

SAFETY AND DEVELOPMENT OF COMMERCIAL AVIATION
IN LATIN AMERICA, AND RELATED SUBJECTS

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Mr. NICHOLS, chairman of the Select Committee to Investigate Air
Accidents, submitted the following

REPORT

[Pursuant to H. Res. 125]

SECTION 1

Following a series of disastrous air crashes in the United States, which resulted in death or injury to a great number of persons, the House of Representatives, on March 3, 1941, by the passage of House Resolution 125, created the Select Committee of the House of Representatives to Investigate Air Accidents.

Section 2 of said resolution reads as follows:

It shall be the duty of the committee to make a full and complete investigation of air crashes and other accidents in the United States in 1940 and 1941, occurring on commercial air lines, with the view to ascertaining all pertinent facts relating to the construction of flying and ground equipment and facilities, the management and operation of such air lines, the laws and regulations, and the administration of laws and regulations, relating to operation and inspection of airplanes and safety equipment and devices, the liability of such air lines on account of loss of life or injury to persons or property, and any other matters which such committee may deem it necessary to investigate, for the purpose of obtaining information to enable it to recommend action.

The committee has heretofore determined that the scope of the resolution embraced the operations of every air line based in the United States or its possessions, and under the control and jurisdiction of any agency of the United States Government.

Pursuant to said resolution, the committee has made a thorough investigation of every serious commercial aircraft accident occurring in the United States and its possessions during 1940 and 1941, with but one exception. In addition, the committee has conferred with,

and taken testimony from, experts in every phase of aviation. The following are some of the subjects considered by the committee:

(1) The adequacy of existing aids to commercial aviation, including in-traffic control, weather services, radio ranges, lighting facilities, radio telephones, blind-landing devices, control-tower operations, and import facilities.

(2) The characteristics and adequacy of existing airplanes.

(3) The present needs of air carriers for new and improved equipment.

(4) The kind and character of airplanes which are now in the process of manufacture or in the blueprint stage.

In addition, the committee has carefully studied the qualifications and background of every pilot and copilot employed by air carriers operating under United States' franchise. All of this effort has been expended to make it possible for the committee to obtain facts as a basis for the recommendations of suitable legislation, Federal regulations, and company operations procedure which will insure greater safety in air travel and the continued growth of commercial aviation.

The committee presently has under consideration the liability of air lines, as directed by the resolution. It has yet to make thorough investigation of our weather reporting and weather forecasting services by the United States Weather Bureau to the end that it can propose changes, if it deems them necessary, in regulations affecting this service, and possibly the introduction of legislation. It has yet to study and conduct investigation into the Civil Aeronautics Administration. It has yet to complete its investigation of the use of ultra-high-frequency radio as a possible further aid to air navigation.

Having carried on this work in the United States, the committee's attention was directed to South America, since it was discovered that United States' and United States' affiliate air lines in 1940 flew 30,700 route miles, which was 46.2 percent of all of the route miles flown in South America, and, further, that those lines flew 8,737,000 air-miles, in 1940, which was 57.2 percent of all the miles flown in South America by all companies. Since the committee was charged by the resolution with the responsibility of making recommendations which would insure, if possible, the safe and healthy growth of commercial aviation in the United States, the committee on its South American investigation was primarily concerned with two things: One, the safety and the comparative safety of air travel on the American-owned and -operated lines running through the Latin American countries; and, two, the possibilities of South and Central America as an outlet for our air commerce. Incidentally, the committee was interested to determine what detrimental effect, if any, the operation of foreign commercial air lines in Latin America was having on our hemispheric and national defense.

If it might be thought by some that the committee, in interesting itself in the operation of German and Italian commercial air lines in South America, was getting outside of the scope of authority conveyed upon it by the resolution, one needs but to peruse the information herein contained to determine that it was the duty of the committee while in South America to do anything possible to promote the safety of United States citizens or, as a matter of fact, the safety of any American citizen, traveling by air on commercial lines in and through Latin-American countries.

At the meetings of the American foreign ministers, held first in Panama in 1939, and then at Habana in 1940, at which 21 republics were represented, the following actions were taken:

In Panama at the 1939 meeting the following resolution was unanimously adopted:

To recommend to the governments represented therein that they take the necessary measures to eradicate from the Americas the spread of doctrines that tend to place in jeopardy the common inter-American domestic ideal.

At the Havana meeting in 1940 they not only reaffirmed the principle contained in the above resolution but recommended that legislation be adopted to prohibit foreign political activities by any group—no matter what forms they use to disguise or cloak such activities.

LATIN AMERICA

Latin America stretches from the Rio Grande southward to the Antarctic. Its total area of more than 8,000,000 square miles is roughly 2½ times the size of the United States; but its population of 123,000,000, approximately 26,000,000 of whom are white (15,000,000 to 18,000,000 are Negroes, another 15,000,000 to 18,000,000 pure Indian, and the remainder mestizos), is a little less than our own, and only one-quarter of the population of Europe. About three-quarters of the Latin-American people live in South America, somewhat more than half the balance being in Mexico, with the remainder about equally divided between the West Indies and Central America. The convenient term "Latin America" should not mislead one into the belief that the area is a uniform political or economic unit. It is comprised of 20 independent republics, widely divergent in size, composition of population, social structure, type of government, and degree of economic development. Each country must be considered individually, and any generalizations must be carefully qualified when applied to individual cases.

However, despite these divergences, there are certain basic features of Latin-American geography and economics which have contributed to the rapid and early growth of air transportation in almost all countries. In this respect, conditions in South America are typical of those throughout Latin America. That continent has the smallest total population and lowest density per square mile of any continent except Australia. The population is distributed around the margins of the land mass and the few major hubs of dense settlements. Rio de Janeiro, Buenos Aires, Santiago, and Lima are separated by great distances.

The continent is primarily dependent on agriculture and mining, and is comparatively young in the scale of economic development. High mountain ranges and great areas of jungle are serious physical obstacles to the construction of highways and railroads. As a result, the ground-transportation system is inadequate and fragmentary in the extreme. Only three areas, centering in Rio de Janeiro, Buenos Aires, and Santiago, possess rail networks even remotely comparable to those of Europe and the United States, and there are few rail systems connecting two or more countries. A large part of the continent depends on river steamers, cart roads, and mule trails. In the interior the Amazon River and tributaries constitute the only ground transportation system for an area two-thirds the size of the

United States. In Central America, Mexico, and the West Indies the same general conditions prevail. Mountain barriers abound and surface transportation is, to say the least, unsatisfactory. Central America is heavily dependent on river boats and mules for transportation, and while northern Mexico has a relatively extensive railroad system, the southern part of that country is inadequately supplied with railways or highways. The importance of the airplane in transportation is evident from the fact that there are nearly as many miles of air lines in Latin America as there are miles of railroads. In only 6 of the 20 republics does railroad mileage exceed air-line mileage. All the Central American countries and 2 of the South American countries have more air line mileage per square mile of area than has the United States.

In the course of this investigation the committee traveled through 16 countries and covered approximately 21,000 miles.

PURPOSE OF THIS INVESTIGATION

The basic function of the committee is to investigate air disasters, air safety, and related fields, and to recommend to the Congress, to the appropriate Government agencies, and air carriers such legislation, regulation, and changes in flight technique as may be conducive to safer air travel.

For 6 months or more, while in the course of investigating air accidents, the committee has journeyed to every section of continental United States, investigating the competency of airplanes, the competency of flight personnel, the adequacy of weather observation, weather forecasting, and weather reporting, the adequacy of navigational aids, and the adequacy of airports and landing facilities. The committee has progressively released reports upon the serious accidents which have occurred, and will continue to release reports until the investigation is complete. Several legislative recommendations have already been made, and others are to follow. These will deal with lighting, with improved landing fields, with air-space control, and many other factors which enter into the whole perspective of air safety.

An increasing number of people are now daily flying the commercial airways of the United States, but the volume of air traffic is but a small fraction of what it will be in the near future, when the military imperatives are at an end and time and effort, without restriction, can be devoted to the further development of air commerce. Truly, this industry will grow to untold proportions.

The committee has, within the last few months, closely observed the growth of air commerce in the United States. It has observed the steadily increasing load factor, and has watched with some dismay the growing danger that flows out of taxing the full capacity of the commercial air lines of our own country. The committee is fully sensible of the fact that day after day on all domestic air lines there is crowding, and that cancellations of flight reservations are quite common because space is not available. The following table is evidence of this fact:

DEVELOP SAFE AVIATION IN LATIN AMERICA

Air-carrier operations statistics for the periods January-June 1941 and 1940
Domestic

	January-June 1941	January-June 1940	Percent of increase over 1940
Revenue-miles flown.....	61,689,346	49,021,661	25
Revenue passengers carried.....	1,569,608	1,151,458	30
Revenue passenger-miles flown.....	887,107,446	483,456,729	29
Express carried (pounds).....	7,894,608	5,204,610	40
Express pound-miles flown.....	4,310,824,619	2,948,425,961	46
Available passenger seat-miles flown.....	1,058,706,678	776,594,000	36

The committee, moreover, is not insensible of the fact that for many years the domestic air lines of the country, while going through pioneering and development stage to make air travel safe and certain have been on the lean side of the ledger. The committee is not insensible of the fact that much of the present crowding of domestic air lines and much of the necessity for refusal to carry passengers has been caused (1) by the increased number of people employed in national defense activities who have found it necessary to use the air lines as mode of quick transportation and who hold certain priorities on space over the ordinary business or pleasure passenger, and (2) by reason of the fact that priorities on equipment, necessary to the military and naval imperatives, have made it impossible for air lines to secure sufficient equipment to take care of the increased passenger air express demands.

The obvious answer to the problem of a growing load factor and of a growing demand for airplane space is that more planes be provided to the domestic air carriers of the United States. Through the Air Transport Association they have requested 450 or more twin motor and four-motor planes for delivery over a period of several years to meet this growing demand. The military imperatives with which we are confronted today has curtailed the building of commercial transports. Inasmuch as the committee was aware of this acute situation, it spent many days investigating the production of commercial airplanes at the Lockheed plant, the Douglas plant, and the Boeing plant. It went so far as to subpoena records. It held conferences with authoritative officials in the War Department, the Navy Department, and the Department of Commerce, in the hope that there might be a relaxing of the restrictions which are presently imposed upon the builders of air transports, in order that additional transports might be released to meet the growing traffic demand and that experimental work and prototype construction of new and advanced transport airplanes might continue.

The committee learned in the course of its investigation at the aircraft plants of the country that the men who give direction to these industries are genuinely anxious to continue building transports at the present time. They have repeatedly insisted that they have the facilities, the skilled craftsmen, and all other things necessary to continue this program without materially affecting the building of

military airplanes. The builders of commercial aircraft have, within the last year or two, discovered many new improvements in the design of airplanes which they should like to incorporate in the new transports which they propose to build and which also would improve the types of military aircraft. One of the outstanding aeronautical engineers in the country made the observation to the committee that the planes which are now in transport use will seem as flying "trucks" compared to the new planes which they propose to produce. All this, of course, is in the interest of the safety of those who fly the air lines of the country today, but it is also of extreme importance in the transport of troops.

We come, however, to another factor, as we look at the question of plane production. When the war and the demand for military planes came to an end, there will be an acute dislocation in the aircraft industry of this country, attended by the disemployment of many thousands of craftsmen. At the present time, hundreds of thousands of American workmen are employed, not only in the aircraft factories of the country, but in additional factories which produce necessary aircraft engines, instruments and facilities. The natural question, then, arises as to whether or not this prospective dislocation can be met.

At the end of the war this Nation will probably be on a production basis of 50,000 planes per year. Other nations are continuing to build and improve aircraft. When the war ends they, too, will be at peak production and will be confronted with the problem of dislocation of manpower employed in this industry and competition will be keen.

Even a partial continuance of the manufacture of aircraft after the war is over will require a market. It is obvious that expensive airplanes for transport purposes cannot be constructed unless they can be sold and used. It is probably a fair estimate that not more than 500 replacements will be necessary from one year to the next on the domestic air lines of the United States. Where, then, shall the aircraft manufacturers look for a market for the improved planes which must be constructed at war's end if production is to be continued and manpower is to be continued in employment? It is obvious that there is but one place to seek for a market, and that is in the field of hemisphere, foreign, and transoceanic flying.

European competitors will certainly be in this market as quickly as the aircraft industry of the United States. One need but indicate that there is already operating in the South American field such lines as the Lati (Italian) line, the Condor-Lufthansa line, the former Air France line, as an indication that other nations are closely watching the hemisphere and transoceanic field of flight.

It may be said that the competitive race is already under way. Added to all this is the fact that every nation will be equipped with thousands of capable pilots, with thousands of skilled airplane mechanics, and with untold millions in investment in productive facilities. These must either be used or become an acute economic problem within the confines of the nations which have made greatest progress in the field of air transportation.

It is obvious, also, when one contemplates the conditions and the distances which prevail in the sister continent to the south, that South America will be one of the first areas in which the various nations will undertake to develop air transportation more fully. It has been a

long-neglected continent. It will become the immediate objective of the leading commercial nations of the world. And so it becomes a question, now, as to who will win the skyways and the air markets of South and Central America.

One can conclude this part of the statement by saying that the United States of America, its aircraft manufacturers, and everyone identified with the air industry, are now keenly aware of the flight possibilities in South America.

At this point one should add that the people of Latin America are far more air conscious than the people of the United States. This is true for many reasons. As early as 1902, and antedating the Wright brothers' first flight by a year, Santos Dumont, of Brazil, after whom the airport at Rio de Janeiro is named, was carrying on work that made him the air pioneer of the Western Hemisphere. He had an aptitude for flight, and was constantly experimenting in the aerodynamic field. He was an early inventor of an airplane that flew, and from that day on our cousins to the south seemed to have become air conscious.

In 1920, which is nearly a generation ago, the first successful commercial air line in the Americas was established in the Republic of Colombia. It was known as the Scadta line. This air line was operated by Germans, and ran from Barranquilla to Girardot, which was the railroad for Bogota. As early as 1920 this line made the journey in approximately 7 hours, whereas the journey by surface transportation, which includes both rail and steamship, required at least a week in the wet season when rivers were navigable and at least a month in the dry season when the journey was made by railroad and horse or motor-drawn conveyance. The committee had opportunity to fly over this route. It traverses high mountains, dense jungles, and swamp. Colombia is now traversed by a network of air lines.

In 1925 another German-dominated line was initiated in the Republic of Bolivia. It operated from the city of Cochabamba to the city of Yencruz. While this was only a 200-mile run, it had to be negotiated over high mountains, which made surface travel extremely slow. The fastest surface transportation between the two above-mentioned points required 4 days, whereas it was covered by air line in 3 hours.

Two years later, in 1927, another air line was initiated by German interests. It became known as the Condor line, and operated in Brazil from Rio de Janeiro to Rio Grande do Sul via Porto Alegre on the Atlantic coast, a distance of approximately 900 miles. This German operation in South America is of much significance, because the original Condor line became the basis and pattern for German air line operations throughout the continent of South America.

There have been other developments in the field of air transport by different interests in South America at a time when the United States was first becoming air conscious. By 1927 there were 5,700 miles of airways in South America, in comparison with 8,900 in the United States.

One might well ask why South America became air conscious so early and saw the opportunities of travel by flight. The answer lies in the fact that distances are enormous, some of the republics are of large area, and obstructions to surface travel are many.

Let us consider for a moment the country of Brazil. In geographical area it is 200,000 square miles larger than the United States, and has a population of 44,000,000. While it is larger in area than our country, it has but one-third of the population. Brazil has but one-tenth of the railroad mileage of the United States, and but one-twenty-fifth of the highway mileage. The reason highway and railroad development has not pushed forward is because of the rugged and difficult terrain. Brazil is a country where one finds vast areas of swamp, pampas, deserts, and mountains. The interior of Brazil is populated by many wild tribes. The terrain is, for great distances, very rough. In certain seasons rivers are so swollen as to become impassable. It is because of these surface obstructions that air transport developed rapidly in Brazil. The airplane can transcend and is wholly independent of all surface obstacles.

The Republic of Argentina, with an area of 1,079,965 square miles is approximately one-third the size of the continental United States. Its approximate length is 2,150 miles, and its breadth 980 miles. Its western boundary is in the crests of the cordilleras of the Andes and on the east it is bounded by the Atlantic Ocean, having a coast line of 1,600 miles. The population of Argentina is 12,762,000, of which nearly one-quarter, or approximately 3,000,000 live in the capital city of Buenos Aires and its suburbs. The famous pampas country of Argentina, the economic heart of the country, extends fanwise from Buenos Aires, a distance of 300 to 400 miles and it is devoted to cattle raising and cereals.

Argentina is traversed by the largest railroad network in South America, comprising 25,804 miles, and it is traversed also by more than one-half the entire highway mileage in South America, 253,115 miles. Established air lines operate over 5,514 route miles. The country is highly developed and is more akin to the Middle West and West of the United States than any other country in South America in its economic development and characteristics of its population.

Consider also the Republic of Chile. Its average width is probably 150 miles. And yet it has a 3,700-mile coast line. The entire length of Chile is composed of barren and forbidding mountains. But nature has compensated for the ruggedness of the terrain, for in these mountains one will find rich deposits of nitrate, copper, silver, gold, lead, and zinc. This stringbean-shaped republic, with a coast line of 3,700 miles, has less than 2 percent of the railroad mileage, and less than two-thirds of 1 percent of the highway mileage of the United States.

Similarly, one can take Venezuela, Colombia, Peru, and other countries in South America, richly endowed with wealth-bearing but rugged terrain, which makes surface transportation extremely slow, if not impossible. And so the population of this continent became highly sensible of the advantages of air transportation more than a generation ago.

There are additional reasons why they have become air conscious. One might cite, for instance, the matter of air mail. Scattered throughout South America are American, Canadian, French, and German banks, commercial houses, and commercial agents who must be in constant contact with their principal offices in other countries. If they rely upon slow steamship, it takes much time for the exchange of mail and important communications. Telephone and cable com-

munications are extremely expensive. They, therefore, have resorted to air mail, and already the poundage of air mail between North and South America has grown to substantial proportions. For the year 1940 the air mail between these two continents aggregated 183,011 pounds, while between the United States and Latin America as a whole it aggregated 546,810 pounds. And it is continuing to grow. The explanation, of course, lies in the fact that one can deliver the air mail in 48 hours what will take from 12 to 20 days to dispatch by surface transportation.

At this point, a few statistics on distances may be of interest, as an indication of the reason why air commerce between North and South America will grow by leaps and bounds, both for purposes of pleasure and business. From New York to Buenos Aires is approximately 8,500 miles. To traverse this distance by surface transportation requires 18 days. To make the journey by air now requires 87 hours in total elapsed time, which effects a saving of 14½ days. From New York to Lima, Peru, is approximately 4,200 miles. The journey by surface requires 12 days; by air it requires 43 hours, effecting a saving of more than 10 days. From New York to Barranquilla, in the Republic of Colombia, is approximately 2,400 miles. By surface the journey requires 4 days; by air it requires but 19 hours. It is obvious from this contrast that in the near future, when the impact of war has relaxed, there will be a tremendous acceleration in the volume of air commerce of all kinds to South and Central America.

It might be well to include one additional point concerning air express, and particularly air express of an urgent nature. Already an enormous air express business is being done in medicines, serums, concentrates, cut flowers, and even baby chicks. Thousands of pounds of orchids are shipped weekly from the world's orchid center at Medellin, Colombia, to Miami, New York, and inland points in the United States. But an outstanding example of what air express means and what its potentialities are can be inferred from an experience which the committee had at Guayaquil, Ecuador. The committee observed 100 5-gallon cans of Diesel oil stacked in the airport at Guayaquil. On making inquiry, it learned that this Diesel oil was to be carried by air express to a point near a gold mining camp in Peru. The entire value of the oil shipment was but \$30. The air express cost was \$300, and the truck expense from the point of plan delivery to the mining camp was \$50. It seems singular, indeed, that an industrial enterprise could afford to pay \$350 for the transportation of \$30 worth of Diesel oil. Yet this oil is essential to a very profitable operation, and it is but one of many such which exist in South America today.

In view of these possibilities of annihilating space, whether people fly for business or for pleasure, it must be manifest that air commerce to South America holds untold possibilities. Moreover, South America is a new world to millions of people in the United States, and it is fair to assume that when plane tariffs are within reach of the average traveler and flight conditions improve, many people will journey to South America to spend a vacation.

But what of the safety of United States citizens who will fly to South and Central America in ever-increasing numbers in the near future? The committee proceeds on the theory that a United States citizen who is a passenger on an air line operating from the United

States to South America and who crashes in San Juan, P. R., or in the jungles of Brazil or on the mountains of Peru, is just as dead as one who may have crashed in Cincinnati, Chicago, or St. Louis. These passengers, who will fly in increasing numbers to South America, are citizens of the United States. The air lines on which they fly are based in the United States and are under the supervision of and limited control by the Civil Aeronautics Administration. They are common carriers and so regarded. They are completely registered and licensed by the United States Government. That same Government, through the appropriate agencies, has expended millions of dollars for radio ranges, for the certification of pilots, the certification of airplanes and equipment, for the installation of weather observation and reporting services, and for many other facilities, all of which are designed to improve air safety. That same Government is spending, and has expended, hundreds of millions for the purpose of developing adequate airports, which are suitably and properly lighted to make flight safe. Moreover, the common carriers are liable for the safety of their passengers. And, finally, it should be observed that today the United States Government is subsidizing transoceanic and hemispheric flight to the extent of \$16,000,000 per year. To be sure, this is in large part a subsidy for the purpose of securing adequate mail transportation between the United States and other countries on this continent. All this, however, is indicative of the fact that the Federal Government, including the executive agencies, the Congress, and the committees of Congress, have a proper and genuine interest in the safety of the people who fly on hemisphere air transports between the United States and Latin America. They are the particular solicitude of this committee.

Air transport to and within South America should be carefully differentiated. One must make the distinction between international lines which fly to and across the borders of the various South American republics and the interior lines which operate exclusively within the boundaries of a given South American country. At the present time there are three international lines which operate to Latin America. The first is an Italian line which operates from Rome to Rio de Janeiro via Dakar and Natal, and thence to Buenos Aires. It was accorded a Brazilian operating permit in June 1939, and commenced operations for both mail and passenger service in December 1939. It flies a route of 5,600 miles, and uses large three-engined landplanes. The name of this line is the Linea Aerea Transcontinentale Italiana, and is popularly known as Lati. It is a subsidiary of the Italian Government owned national air line. It is flying this run at the present time.

The second international airline operating in Latin America—the Pan American Airways, Inc., is based in the United States. It operates from Miami, Fla., via several routes to South America. One route is direct, nonstop to the Canal Zone (a 6-hour flight in a stratoliner). Another route is via Cuba and Jamaica to Barranquilla, Colombia. A third route is from Miami, via Cuba and Haiti, to Maracaibo, Venezuela. A fourth route joins the Caribbean Islands from Trinidad to the Yucatan Peninsula of Mexico and thence to Mexico City. A fifth route connects Trinidad and the ports of Venezuela and Barranquilla, Colombia, with Panama and thence via the capital cities of the Central American republics to Mexico City. At Mexico City connection

is made with the United States at Brownsville, Tex., and through a Mexican subsidiary with the United States at Los Angeles, Calif.

However Pan American's principal South American international line extends from Miami, Fla., via San Juan, P. R., and Port of Spain, Trinidad to Belém do Para at the mouth of the Amazon in Brazil, and thence overland direct to Rio de Janeiro and thence via Porto Alegre to Buenos Aires, Argentina.

The third international line, Pan American-Grace Airways, Inc., known as Panagra, operates from Buenos Aires north to the Canal Zone via Santiago de Chile, and thence along the Pacific slope of the Andes, with an alternate route departing at Cordoba in Argentina, thence via La Paz in Bolivia, and joining the Pacific coast route at either Arica in Chile or Arequipa in Peru. In Ecuador, Panagra also operates a local loop service connecting seven of the principal cities. Panagra joins together the capital cities of Argentina, Chile, Peru, Bolivia, Ecuador, Colombia, and Panama where transfer is made with Pan American of passengers, mail, and express to and from Central American countries and the United States.

An effort is now being made to revive a fourth international air line which formerly operated between Paris, France, via Dakar in Africa and Natal or Recife in Brazil to Rio de Janeiro and Buenos Aires, and known as Air France. It went into bankruptcy when French Government subsidies were withdrawn. This company has a considerable investment in airport and navigational aids in Brazil and perhaps Argentina, and holds claim to substantial stocks of fuel, but these stocks, with those of Luft Hansa, were confiscated by the Brazilian Government while the committee was in Rio de Janeiro. It is apparently believed by the Axis Powers that the services of this line might be better received in South America than those now performed by the Italian line Lati and therefore negotiations were commenced by the Brazilian Government to take the place of Lati. However, at least in Brazil, these negotiations seem to have failed.

Interior lines within the boundaries of individual countries are now in most instances closely controlled by the Government of the country concerned. The Republic of Colombia is well served by a Colombian line known as Avianca. It represents a consolidation of 3 different airlines. It now operates 13 planes and serves approximately 39 cities. It is operating Boeing, Douglas, and Ford equipment, and is giving excellent service. This line was originally German-operated under the name of Scadta, and was de-Germanized in 1939.

The Republic of Peru is now internally served by the so-called Faucett Line. This company was started by a United States citizen named Elmer Faucett, who journeyed to Peru as a salesman for the Curtiss Airplane Co. in 1920. After years of genuine effort, he finally developed an airline which serves the major localities of Peru. It operates single-engined equipment exclusively, and has developed an interesting—and in fact a marvelous—safety record, as it has experienced but 1 accident in 13 years of operation.

The Germans organized the first successful air lines in South America in the early 1920's. These enterprises were primarily commercial in nature and remained so until shortly after the ascension of the National Socialist government. At that time German air-transport policy underwent a fundamental change, and German activities

in South America, while commercial in form, became largely propagandaistic, and even semimilitary in intent. The large-scale expansion program was begun early in 1935, the spearhead of which has been the Brazilian-incorporated Syndicato Condor. Condor is to all intents and purposes an arm of the German-Government-owned Luft Hansa, and has been liberally supplied with equipment and funds. Besides expanding the services of wholly German-owned companies, the Germans have acquired influence over a number of South American-owned lines by selling them equipment and furnishing them with technical personnel on very liberal terms. There are nine air lines (16,600 route-miles) operating in South America, which use German equipment exclusively. (Included in this category are Lloyd Aero Boliviano, which has one United States plane, and Ariposte Argentina, which has a few obsolete French planes in storage.) Seven of these also employ various proportions of German personnel. Two of the latter, Condor, in Brazil, and Sedta, in Ecuador, totaling 8,300 route-miles, are completely German owned and managed. (A third German-owned line, the Luft Hansa Peru, with 1,070 route-miles, was taken over by the Peruvian Government in April 1941.) Two others, Lloyd Aero Boliviano, in Bolivia, and Varig, in Brazil, totaling 3,600 route-miles, though partly South American owned, were originally organized by Germans, are German managed to a large degree, and undoubtedly still have a large proportion of German ownership. The remaining three, Vasp, in Brazil; Ariposte, in Argentina; and Causa, in Uruguay, totaling 2,900 route-miles, are South American-owned companies to which the Germans sold airplanes on attractive terms, with the stipulation that German pilots and technical personnel be employed until the equipment was fully paid for. German influence is still significant in Vasp, but Ariposte and Causa have reduced their German personnel greatly in the last 2 years, and are entirely under South American management. There are no Axis controlled or -influenced air lines in Central America, Mexico, or the West Indies.

In Central America, and particularly in the Republic of Honduras, air service is now afforded by the Transportes Aereos Centro Americanos, popularly known as TACA. This company was established as an individual operation in 1932 by Lowell Yerex, a citizen of New Zealand. It now operates a network of approximately 5,000 miles in and through Central America, and does an enormous express business.

The principal interior operation in South America is that known as the Condor line. It is partly German owned but Brazilian incorporated, and was first established in 1927 between Rio de Janeiro and Porto Alegre. Since that time the Condor line has developed to the point where it now operates in far-flung fashion throughout Brazil. Until recently its operations extended to Peru.

In a number of countries its operation was taken over by the local Government, so that today the bulk of the operation of the Condor line is in Brazil, although it has substantial mileage in other countries as well. At the present time, Condor makes approximately 65 stops in Brazil, and operates extensively along the entire northern border and into the interior of Brazil. Planes, for the most part, consist of one- and three-engined junks with several large modern Focke-Wulf airplanes. Judging from comments on the part of

officials and public, this line has evidently rendered both reasonably safe and satisfactory service. There are, however, definite evidences of over-crowding and of carelessness and disregard for safety factors in its operation. There have been many near-serious accidents.

In more recent years American capital in conjunction with local capital, or the local government, has supplanted important parts of the German air-line operations in South America. Panair do Brazil, a Brazilian company managed under the direction of Pan American Airways operates thousands of route miles in Brazil, in some cases paralleling the operations of the German Condor lines, as for example the 3,000 mile route up the Amazon River, and the route from Belém at the mouth of the Amazon, following the northern coast of Brazil to Natal and Recife and thence coastwise to Rio de Janeiro. Panair operates many other routes radiating from Rio de Janeiro and São Paulo to interior points.

In certain South American countries, notably Brazil, Argentina, and Peru, mail routes have been established and are being operated by the local army air forces. These routes connect interior points with the capital cities. They are probably unprofitable as commercial operations but they are valuable to the citizens of these countries and are important from the standpoint of national defense. The pilots are army officers and the airplanes used are small, single engine planes of the types commonly used by private fliers in the United States. The airports are small and necessarily rudimentary but for this service a network of radio stations is established which can be developed for purposes of national defense, including weather reporting, and the airports can be developed as traffic may require.

Following is a summary of air-line operations in South America for the year 1940, which will indicate the importance of operations on the basis of nationality of company.

Nationality	Route miles	Percentage of total	Miles flown	Percentage and total
United States and United States affiliates	30,700	46.2	8,727,000	57.2
German and German affiliates	15,800	23.7	3,173,000	20.8
South American	7,400	11.1	1,755,000	11.5
Other lines, mail only	10,400	15.8	1,210,000	8.0
Other lines	2,000	3.2	380,000	2.5
Total	66,300		15,255,000	

The safety record of lines operating to South America in the years 1936 to 1940 are rather interesting, because they represent a reasonably high safety factor. In this period the Pan American system had 8 fatal accidents where passengers were involved; the Fawcett line had 1; the Avianca line had 3; the Condor line, 3; and the Vasp line, 1, as against 21 fatal accidents on the domestic air carriers of the United States. Miles flown per fatal accident as averaged over the period from 1936 to 1940, ranged from 5,836,000 in the case of Pan American, to 1,750,000 in the case of Vasp; and 2,186,000 in the case of Condor. These totals will compare with 19,101,770 miles flown per fatal accident for the domestic air lines of the United States.

In view of the fact that the committee's basic purpose in inspecting flight facilities in South America was the study of air safety and the recommendation of improvements conducive to safety on United

States operated air lines, we should like to make the following observations:

First, it must be realized that no agency of the United States Government has authority to make recommendations concerning the operation of any United States owned air line which operates wholly within the boundaries of a given South or Central American country, and which is exclusively under the jurisdiction and control of the government of such country. The committee has no jurisdiction other than that which extends to air carriers which are based in, licensed by, and regulated under the laws and regulations of the United States Government. Its recommendations, therefore, must concern themselves exclusively with those lines under our jurisdiction which operate in the international field. These recommendations are tentative in nature, and can be classified under structures, personnel, navigational aids, and airports.

It should be remembered, also, that intercourse between nations, since time immemorial, has been handled by treaty, and that certain treaty obligations enter into the whole field of international air commerce. It is manifest that any government in South America is supreme in its own domain, and can make whatever rules, regulations, or requirements it desires for the control and supervision of air commerce, irrespective of whether it be an international or a domestic line. This is of particular importance where an international air line, based in the United States, undertakes the acquisition of property for the purpose of constructing airports. Either the matter must be covered by treaty or it must be covered by contractual relation between such air carrier and the government involved. The committee is entirely sensible of this complication, and therefore holds the recommendations on the tentative side, subject to such modification as may be necessary to comport with international law.

There is room for divergence of opinion concerning the adequacy of 2-engine aircraft for operations in Central and South America, but it is the personal and direct observation of the members of this committee that American owned international air lines operating in Latin America should be equipped with 3- and 4-engine airplanes of long range and large carrying capacity. The only routes now so equipped are those which operate long distances over water, to wit: The trans-Caribbean routes including the route from Miami to Belém do Pará (at the mouth of the Amazon).

The reason for this recommendation is obvious when one considers the long distances to be covered, the ruggedness or impenetrability of the terrain, the lack of adequate intermediate airports, the lack of navigational aids, the inadequacy of weather-reporting services, the high altitudes required to be reached in crossing mountain ranges, the infrequency of human habitation in the jungle and plains areas, the great difficulties attendant upon transporting and maintaining supplies of gasoline and oil at the rear alternate airports, the scarcity of competent maintenance personnel at other than terminal airports, and in addition to these physical reasons—the now great and increasing demand for both passenger and cargo space.

DESCRIPTION OF FLIGHT

At this point in this report the committee offers a condensed description of its flight as follows:

Departed Miami, Fla., at 7:30 a. m. Sunday, October 12, 1941, en route to Port of Spain, Trinidad, flying in a Boeing 307 4-engine plane (strato-liner) via San Juan, Puerto Rico, altitude 16,000 feet. Arrived in San Juan at 1:45 p. m., late because of slight delay in departure and because of head winds. It was too late to proceed to Trinidad as the airport at Trinidad is not lighted and consequent landings there cannot be made after sundown. We therefore remained the night in San Juan.

Departed San Juan the following day at 5:30 a. m. for Belém do Pará via Port of Spain, Trinidad. Entire flight over water to Trinidad at 16,000 feet, thence to Belém over trackless jungle of the Guiana and Brazil. Arrived 4:20 p. m. After passing the coast line on open space in the jungle appeared possible of expansion into an alternate airport.

Belém do Pará is the Amazon basin seaport, a city of 300,000 people. The Amazon is navigable for ocean-going steamers 1,000 miles inland to Manaus, a city of 80,000 population and to river steamers an additional 1,500 miles to the Peruvian city of Iquitos.

Tributaries are also navigable to river boats in all directions. The Amazon has a fall of only 350 feet in 2,500 miles and it is several mile wide (up to 15) with many islands. Air-line operation using sea planes follows the Amazon to its upper reaches near the Andes Mountains.

Departed Belém do Pará at 6:30 a. m. the following morning for Rio de Janeiro, via Barreiras (the Barriers), distance 1,500 miles airplane used—a Douglas DC-3. Flight over jungle for first 500 miles then jungle merged into a relatively dry, badland type, hight terrain, with sparse vegetation and many deep ravines. Barreiras is the midway stop for gas and oil. It takes 6 to 8 weeks to transport gas and oil in drums and cans to Barreiras via the San Francisco River. Last half of trip was made on instruments between and through cloud layers. Arrived Santos Dumont Airport, Rio de Janeiro at 4:20 p. m., Tuesday, October 14, 1941.

Departed Rio de Janeiro 8 a. m., Monday, October 20, for Buenos Aires, Argentina, via Porto Alegre, Brazil, in a Douglas DC-3 cruising at 7,000 feet. The first portion of the trip was over water of shore, then crossing low mountains to Porto Alegre. From Porto Alegre to Buenos Aires the flight was over sparsely settled cultivated land (Uruguay), and finally over the River Plate, landing at Buenos Aires at 6 p. m. (Delayed at Porto Alegre 2 hours for engine repairs.

The following day the committee made a brief visit to Montevideo Uruguay. Departed Buenos Aires at 10 a. m., October 24, 1941, for Santiago Chile, in a Panagra Douglas DC-3 via Cordoba and Mendoza. The trip over the Andes through Uspallata Pass was impressive indeed. Leaving Mendoza, Argentina, at 3:30 p. m., the plane entered the Mendoza River Valley, climbing to 18,000 feet at Uspallata Pass

where Mount Aconcagua, the highest mountain in the Western Hemisphere, rises to 23,098 feet on the left, then level flight for 15 minutes at 18,000 feet and down through the Juncal River Valley to Santiago. This part of the trip consumed 1 hour 20 minutes. Oxygen hoses were available for each passenger. Arrived Santiago de Chile at 4:45 p. m.

Departed Santiago de Chile for Lima, Peru, at 7 a. m. via Arica, Chile, and Arequipa, Peru, in a Douglas DC-3, cruising at about 9,000 feet. The Pacific shelf of the Andes over which this portion of the route passes is absolutely arid. Deep gorges cut by short mountain streams arising in the high Andes Mountains occur every 25 to 50 miles. Some of these gorges are said to be from 5,000 to 7,000 feet deep. The Pacific shelf is very narrow. The ocean appears on one hand and 20,000-foot mountains on the other. Population exists at occasional seaports and in the irrigated bottoms of the gorges. Elsewhere there is no sign of habitation. This arid shelf extends over 3,000 miles on the west coast of South America. We flew out to sea a few minutes as we approached Lima, let down through a local fog until visual contact was made with the ocean, and then flew in across the city to land at 5:30 p. m.

Departed Lima, Peru, at 10:40 a. m., October 29, 1941, en route to Guayaquil, Ecuador, cruising at 7,000 feet with stops at Chiclaya and Talara, Peru. At Talara the committee saw an extensive oil field from which gasoline stocks for the west coast of South America are obtained.

The arid condition persists until nearing Guayaquil, when it breaks off and becomes jungle within a few miles. Arrived 3:50 p. m.

Departed Guayaquil, Ecuador, at 6 a. m. the day following (October 30) for Cali, Colombia, cruised at high altitude on instruments until nearing Cali. Arrived 9:40 a. m. Changed to Avianca, a Colombian air line operated under Pan American Airways management and with American captains (copilots are Colombians and will be promoted to take over captaincies as they become proficient). Took off for Bogotá, Colombia, at 12:15 p. m., climbed to 16,000 feet, on instruments, crossed a range of mountains and arrived Bogotá (elevation 8,600 feet) at 1:35 p. m.

Departed Bogotá for Barranquilla November 1, 1941, at 12:20 p. m. Arrived Barranquilla 2:50 p. m. Airplane used was a Boeing 247-D. We were the only passengers. Ship was loaded with express, including 300 pounds of gold in ingots and about 600 pounds of orchids destined for the United States, plus other items. Cruised at 10,000 feet over mountain range, then out over perhaps 200 miles of swamp jungle, the lower basin of the Magdalena River. Many rain storms visible but we flew between them.

At Barranquilla, Colombia, the committee rested over the week-end instead of visiting Caracas, Venezuela, as planned.

Departed Barranquilla, Colombia Monday, November 3, 1941, at 3:53 p. m. for Cristobal, C. Z., arrived at 5:55 p. m. Flight in a DC-3 of Pan American Airways which originated at Trinidad. Cruised over water at about 6,000 feet, losing sight of land for a short period en route. Crossed the isthmus on the following morning. At 2:30 p. m. one member of the committee departed for Miami via Pan American Airways in a Boeing 307 (stratoliner) arriving Miami at 8:30 p. m., cruising at about 12,000 feet. This 6-hour trip was entirely over water except while crossing above Cuba.

The rest of the committee departed Canal Zone, Wednesday, November 5, at 10 a. m., for Guatemala City, Guatemala, via the capitals of the Central American republics.

Our first stop was at David, provisional capital of Panama, population, 50,000. Departed David at 11:40 a. m. eastern standard time to arrive at San Jose at 11:45 a. m. central standard time, the capital of Costa Rica, altitude of 3,969 feet, population 65,000.

Departed San Jose at 12:08 p. m., flew through some very rough, turbulent weather and arrived at Managua, the capital of Nicaragua at 1:33 p. m. Managua was rebuilt after the earthquake of 1931, and now has a population of 80,000.

Departed Managua at 1:50 p. m., arriving at Tegucigalpa, at 2:50 p. m., the capital of Honduras, elevation of 2,300 feet, population 50,000.

Departed Tegucigalpa at 3:11 p. m. and arrived at San Salvador at 4:08 p. m., the capital of El Salvador, population of 102,000.

Departed San Salvador at 4:28 p. m. for Guatemala City, capital of Guatemala, arriving at 5:18 p. m. Here was demonstrated to the committee crying necessity for weather reporting and better two-way radio connection with the ground, because while our last weather report before our arrival at Guatemala City gave us an estimated ceiling of 800 feet, when we arrived at Guatemala City the ceiling could not have been in excess of 200 feet and was closing down so rapidly that had we been 5 minutes later it would have been impossible for us to land, and we would have had to seek an alternate airport.

Thursday, November 6, we departed Guatemala City at 8 a. m., and went immediately on instruments. This was, to say the least, the most dangerous and thrilling portion of our trip, because the country around Guatemala City is very mountainous, with peaks running to an elevation of 13,000 feet. We circled in a reasonably close circle until we had obtained an altitude of 11,000 feet, at which time, because there are no radio beams to guide the flight of pilots, it was necessary for the flight crew to start the working of a problem which would take them between the mountain peaks and finally to the coast line of the ocean, where it was anticipated that the high cloud formations would break up. We broke out over the ocean at a 14,000-foot elevation. For the first hour and forty minutes of the flight out of Guatemala City we were never off instruments.

We arrived at Minatitlan, in the State of Veracruz, Mexico, at 11:15. At this time we were 3 hours and 15 minutes out of Guatemala City, although we were supposed to have made the trip from Guatemala to Mexico City in 3 hours and 45 minutes and we were still 2 hours and 15 minutes from Mexico City. We left Minatitlan at 11:30 a. m. and arrived at Mexico City at 1:40 p. m.

Monday, November 10, we departed Mexico City at 9 a. m. and arrived in Los Angeles at 6:55 p. m.

CONCLUSIONS FROM FLIGHT EXPERIENCE

From all this, one can draw the broad general conclusion, based upon terrain, long water hops, high altitudes, possible weather hazards, and so forth, that the ultimate development of safe flight on the international air lines from the United States to Buenos Aires, thence

across the mountains, and along the Pacific coast, requires an improved type of plane with ample motor capacity and ample passenger capacity. It has been the feeling of the committee that aircraft manufacturers who now have larger, more powerful and more capacious planes in the mock-up stage, for construction, as soon as priorities and military requirements will permit, should be authorized to proceed forthwith on the construction of these larger and more powerful planes, that they may be secured without delay for international air-line service, and for military transports.

A question arises as to whether or not economic consideration will permit the operation of larger multiple-motored planes. Obviously, the operation must prove profitable, for otherwise the line must retire from business, or the Federal Government must increase its subsidy to make up for operating losses. The committee believes, however, in view of the development of air commerce within the last several years, that this can be an economic operation with the use of larger planes.

It may be cited at this point that in September 1938, the Panagra line, operating from Buenos Aires to Santiago, Chile, and thence north to Guayaquil, Ecuador, carried 494 passengers. In September 1941, only 3 years later, passenger travel indicated an increase of more than 600 percent, as 3,539 passengers were carried in the latter month. In August 1941, passage was refused to 309 prospective passengers. This does not include many who made informal application at the air-line offices in various parts of the different republics of South America, who could conceivably number twice that many. One hundred and seventy-nine of the 309 were rebooked on subsequent planes, making a net loss of 130 passengers in that particular month, with a net revenue loss of \$20,151. This means a loss of nearly 10 percent of the entire Panagra revenue for that month. When one considers the certain increase in air travel which will follow more frequent schedules, and reduced fares, it is our belief that larger and therefore safer equipment will be economically justified.

FLIGHT PERSONNEL

Next in importance to the competency and type of plane which is used on international flight, one should properly consider the competency, experience, and training of flight personnel. Let it be observed at the outset that on international air lines a larger flight crew is carried than on domestic air lines. It consists of four and, in some cases, five persons. This would include the captain, copilot, the navigator, the communications or radio man, and the steward. Judging from the examination by the committee, it is fair and proper to state that the pilots and copilots now operating on the international air-carrier service from the United States through South America are men of high competency. In most cases they have seen service on domestic air lines and in other international air commerce. They are experienced pilots. The captains have been trained in the art of air and water navigation, and feel equally at home in navigating both elements. This observation, no doubt, will be borne out by the committee's records of the pilot and copilot in each case, indicating the number of hours flown and the variety of experience which they have had.

The committee believe that it is entirely proper and necessary that a crew of at least four, and perhaps five, should be carried at all times. Manifestly, there must be a competent pilot and copilot to operate the craft. There must be a navigator, in view of the possibilities of getting off course over uncharted country, and finally, the meageries of navigational aides and weather service make it imperative that there be a communications man aboard the ship at all times to maintain constant contact with ground stations, so that at no time will the flight be without full and adequate information concerning the weather. An additional fact which enhances the importance of the communications officer on every flight is that the Morse code is so widely used between the flight and ground or vessel stations. This constitutes a greater difficulty than if radiotelephone communication were in widespread use as they are on domestic lines.

It should be observed that, in the matter of flight personnel, the restrictions which now obtain in the laws of various South America republics with reference to the use of native pilots and native crew members does not apply to international lines.

In the case of interior air-line operation under the exclusive supervision and control of the several South American republics, rigid restrictions obtain. In some cases the laws provide that air-line personnel on interior operations must be 100 percent nationals. In other cases, it calls for 50 or 75 percent. By way of elaboration, can be said that in Mexico, Venezuela, Chile, Argentina, and Brazil the legal requirement is that on nationally incorporated air lines the flight personnel must be 100 percent national. In the case of Peru and Bolivia, the requirement is that 80 percent of the employees must be nationals. In the case of Ecuador, the requirement is 50 percent. However, in view of the fact that an operation from the United States to South America is international in character, United States nationals can be employed on those lines. It should be said, however, that the Latin-American pilots are of a very high order, and for the most part make excellent pilots.

Curiously enough these restrictions as to nationality of persons on local interior air lines were instigated in certain cases by the Germans. It must be remembered that Germans and Italians maintain their German and Italian citizenship under the laws of their home countries, even though they may become naturalized citizens of another country. This is termed "dual citizenship." Therefore, in an attempt to exclude the citizens of other countries such as the United States, from obtaining positions as air line pilots and crew on local operations in certain South American countries they encouraged the adoption of local laws providing that air line personnel should be citizens of these countries.

Such laws permitted Germans and Italians holding dual citizenship to be employed, and excluded citizens of the United States and other countries. In the case of Brazil, that Government soon recognized the facts and proceeded to amend their laws to require that such personnel be Brazilian by birth. Of course, such a law does not prevent second-generation Germans and Italians from holding the positions, and in many cases this type of person is more pro-Axis than the native-born Axis citizen.

By these and other means, the Axis Powers have sought to dominate the Latin American air-line picture, while their pilots were given broad

experience and knowledge in flying the terrain of these countries, and obtained opportunities to spread Axis propaganda and doctrine without interference. At the same time, many airplanes of Axis make were sold, which helped build up the aircraft production capacity of the Axis countries at home.

In uncovering the plot of the Nazis to dominate the world, one must keep constantly in mind that they have long since recognized the fact that airplanes have annihilated distances and that the barriers of sea and land do not restrict movement by air.

NAVIGATIONAL AIDS

The matter of lighted airways and radio beams can be dismissed at once by the observation that neither exists in the Latin American countries. It is doubtful whether either lighted airways or radio beam courses for most sections of South American airways can ever be developed, for two reasons: The first is, the enormous distances which must be traversed, and the large initial cost of installing these aids. The second reason is the ruggedness of the terrain over vast areas which would make the installation and maintenance of these aids a task of astronomical proportions. Finally, such aids would require the use of electric current, which is not available over vast uninhabited areas.

Let it be observed, also, that it is doubtful, indeed, whether weather reporting service, as we know it in the United States, can ever be developed in any great degree in many of the Latin American countries. This obtains for several reasons. In the first place, the governments of many Latin American republics do very little by way of weather observation and weather reporting. Secondly, since electric power is not available in wide areas, it is obvious that a teletype service as we know it today, cannot be installed. It is imperative, therefore, that lines operating from the United States to South and Central America must build up a very substantial and capable weather-reporting service of their own, for the benefit and security of air commerce. International air lines from the United States to the South American Continent are fully cognizant of this fact, and have already taken steps to build up a capable and independent weather service. A considerable number of meteorologists are already in their employ, and they are making effort to develop that type of observation, forecasting, and reporting which will keep every flight constantly advised of the development of weather conditions.

Repeated inquiry by members of the committee elicited the information that little or no exchange of weather information is maintained between ships at sea and shore stations of air lines. This is particularly true on the Pacific coast. It is common knowledge that many of our most adverse and disastrous weather conditions are generated over water, and if a better and more coordinated weather service from ship to land stations in the Atlantic, the Caribbean, and the Pacific were devised, it would serve to forewarn not only air operations over sea, but air operations on land, of weather disturbances that are moving toward shore. This, too, would be of material benefit for land operations in the coastal sections of the United States where weather is frequently a disturbing factor to air commerce.

AIRPORTS AND LANDING STRIPS

The adequacy of airports and landing strips in Latin-American countries is of extraordinary importance, first, because of the mountains and rugged terrain, and secondly, because of the difficulty in developing alternate landing fields in sufficient number and of adequate size to provide that margin of safety which the committee deems essential.

A brief recital of airports and airport conditions as the committee found them is as follows:

1. *San Juan, P. R.*—At San Juan, a new airport is in process of completion which will be a combined military, naval, and civil airport. It will be adequate in size, it will be lighted, and will be equipped with all necessary facilities conducive to safety.
2. *Port of Spain, Trinidad.*—At Port of Spain, it need only be observed that the airport is being improved at the present time. Runways are entirely too short, the airport is without lighting facilities although this is not essential where night flying does not obtain. Runways should be longer and additional runways should be installed particularly for four-motored operation.
3. *Belém, Brazil.*—At Belém, which is the northern terminus of the short route across Brazil to Rio de Janeiro, two runways, neither of which is hard-surfaced, are available for landing at the present time. They are 500 feet wide and approximately 4,000 feet long. No lighted runways are available at Belém.
4. *Rio de Janeiro.*—At Rio de Janeiro, the Santos Dumont airport has been constructed close to the heart of the city, at the very edge of the bay. There are no runways, but landing is made on hard and acceptable turf. This field was constructed by means of filling in portion of the bay. It should be enlarged for maximum safety.
5. *Buenos Aires.*—At Buenos Aires several airports are available from the standpoint of obstructions and surrounding hazards, the are entirely satisfactory, but should be enlarged. A greater area required for complete safety. Runways are not available, but the conditions in all seasons of the year are quite good. Lighting is not available.
6. *Montevideo, Uruguay.*—While Montevideo is off the international airways, yet it is fair to assume that sooner or later some international operation from the United States will include Montevideo. A new airport is being constructed in close proximity to the city. Present airport facilities are extremely limited, and it is doubtful whether twin-motored plane, such as is normally employed, can safely operate into the present Montevideo airport.
7. The journey from Buenos Aires across the Andes to Santiago Chile, embraces two intervening let-downs. One of these is at Cordoba and the other at Mendoza, both in Argentina. The airport at Cordoba is adequate in size and entirely safe. It is being gradually extended because the Argentine Republic conducts many military operations at Cordoba. These, of necessity, require an adequate airport, which can be used for both civil and military operations with complete safety. This airport is, however, not lighted.
8. *Mendoza.*—At Mendoza, which lies at the eastern base of the Andes Mountains, the airport is being improved at the present time. It is adequate in size, and while runways are not surfaced and

not be for some time to come, it is the belief of the committee that it is entirely safe for planes of all sizes. Here, again, no lighting facilities are available for night operation.

9. *Santiago, Chile*.—Landing facilities at Santiago are reasonably good. They could be improved. The airport could be enlarged and lighting facilities should be installed. The airport lies in close proximity to the peaks of the Andes. This offers the possibility of adverse weather conditions, low ceilings, and limited visibility during a considerable portion of the year. It is therefore imperative, in the interest of safety, that the most modern airport facilities be installed and maintained. Antofagasta and Arica, Chile, provide fueling stops between Santiago and Lima. The airports are hardly adequate.

10. *Lima, Peru*.—At Lima, facilities seem entirely inadequate as to size. There are no serious hazards or obstructions. Lighting facilities are not available. Surfaced runways should probably be installed as time goes on, because it is our observation that in the rainy season the turf becomes quite soft and constitutes a moderate hazard.

11. The flight from Santiago, Chile, to Guayaquil, Ecuador, and points north, is made over a rugged terrain, and for 3,000 miles along the Pacific shelf. Alternate airports over this rugged area constitute no particular problem where the flight continues along the coast line for the very good reason that hard-packed sand without obstructions can be found at many spots for emergency landings, except that there are no facilities for refueling available.

12. *Arequipa, Peru*.—The airport at Arequipa admits of some difficulty of approach, since the course takes its way in and around high terrain before one can make the approach to this port. It is reasonably satisfactory, and improvements are going forward.

13. *Guayaquil, Ecuador, and Cali, Colombia*.—At Guayaquil and at Cali the approaches to the airport offer no particular difficulty or hazard. The terrain is quite flat, and the airport facilities are reasonably good.

14. *Bogotá, Colombia*.—The airport at Bogotá is at an elevation of 8,600 feet and lies in the midst of surrounding mountains which attain an altitude of many thousand feet over the field. Letting down and taking off at this airport offers considerable difficulty under low ceilings, and runways need to be extended.

15. *Barranquilla, Colombia*.—At Barranquilla, which is on the coast of the Caribbean, the terrain is quite flat, the approach is without difficulty, the facilities offer no hazard or danger. A very extensive United States defense improvement project is under way at the Barranquilla airport at the present time, and it will be one of the very best, when completed. At the present time it is unlighted.

16. *Cristobal and Balboa, C. Z.*—Airports at Cristobal and Balboa in the Canal Zone are of course extensively used for military purposes, and airport facilities are therefore being improved constantly in line with the best practice of our own War Department. It should be observed, however, that at Balboa the approach is a bit difficult, because of hills of considerable height which are in direct line with the prevailing wind. For the most part, landings and take-offs are in one direction with hills of substantial elevation at either end. This situation may call for some improvement.

17. The flight from the Canal Zone to Guatemala City is approximately 7 hours, and operates over Costa Rica, Nicaragua, Honduras, El Salvador, and Guatemala. It might be said, generally, that the airports in the Central American republics on the international line of flight, with the exception of the airport at Guatemala City, offer no particular difficulty or hazard. For the most part they are adequate in size. None, however, is lighted. None is equipped with runways. From observation, the condition of the turf seemed satisfactory and without peril to safe landing. It should be observed, however, at this point, that as larger planes are placed in use for this and other operations in South and Central America, these airports will doubtless have to be enlarged. The airport at Guatemala City is equipped with a runway and is located in the center of a surrounding bank of mountains, reaching altitudes which vary from 10,000 to 15,000 feet. The Guatemalan airport offers considerable difficulty in adverse weather, in view of the fact that no alternate landing fields are near. Assuming a weather situation which closes in to cause a low ceiling and diminished visibility, this airport can very conceivably cause difficulty.

18. The next leg of the flight operates from Guatemala City to Mexico City, and continues through Guatemala and the southeast portion of Mexico. The lower portion of Mexico is equipped with some alternate landing fields which, while limited in size, appear adequate for emergency landings. At Mexico City improvements are under way at the present time, and it is fair to expect that the airport in the capital of Mexico will be one of the best from the standpoint of size and all other facilities.

OBSERVATIONS

Surveys have been made and a corps of engineers and contractors have been sent to South American countries for immediate construction of a series of landing fields. A number of them are located along the northeast coast of South America and will be placed in positions which are important to the United States from the strategic standpoint.

A question now arises, if it is assumed that airports in Central and South America are in some instances not adequate to the requirements which will be imposed by the use of larger planes in the near future. It should be remembered that while the United States has been spend-

ing hundreds of millions of dollars for airport improvement, it is not so easy for South American republics to make vast outlays of funds for this purpose. It may be that the United States Government should, in some way, lend a helping hand in the development of such airports. This could be justified both from the standpoint of the benefits to be derived in the field of civil aviation, as well as the benefits which accrue to defense solidarity for this country and the hemisphere. Such a program for airport improvement would no doubt have to be covered by treaty so that the rights for a long time to come, as between the United States and the Latin American republics, with respect to both ownership and use of such airports, could be clearly and equitably resolved.

SECTION 2

A. PARTIAL SUMMARY OF OTHER INFORMATION RECEIVED BY THE COMMITTEE IN LATIN AMERICA

The committee should indicate that in the course of its discussions with our diplomatic and commercial representatives, our military and naval attaches, and with the officials of the various republics of Latin America, the questions of national defense, hemisphere defense, and hemisphere solidarity were very much to the fore, as international operation of commercial air lines is so closely linked with these questions.

It is, of course, common knowledge that for a long period of time air lines which have been dominated by the interests of some unfriendly and potentially hostile powers have been operating in various parts of South America. One can point out, for instance, the so-called Scadta line in the Republic of Colombia, which began as a German operation in 1920. One can point out also the operation of the Sedta line in Ecuador. The largest foreign operation, however, in South America is that of the Condor line, which first began in 1927 in Brazil and which has continued without interruption from that day to this, not only in Brazil, but in other South American republics as well.

This condition first engaged the attention of the United States Government, early in the first year of the present World War. It was obvious to any reasonable person that the operation of foreign-dominated air lines in Peru, Ecuador, Bolivia, Colombia, Brazil, and other South American republics, and particularly in that area which lies adjacent to the Panama Canal, could not be regarded as other than inimical to the best interest and security of the United States and South America. It is quite manifest that the development of civil air-line operations in adequate degree between the United States and the Latin American republics would constitute a long stride toward unified hemisphere defense. It would involve the training of flight personnel who are entirely familiar with South America, the development of weather observation, forecasting, and training observers, the development and training of adequate ground personnel who, in a time of crisis, would not only serve civil aviation, but mutual defense aviation as well.

Moreover, the increased expansion of United States air-line activities on international lines in South America, plus such aid and assistance

as this country can render in the development of civil aviation within the various republics of South and Central America, under their own supervision and control, will automatically eliminate the air activities of hostile powers and bring these two continents into closer relationship.

The reader of this report should be admonished at this point that the material which follows is of a rather delicate and confidential nature. It is, however, intended for the information of Members of Congress so that they may be adequately apprised of the extent of Nazi organization and Nazi activity in various countries of Latin America. In all of these countries there is a strong awareness of the danger that threatens from the subversive activities of Axis Powers including the closely knit military or semimilitary organizations known to exist. Governmental action has been taken to curb them and many thoughtful Latin Americans are on the alert to recognize and counteract Nazi, Fascist, and Falangist influence. But the subversive forces are strong, and their continuance has a very direct and harmful effect upon inter-American aviation.

A. THE ARGENTINE REPUBLIC

The Argentine Republic: One can but indicate certain highlights and effects, for otherwise the recital would be too long for a report. The items which follow, however, should prove sufficiently persuasive because they were obtained from authoritative sources. There are 2,200 agents of the German Gestapo now operating in the city of Buenos Aires. There is reason to believe that a large contingent of storm troopers has been organized and that secret drilling is now in progress. Buenos Aires has a German population which exceeds 250,000. It has been indicated to the committee that the Italian population is even larger. It is known that the German Embassy and German agents have been subsidizing newspapers, radio, movies and magazines, in order to keep the Nazi story constantly before the people of the Argentine and impress upon them superiority of the Nazi philosophy. It is known that in a single month, under the tutelage of the German Embassy, more than 150 pieces of propaganda literature have been issued in Buenos Aires. The committee has been reliably advised that Buenos Aires, which is a city of more than 2,000,000 people, has been divided into 56 districts, with 1 cells in each district, all of which are carefully policed and supervised by the Nazi organization. It is known that efforts have been made to induce an international airline based in the United States to carry into the United States whole quantities of films, books, and pamphlets for the purpose of showing the Nazi story of present world condition and to indicate British atrocities. The committee has reason to believe that an incipient revolt in the Argentine Air Corps was inspired by Nazi agents, and was actually hatched at a cafe in Buenos Aires known as Dices's Cafe.

At the present time the Argentine training planes consist for the most part of 70 Focke-Wulf planes of German design, which are manufactured at Cordoba, Argentina. It is quite obvious that with German training planes in the Argentine air force, the German influence will continue to persist. The committee knows that the German Embassy in Buenos Aires operates its own printing plant, and the

only recently it printed the speeches delivered by a United States Senator and by Charles A. Lindbergh, compiled these speeches in a green brochure, and gave them wide distribution in Argentina to impress people there with the fact that disunity exists in the United States. The committee knows that the newspaper *El Pampero* is definitely subsidized, and that one of the first gestures of this newspaper on the arrival of the committee was to remark in a very cynical fashion about the presence and the activities of the committee in Argentina. The committee knows, also, that the immunity of the diplomatic pouch has definitely been violated, and that on one occasion a diplomatic pouch from Germany, which weighed 500 pounds, was seized in Argentina by members of an investigating committee of the Argentine Congress, and was found to contain a complete short-wave broadcasting unit.

German propaganda and organizational activities are carried on on a self-sustaining basis. The Gestapo agents fix quotas and levy contributions on every Nazi and every German in South America on the basis of ability to pay. It is known also that the international Italian air line, known as *Lati*, has been repeatedly carrying shipments of barium, platinum, and adrenalin from South America to Europe. These items, as is so generally known, are all critical defense items. An intelligence report which members of the committee had opportunity to examine, will indicate that there are 90,000 active Nazis operating in Buenos Aires, and that they have now infiltrated into the trade union movement and into the charitable organizations of Buenos Aires. There is reason to believe, also, that the Nazis have perfected plans for the sabotaging of utilities in the city of Buenos Aires, and that in a crisis they could probably establish an operating base in Argentina and cause considerable difficulty.

B. REPUBLIC OF PERU

In the Republic of Peru it is definitely known from the records that there are more than 22,000 registered Japanese in the city of Lima, and there is reason to believe that the number exceeds 30,000. The committee had opportunity to examine and walk through "Little Tokyo" in Lima, and visually verified this fact. The Nazis are very active in the Republic of Peru. When recently United States bombing planes were denied to Peru, there was considerable agitation and hostility and it was the signal for the German legation in Lima to stage a celebration in honor of the event and to undertake an aggravation of any hostile feeling which arose between Peru and the United States. It should be pointed out that Peru has a long and exposed coastline, and that its navy is inadequate. Peru is rich in oil, copper, lead, gold, silver, and many of the critical materials which Japan would urgently need to carry on a prolonged struggle. Northern Peru is the locale of the greatest copper mine in the world. Oil operations are within a stone's throw of the Pacific coast, and it would offer no great difficulty for an invading force to take over and to operate the oil fields of northern Peru. It should be said, also, that the two largest newspapers in Lima, namely *El Comercio* and *La Prensa*, appear to have definite Fascist leanings.

C. CHILE

Chile is interesting geographically because its average width is but 150 miles with a 3,700-mile coast line which extends from the middle of western South America to Cape Horn. The northern part consists in the main of extremely rugged terrain. It is very rich in high-bearing nitrates. The southern portion of Chile, around the enterprising city of Valdivia, is extremely fertile and became the objective of the Germans, many years ago. They have built up this territory over a generation to the point where, agriculturally speaking, it is the richest and most self-sufficient portion of the entire republic. There is reason to believe that storm troopers are drilling in Chile. The very best diplomats from Germany, Spain, and Italy are now coordinating their activities in Chile in order to break down the cordial relationship which has existed between Chile and the United States. Chilean Army officers, over a period of many years, have been feted, instructed and educated in Germany, and have developed an admiration for the German system. Santiago, the capital of Chile, has a newspaper subsidized by the Nazis. It is also the locale of a motion-picture theater which has been subsidized and which, along with American short features, undertakes, when available, to show Nazi shorts or war activities and the success of the Nazi machine.

The navies of the South American countries are not highly effective comparatively speaking, and one can only reasonably infer that in the over-all problem of defense the United States must at the very outset of a crisis determine that it must defend South America at sea and in the air.

D. MEXICO

In Mexico City are two newspapers, the *Excelsior* and the *Omega*, which are definitely pro-Nazi. One finds widespread admiration and sympathy among Mexican Army officers for the Nazi system. It was disclosed to the committee that short-wave radio stations abound in the jungles of Mexico for direct communication with Berlin and European centers. A number of these short-wave stations have actually been confiscated by the Mexican Government at the instance of the United States officers. The committee has reason to believe that merchant vessel departures from the United States across the Atlantic have been communicated in code to Mexico City and then by short-wave transmitted to Nazi authorities in Germany. The committee is advised that long after representations were made for the purpose of prohibiting the shipment of mercury and other critical materials from Mexico to Japan; that as much as one-half million dollars worth of mercury was transported in a single shipment from Mexico to Tokyo and labeled as scrap brass. It is believed that the German Ambassador in Mexico City is the head of the Gestapo for the North American Continent. It is known that women spies are very widely used for the purpose of procuring information of diplomatic and military value. It is also known from informal testimony given to the committee that Falangist "refugees" in substantial numbers, have arrived from Spain into Mexico, and are actively at work seeking to secure from Mexico a recognition of the Franco Government in Spain.

E. COLOMBIA

In 1920 the Seadla air line first operated in the Republic of Colombia from near the capital city of Bogota to the city of Barranquilla on the coast of the Caribbean. This was a German air operation and it is known to the committee that over the years pilots were alternated frequently. It is a fair inference that there exist today in Germany perhaps more than 100 skilled military pilots who have flown the length and breadth of the Republic of Colombia and who are conversant with every square mile of its terrain. It is known also that when this air line was under German domination it was very active in photographing terrain. There is reason to believe that photographs of Colombia now repose in the military archives of Germany. It was represented to the committee by competent persons that a Japanese colony, located approximately 30 miles from the city of Cali, on the Pacific side of the Andes, has become a veritable storehouse for rifles, ammunition, pistols and hand grenades, all of which were imported under the misleading appellation of farm machinery. The 2,000-acre bean farm which serves as the obvious and ostensible excuse for the small Japanese colony, referred to above, is surrounded with a wire fence which is electrically charged. An investigation has been made to verify the actual existence of material of war in the above named locality and representations have been made to the Government of Colombia seeking the immediate confiscation of material. The committee believes that as of the date of this report nothing has been done in the matter of confiscation.

F. GUATEMALA

The Republic of Guatemala has been affectionately referred to by Adolf Hitler as the Little Reich. It is midway between Brownsville, Tex., and the Panama Canal, and is the logical let-down for planes in the ferry command, which are flown from the United States to the Panama Canal and thence east for the South Atlantic hop. There are approximately 70,000 Nazis in Guatemala. It was represented to the committee by American authorities that 60 percent of all the coffee plantations in Guatemala are owned and operated by Nazis. The committee knows that one of the leading hotels in Guatemala City is operated by a subchief of the German Gestapo, and that through the blandishment of liberal credit and a well-stocked bar, he has sought to lure Americans and American flyers to this hotel, for the purpose of eliciting information and secrets which might have some value. The committee is advised that in the German Legation at Guatemala City are no less than 14 short-wave receiving sets. In the Republic of Guatemala are about 18 serviceable airports which would accommodate bombing planes, as well as combat and other types. The committee is given to understand that 5 of the 18 airports belong to Nazis. Attached to the Nazi Legation in Guatemala City at the present time are two expert air officers from the German air force. The Gestapo is extremely active among all people of German descent and of all generations in Guatemala, and have levied contributions for the purpose of making the Nazi propaganda activities self-sustaining. The committee is advised that the Gestapo has set up its own secret court system in Guatemala, and that violators

and offenders of Nazi law, Nazi regulations, and of Nazi philosophy are tried and punished.

G. BRAZIL

Of perhaps the greatest immediate interest to our country from the standpoint of both national and hemispheric defense is the United States of Brazil. That is a vast country, in area larger than our own, but having a population only one-third as large. In considering Brazil, one should first examine its population and immediate past history.

Brazil only emerged from the rule of its emperors in 1889. It was in 1888 that slavery was abolished. Until 35 years ago, Rio de Janeiro was so unhealthy that two out of every three white immigrants died within 6 months after their arrival, and usually of the yellow fever. A young Brazilian doctor who had been trained in the United States led the fight to eradicate the yellow fever plague, first in Rio and then elsewhere in Brazil. He is rightly a national hero. Since that time the cities have become healthful places to live and have grown into splendid modern metropolises.

In recent years, industry has taken root in Brazil and notably in the great city of Sao Paulo. These industries were established by German, Italian, French, and other European nationals, or their descendants, and more recently by Japanese. Sao Paulo, in addition to being the center of the coffee and cotton industries, is a beehive of industrial activity. The State of Minas Geras contains fabulous mines of various highly strategic metals. Rio Grande do Sul is a fine cattle country, and incidentally is the home State of Brazil's President (and benevolent dictator) Getulio Vargas, and his Foreign Minister Oswaldo Arranha (formerly Ambassador to the United States).

Most of the population of Brazil is concentrated near the sea coast, necessarily because land transportation inland (except in the Amazon Basin) is exceedingly difficult, and lateral transportation along the coast is almost impossible except by sea. It is also concentrated near the coast because the tropical jungles in the interior are exceedingly trying upon the constitution and health of the white man.

"The Amazon" is a misconception. In Brazil, "The Amazon" is called Los Rios dos Amazonas—the Rivers of the Amazon. It is not one, but a number of great rivers which join and intertwine into a main stem that is more akin to a twisted mass of grapevines than anything else. There is no central trunk stream—but rather it is an enormous mass of water moving slowly to the sea through intertwining and deep channels, separated by large island masses. It is navigable to near its headwaters in the distant mountains, which surround the great basin. It is the home of several hundred thousand persons who seldom set foot on land. Contrary to common belief, the equatorial jungle of the Amazon will not provide adequate food for the existence of any but the members of the numerous wild Indian tribes. Diets must be fortified by imported foodstuffs.

The journey from Belém do Para, the seaport of the Amazon Basin (population 300,000, 90 miles south of the equator), to Manaus, 1,000 miles westward and the center of the rubber-gathering industry (population 80,000) takes from 2 to 4 weeks by oceangoing or river steamer. That journey is accomplished in one daylight flight in a seaplane. To Benjamin Constant, another 1,000 miles, adds addi-

tional weeks to river travel, and is accomplished the second day by seaplane.

The northern rim of the Amazon Basin, extending from just back of British Guiana and Venezuela into the Province of Vichada in Colombia, is a vast plains area, flat and relatively treeless. Reports indicate that in this area, which extends to within 150 miles of Bogotá, Colombia, and 550 miles of the Panama Canal, there are areas as large as 5 by 10 miles that are perfectly flat and entirely suitable for landing the largest airplanes. Near the eastern end of this plains area is a town called Boa Vista on the Rio Branco, which contains a German monastery, a good radio station, and a Diesel electric power plant. At the western end of this area, in Colombia there are about 30 recognized airplane landing strips and an equal number of places in addition where landings can be made. It is understood by the committee that the former chief pilot of the Scadta line, a German Army Air Force reserve officer, has settled with one or more of his aides, and established an airport, in this area, possibly equipped with radio. This plains region is perhaps a thousand miles long and from 1 to 200 miles wide. It can be reached without serious difficulty by 4-foot draft river steamers of which there are many.

The bulge of Brazil is, of course, the landing and take-off point for flights to and from Africa and Europe. Here we find the now well-known cities of Natal and Recife. The former line Air France has extensive airport and radio facilities here, as has the German line Luftansa—now used by Lati. Additional radio directional equipment is installed on the rocky island Fernando de Noronha, approximately 200 miles off-shore in the direction of Dakar, Africa. This equipment is owned by and is believed to be still in operation by Air France, which can hardly be said to have remained under purely French control.

The bulge of Brazil was not visited by this committee, but reports to it indicate that large areas here are suitable for emergency landing of aircraft, without material improvement other than might be accomplished by necessities of agricultural pursuits.

At numerous airports and strategic locations in Brazil, Axis-controlled air lines had accumulated large stocks of aviation gasoline and oil, in a number of cases far beyond any possible requirement of their commercial aviation. Through a policy instituted by the Brazilian Government, in recent months these stocks are suffering an enforced reduction to normal proportions. Just how many hidden stocks may remain is problematical, but attention is directed to this matter as well. It must be recognized, however, that there are numerous rivers emptying into the ocean along the 4,000-mile coast line of Brazil that are of sufficient depth to accommodate modest oceangoing vessel for considerable distances upstream. The delta of the Amazon is 150 miles wide, with several good channels, and the river is navigable for 1,000 miles to Manaus for ocean vessels.

There are other large flat areas, free of trees, and many places where fuel stocks might be cached nearby. These facts are receiving careful consideration and investigation, but the importance of the bulge of Brazil, from the standpoints of both commercial aviation and defense cannot be overestimated, particularly in view of the facilities now still available to, and long the property of, Axis-owned air lines.

While there is strong evidence of German efforts and influences in Brazil, and considerable organization in progress, those influences are not in such apparent strength as in some other Latin-American countries. The reason for this seems to be in the fact that the "pure Aryan blood" doctrine of the Nazis is difficult of acceptance in Brazil, presumably in view of the fact that pure Aryan blood is in the small minority only. The Portuguese, original colonists of Brazil, mixed rather freely with the African Negro slave population and admixtures of various bloods in varying proportions continue. Furthermore, Brazil as a whole is highly nationalistic and proud of its wealth and accomplishments, and while there is considerable admiration for the German war machine in military circles, there appears a real determination not to become the puppet state of any power, European or otherwise.

SECTION 3

CONCLUSIONS

1. At war's end, when the United States and other competitive nations like Great Britain, France, and Germany will be on a plane-production basis of such proportions as to impel those nations to seek outlets for plane production in the hope of averting severe dislocation and severe unemployment in the aircraft industry, it is obvious that these nations will make a competitive drive for the skyways of Latin America and transoceanic service.

2. It behooves the United States Government, its agencies which are identified with the development of civil aviation, and the aircraft manufacturers of the United States, to cooperate in a broad-gauge and comprehensive program which has for its objective the promotion of international air-line service between the United States and Latin America.

3. International air-line service, whether for tourist or business purposes, will grow in direct proportion as it is made safe and convenient.

4. Safe air-line operation from the United States to Central and South America requires planes that are of sufficient capacity and of sufficient motor power to provide convenience, speed, and the ultimate in safety over rugged and sparsely settled terrain.

5. Next to the competency of the plane, one might rate the competency of the flight personnel, and it is suggested that, in consideration of the legal restrictions which may be imposed by South American countries upon the use of flight personnel of United States citizenship, a program be initiated forthwith designed to bring ambitious young men from Latin American republics to the United States for complete and thorough training, so that they may become not only competent pilots but wed to the traditions of this hemisphere.

6. In view of the fact that South American republics have made relatively little progress in the field of weather observation, weather forecasting, and weather reporting, the matter of providing international air operations with adequate weather service should receive early and careful attention.

7. The cause of safety is not served until a plane traversing the skyways is brought safely to the land. This means airports that are

adequate in size for the larger planes which can be expected in international air line operations. Such airports must be equipped with every modern facility conducive to safety. The committee is not insensible of the fact that the budget allowances of South American countries for airport development will not permit of extensive development. It is entirely possible that, through the instrumentality of loans, a joint program can be worked out for the development of airports, which will have due regard for the sovereignty of Latin American countries. The elements of nationalism, sovereignty and independence in every case must be thoroughly recognized. The committee should observe at this point that in the making of loans there should, in every case, be some consideration so that it is not made to appear that this aid comes in the nature of a gift. For an agency of the United States to develop a program which in the slightest degree might affront the pride and sense of nationalism of our Latin American cousins might prove hurtful rather than beneficial.

8. *Night flying*.—The distance from New York City to Buenos Aires is approximately 8,500 miles, and it can be traversed by surface transportation in a period of 18 days, as compared with 87 hours elapsed time today by plane. This indicates that further improvement can be made in annihilating space by means of night flying. There is today virtually no night flying in Latin America, because airports are not adequate for the purpose, nor are they equipped with lighting and other indispensable night landing facilities. If and when night flying is undertaken, it is quite obvious that the United States must render technical and financial assistance for the purpose of installing, in the interest of safety, adequate navigational systems along international airways which may be flown at night.

9. *Foreign international air lines*.—The committee was thoroughly convinced of the necessity for supplanting by American operation, the trans-Atlantic operation of the Italian Government-owned air line "Lati", in the interest of hemispheric and national defense, and made haste to present this view to our governmental agencies concerned. The committee presented similar views concerning the German interests in the several Condor operations.

Since making these representations war has been declared between the United States and the Axis Powers, and between several Latin-American countries and those powers. These necessities above stated, immediately became imperatives. It is, therefore, absolutely imperative that our State Department, together with others in authority, be directed to complete negotiations without further delay, to the end that the Italian operation Lati be supplanted with United States operation and equipment, and that the Condor operation be scrupulously degermanized, and, furthermore, that negotiations be completed for the use of United States capital and equipment to replace German and Italian capital and equipment on all South-American air lines.

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