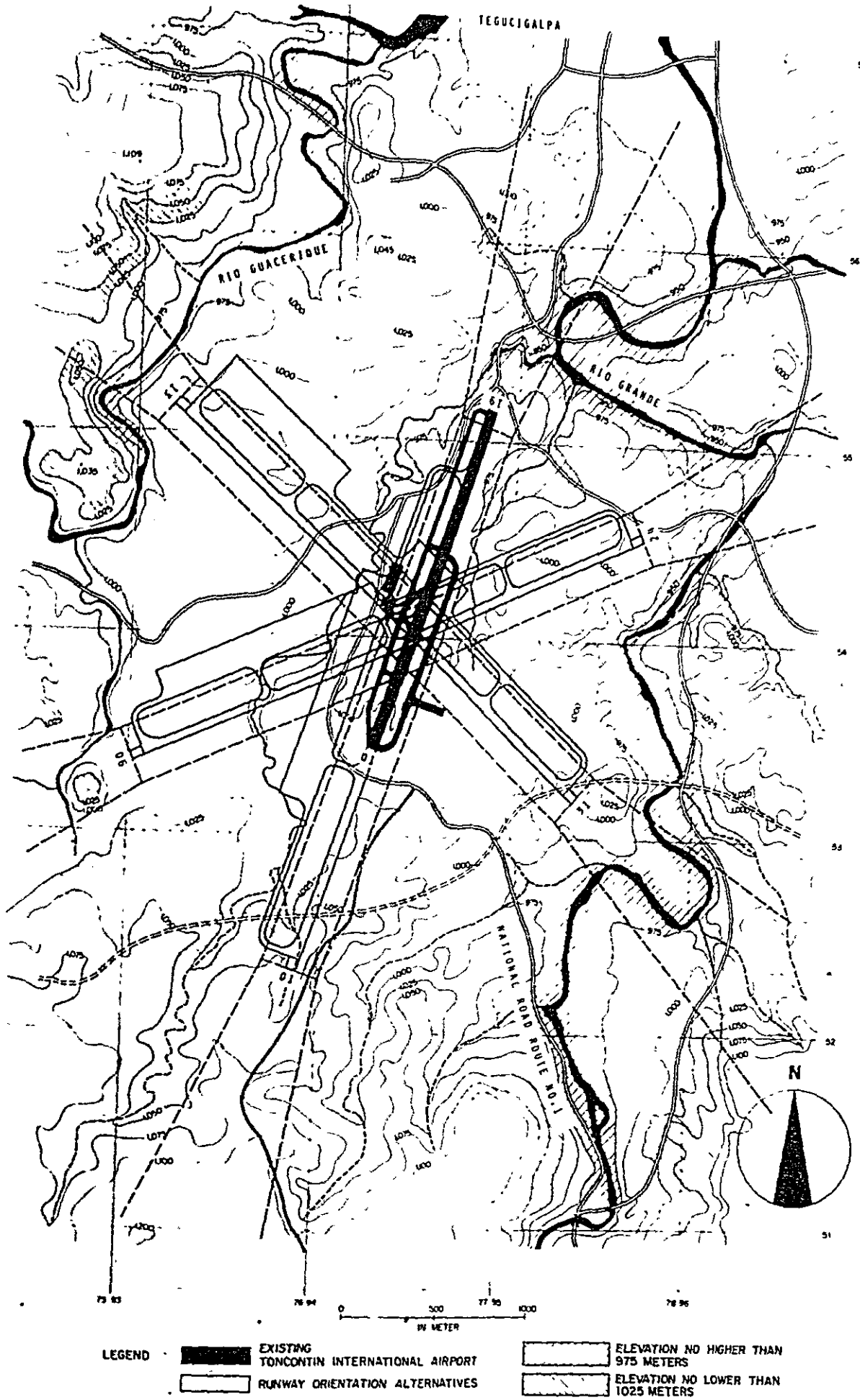
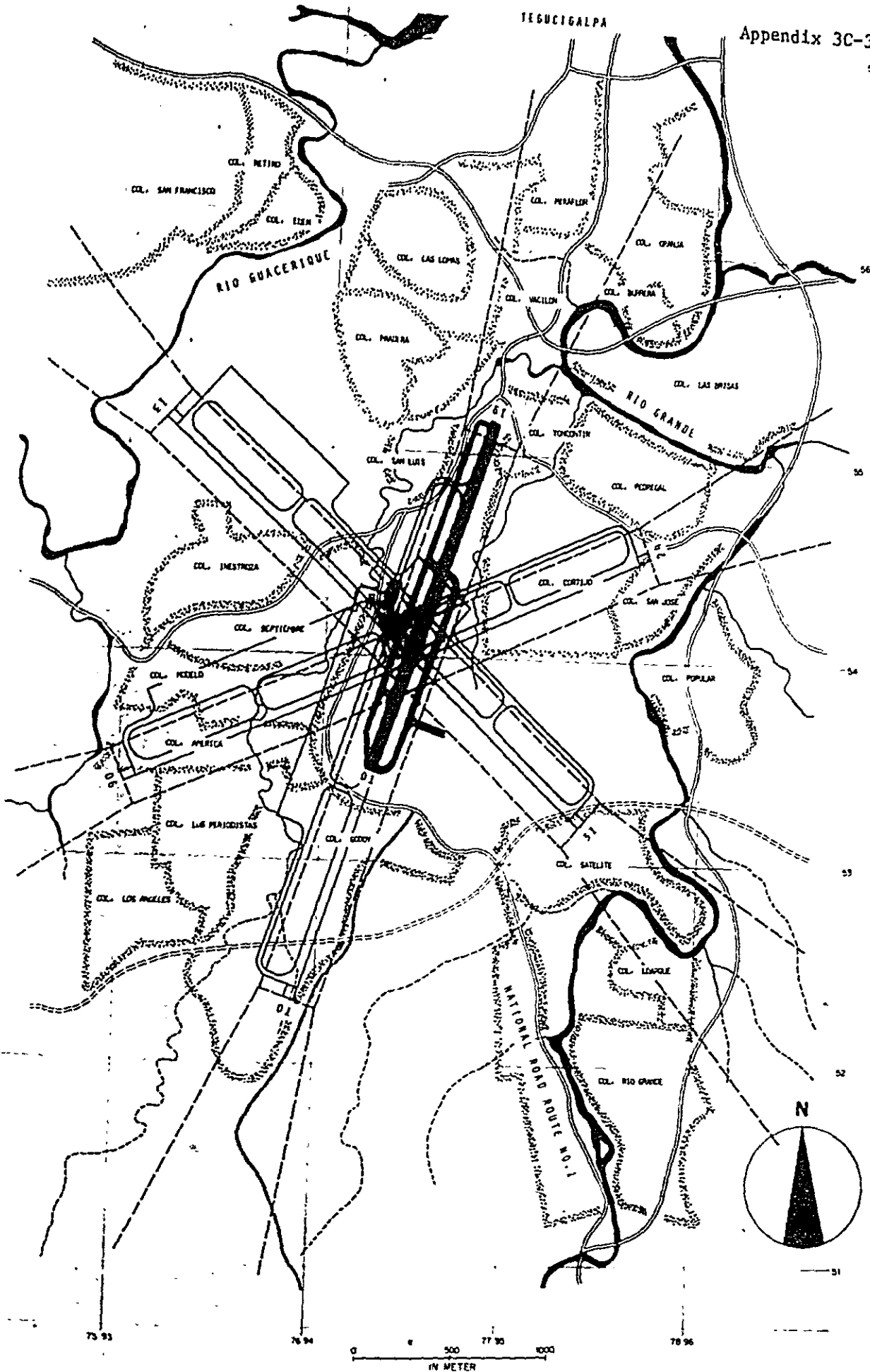


Fig. 3C-1 (b)

TOPOGRAPHICALLY FEASIBLE ORIENTATION ALTERNATIVES OF RUNWAY EXTENSION NEEDED IN IMPROVEMENT OF EXISTING TONCONTIN AIRPORT



LEGEND : EXISTING TONCONTIN INTERNATIONAL AIRPORT
 RUNWAY ORIENTATION ALTERNATIVES

RESIDENTIAL AREA

Fig. 3C-1 (c) INCOMPATIBILITY WITH SURROUNDING LAND USE OF TOPOGRAPHICALLY FEASIBLE EXPANSION POSSIBILITIES OF EXISTING TONCONTIN AIRPORT

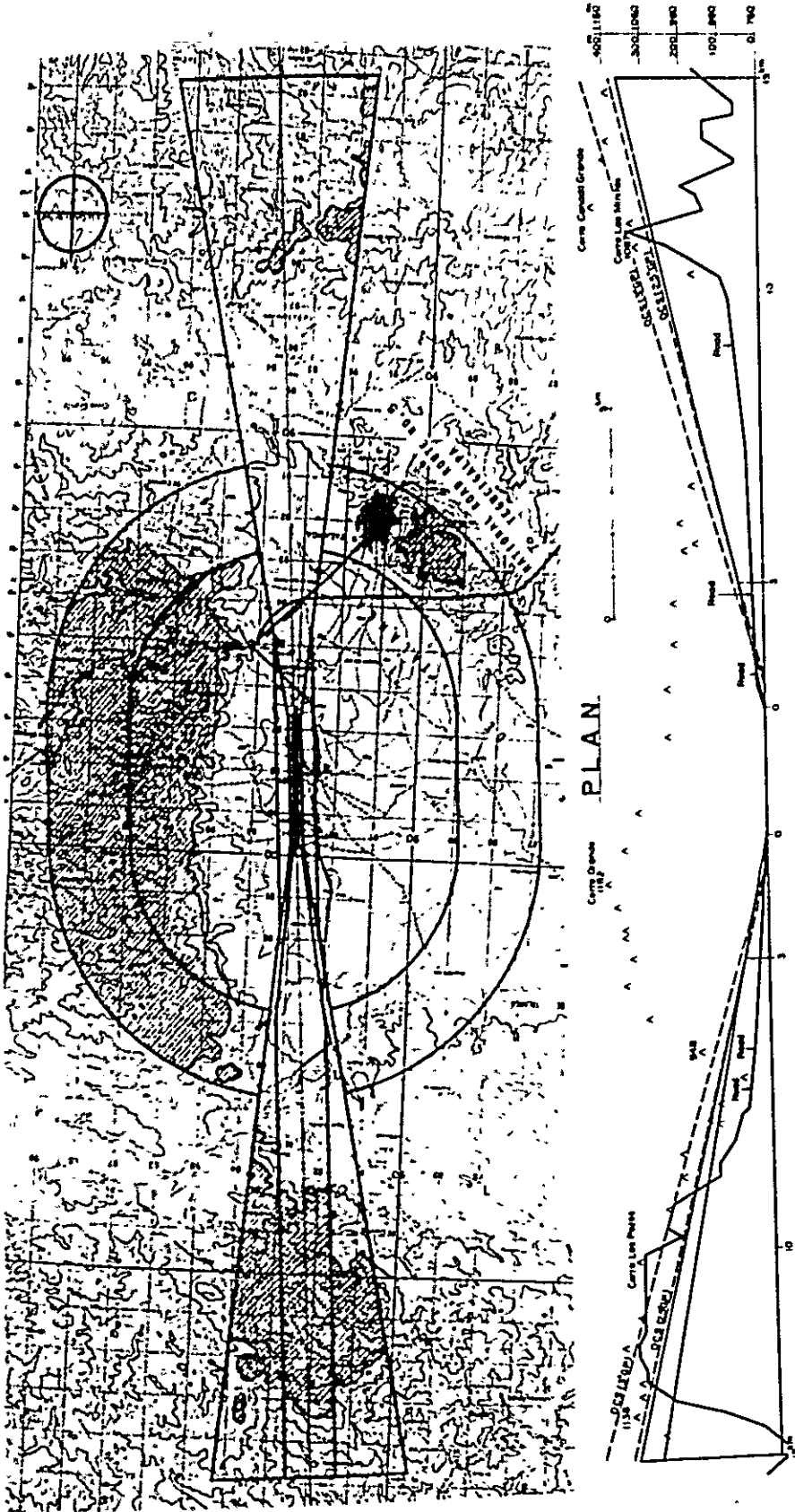
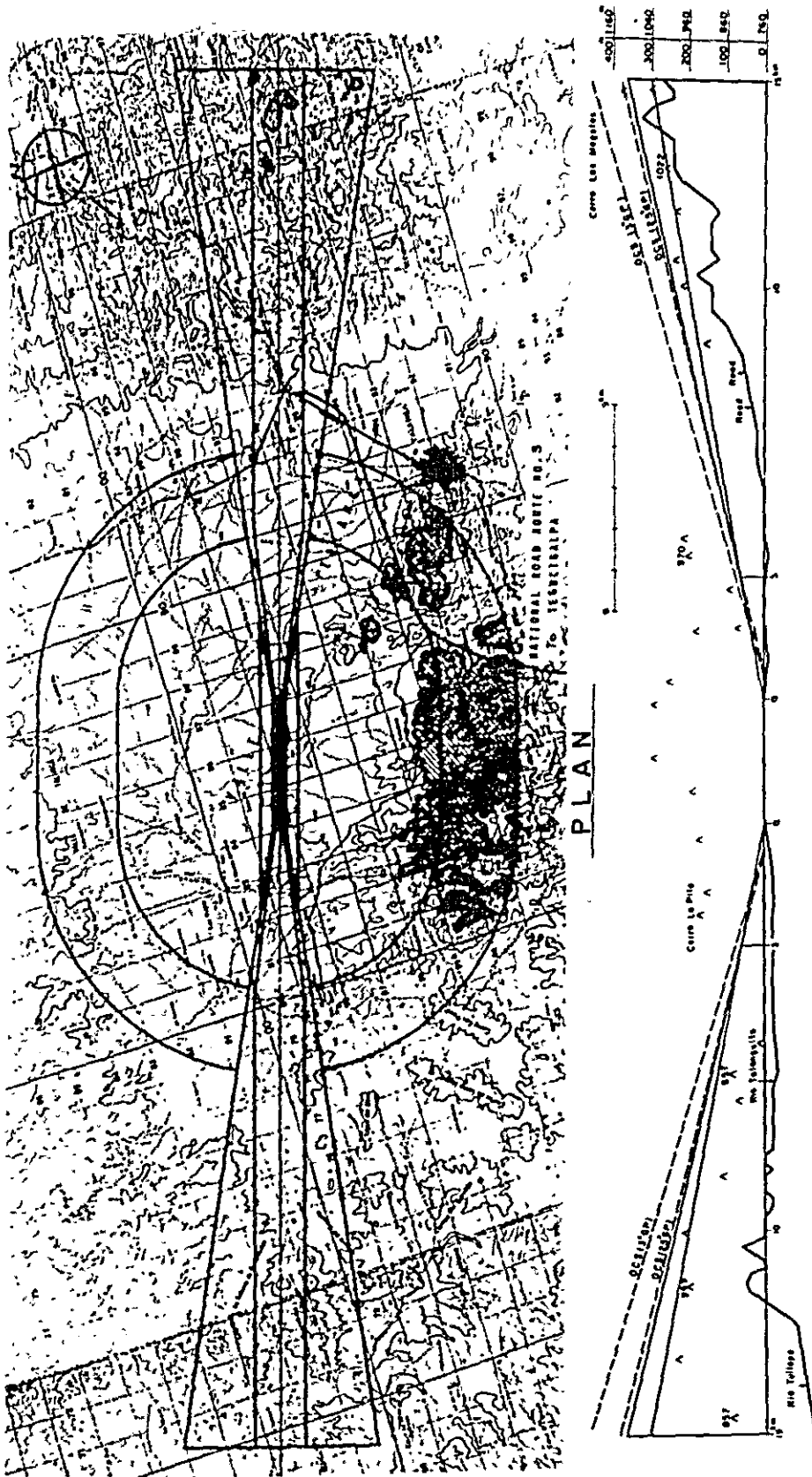


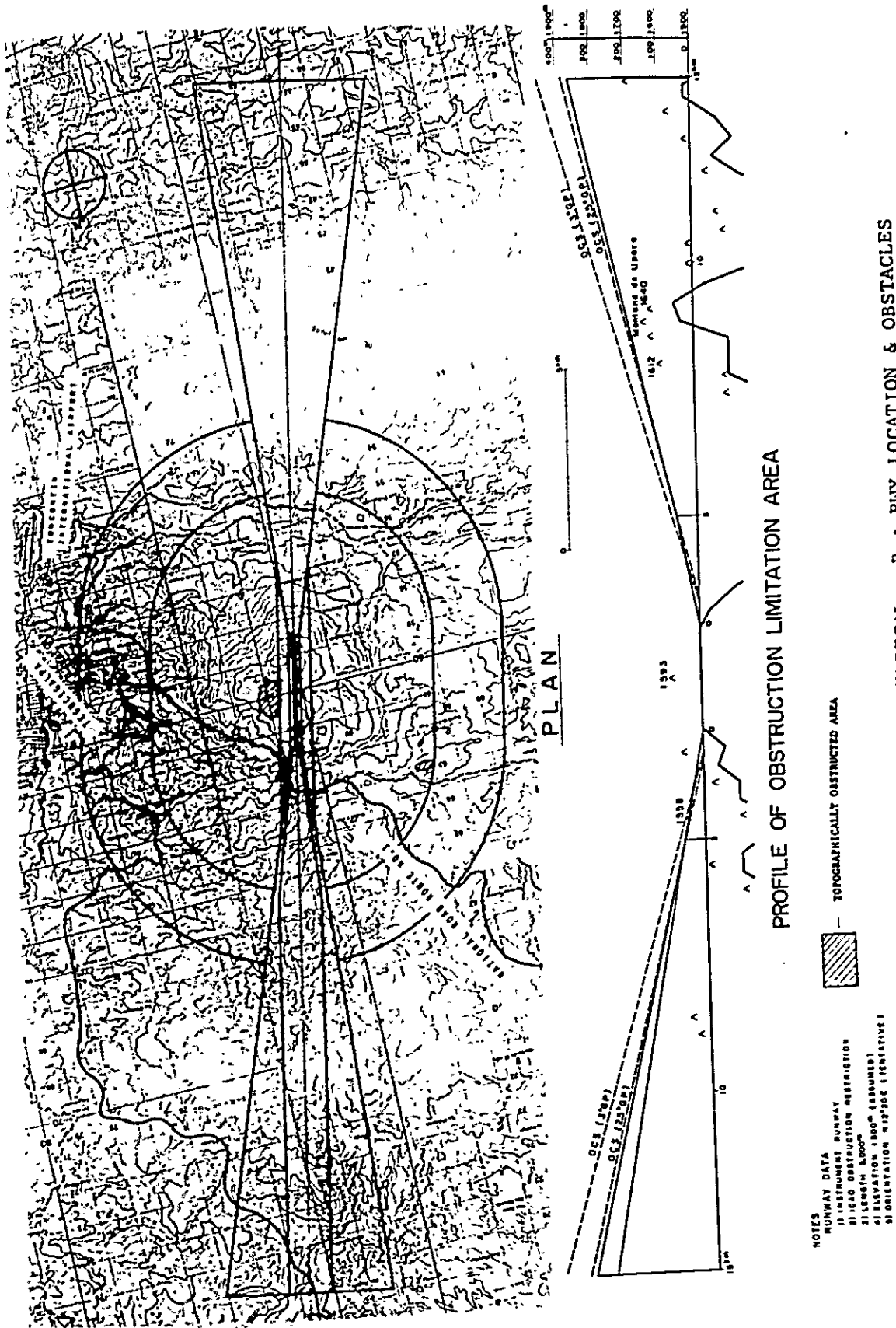
FIG. 3C-2 (a) VALLE DE TALANGA - A : RWY LOCATION & OBSTACLES



PROFILE OF OBSTRUCTION LIMITATION AREA

NOTES
 RUNWAY DATA
 1) INSTRUMENT RUNWAY
 2) ICAO OBSTRUCTION RESTRICTION
 3) LENGTH 1000'
 4) ELEVATION 700' (ASPHALT)
 5) DIMENSIONAL DATA (REFER TO DRAWING)

FIG. 3C-2 (b) VALLES DE TALANGA - B : RWY LOCATION & OBSTACLES



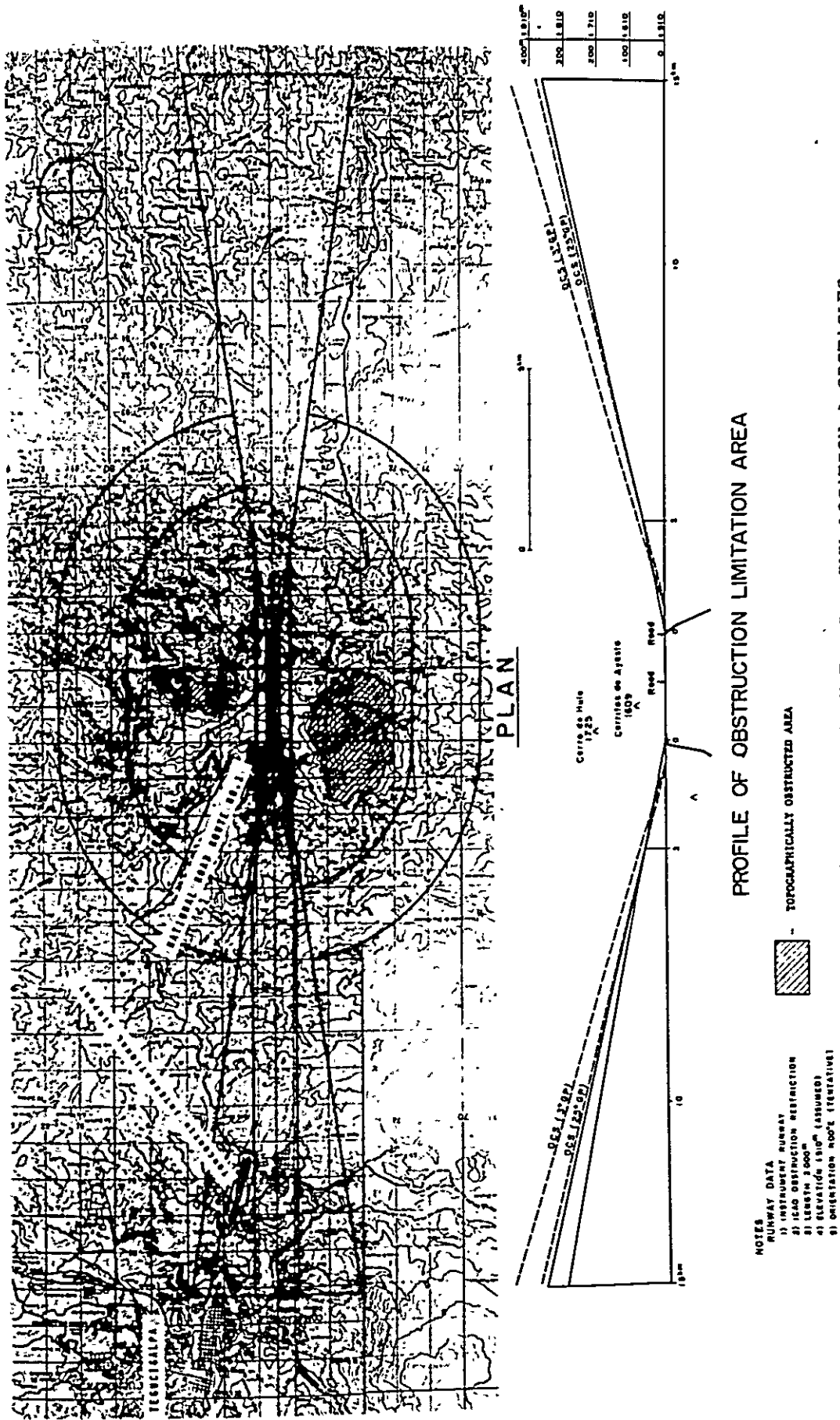


FIG. 3C-4 CERRO DE HULE - B : RWY LOCATION & OBSTACLES

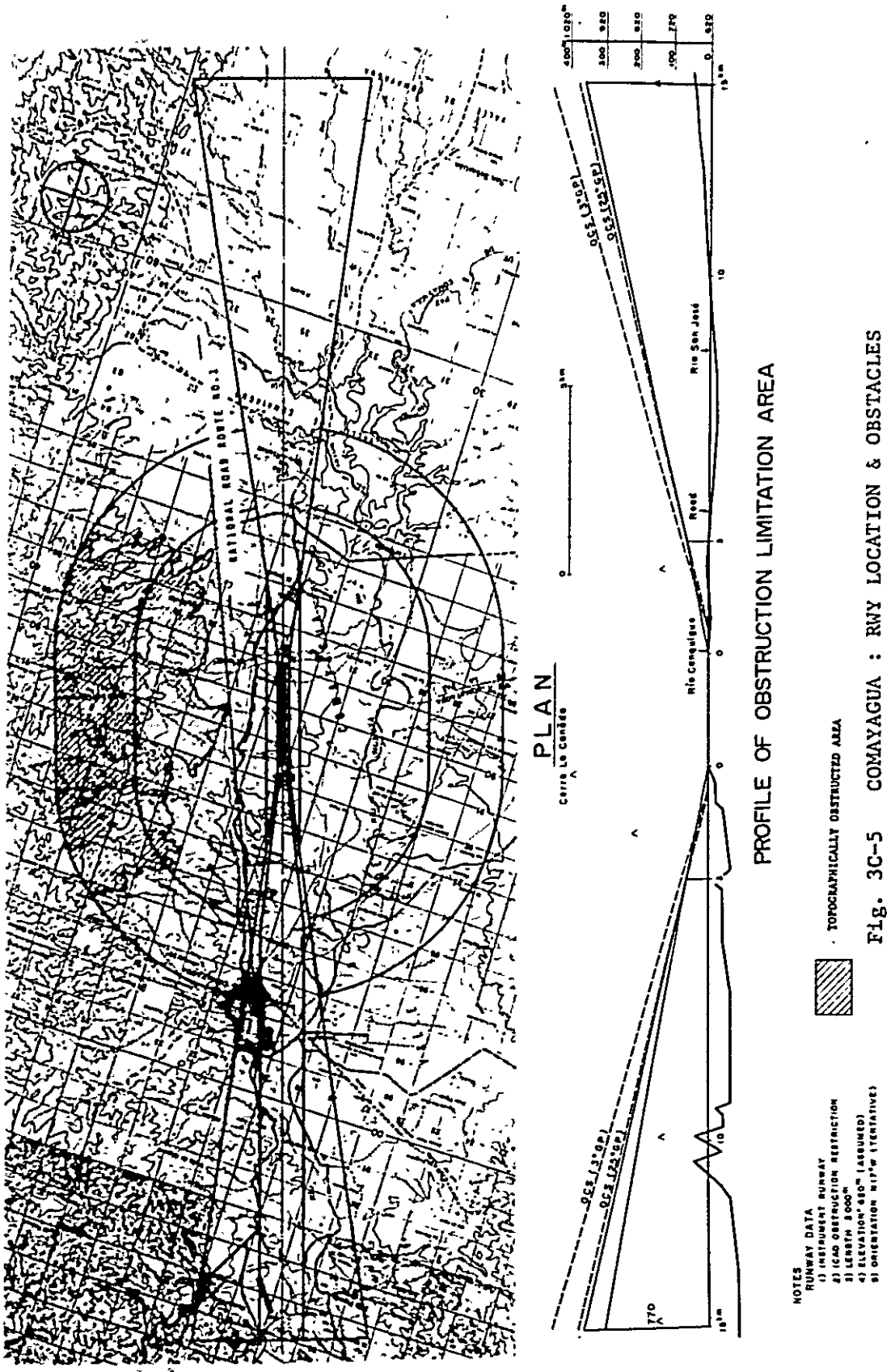
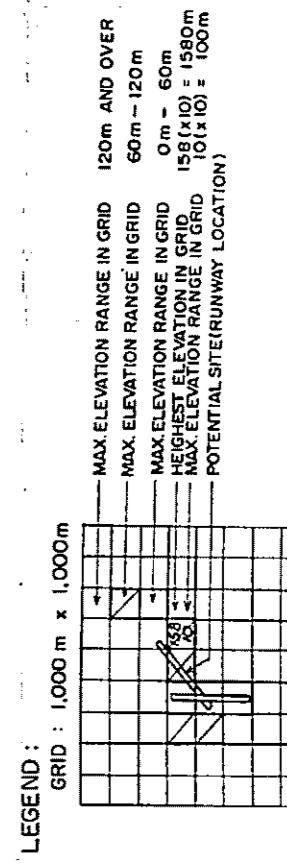


FIG. 3C-5 COMAYAGUA : RWY LOCATION & OBSTACLES

APPENDIX 3D

GRID MAP



NOTE : COMAYAGUA-SITE IS NOT SHOWN
 SCALE : 1 : 200,000

AIRPORT POTENTIAL SITES / EARTHWORK PRACTICABILITY
 GRID MAP
 NEW TEGUCIGALPA AIRPORT DEVELOPMENT - HONDURAS, C.A.

APPENDIX 4A

LISTS OF PROJECTION FORMULA

1. Forecast of International Embarking & Disembarking Passengers
in the Republic of Honduras

$$\text{[Formula 1]} \quad \text{Log } Y_t = -1.1656 + 1.1340 \text{ Log } X_t + 0.4094 \text{ Log } Y_{t-1}$$

where: Y_t = International Embarking & Disembarking
Passengers in Honduras at year t

X_t = Gross Domestic Product in Honduras at
year t

$$(R = 0.989, DWR = 2.272, n = 18)$$

2. Forecast of International Embarking & Disembarking Passengers
at Toncontin Airport

$$\text{[Formula 2]} \quad \text{Log } Y_t = -0.9902 + 1.1393 \text{ Log } X_t + 0.3673 \text{ Log } Y_{t-1}$$

where: Y_t = International Embarking & Disembarking
Passengers at Toncontin Airport at
year t

X_t = Gross Domestic Product in Honduras at
year t

$$(R = 0.971, DWR = 1.818, n = 18)$$

3. Forecast of International Embarking & Disembarking Passengers
bt Route at Toncontin Airport

3.1 TGU - MIA Route

$$\text{[Formula 3]} \quad Y_t = -9,548 + 0.2945 X_t$$

where: Y_t = International Embarking & Disembarking
Passengers by TGU - MIA Route at year
 t

X_t = Total International Embarking & Dis-
embarking Passengers at Toncontin Air-
port at year t

$$(R = 0.985)$$

3.2 TGU - MEX Route

$$\text{[Formula 4]} \quad Y_t = 3,513 + 0.0436 X_t$$

where: Y_t = International Embarking & Disembarking
Passengers by TGU - MEX Route at year t

X_t = Total International Embarking & Dis-
embarking Passengers at Toncontin Air-
port at year t

$$(R = 0.917)$$

3.3 TGU - PTY Route

$$\text{[Formula 5]} \quad Y_t = 11,356 + 0.2027 X_t$$

where: Y_t = International Embarking & Disembarking
Passengers by TGU - PTY Route at year t

X_t = Total International Embarking & Dis-
embarking Passengers at Toncontin Air-
port at year t

$$(R = 0.980)$$

3.4 TGU - ADZ Route

$$\text{[Formula 6]} \quad Y_t = -2,900 + 0.0641 X_t$$

where: Y_t = International Embarking & Disembarking
Passengers by TGU - ADZ Route at year t

X_t = Total International Embarking & Dis-
embarking Passengers at Toncontin Air-
port at year t

$$(R = 0.931)$$

3.5 TGU - SJO Route

$$\text{[Formula 7]} \quad Y_t = 7,453 + 0.0349 X_t$$

where: Y_t = International Embarking & Disembarking
Passengers by TGU - SJO Route at year t

X_t = Total International Embarking & Dis-
embarking Passengers at Toncontin Air-
port at year t

$$(R = 0.607)$$

3.6 TGU - MGA Route

$$\text{[Formula 8]} \quad Y_t = 8,012 + 0.0159 X_t$$

where: Y_t = International Embarking & Disembarking
Passengers by TGU - MGA Route at year t

X_t = Total International Embarking & Dis-
embarking Passengers at Toncontin Air-
port at year t

$$(R = 0.446)$$

3.7 TGU - GUA Route

$$\text{[Formula 9]} \quad Y_t = 16,357 + 0.0841 X_t$$

where: Y_t = International Embarking & Disembarking
Passengers by TGU - GUA Route at year t

X_t = Total International Embarking & Dis-
embarking Passengers at Toncontin Air-
port at year t

$$(R = 0.670)$$

3.8 TGU - BZE Route

$$\text{[Formula 10]} \quad Y_t = 1,042 + 0.0059 X_t$$

where: Y_t = International Embarking & Disembarking
Passengers by TGU - BZE Route at year t

X_t = Total International Embarking & Dis-
embarking Passengers at Toncontin Air-
port at year t

$$(R = 0.413)$$

3.9 TGU - MSY Route

$$\text{[Formula 11]} \quad Y_t = -12,463 + 0.2487 X_t$$

where: Y_t = International Embarking & Disembarking
Passengers by TGU - MSY Route at year t

X_t = Total International Embarking & Dis-
embarking Passengers at Toncontin Air-
port at year t

$$(R = 0.967)$$

4. Forecast of International Embarking & Disembarking Passengers
Generated by New Route

$$\text{[Formula 12]} \quad T_{ij} = 0.5368 \frac{P_i P_j}{D_{ij}^{1.7558}}$$

where: T_{ij} = Number of Passengers between cities
i and j

P_i = Number of Population in city i

P_j = Number of Population in city j

D_{ij} = Travel Time between cities i and j
(Including trip time from downtown
to airport)

5. Forecast of International Transit Passengers at Toncontin
Airport

$$\text{[Formula 13]} \quad Y_t = -17,002 + 0.8365 X_t$$

where: Y_t = International Transit Passengers at
Toncontin Airport at year t

X_t = International Embarking & Disembarking
Passengers at Toncontin Airport at
year t

(R = 0.916)

6. Forecast of Domestic Embarking & Disembarking Passengers in the Republic of Honduras

$$[\text{Formula 14}] \quad Y_t = -850,029 + 1,447 X_t + 77,687 Z_t + 0.7765 Y_{t-1}$$

where: Y_t = Domestic Embarking & Disembarking Passengers in Honduras at year t

X_t = Per capita GDP in Honduras at year t

$Z_t = TR_t/TA_t$

where: TR_t = Travel Time by road between Tegucigalpa and San Pedro Sula at year t

TA_t = Travel Time by air between Tegucigalpa and San Pedro Sula at year t

($R = 0.917$, $DWR = 2.001$, $n = 18$)

7. Forecast of Domestic Embarking & Disembarking Passengers at Toncontin Airport

$$[\text{Formula 15}] \quad Y_t = -207,281 + 325 X_t + 23,172 Z_t + 0.7769 Y_{t-1}$$

where: Y_t = Domestic Embarking & Disembarking Passengers at Toncontin Airport

X_t = Per capita GDP in Honduras at year t

$Z_t = TR_t/TA_t$

where: TR_t = Travel Time by road between Tegucigalpa and San Pedro Sula at year t

TA_t = Travel Time by air between Tegucigalpa and San Pedro Sula at year t

($R = 0.961$, $DWR = 2.198$, $n = 18$)

8. Forecast of Domestic Embarking & Disembarking Passengers by Route at Toncontin Airport

8.1 TGU - SAP Route

[Formula 16] $Y_t = 12,740 + 0.1927 X_t$

where: Y_t = Domestic Embarking & Disembarking Passengers by TGU - SAP Route at year t

X_t = Total Domestic Embarking & Disembarking Passengers at Toncontin Airport at year t

(R = 0.863)

8.2 TGU - LCE Route

[Formula 17] $Y_t = -3,099 + 0.3206 X_t$

where: Y_t = Domestic Embarking & Disembarking Passengers by TGU - LCE Route at year t

X_t = Total Domestic Embarking & Disembarking Passengers at Toncontin Airport at year t

(R = 0.795)

8.3 TGU - ROA Route

[Formula 18] $Y_t = -933 + 0.0824 X_t$

where: Y_t = Domestic Embarking & Disembarking Passengers by TGU - ROA Route at year t

X_t = Total Domestic Embarking & Disembarking Passengers at Toncontin Airport at year t

(R = 0.767)

8.4 TGU - TJI Route

$$\text{[Formula 19]} \quad Y_t = 6.9 + 0.0414 X_t$$

where: Y_t = Domestic Embarking & Disembarking
Passengers by TGU - TJI Route at
year t

X_t = Total Domestic Embarking & Dis-
embarking Passengers at Toncontin
Airport at year t

$$(R = 0.999)$$

8.5 TGU - OAN Route

$$\text{[Formula 20]} \quad Y_t = -3,535 + 0.1249 X_t$$

where: Y_t = Domestic Embarking & Disembarking
Passengers by TGU - OAN Route at
year t

X_t = Total Domestic Embarking & Disembark-
ing Passengers at Toncontin Airport
at year t

$$(R = 0.831)$$

8.6 TGU - PLP Route

$$\text{[Formula 21]} \quad Y_t = 880 + 0.0365 X_t$$

where: Y_t = Domestic Embarking & Disembarking
Passengers by TGU -PLP Route at
year t

X_t = Total Domestic Embarking & Disembark-
ing Passengers at Toncontin Airport
at year t

$$(R = 0.728)$$

9. Forecast of Domestic Embarking & Disembarking Passengers
by Route

$$\text{[Formula 22]} \quad T_{ij} = 0.465 \frac{P_i P_j}{D_{ij} 0.5452}$$

where: T_{ij} = Number of Passengers between cities
i and j

P_i = Number of Population in city i

P_j = Number of Population in city j

D_{ij} = Travel Time between cities i and j

10. Forecast of International Loaded & Unloaded Air Cargo in the Republic of Honduras

[Formula 23] $\text{Log } Y_t = -2.6929 + 1.0679 \text{ Log } X_t + 0.4332 \text{ Log } Y_{t-1}$

where: Y_t = International Loaded & Unloaded Air Cargo in Honduras at year t

X_t = Gross Domestic Product in Honduras at year t

($R = 0.941$, $DWR = 1.820$, $n = 18$)

11. Forecast of International Loaded & Unloaded Air Cargo at Toncontin Airport

[Formula 24] $\text{Log } Y_t = -2.5672 + 0.8970 \text{ Log } X_t + 0.5198 \text{ Log } Y_{t-1}$

where: Y_t = International Loaded & Unloaded Air Cargo at Toncontin Airport at year t

X_t = Gross Domestic Product in Honduras at year t

($R = 0.932$, $DWR = 1.806$, $n = 18$)

12. Forecast of International Loaded & Unloaded Air Cargo Generated by New Route

[Formula 25] $T_{ij} = 32.265 \frac{G_i G_j}{D_{ij}^{2.1075}}$

where: T_{ij} = International Air Cargo Tonnage between cities i and j

G_i = (Number of Population in city i) x (Per capita GDP in city i)

G_j = (Number of Population in city j) x (Per capita GDP in city j)

D_{ij} = Travel Time between cities i and j

13. Forecast of Domestic Loaded & Unloaded Air Cargo in the Republic of Honduras

[Formula 26] $Y_t = -3,517 + 0.2197 X_t + 1,583 Z_t + 0.8049 Y_{t-1}$

where: Y_t = Domestic Loaded & Unloaded Air Cargo in Honduras at year t

X_t = Gross Domestic Product in Honduras at year t

$$Z_t = TR_t/TA_t$$

where: TR_t = Travel Time by road between Tegucigalpa and San Pedro Sula at year t

TA_t = Travel Time by air between Tegucigalpa and San Pedro Sula at year t

$$(R = 0.726, DWR = 2.616, n = 18)$$

14. Forecast of Domestic Loaded & Unloaded Air Cargo at Toncontin Airport

[Formula 27] $\text{Log } Y_t = -1.8335 + 1.0594 \text{ Log } X_t$

where: Y_t = Domestic Loaded & Unloaded Air Cargo at Toncontin Airport at year t

X_t = Domestic Loaded & Unloaded Air Cargo in Honduras at year t

$$(R = 0.935)$$

15. Forecast of Number of Small Aircraft Registered at Toncontin Airport

[Formula 28] $Y = -82 + 0.11 X$

where: Y = Number of small aircraft registered at Toncontin Airport

X = Gross Domestic Product (in 1966 constant prices)

$$(R = 0.959)$$