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Seventeenth Annual Meeting

Theme:

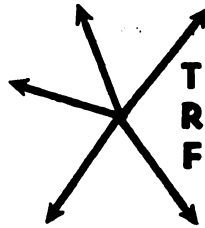
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TRANSPORTATION RESEARCH FORUM

BALI, a diamond-shaped island in the Indonesian archipelago, is home for about 2.5 million people. Prior to World War II, the place was difficult to reach because of its remoteness and lack of transportation facilities of all types. Visitors were a few hardy tourists who had the means and the interest to visit off-beat locations with unique cultures. After the war, western media and especially the popular musical, "South Pacific," symbolized Bali as the epitome of the mysterious and exotic. This set off a new interest in visiting this truly fascinating land. It is held in equal esteem by orientals who also appreciate the differences between this South Sea island and their own individual countries. As a result, Bali has become a popular tourist stop-over in most Southeast Asian tours.

The growth of the air transport industry has also contributed to the extent of tourism. However, because the average length of stay for a tourist is only a little over three days, the resulting high turnover has placed a burden on the existing airport and now, air travel, which originally helped to put Bali on the tourist maps, has become the critical factor which may limit the growth of tourism.

In 1974, tourism accounted for ten percent of the gross domestic product in Bali. With finite agricultural resources for its population, no minerals and no large-scale industrial prospects, the importance of tourism to the economy is expected to grow even further, and become a more important source of support for the economy. According to projections made by the Indonesian authorities, tourism must account for 20 percent of the Balinese gross domestic product in 1980 and 32 percent of the total economy in 1985 just to keep pace with the remainder of the country.¹ In fact, if these projections can be realized, by 1985 tourism will become almost as important as agriculture to the Balinese economy, something quite unthinkable today.

In 1975, 99 percent of all international visitors reached Bali by air, yet less than one-third of them arrived on a direct international flight. The number of foreign visitors on direct international flights to Bali reached a peak in 1972 of 65,000 passengers. However, due to the change in air policy which occurred at that time, this number declined to 45,000 in the following year. Although there has been a substantial increase in tourists visiting Bali, from about 104,000 in 1972 to 167,000 in 1975, total direct air arrivals have not regained their 1972 levels.

The seriousness of this decline must be considered in light of the tourist industry. Most of the visitors to Bali are on a strictly or loosely packaged multi-destination, multi-country tour of Southeast Asia. Travel companies who plan and promote such tours are well aware that the current market requires numerous stops and that their success or failure may be dependent upon the number and quality of the stopovers. The inability to reach Bali directly by air has even caused some tour operators to drop it as a stopover. Those who continue to use it must reduce the amount of time spent on Bali because of the extra stops involved in reaching it.

This paper analyzes the current air policy and identifies changes in air traffic that would occur if this policy were modified. The conclusions show that the number of international air arrivals to Bali, both direct and indirect, could reach about 400,000 by 1985. Should Indonesian air policy be liberalized to allow more direct international flights to Bali, the tourist volume projection could be increased by well over 50 percent to 650,000 persons, with most of the increase occurring in direct international air arrivals.

PHYSICAL FACILITIES ON BALI

What is today called Ngurah Rai Bali International Airport began flight operations as an airfield around 1933. The small landing strip with a grass runway established air communications between Bali and Surabaya and other cities in Java. Being at sea level, it was periodically inundated after heavy rainfalls and was not a dependable facility. During World War II and Japanese occupation, the airfield was used extensively, and some improvements were made by the Japanese. At the end of hostilities, the airfield was given an asphalt surface and the runway was extended to 1,600 meters. A small terminal building was completed in 1953 but by then, planners had already begun thinking of an international airport for Bali. It was not until 1963, however, that actual construction began. The most distinctive feature of the airport was a one kilometer extension of the runway into the sea on a causeway ending at a coral reef. This extended the landing strip to its present configuration of a single runway, 2,700 by 45 meters.

The major problem with this airport as far as landing facilities are concerned is the runway strength. Plate bearing tests carried out by an engineering firm showed that the pavement would deteriorate if fully-loaded planes were to land.² The airport is now used by DC-8

Indonesian Air Transport Policies and Tourism on Bali

by Norman A. Abend* and Albert J. Gomes**

and Boeing 707 type aircraft, but not without load penalties. Part of the projected growth in international direct air arrivals could be achieved by runway strengthening that would eliminate the load penalty. Furthermore, the general introduction of wide body jets on South-east Asian trunk routes is not too far in the future. Garuda Indonesian Airways plans to initiate a route between Jakarta-Bali-Biak (one of the Irian Jaya group of islands near the island of New Guinea)-Honolulu-Los Angeles. If this route is to be serviced by a DC-10 aircraft, the runway must be strengthened and other passenger volume constraints at the airport must be addressed.

Although the runway has more capacity in terms of time available for landings, international air route capacity is more importantly a function of filling available flights and having those flights land at times that are optimum for specific flights. Thus, merely saying that arrivals can occur throughout a 24 hour period is not being realistic in terms of the needs of international air travel.

AIR PASSENGER VOLUMES

Systematic traffic data for Ngurah Rai Airport is just not available prior to 1969. One of the obstacles to the development of a firm statistical base in many underdeveloped locales is that statistics are poorly maintained and are often adjusted by the agency collecting them. Thus, on Bali, the air arrival data maintained by the airport management is often much higher than figures kept by other agencies whose interest is to show lower figures.

When international operations began at Ngurah Rai, international arrivals to Bali jumped from 11,000 in 1969 to 40,000 in 1970 and 65,000 in 1972. During this same period, however, domestic arrivals (people who came from another airport in Indonesia) grew insignificantly from 36,000 in 1969 to 39,000 in 1972.³ Since most of these arrivals both by domestic and international flights were not

Indonesian, the relationship confirms a fact that has been neglected by previous analyses of air traffic to Bali, namely, that a large number of foreign visitors have historically used Indonesian domestic flights to get to Bali.

This fundamental relationship is brought into even sharper focus when one looks at the drop in international air arrivals between 1972 and 1973. This occurred in the wake of a severe curtailment of international flights into Bali during the latter part of 1972 (causing a considerable furor in travel circles) when Indonesian air policy was changed. On the threshold of a major increase in tourism on Bali, international arrivals declined from 65,000 in 1972 to 53,000 in 1974. During this time, however, domestic arrivals increased from 40,000 to 113,000 persons. To some degree, these early 1970's figures show a very large growth of tourism on Bali that presumably was not affected by the shift in air policy. However, experience since that time indicates that the rate of growth has been dampened by the lack of international flights and that, in the future, the effect of government air policy is likely to have an even greater impact.

AIRLINE SERVICES

Only four airlines are presently providing international air services between Bali and points outside Indonesia. These are Garuda, Pan Am, Qantas, and Thai International. Direct international air service is provided by only three of the four, since all Thai flights stop in Jakarta prior to arriving in Bali. Pan American provides Boeing 707 service between Hong Kong and Sydney and is, in fact, the only carrier providing direct flights to Bali from Hong Kong since the Garuda-Bali service operates via Jakarta. Pan Am carried over 9,000 passengers to Bali in 1974. Qantas provides Boeing 707 service from Sydney to Bali, but was required to terminate its Bali to Singapore service in 1974. Qantas carries about 10,000 passengers on its Bali runs. Thai International has DC-8 service between Bangkok and Bali with stops in Singapore and Jakarta. In 1974, it carried 24,000 passengers to and from Bali. Combined, these international airlines carried 21 percent of the traffic in and out of Bali.

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Garuda, the Indonesian flag carrier, carries the bulk of Bali's visitors, accounting for 79 percent of all arriving and departing passengers. Garuda uses DC-8's on its international routes serving Bali, with DC-9's, F-27's, F-28's and DC-3's providing service on its domestic routes. Of the 1.8 million passengers carried by the Garuda air system, both international and domestic, 13 percent were trips to and from Bali. There are one or two other very small carriers that operate out of Ngurah Rai Airport, but these are not significant in this analysis of international flights.

ORIGINS AND DESTINATIONS

The actual origins and destinations of air passengers to Bali by nationality and place of residence was obtained by a questionnaire survey of air passengers carried out by the Bali Tourism Development Board (BTDB). The survey was designed to obtain a wide range of tourist related information and among the questions were those specifically related to travel arrangements. For the purpose of determining regional flows of passengers to Bali, the information provided by air passengers as to their next or last overnight stop was arranged by nationality and then grouped by major geographical region. The resulting tabulation may be of interest and is shown as Table 1.

An examination of this table shows that the present schedules are not convenient for a large number of non-Indonesian visitors to Bali. This was demonstrated by determining what percentage of the total traffic from a particular

region departed from one airport to come to Bali but spent their next or last overnight somewhere else. The implication is that these passengers would have chosen a more direct route had a better scheduled air connection been available. Thus, taking the total of all non-Indonesian nationalities, it is seen that although one-third of all passengers showed Jakarta as their origin or destination, only about 15 percent spent the night in the Indonesian capital. It can therefore be assumed that the remaining 18 percent (all nationalities except Indonesians) had to go to Jakarta merely to connect with a flight to Bali.

Jakarta is least suited as a gateway for Australians and for visitors coming from North America, because for both these groups, a detour to Jakarta in order to connect for the flight to Bali means backtracking. The average Australian actually has to overfly Bali, land in Jakarta, change planes, and then fly back to his destination. A stop in Jakarta may be the normal route for non-Indonesian Asians; however, it is evident that more direct international flights, even from other Asian origins, would benefit many visitors to Bali. Convenience of air connection is extremely important for attracting tourist flows and, in this sense, Bali is unnecessarily penalized compared to other destinations in Southeast Asia.

AIRLINE LOAD FACTORS

The anomalies observed in existing scheduled airline service to Bali showed that the scheduled airline service should be corrected, if only for the purpose of

BALI AIR PASSENGERS BY ORIGIN/DESTINATION

Origin/ Destination (1)	Percentage Distribution						
	Airline Manifest (2)	BTDB Survey					
		All Nationalities (3)	Europe (4)	Australia New Zealand (5)	North America (6)	Japan (7)	Other, Asia And Misc. (8)
Jakarta	32.87	14.7	14.4	5.3	13.9	17.3	39.7
Surabaya	12.62	3.8	6.1	1.5	2.6	5.1	4.3
Joyjakarta	11.18	12.4	16.1	11.5	10.1	12.7	7.1
Other Indon	11.17	7.3	15.0	2.2	2.4	14.9	2.1
All Indonesia	67.84	38.20	51.60	20.50	29.0	50.8	53.20
Australia	10.04	18.6	3.6	55.9	11.7	1.4	1.5
Singapore	12.83	20.6	13.8	17.7	28.7	26.8	27.3
Hong Kong	4.74	5.5	4.2	2.4	10.1	0.3	9.8
Bangkok	4.40	8.0	12.4	1.5	9.9	8.6	4.9
Manila	---	2.2	2.0	---	2.9	9.7	2.4
Tokyo	0.04	---	---	---	0.2	---	---
Other Asia	---	2.1	0.7	1.0	6.0	3.2	0.1
Europe	0.09	4.1	11.1	1.0	0.4	---	0.6
USA	---	0.5	.4	---	1.1	---	---
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Directorate General of Tourism, BTDC
Transportation For Bali, Checchi and Company, December, 1975, p. IV-19.

TABLE 1

obtaining better airline operating efficiency. Direct international flights into Bali all operate at very high load factors, while most flights between Bali and other Indonesian cities do not. A recent study by the U.S. Civil Aeronautics Board points out that the quality of service depends on many factors; for example, whether, given sufficient traffic, there are adequate seats available and whether flights operate non-stop or directly to the desired destination.⁴ Frequency of flights is also important, since it largely determines the average waiting time in transit; in fact, an adequate number of well-timed connecting flights may entail less total travel time than infrequent single plane flights. Departure and arrival times also affect the quality of individual flights because travelers have clear time preferences often coinciding with the beginning and end of the business day. Flights at these times are of greater value than those at off-peak periods. On long-distance flights, especially in an east-west direction, the time preference pattern is complicated by crossing of time zones which may increase or decrease the nominal time difference between departure and arrival by several hours.

The CAB study points out that as an objective indicator of the equilibrium of supply and demand, the use of load factor analysis is of particular value in assessing the need for the introduction of non-stop service as well as for the provision of additional non-stop services. The following specific tests are currently being used by the CAB to determine when such services are necessary:⁵

1. Additional non-stop service is needed when the load factor exceeded 75 percent for the previous 12 months.
2. New non-stop service is needed when O & D data shows that for the previous 12 months, there was sufficient traffic to maintain a 55 percent load factor on two round trips with the smallest aircraft type commonly used in city pairs of similar mileage range.

The rationale for using a 75 percent load factor as a justification for additional non-stop service is explained by the fact that this ratio is considered the upper limit beyond which average load factors cannot rise without risking a critical shortage of seats during peak periods of demand. Similarly, initial non-stop service is dictated by a cost-related fare structure using a load factor in which the system will approach break-even over all distances. For U.S. domes-

tic carriers, this break-even factor is 55 percent.

Based on the CAB criteria cited above, it was found that there was justification for significant increases in direct international flights as well as some re-routings to improve the accessibility of Bali to tourist traffic. In addition, a survey of the major international air carriers serving Southeast Asia was undertaken. It was estimated that the ability to initiate a limited number of direct flights to Bali and to make slight modifications in some existing multi-stop routes (eliminating one or two stops) would increase current passenger volume by at least 30,000 people per year. This represents nearly a 20 percent increase over current figures. A good part of the increase would originate in Oceania (Australia, New Zealand), but there was also found to be demand for more direct flights from major Southeast Asian gateways.

THE CONTEXT FOR POLICY FORMULATION

The common tourist identity of the Southeast Asian region is reinforced by the fact that it is quite far from the main traffic generating regions of the world—North America, Western Europe, Japan and Oceania. In a recent interview, the Deputy General Manager of Thai International said, "A European passenger, for example, is not prepared to limit his itinerary to one or two Asian destinations when his basic investment in a Europe-to-Asia air fare is so substantial. The same is true of Americans and, to a lesser degree, of Australians. This leads to the inescapable conclusion that a single destination promotion (of tourism) is wasteful in the extreme."⁶

This reality of demand imparts a multi-country, multi-destination character in a great deal of tourism and, in turn, air travel throughout Southeast Asia. In practical terms, the combination of regional homogeneity and distance from markets has resulted in a pattern of air travel in tourism that is unique to the region. This pattern consists of the use of certain airports in Southeast Asia as "regional gateways" and a combination of scheduled and non-scheduled services to these gateways which together have offset quite substantially the travel distance factor through a reduced travel cost. The designation of "Southeast Asian region" is used by a number of agencies. For example, the Boeing market research unit in Seattle, Washington, defines the region as including Brunei, Burma, Indonesia, Cambodia, Laos, Malaysia, Philippines, Singapore, South Vietnam and Thailand. Other research done both by

airline companies and tourist organizations uses a similar collective nomenclature.

The regional gateway concept is associated with the need to provide the most logical routing of passengers to the Southeast Asian region from the originating areas. Thus, for the North American tourist, there are essentially two ways to get to Southeast Asia. The first is the Asian circle route, which includes Hong Kong as a major Asian gateway, with Guam, Manila and perhaps Singapore as minor gateways. The second is the circle Pacific route, with Sydney as a major gateway, and Melbourne, Darwin and possibly Auckland serving as minor ones.

For traffic originating in western Europe, Bangkok is the most important gateway in both directions, although some long-haul flights are routes through Kuala Lumpur and Singapore. Similarly, for traffic originating in Oceania, Sydney is the main gateway with Auckland, Melbourne and Darwin serving as minor gateways. The Japanese traveler to the Southeast Asian region has possibly the widest choice of gateways; however, Hong Kong must be ranked first, with Taipei, Manila and Singapore filling less important roles. A map of the Southeast Asia region showing the major countries and tourist gateways is shown as Figure 1.

The gateway concept, applicable to Bali, is also related to the fact that the Southeast Asian region is the meeting point of two of the most important and fastest growing trunk air routes in the world. These are: a) the trans-Asian route which was the realization of the pioneering dream of commercial aviators to link Europe by air to the orient and Australia; and b) the trans-Pacific route, which developed somewhat later, but whose subsequent growth has matched that of the older trans-Asian route. A recent study remarks that there has been an extraordinary similarity between the post-war growth of the trans-Pacific and trans-Asian trunk routes taken as a whole.⁷

The high growth rates are due to a number of factors, not the least of which has been the introduction of non-stop flights to selected gateways in the Southeast Asian region. When these non-stop flights from the main tourist generating countries were combined with lower fares to the area, the traffic growth became nothing less than spectacular.

Air fare is usually the largest single component of the price of a non-resort tour package. For this reason, organizations that sell group tours are keenly aware of the wide variations that exist

in the cost of air travel to different destinations. These variations depend not only on the availability and conditions of promotional fares that are offered by the scheduled carriers, but also on each national government's policy toward chartered carriers. For example, Americans often receive literature advertising tours to Asia, to places such as Bangkok, Tokyo and Hong Kong, where the air travel cost is less than a round trip fare within the continental United States. In addition to the four types of commercial passenger charters authorized by the International Air Transport Association (IATA), the recent introduction of one-stop tour charters (OTC) will even further expand the charter flight market, especially to more distant locations that are within the ambit of Southeast Asian gateways.

While tour operators try to incorporate as many low cost promotional and charter fares as possible into their tour packages, they often have no choice but to book their clients on regular economy class tickets for certain legs of a multi-destination itinerary. It is being discovered that one of the unique features of tourism flows to Southeast Asia is that long-range charters and regional scheduled services interface at the regional gateways and complement rather than compete with one another. Thailand and Malaysia have adopted a liberal attitude toward charter traffic and, partly for this reason, Bangkok is already used extensively as a terminal for tour charters from western Europe. Within Southeast Asia, however, the lack of inexpensive air travel made available by charter flights has meant that many of the Southeast Asia tours limit themselves to stops at gateways rather than penetrating the interior or making a circuit of regional attractions. Tourism officials are certain that more intra-regional direct flights that offer both convenience and lower cost are the key to increasing the economic benefits derived from the tourism industry.

Even considering the popularity of Bali as a tourist stop, and the potential for other part of Indonesia being opened to tourism, there are few tourists who are able to go beyond the limits of their charter flights. This can be shown by the following statistics: Bangkok received more than one million visitors in 1974, but contributed only 7,000 tourists to Bali; Hong Kong receives about one and one-quarter million visitors per year, of which only 5,500 go on to Bali; Sydney does have direct air service to Bali, but it is conservatively estimated that the 15,000 passengers using this connection in 1974 could be almost dou-

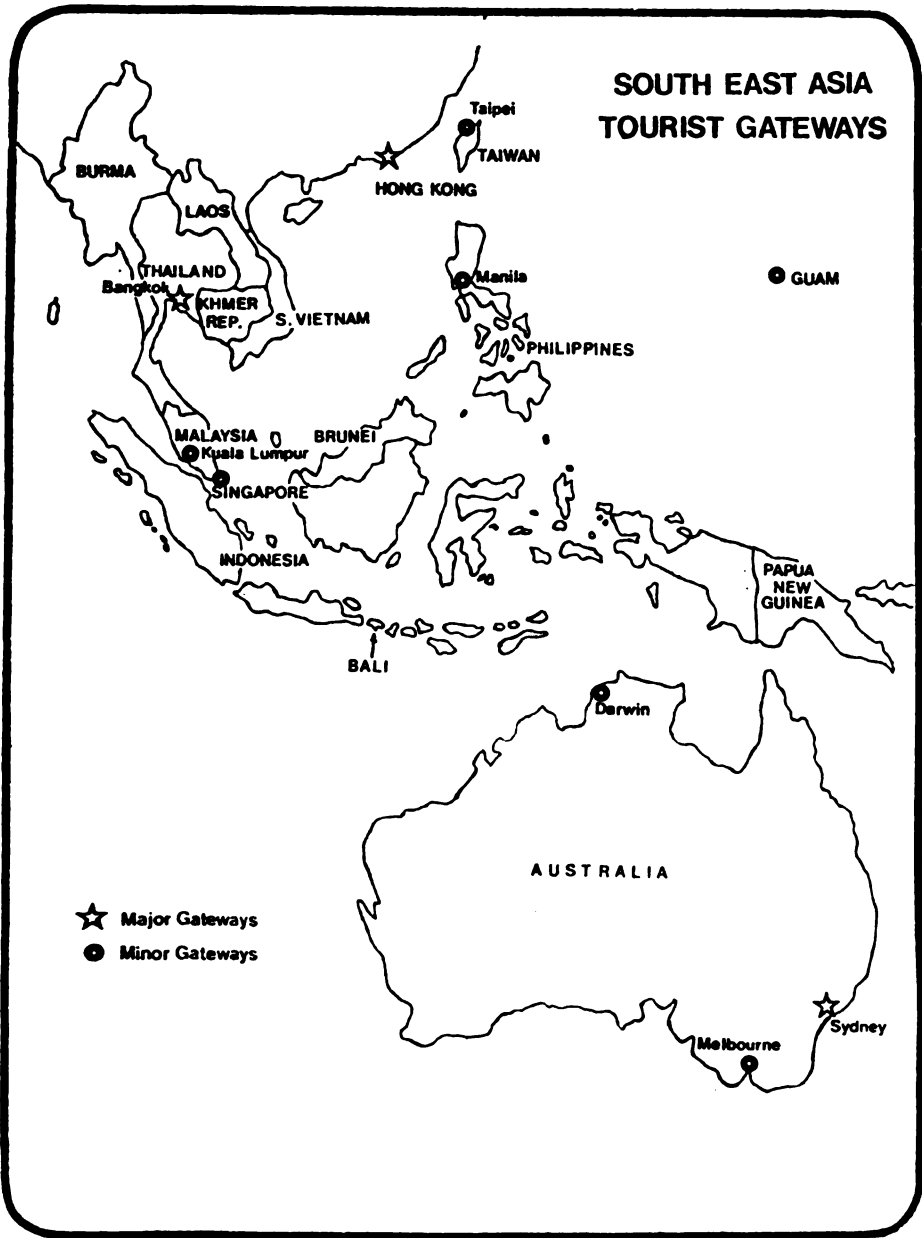


FIGURE 1

bled by more direct flights. Manila, for which airline data is not available, represents a noticeable gap in air service to Bali. There is no direct service between Manila and all of Indonesia, including Bali. A direct scheduled connection or charter flights between Manila and Bali would be particularly attractive

to the large volume of Japanese who visit Manila.

POLICY ALTERNATIVES

The air policy alternatives open to the Indonesian government via international scheduled service are as follows:

Alternative A: Maintain the Present

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Policy—This implies continued restriction of direct international operations into Bali by Garuda and foreign flag carriers alike. Under this alternative, the inefficient utilization of aircraft servicing Bali will continue to be a problem for Garuda. Economically, its greatest impact is likely to be that it will restrict the future growth of the tourism sector of the Balinese economy. Taking all factors into consideration, the potential losses to Garuda by loss of the Jakarta-Bali monopoly would be overcome by the increase in tourism on Bali.

Alternative B: Open Skies—If an open skies policy were to be adopted for Bali, it would enable aircraft of any nation, whether scheduled or charter, to land at Ngurah Rai Airport and to handle both incoming and outgoing traffic without that nation having to grant reciprocal privileges to an Indonesian carrier. The underlying philosophy behind a full open skies policy is that the economic benefits of tourism would be maximized. It would also lead to heavy use of the airport and optimum revenue from landing fees. It should be noted that very few countries practice this policy to its full extent since it would make the development of a locally-based airlines difficult, if not impossible. Apart from its effect on national pride, this may not be a serious disability, but it would virtually preclude the country concerned from being able to influence the international fares and rates charged.

Alternative C: Liberal Traffic Rights—This option consists of maintaining a liberal attitude toward applications from foreign scheduled operators while at the same time seeking reciprocal rights. Most probably, this would result in the establishment of a one-to-one parity between the specific international airline and Garuda. Most countries follow this policy.

TRAFFIC PROJECTIONS

The island of Bali attracts only two percent of the total visitor arrivals to the countries of Southeast Asia and the Far East. Since 1969, this share of this market has remained stable. Flight frequency is a function of the number of passengers that are to be carried, the aircraft size and load factor. Thus, when projecting large increases in passenger volumes on an annual basis, the increase in the total number of flights per day does not necessarily have to be very large. In view of the fact that so many of the international tourists are arriving on Bali via domestic flights that do not have a high occupancy rate, the net effect is that substantial increases in traf-

fic could be experienced on Bali without a substantial increase in total number of flights. Based on the projected number of passengers to Bali, a chart shown as Table 2 has been prepared to show the increases in passenger arrivals between 1976 and 1985, and the effect on flight frequency. For international flights, a total of 19 direct flights in 1976 could be expanded to 34 flights by 1985, yet the increase in passengers handled could grow from about 60,000 passengers per year to over 300,000 passengers by 1985. This would require an increase of less than 100 percent in total number of flights. This is accounted for by the fact that occupancy rates could be higher, rising from 50 percent at present to a more acceptable 65 percent. Also, airlines could utilize wide-body jets which they do not do at the present time. Therefore, increases in frequency and seat availability on international flights would have the effect of satisfying the large potential increase in tourism. The projections shown in Table 2 do not include passengers on international flights originating in Singapore or Bangkok that could have a scheduled stop in Jakarta. Such a stop would not prove to be time-consuming or out-of-the-way for most international travelers since Jakarta is almost in a direct line from these origins. One of the assumptions of such routing would be that passengers would not be required to disembark, change planes or otherwise be inconvenienced at Jakarta. In the past, passengers who arrived on international flights in Jakarta were required not only to change planes, but also to change airports. Aside from the sheer inconvenience, this required a lengthy limousine trip between the international and domestic airports. At present, all flights to and from Bali, whether domestic or international, are routed to Halim Perdana Kusuma Airport. Kemayoran, the other airport, handles all domestic service, except Bali. Removal of this bottleneck has already had an effect of increasing the amount of travel to Bali.

SUMMARY

A government policy on international air travel and airline rights is often dictated by nationalistic interests in both developed and developing countries. Decision-making in the capital is based on an assessment of the airline industry itself, often excluding the overall, broader impacts on the economy. This is the case in Indonesia.

Air industry officials have claimed that there will be a negative impact of increasing direct international flights

**INTERNATIONAL CITY PAIR PROJECTIONS FOR
LOAD FACTOR, AIRCRAFT SIZE, AND FREQUENCIES**

Destination and	Pass (arrivals only)			Load Factor			Average Aircraft Size			Weekly Frequencies [✓]		
	1976	1980	1985	1976	1980	1985	1976	1980	1985	1976	1980	1985
Sydney	30,940	72,000	148,500	50	60	65	140	190	279	9	12	16
Singapore	Routed Through Jakarta and Other Indonesia Airports as at Present											
Hong Kong	9,100	21,600	47,250	50	55	65	140	190	279	3	4	5
Bangkok	14,560	36,000	85,000	40	46	65	140	190	279	5	8	9
Malta	5,460	18,000	40,500	44	53	60	120	163	279	2	4	5
International Charters	18,000	36,000	18,000	90	85	85	190	279	279	4 ^{2/}	3	3 ^{2/}

[✓] Rounded to the nearest whole number.

^{2/} Every two weeks.

Source: Directorate General of Tourism, BTDC
Transportation For Bali, Checchi and Company, December, 1975, p. IV-62.

TABLE 2

into Bali by allowing foreign carriers to participate in the increased traffic. Notwithstanding increased tourist revenues, the interests of Indonesia's indigenous airlines are expected to be jeopardized to a considerable extent. This argument has historically been put forward by Garuda, the larger of the two Indonesian-owned airlines, which carries almost 80 percent of total air traffic to and from Bali.

Increased tourism earnings on Bali, however, could be substantial. The effect of allowing direct international flights to Bali would be to increase tourist volumes by 20,000-30,000 persons during the first year. By 1985, continuation of such service could produce nearly 200,000 more tourists than can be expected under existing flight restrictions. Converted to tourist expenditures, this could amount to \$33 million per year. A study conducted at Udayana University in Denpasar, the capital of Bali, found that an average of \$50 per day is spent by tourists and this average was applied to the increased volume of tourists that would be generated by better access.⁸

This increase in Balinese income, of course, must be weighed against potential losses to domestic airlines. A liberalized air policy for international carriers would probably reduce Garuda's air traffic volume by nearly 100,000 persons (mostly foreigners now forced to use domestic flights) by 1985. However, this could be overcome by an increase of nearly 150,000 international passengers that Garuda could carry with any reasonable allocation of traffic rights. Normally, Indonesian flag carriers would

share in any new international route on a 50-50 basis. Even assuming that Indonesian flag carriers are not as competitive in an international market as other, more experienced and entrenched airlines, they would show an increase in revenues with a liberal air policy. Assuming a 25 percent share of international passengers, Indonesian airlines could overcome an expected loss of \$12 million on the Jakarta-Bali run with an income of \$32 million from international travelers. In all likelihood, Indonesian flag carriers would capture a much larger share of this market. Obviously, the key is that passenger fares for international arrivals would be much higher than the comparable fare now accruing to Garuda on its share of the flight from Jakarta to Bali.

Based on this analysis, it is evident that even under conservative assumptions, the revenue implications for the Indonesian economy are positive. It is concluded that a liberalized air policy allowing international flights to land directly in Bali from remote locations would have the effect of increasing tourism revenues on Bali itself as well as increasing the revenue of the domestic carriers by expanding their international market. Since the incentive to develop market demand would fall upon foreign airline companies, it is quite likely that Garuda would not even have to share the expense of such market development. The initiation of low cost charters and other similar incentives that are used to develop markets could be achieved without Garuda's participation; however, they would be allowed to enter the market when it reached a

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profitable level, sufficient to support more than individual flights.

The problem is not unique to Bali. A recent article in *Business Week* notes a similar problem in Manila.⁹ Tourist officials there, concerned about low hotel occupancy, claim an increase in flights from 190 to 500 per week is needed. More significant, however, is that because of a regressive air policy practiced by the Philippine government, other countries, particularly the United States, are either reluctant or unable to increase flights despite a clear recognition of the market.

This paper, based on a study undertaken for the Ministry of Communications of Indonesia, has attempted to demonstrate that under certain conditions, air policy restrictions may not be beneficial to those being protected. In the case of Bali, it may have deterred the national airline from expanding internationally by providing a safe domestic guaranteed market. Such international development is normally a goal of developing countries since it provides a measure of prestige and the flow of money into the country. Such policies may also be counterproductive in overall economic terms, particularly for a location that is sensitive to air travel capabilities. Indonesia has been able to

protect its own flag carriers, but only within its own boundaries. While Garuda does indeed carry the bulk of domestic airline passengers and is guaranteed its share of airline passenger arrivals in Bali, it has not been able to develop its international route structure to any considerable extent, nor has it been able to capitalize on operating revenues that normally accrue from long distance, over-water flights.

FOOTNOTES

1 Proveski Ekonomi & Lalu Lintas, Propinsi: 40-Bali, Dir. Jend. Bina Marga, Jakarta, 1971, Table XI-1.

2 Master Plan 1975-1995; Pelabuhan Udara Internasional Bali Ngurah Rai; Final Report—P. T. Encona Engineering Inc., Jakarta, March, 1975, p. 15.

3 Data provided by Airport Manager at Bali Ngurah Rai Airport.

4 The Domestic Route System: Analysis and Policy Recommendations. A staff study by the Bureau of Operating Rights, U. S. Civil Aeronautics Board, October, 1975.

5 Op. cit., p. 165.

6 Nella Lumboldt, Statement made before the 6th Regional Convention, Asia and Australasia Hotel and Restaurant Association, Manila, September 23, 1975.

7 Trans-Asia Trunk Air Route, McDonnell Douglas Corporation, Long Beach, California, 1974.

8 Unpublished data collected by random sample of tourists on Bali. Survey funded by UNESCO.

9 "A Huge Hotel Glut Threatens Manila," *Business Week*, May 10, 1976, p. 62.