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Analysis of public relations factors involved in the reopening of the airport, Newark, New Jersey, November 15, 1952

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ANALYSIS OF PUBLIC RELATIONS FACTORS INVOLVED IN THE RE-OPENING OF THE AIRPORT, NEWARK, N.J. NOVEMBER 15, 1952

by

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PREFACE

This is not intended as a technical treatise on any of the subject matter covered, nor is it presumed that all the answers which should have been considered in the re-opening of the Newark Airport are here. This is designed, rather to present, from a public relations point of view an analysis and appraisal of public relations factors involved in the re-opening of the airport.

The manuscript has undergone several typings, and I am deeply grateful to officials of the various government and private organizations who have so generously provided me with relevant and pertinent materials, particularly the Newark Chamber of Commerce, the National Air Transport Coordinating Committee, the New York Port Authorities, and the Newark City Government.

My grateful appreciation to my wife, Marjorie Babcock Crowley, who has so patiently read and reread the manuscript and has given me the courage and stimulation to completion of it.

It is also hoped that the material presented here will stimulate further reflection on the part of those whose responsibility it is for fostering the goodwill and patronage of the public for the advancement of air commerce.

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INTRODUCTION AND STATEMENT OF THE PROBLEM

On February 11, 1952, after the third tragic air disaster in the city of Elizabeth, New Jersey, within 57 days, the Port of New York Authority ordered the immediate suspension of all air operations and activities at the Newark Airport. The closing of the airport became the subject of heated controversy among various interests and organizations, social, economic, and political.

The first of the three accidents that led to the airport's closure occurred on December 16, 1951, when a Miami Airlines C-46 converted Curtis Commando crashed into the heart of Elizabeth, New Jersey, killing all fifty-six persons on board, including the crew. The second crash occurred on January 22, 1952, when an American Airlines two-engined Convair, attempting to make an instrument landing in inclement weather, crashed into two homes in the residential section of Elizabeth, killing all its passengers, among them Ex-Assistant Secretary of War Robert Patterson and six tenants of the aforementioned homes. The third crash occurred on February 11, 1952, when a National Airlines plane, plunged in Elizabeth into an apartment house killing 4 tenants, twenty-six passengers including the crew, and injuring forty-four, mostly passengers of the plane. In all the three accidents, one hundred and nineteen persons lost their lives.

Nine months later, on November 15, 1952, notwithstanding public demand to have the airport closed permanently or moved to another location, the airport was ordered re-opened and flying operations resumed on full scale again.

The re-opening of the Newark Airport presented a problem in public relations which involved not only factors of safe operations, but also the human element and the economic welfare of the community.

It is the purpose of this paper to evaluate and analyze, from the public relations point of view, the methods, procedures, and techniques utilized in the re-opening of the Newark Airport. An attempt is further made to present a series of recommendations for (1) the ultimate reconciliation of all publics involved--the community, the residentiary public, and the economic interests within the vicinity of the airport, and (2) the reassurance given to Elizabeth and contingent residents that all steps within human cognizance have been undertaken to secure the safety of all concerned.

It is further desired to make this a helpful study which may be applied to like or similar situations occurring elsewhere.

CHAPTER I

THE NEWARK AIRPORT

The Newark Airport is situated in the state of New Jersey between 40 degrees 30' & 45" latitude and longitude 74 degrees 00' & 15", approximately 8 miles from New York on the Pulaski overhead highway, United States route 1. It is about one and one-half miles southeast of the main business district of Newark, New Jersey. Exits from the Pulaski highway make the airport most accessible to the motorist and the pedestrian.(1)

Construction was started in 1928 and it was officially opened to air mail service on September 15, 1929.(2) The post office department furnished facilities and personnel to handle all airmail. The opening expedited the delivery of mail to the metropolitan area. Prior to this all airmail had to journey overland to the city from Brunswick, New Jersey, the terminal in use at that time. This change of destinations in the New York area certainly facilitated all deliveries of airmail service.

The original runways were North-South and East-West. They were of sufficient length to accomodate the planes of that period. Colonial Lines were the civilian operators of the contract airmail service from Boston to New York City. They also operated the service to Albany, New

(1) "Newark," Encyclopedia Americana, Vol.XX, p. 257.

(2) Civil Aeronautics Airports Division, Bulletin, (Washington: Government Printing Office, 1952), p. 4.

York, Montreal and other parts of Canada. The mail south to Washington to Atlanta and all points west used the Newark Airport. A shuttle service from Newark to Brunswick, New Jersey, connected with mail planes to Pittsburg and Cleveland with the mail planes west to Chicago to California and all intermediate points.

The first passengers were carried by individual charter planes to accomddate joy riders and sightseers. Early in 1930, Colonial Lines inaugurated the first passenger service between Newark and Boston, Massachusetts, utilizing the tri-motored Ford airplane to that end.

During the intervening years, various companies started passenger service to the south and west, connecting with intermediate points. As aviation progressed, airplanes and facilities kept abreast with the air development and grew to meet the demands of air travel.

By leaps and bounds and with the aid of government subsidies, airmail, and local financial assistance, the airport grew in size and prestige. It kept pace with aeronautical developments of industry and transportation until the second World War. Recognizing the advantages defensively and offensively to the airplane and the need of up-to-date bases for its utilization the Air Force had occasion to acquire the airport for its use.

The United States Air Force made arrangements to occupy the port of Newark together with the airport and all facilities to further its mission and to expedite to a successful termination all hostilities. The purpose of the Air Force in occupying the Port of Newark was to ship, receive, and process, airforce supplies, airplanes and equipment for use of United States troops in overseas assignments, both in European and

Asiatic theater commands.

At the peak of the war, the Atlantic Overseas Command processed for shipment over 1000 aircraft per month, plus the accompanying complement of supplies as needed by overseas commanders to win the war. These abovementioned supplies utilized the port water and harbor facilities to directly ship by tanker through the adjoining port of New York. The port of Newark was ideally located for the fast shipment of parts, etc., which arrived and were quickly and speedily transferred from rail to marine to air, being integrated at one and the same place. This big advantage, whether for peace or war purposes, made the Newark Airport an economic asset to the community.

With the cessation of hostilities, the demands of business for the commercial use of the Newark Airport were acceded to by the Air Force in 1946.

Upon return of the airport and its facilities to the city of Newark, the physical layout of the field comprised three well-developed, efficient, modern equipped runways ready for the immediate use of the airlines. The runways were North-South; East-West; North-East; and South-West. The latter, the North-East-South West was the instrument runway, and was utilized for all landings when weather conditions and visibility prohibited usual or contact flying. This runway had every known device and aid whereby the necessary assistance was given to the pilot to insure his landing safely, which consisted of an I.L.S. (Instrument Landing System) and a G.C.A. (Ground Control Approach). The Instrument Landing System was augmented by the radar scope whereby the control tower gave verbal instructions to the pilot to aid him in

correctly guiding to land the plane safely. This comprised his position, height, distance, weather and visibility from the runway. Ground Control Approach is accomplished entirely by radar observations of the plane from the tower control by two-way radio.(3)

In addition, there was installed by the Airforce a high voltage frequency lighting directional aid together with neon approach lights to the end of the runway to implement the safety factor during the landing approach. The majority of pilots, when questioned, were of the opinion that Newark Airport possessed one of the best landing instrument runways in the country. (The author can testify to its qualifications by his own personal experience, having had occasion to use it several times, when stationed there during the war, visibility being very low to zero.)

By 1952 the Newark terminal was a bee-hive of aviation industrial activity, economically, politically, and socially, with all of the modern facilities for the needs of successful air transportation.

Newark, by location, was ideal, geographically, technically and economically for the air transport demands of passengers, operators, and the other publics.

From the aviation aspect, Newark had every known and modern air navigation aids, communication facilities, visual pilot aids. In fact, from the standpoint of safety, Newark ranks among the leaders. It has an up-to-date complete weather forecasting station plus the usual radio range and radar components.

(3) Jerome Lederer, "Notes on Airport Safety," Flight Safety Foundation, Inc., Address delivered before the AOC, Los Angeles, California, March 21, 1952.

Its terminal buildings, shops, restaurants and the like are of the best. Its proximity to rail, bus and road travel is without competition.

Its ready accessibility to cargo and freight shipments is an advantage possessed by few airports. The industrial manufacturing area finds the convenient air transportation of its products an economic asset in competitive markets.

It must be clearly noted that prior to the building of New York's LaGuardia airfield within the confines of the city, this pioneer airport was rated one of the busiest in the world. The major airlines- Eastern, United, American, Trans-World Airlines, and National- are housed there and daily operate.

It is true that the instrument approach runway to the airport necessitated low flying directly over the city of Elizabeth's main business and residential sections. During inclement weather conditions, the wind blows practically from a Northeast direction; consequently as planes land into the wind, this required an approach over the heart of Elizabeth. However, at the time, the Airport was considered by all as a "safe airport".

Newark Airport Employment:

A census of employment of personnel associated directly with the airport conducted by the Port of New York Authority in 1951 revealed that 2,335 persons earn their living there.

The bulk of this employment stems from aeronautical functions: traffic, flight, maintenance and ground personnel. The remainder represents employment through related activities, such as ground trans-

portation service, concessions, federal government units, buildings and grounds. The total payroll, airline, and non-airlines for persons employed at the airport during 1951 is estimated at $11,365,000.

Airport employment is stable in volume, and appears to be relatively unaffected by seasonal swings in air traffic. During 1951, employment reached a low of 2,261 and a high of 2,406.

Over 83% of Newark personnel reside in New Jersey. Most of them make their homes in Hudson, Essex, Union, and Passiac counties and a considerable number in Morris, Middlesex and Monmouth counties.

Employment generated by the Newark airport does not stop at the boundaries of the airport premises. Hotel operators in larger cities of Northern New Jersey estimate that from 10 to 20% of their receipts originate from flight crews and transients entering the area by way of Newark Airport. This percentage is large enough to affect hotel employment as the business volume of food supplieys, laundries and other establishments servicing the hotel trade.

The 14,275,000 gallons of aviation gasoline and oil dispensed during 1950 at Newark Airport, having a retail value of $4,710,000 is of course, reflected in Northern New Jersey's distributing industry.(4)

THE CITY OF NEWARK:

The city of Newark, the administrative seat of Essex County, is the largest and most prosperous in the entire state. It has a dense population of 553.1 persons per square mile. As of 1950, the city's

(4) An Economic Evaluation of Newark Airport, Newark Fact-Finding Committee, (Newark, New Jersey, 1952), p. 29.

population is 438,776. The estimated size of greater Newark in 1951 is 1,043,759. Newark's trading area caters to about 3,760,594.people.

Newark is the terminal city for the following railroads: Pennsylvania; Central New Jersey; Erie; Deleware-Lackawanna, and Westernn; Baltimore & Ohio; Hudson & Manhattan. It ranks highest in the number of railroad tracks per square mile in the country, with its average of twenty-six.(5)

Jersey City, Elizabeth, Bayonne, Orange, and Patterson have a combined population of 732,936, all within the trading perimeter.

Its nine local banks possess assets of $ 1,053,872,000 with total deposits of $ 960,268,000. Auto registrations in the city proper are 113,949. Many and varied industries make Newark their headquarters, such as: electrical appliances, auto parts, textiles, alloy wire, chemicals and the like. General Electric, Westinghouse, Weston and Western Electric are among the many manufacturers who have main offices located in Newark, not to speak of the beer and beverage interests situated in the city of Newark.(6)

THE CITY OF ELIZABETH:

The city of Elizabeth has an estimated population of approximately 114,500, mostly native born. The predominating nationalities of foreign extraction are Irish, German, Italian and some Polish and Lithuanian.

It is an ideal industrial community with its temperature averaging 63 degrees F. and the annual rainfall being about 14 inches. Assessed valuation of the city is estimated at $142,000.000.

(5) Moddy's Manual, Government and Municipal, Moody's Investors Service (New York, 1953), p. 768.

(6) Ibid., p. 768.

The city proper has 286 establishments employing 35,426 men and 13,267 women who receive annual wages averaging $ 80,650,300. Its products are valued at $ 420,360,902, principal of which are sewing machines, copper wire, petroleum and products, paper products, printing presses, beds, marine aviation, electric fans, generators, paint and printing ink.

On the financial side of Elizabeth, it has seven banks whose resources amount to $ 177,000,000 and deposits close to $ 162,000,000. There are 9 savings banks and loan associations in the city.

Elizabeth is on the main line of the Pennsylvania Railroad, the Baltimore & Ohio, and the Jersey Central. It has a direct bus service to New York. It has two prominent hotels, two good-sized newspapers, seven theaters, and four adequate hospitals.

The city of Elizabeth combines all the conveniences of the city with the advantages of suburban life. It has a considerable area of beautiful residential districts.(7)

(7) Encyclopedia Americana, op. cit., p. 248.

CHAPTER II

THE THREE AIR CRASHES

The three air accidents which brought about the Newark Airport's Closure on February 11, 1952, are described as follows:

A. THE FIRST CRASH:

In the afternoon of December 16, 1951, a Florida-bound Miami Airlines plane fell flaming into the Elizabeth River 7 minutes after leaving the Newark Airport. All its passengers and crew, fifty-six in all, perished.(8)

The plane, a C-46 type, had left the airport several hours after its announced time of departure. It was delayed because of repairs. The engine burst into flames right after the take-off, and it was while the pilot was maneuvering to land that the plane crashed.

The burning plane came low over a heavily-populated section of Elizabeth, sheared part of a roof of an abandoned frame dwelling at Westfield Avenue, threw up a shower of bricks as it smashed into a former pumping station of the Elizabethtown Water Company, and then dropped into a 25-foot deep gully where the river, only a creek at this point, flows between the old water works and a junkyard.

The plane broke into pieces as it landed upside down on the creek, forming a 20-foot pyre which blazed fiercely. Most of the bodies were burned inside the plane but some were flung into the creek which had been

(8) New York Times, The (New York Times Publishing Company, New York), December 17, 1951, pp. 1, 22.

ice-lined because it was then winter. A part of the fuselage with its landing wheel pointing skyward and a sheared-off wing section were recognizable.

Thousands of persons saw the distressed plane maneuvering for a place to land and police received more than a score of calls while the plane was still aloft, but nothing could be done about it.

Hardly was the plane aloft when the pilot called the field for clearance to land again, reporting its right engine was afire. As the pilot struggled with the controls trying to head back, a wing fell off. The airliner tilted at a crzy angle and headed in low toward the river gully. It skimmed over the roof of the Alexander Hamilton High School and crashed a few hundred feet from the city courthouse.

Officials at the Newark Airport testified during the investigation that the only trouble reported by the plane personnel before it took off was that its heating system was not functioning properly. The supervising agent for the Civil Aeronautics Administration, Mr. Farinacci, said, however, that he didn't believe that it could have been the cause of the accident.

Three reports concerning the plane in flight had been made by the men in the tower to the field officials. The first message was sent through two minutes after it took off, then at the time with a smoking right engine. The second message said the pilot had tried to make a left turn in his attempt to return to the Airport. The third report said that the plane had crashed.

The investigation sought to determine whether the non-scheduled war-surplus airliner was inspected properly before it took off.

Civil Aeronautics Administration Investigation Report:

The primary cause of the C-46 aircraft of the Miami Airlines which killed all occupants was motor trouble. The right engine of the plane caught on fire on the take-off resulting in loss of power so that the pilot was not able to return to the airport and had to make an emergency landing in the city of Elizabeth, New Jersey, on the 16th of December, 1951.

Veteran investigators from the Civil Aeronautics Board searched through the wreckage, trying to ascertain the cause of the failure of the right engine. According to the report there were ample indications prior to the take-off that the right motor was not functioning correctly, even though the log showed that the plane had just had a required periodic inspection as prescribed by Civil Aeronautics Administration regulations.

One such indication cited by the report was that "the right engine required twice as much oil as the left" at the time it was serviced at Newark by the line crew. Another sign was the presence of fresh oil on the cowl flaps. This all should have been noticed by the crew during the pre-flight inspection. The fresh oil smear should have definitely suggested the need for a thorough inspection to determine its source before further operation.

Reconstructing the flight the Civil Aeronautics Board report said that Number 10 cylinder on the right motor blew out and raw gasoline which normally was fed into it for controlled combustion burned freely in the open air.

Faulty Maintenance Seen:

Number 10 cylinder failed when hold down studs or bolt gave way from fatigue, "obviously, these nuts had been improperly installed."

Studs on Number 14 failed for the same reason, namely fatigue.

In addition, advice from the chief pilot on the ground did not help matters, relayed by the tower radio, and may have caused even more trouble. Due to smoke ensuing from the right landing gear well, the suggestion was made that the gear be dropped to put out the fire. This action had the reverse effect of slowing down the plane by reducing its speed on take-off with a full load, as revealed by subsequent examination.

The conclusion was that faulty maintenance was to blame for the accident. Likewise, the official report charged the operator, Miami Airlines, Inc., with over-loading the plane and charged its pilot training program in emergency procedures as being inadequate.(9)

(9) Civil Aeronautics Administration Journal (Washington: Government Printing Office), Vol. XIII, June 20, 1952, Number 6, p. 55.

B. THE SECOND CRASH:

In the afternoon of January 23, 1952, an American Airlines twin-engined Convair Liner carrying 23 persons including the crew crashed into a residential section of Elizabeth, killing all its passengers, among them Ex-Assistant Secretary of War Robert Patterson and six tenants in homes hit by the plane.

When the plane hit the houses, it sheared the roof and upper floor from a three-story brick building near the corner, and demolished a two-story converted garage just back of the structure and set fire to a white cottage next to the brick house. (10)

The pilot was in oral contact with the Newark Airport four minutes before the plane crashed. He was over Linden, New Jersey at the time, and was flying on a northeast direction for a landing, with a ceiling of only 400 feet and with a visibility of less than three-fourths of a mile. Up to 3:41 P.M. the pilot was in touch with the ground control system at the Airport, but a second later, the plane's image vanished from the radar screen.

Details of the last moments of the plane were: (1) that at 3:36 the radar control operator asked the pilot whether the messages from the control tower were coming in clearly. The pilot answered that they were loud and clear. The control tower relayed orders that the plane, Number 6780, was cleared for an approach on runway Number 6. The message also informed that the radar advisory would be furnished the plane for

(10) New York Herald Tribune, June 23, 1952, pp. 1-2.

Instrument Landing system on the localized frequency which was 110.3 megacycles. The Newark radar control tower had identified the plane on the precision airport radar scope while it was approximately 3 miles south of Linden, which is 9 miles south of the airport. The pilot acknowledged this transmission.

At five miles away from the Airport, the plane was on the glide path and 900 feet left of the course. At 4½ miles, the Newark radio operator reported to the pilot: "Coming back on course 400 feet to left of glide path good." At 4 miles, the radio operator called him again and said, "300 feet left and coming back on course;" then his next message advised the pilot he was on a course and 100 feet on the glide path with the courthouse 1 mile ahead. At 3½ miles out the radio operator sent the message: " Drifting 900 feet to the right of the course, ½ mf a mile from the courthouse," and at 3:44 P.M., he reported that the plane had disappeared from the radar scope. In a few seconds or so, the plane crashed.

All witnesses, officials and civilians alike, agreed that the plane's tanks must have exploded at the moment of impact with the houses. They testified that flames shot high from the damaged structures with simultaneous rapid spread of the roaring fires.

Witnesses were not sure of the angle of descent, but firemen believed it must have come down at a steep angle, its 90 feet length and 74 foot wing span almost completely covering the three structures. The wreckage was too hard to recognize except for one engine just outside the brick apartment house.

The plane, it was obvious, attempted to make an instrument landing through rain and fog while being monitored on surveillance radar sets.

This system was designed to permit a pilot to see whether he is on the proper approved path to an airport by watching two needles in an indicator. One needle shows the pilot whether he is lined-up correctly with the runway and the other is supposed to indicate to him whether he is on the proper glide path- not too high or too low at any specified moment.

Another landing system, ground control approach (G.C.A.) was available but was not being used. In this system a controller on the ground watches his radar scopes and talks the pilot in by telling him over two-way radio exactly where he is and what to do to land without difficulty.

Civil Aeronautics Administration Investigation Report:

With another crash to solve, the investigators were baffled and had no explanation to offer that could affix on any one factor. The only conjecture that the accident specialists have to suggest after months of intensive investigation, is the possibility that ice might have formed in one of the carburetors in its critical decent to the runways.

Carburetor icing, the nemesis of all pilots, could have caused the malfunctioning of the engine to account for the plane's erratic course in the last minutes.

To support this contention, the board cited the plane's sudden yawing to the right; its disappearance from the radar scope, indicating a sharp swerve and unforseen loss of altitude. Eye witnesses described what sounded like back-firing before it crashed. A possible field of speculation could be that the pilot inadvertently turned at the wrong speed, causing a stall and out of control at low altitude prohibiting

recovery within the time and height limits. A 30 degreee bank raises the stalling speed approximately 50% and if the pilot does not have that additional speed for the maneuver at the moment of execution a stall and loss of control results. The sudden surging or full power by the other motor to correct the situation by the pilot may be what the witnesses heard, "loud bangs with a roar."(11) The Civil Aeronautics Administration investigators were forced to admit that the true cause or causes of the crash have not been, as yet, ascertained.

(11) Civil Aeronautics Administration Journal, op. cit., p. 55

C. THE THIRD CRASH:

At 12:20 A.M. of February 12, 1952, the third air tragedy in Elizabeth occurred when a National Airline plane, carrying 70 persons crashed into an apartment house killing 4 tenants, 26 passengers including the crew, and injuring 44, mostly passengers of the plane.

The tragedy occurred with the same square mile as the other crashes. The plane, a DC-6 bound for Miami plunged into the four-story brick building when most of the residents were fast asleep.(12) It sheared off half a floor of the building, struck some trees, then crashed. The crash lit the skies for miles around. Passengers sitting in the rear of the ill-fated ship were saved but most of them received injuries. Explosions in the plane and the building seriously hampered rescue workers who toiled desperately to get some of the survivors. The bulk of the plane barely missed the Janet Memorial Home at 700 Salem Avenue, an institution for children of broken homes. This orphanage home houses 48 children and 12 adults.

After the plane hit the apartment house, located in a fashionable residential section of the city of Elizabeth, two sections of it landed in the playground of the children's home.

Investigations disclosed that the plane crashed two minutes after it took off from Newark Airport and had been in trouble practically from the instant its wheels left the runway. The weather had nothing to do with the crash, as it was a clear, moonlit night.

(12) New York Times, February 12, 1952, p. 186.

A record of the plane's take-off was as follows: The pilot called for clearance at 12:13 A.M. and was cleared to runway Number 24. Following engine run-up, the pilot requested take-off clearance which was granted. The aircraft took off at 12:18 A.M. One minute later the air traffic controller on duty in the tower watching the plane's take-off thought it appeared to lose altitude. The controller then contacted the aircraft and asked if everything was all right. The pilot replied that he had lost an engine, meaning that one engine was not functioning or working properly. The pilot was told he was cleared to land on any runway he wished. He was told that he would be kept advised on the wind, then holding south at 5 miles per hour.

The pilot evidently could not maintain flight on the take-off and the plane lost altitude until it finally crashed.

Veteran pilots pointed out that in the earlier accidents, that dropped destruction on Elizabeth, the pilots had lost control of their aircraft. They pointed out, however, that the pilot rode his ship to the last second in a manner calculated to save a maximum of passenger lives. Automatic recordings of the control tower's oral directions to Foster made it clear he had tried to get back on the runway after one of his engines quit. The position of the wreckage indicates that when he found that it was impossible to return the plane on the runway, he figured out the best way to hold the casualties to a minimum.

Civil Aeronautics Administration Investigation:

With the marks of two unsolved crashes nearby, Federal, State and local officials acted to ascertain the causes of the third crash in 57 days all occurring in Elizabeth, New Jersey and also taking off from the same airport.

Immediately upon take-off, the pilot reported loss of one starboard motor. The pilot apparently jettisoned some of his gasoline load prior to landing (law prohibiting landing with the allowable gasoline load for take-off). This would increase his lift, when with a downward motion the giant craft plunged into a large apartment house.

Conclusions drawn were that two motors failed on take-off both on the same side. Investigators checked a report that inferior grade of gasoline when gassed up, another instance of faulty maintenance. From the report it was learned that one of the engines had considerable time since installation.(13) It is a well known fact that old motors require more than the usual inspection and that as they get older the chances of failure increase. The crash at Puerto Rico was the result of an engine having reached the limit of its usefulness and increased the chances of failure.

In the time element with the tension, complexity of procedure under stress, and multiplicity of gadgets the pilot does not have the time to react to the emergency notwithstanding all the knowledge he has attained with experience.

It is about time that operators and designers take cognizance of the human limitations and factors involved and make allowances physiologically and psychologically that the human pilot has a chance to accomplish his duties and responsibilities to the cargo he carries, whether passenger or freight, and that he was trained and adjudged qualified to perform. The burden placed upon the pilot of the present modern airliner for safety seems almost impossible under emergency conditions.

(13) Civil Aeronautics Administration Journal, op. cit., p. 55

D. CONCLUSIONS:

It is important to note that the first crash occurred in good weather, the second on a rainy, foggy afternoon, and the third in good weather. The Civil Aeronautics Administration findings revealed that the primary cause of two accidents, namely the first and third, was engine trouble, attributed, therefore to faulty maintenace. The cause of the second crash has not as yet been exactly determined but indications again point to weather and maintenance considerations as the principal causes. There was no adverse report on any of the three crashes pointing to faulty design and location of the Airport, nor to its control operations and procedures.

CHAPTER III

PUBLIC REACTION TO THE CRASHES

The three tragic crashes which occurred with the area of one square mile in the city of Elizabeth within a space of only 57 days and which brought a combined death toll of 119, were received with indignation and contempt by residents of Elizabeth and adjoining vicinities. "The Newark Airport must be closed permanently," was the hue and cry heard everywhere in the communities of Elizabeth and nearby areas.(14) The majority of the people, swayed by the force of emotion and public opinion, had aligned themselves with certain segments of the communities who maintained that the Airport "was a community menace."

CLOSING OF THE NEWARK AIRPORT:

But the New York Port Authority was not caught napping in mid-stream. For, even before the clamor to have the Airport closed crystallized into an outright demand the day following the third tragedy, it had ordered the closure of the Airport at 3 A.M., February 11, 1953, barely two hours after the crash. The closure was, however, made for "an indefinite period of time." In spite of this, public reaction continued to mount.

It would be interesting to note that prior to the last crash, a group of citizens from Newark, Elizabeth, Union, Hillside, and Linden, had tried to obtain evidence to compel the Port of New York Authority to stop the expansion program at the Airport. On several occasions, prior to the crashes, a group of families stormed the Newark City Hall and

(14) Newark News, December 17, 1951, p. 4.

petitioned that "immediate action be taken by the public officials to eliminate the noise nuisance and danger from low-flying planes." Mothers with babies in their arms came to give evidence of the terrible effect the noise had on them, together with their property, and the individuals living in the glide-paths area used by the planes leaving and departing from the Airport.

When their complaints rose to fever pitch, it became evident that a formal organization had to be set up to represent them before the authorities concerned.

Shortly after this, the Mayor's Committee, Incorporated, was organized. The committee was composed of representatives of the complaining areas and was headed by Mayor Nicholas Sylvester LaCorte of Newark. The committee continued to secure evidences by which to force the closing of the airport. It brought out formal complaints of homeowners, school teachers, hospitals, and residents within the glide-path area who demanded that "something be done" to close the Airport and move it to another location. It likewise appealed to Governor Alfred E. Driscoll, of New Jersey, to have the construction program stopped outright. Mayor James F. Kirk of Elizabeth took occasion to picture his city as one "under an umbrella of death."(15) Appeals characteristic of these passed from one person to another; shall we go on, unheeding the consequences of these tragedies, in dread of the possibility of others to come? Shall we be victims of more hours of horror, flame and death, the terrified searching for charred, dismembered bodies of loved ones amongst

(15) Elizabeth Journal, (Robert C. Crane Publishing Company, Elizabeth, New Jersey), January 23, 1952, p. 4.

the burned fragments of a plane? Shall we continue to live "under an umbrella of death"?

Prior to the last crash, a petition was laid by the people of New Jersey in the hands of the State Legislature. It seemed, that in the petition, the aggressiveness of the chosen representatives and some newspapers who had taken side with them was outdone by the people speaking for themselves. Everywhere, in churches, stores, offices, factories, clubhouses, and streetcorners, a good deal of petition-signing was accomplished. The petition form bore an attached slip containing challenging questions as introductions:

1. If you wish our records as the world's first city of commercial disaster enhanced, don't sign the petition.
2. If you think we should have more than two major disasters in 37 days, don't sign.
3. If you don't think Elizabeth will be a dead city as soon as the Port of Authority gets through with its buildings and moving LaGuardia to Newark, don't sign.

But, if you think we have had enough accidents, deaths and crashes that are damaging to the city, if you think we have had enough of disaster to last us for generations, Sign Up!

Along with this petition signing there was a questionnaire distributed to residents of affected areas. To date, however, results of this poll survey have not been tabulated or announced publicly. (Sample of returned questionnaire appears in the Appendix-D)

Several aviation people and private citizens launched oral and written attacks on the Newark Airport operations as they were at the time of the tragedies and as the Port of New York Authority plans them for the future. One of these lashings was voiced by Captain David L. Behncke, of Chicago, former president of the Airline Pilot's Association. (16)

In startling, sometimes almost terrifying terms, Captain Behncke declared that longer and better runways as proposed at Newark Airport "will only intensify noise and increase danger." He characterized airports such as Newark as "jig-saw-fitted" into their surroundings, completely outdated and suitable only for school flying, small plane operation, feeder airline or air freight use and ferry flying. "Such fields," he said, "should be connected by air taxi service to main trunk line terminals away from densely populated areas."

Behncke likewise maintained that the impetus of wartime aircraft development in today's modern airline equipment, the development of the jet and the turbo-jet-powered airline planes, both the runway pattern and the location of the Newark Airport "must undergo a drastic re-examination and equally drastic changes must be made." He called it a "gross mistake, a licentious waste of public funds," to add more dollars to the Newark Airport developments.

The former Airline Pilot's Association president said "there should be a sound public relations program to bring to light the rather close relationship between agencies such as the New York Port Authority and the Civil Aeronautics Administration Board." Concluding rather bluntly, Behncke said that only such a program can cope with the "high-handed methods common to these types of bureaucracies."

(16) David L. Behncke, " The Newark Airport and Its Neighbors", Newark, N.J.

CHAPTER IV

PREPARATIONS MADE TO RE-OPEN AIRPORT

Scarcely a week after the closing of the Airport, however, a counter clamor to have air operations resumed reverberated throughout the vicinity from various quarters of affected publics, among them the airline employees, airline companies, business and industrial concerns, and even from non-profit organizations. These publics underscored the fact that social and economic retrogression was beginning to be felt in the communities. They maintained that chaos and confusion had begun to wreak destruction; that if the closure were lifted, it would mean economic and social disaster to the areas affected. They pointed out that the Newark Airport was a vital key to the communities prosperity and well-being.

As always, in a question or issue at stake, there are two sides involved. The interested parties, for and against the re-opening or the closing of the Airport as the premise might aptly be put, in this case, conducted a series of surveys, hearings, and investigations of their own, aside from those conducted by government organizations and agencies.

Principals that sought the Airport's eventual re-opening were the Newark Chamber of Commerce, representing various business, industrial and commercial establishments in New Jersey state, particularly northern New Jersey, and the National Air Transport Coordinating Committee representing all leading commercial airlines in the country.

The faction interested in the Airport's permanent closure was composed of some citizens from Elizabeth and Newark and adjoining areas,

and represented officially by the Mayors' Committee, Incorporated.[17] They constitute the supposedly minority group although they represent only 4 out of 100 citizens opposed to the Airport's re-opening. It is not to be inferred, however, that this group, led by the Mayors' Committee, Incorporated is led by a political machine. Rather, this group has taken a stand, with the highest of motives and as civic-minded citizens interested in the welfare of their respective areas.

A. NEWARK CHAMBER OF COMMERCE:

On March 15, 1952, the Board of Directors of the Newark Chamber of Commerce approved a committee proposal that a questionnaire be devised and sent to all Chamber members to ascertain the economic affect of the "untimely shutdown."[18]

The questionnaire was designed as a tool for use in a survey to (1) determine the normal use of commercial air transportation services by Northern NewJersey industrial and business firms, and (2) to ascertain what effect the cessation of commercial air transportation, as represented by the closing of the Newark Airport, had had upon business conducted in the area.[19]

About 3,500 questionnaires were sent to a representative cross-section of the community. The survey covered various types of business including manufacturing, wholesaling, retailing, construction, insurance,

(17) The Mayors' Committee Report, Newark, New Jersey, November 20, 1952, p. 1.
(18) Newark Airport Survey (Newark Chamber of Commerce, Newark, New Jersey), March, 1952, p. 1.
(19) Ibid., p. 2.

banking, hotels, transportation services other than air, and others such as real estate and advertising.

Findings of the survey revealed that the economic interests of Northern New Jersey municipalities were dependent upon the Newark Airport. "Write-in" votes representing comments on the returned questionnaires showed that 73% maintained that the airport "should be re-opened without qualification"; 23% declared that the airport "should be reopened as soon as it is possible to effect safety measures by all parties concerned" and the remaining 4% felt that the airport "should remain closed and moved to another location."

The Newark Chamber of Commerce, furthermore, felt the need of a separate survey to be conducted by an independent testing organization. A few weeks after it had conducted its own, it engaged a committee, known as the Newark Fact Finding Committee, to study the economic effects of the operation of the Newark Airport. On May, 1962, this committee released its findings. The report contained some of the facts and figures pertinent to an evaluation of the economic significance of Newark Airport to the Northern New Jersey-New York Metropolitan Area. The report showed the value of the airport as a source of employment, an estimate of the annual value of the airport's operation, and a summary of the dollar investment represented by the airport. It also showed how and to what degree the transportation services made possible by Newark Airport are employed in furthering New Jersey industry and commerce.

B. NATIONAL AIR-TRANSPORT COORDINATING COMMITTEE:

The National Air Transport Coordinating Committee, made up of top policy executives of the scheduled and non-scheduled airliners, private and corporate aircraft owners and operators, and all other elements of

civil aviation, meanwhile, launched a series of studies designed to produce a lasting reduction in the noise caused by aircraft arriving or departing from the Airport. It arranged for ground engine testing and run-ups to be conducted in isolated airport areas, to curtail noise annoyance to those living near the airport. At the same time, it established a complaint center through which reports of violations of established air safety rules and regulations coursed.

The National Air Transport Coordinating Committee, however, was quick to admit that adjustments needed in order to permit the air industry to maintain maximum service with a minimum of annoyance to its airport neighbors, particularly the communities, could not be solved overnight; that a solution must have to be found by the application of the nation's top aviation technical know-how and the whole-hearted cooperation of the public.

On May 14, 1952, the National Air Transport Coordinating Committee adopted an eight-point program to improve public safeguards and reduce noise involved in the operation of aircraft over populous districts of the congested metropolitan area of New York and adjoining vicinity. (20)

The program, as it concerned Newark Airport, embraced the following points: preferential runway system, take-offs and landing procedures, training flights, engine run-ups on the ground, installation of a two-way recording equipment, notification of pilots, new runway equipments, and other new flight procedures.

(20) Report of the National Air Transport Coordinating Committee, May 20, 1952, p. 4.

C. THE DOOLITTLE COMMISSION:

Pressure of public opinion and interest of congressional leaders led President Harry S. Truman, on February 20, 1952, to appoint a commission to study the problems of airport safety. Under the chairmanship of Lieutenant General James H. Doolittle, the commission, composed of experts in their respective fields of aviation, undertook an intensive study of all aspects of aviation that had a bearing on the airport problem.(21) The Doolittle commission examined the record and consulted with individuals and organizations concerned with civil and military aeronautics and airport management. It collected, compiled, and analyzed the views and opinions of some 75 municipal governments of United States cities on the past, present, and future of the airports in their communities, visited 30 of the major airports of the country and conferred with their local authorities. It also obtained the views of civic associations representing people who live in the vicinity of airports but are not otherwise related to the aviation industry.

The Commission found out that some of these groups were outspoken in their desire to be relieved entirely of the nuisance and exposure to potential hazard resulting from aircraft operations in their vicinity. The majority, however, were more moderate in their views. This bigger segment recognized that aeronautics is an essential element in the nation's economy; they asked only that "all possible steps be taken to minimize nuisance and hazard."(21)

(21) "The Airport and Its Neighbors," Report of the President's Airport Commission (Washington: Government Printing Office, May 16, 1952), pp. v-vii.

The Commission found that potential danger to people on the ground is confined almost entirely to the areas at the end of the airport runways; that to minimize this hazard existing airports should gradually concentrate their traffic on one or two parallel runways. The commission also urged that new airports be built on the single or parallel runway pattern incorporating cleared areas a half-mile long and 1,000 feet wide at the end of each runway, with two-mile-long approaches beyond these extensions, zoned to keep out any concentrations of people, or construction of buildings.(22)

Specifically, some of the aspects of the airport problem and its safety as it applies to the Newark Airport, considered by the Doolittle Commission, were the following:

1. Airport growth — Many airports are approaching saturation. A considerable number of them are badly "out of balance" due to deficiency in one or another of their facilities. This is particularly true with some of the large municipal airports which now have traffic control capabilities permitting a great many landings and take-offs per hour but whose runways and servicing facilities on the ground have not been kept apace with such changes. It would not be justified, therefore, to classify the Newark Airport under this category since prior to the tragedies, the control tower and the pilots never reported difficulties in the matter of landing and take-offs. The former runways were considered adequate under all flying conditions.

(22) "The Airport and Its Neighbors", op. cit., pp. iii-iv.

2. Military and Civilian Operation -- Airport use becomes more complicated when there is joint use by civil aviation and the armed services. This certainly is not conducive to ideal operation factors but in the interest of economy and civil defense, this may be permissible. It is to be emphasized, however, that full-scale military operations and civil aviation on one airport is impractical.

3. Community encroachment -- Many communities are approaching an impasse arising from limitations to safe operations on existing airports combined with physical inability to improve or extend them because homes or factories have been built close to ends of the runways. In the case of the Newark Airport, however, this problem does not apply as evidenced by the successful completion of the preferential runway which channels traffic away from the congested areas, particularly Newark and Elizabeth.

4. Zoning -- The Commission suggested two measures in connection with zoning problems. It recommended (1) that certain extensions or overrun areas be incorporated in the airport itself, and (2) that larger areas beyond such extensions be zoned by proper authority, not only to prevent the erection of obstructions that might be harmful to aircraft, but also to control the erection of public and residential buildings as a protection from nuisance and hazard to people on the ground. Fortunately, the new preferential runway at the new airport provides for adequate [illegible] zoning for present and future expansions. In the case of the east-west runway which is limited for use only under certain conditions of wind velocity and direction, zoning is impossible because on the west side big buildings occupy the area; on the east side is Newark Bay.

5. Federal assistance -- The Doolittle commission suggested that

airport projects be financed on a "matching basis", i.e., the Federal government should provide grant-in-aid to the communities concerned. It decried the ineffectiveness of the program saying that there was difficulty in synchronizing the availability of federal and local funds. This aspect of government relations which is a public relations problem is a matter of extreme importance. As it applies to the Newark Airport, the "matching basis" proposition is almost like "putting a square peg in a round hole! The question resolves on how important the city of Newark and the Newark Airport is to the national and civil defense, from the aviation point of view.

6. Runway design and length -- The Commission proposed the early acceptance of the single or parallel runway design of airport, with approaches over relatively clear areas. The single or parallel runway airport, however, has one shortcoming, i.e., difficulty of operation in strong crosswinds. But this can be overcome through pilot training techniques and the use of tricycle gears. It likewise emphasized that this hazard can be effectively solved by further development of special cross-wind landing gears.

7. Nuisance factors -- This phase of airport-neighbors relations was clearly emphasized by the Doolittle commission. The Commission pointed out that the public deserves a clear explanation of necessary airport procedures, accompanied by valid assurances that everything possible is being done to alleviate both noise and hazard. It cited as an example that incoming aircraft must sometimes, in low visibility, be "stacked up" near an airport under precise traffic control to prevent collisions. It also stressed the need for operators, pilots, and airport controllers

being indoctrinated to consider the people on the ground and to make every effort consistent with safe flying practice to reduce hazard and noise.

An interesting though quite amusing part of the report of the Commission explained that aircraft designers and manufacturers must also assume a share of the noise alleviation task. It added that if the manufacturer is given a penalty for high noise, or better yet, a premium for low noise level, it will stimulate competition in the development of quieter aircraft. It is difficult, in fact, impossible, to standardize humanity and this noise factor is more or less a psychological factor. What may be high noise to one individual may be low noise to another. It is only to be hoped that in the near future, science will be able to determine and find the solution to the elimination of noise and nuisance incident to aviation activities.

8. Standardization and trading-- Another vital aspect in the overall safety problem is to create standard training procedures and cockpit instrument design for all aircraft. Many accidents are caused by pilot error which can be greatly reduced by the above-mentioned factors.

The complexity of the modern airplane is now practically beyond the limitation of the human element, psychologically and physiologically. In the April, 1952 issue of Fortune, this complexity is underscored: " A mechanic during World War II could keep the electrical system in his head and take care of the engine at the same time. Now it takes an electronics specialist with years of background in radio and radar to keep the Sabre jet's electrical system in tune." An F-86, for example, has 495 vacuum tubes aboard, 86 things for a pilot to push, touch, turn, pull, or otherwise operate, and at least 100 other signals, dials, and indicators to watch (all this in a single motored pursuit plane.) This

situation is multiplied in multi-engine planes, of different types and makes, and with different control and operation systems. The B-36 bomber, for example, carries 2,143 vacuum tubes.

This complexity and multiplicity of instruments is most evident when the pilot is confronted by an emergency. No matter how experienced a pilot may be, the element of time does not allow him to utilize the measures necessary for the protection of passengers and equipment. It is to be regretted, therefore, that manufacturers and designers of aircraft today have given over-emphasis on gadgets and instruments of the plane, and in their desire for higher performance have neglected to make certain allowances for the physiological limitations of the pilot.

CHAPTER V

RESUMPTION OF ACTIVITIES

Even as discussions and deliberations regarding the problem were in full swing, the Newark Airport was re-opened on June 16, 1952, by the Port of New York Authority to the Army Air Forces and for limited use by the commercial airlines.(23) Because of the rigid regulations that were set up by the airlines, the Civil Aeronautics Administration, and the Port Authority, less than 10% of the planes made use of the Airport as compared with the normal number of planes that used it prior to the Elizabeth crashes. The original runway identified with the three crashes was used in limited scale; the remaining two were utilized according to wind direction and velocity and weather conditions.

The economic survey conducted at the instance of the Newark Chamber of Commerce, the eight point program offered by the National Air Transport Coordinating Committee, and the findings and recommendations of the Doolittle Commission appeared to have merged all interests into a powerful bloc that brought pressure to bear for the interest of the entire metropolitan area of New Jersey. The issue no longer revolved, it seemed, on the re-opening of the Airport, but upon full and complete resumption of operations, since all safety factors involved in the closing had been satisfied.

(23) Civil Aeronautics Airports Division Bulletin, op. cit., p. 4

On November 15, 1952, the Newark Airport resumed full and complete operations.(24) The unlimited use of the airport for civilian and military services was effected by the completion of a new and preferential runway as recommended by the general findings of the Doolittle Commission, and the subsequent closing of the original North-South and Northeast-Southwest runways.

The preferential runway diverts a maximum number of take-offs and landings over Newark Bay and the Kearney Meadows; eliminates all take-offs and landings over the center of Elizabeth and reduces to a minimum landings and take-offs over the Weequahic Park section of Newark and over Elizabethport and the Arthur Kill. (See accompanying diagram, Appendix D, page 88)

Other important points of the operating procedures laid down when the New York Port Authority ordered complete resumption of air services are as follows:

(1) Removal of all training flights from Newark Airport except qualification flights which the Civil Aeronautics Administration regulations require to be held there; (2) maintenance of not less than 1,200 feet of altitude for as long as possible before actual start of a landing; (3) attainment of 1,200 feet as soon as possible after take-offs before making turns; (4) the elimination of engine "run-ups", except those immediately before the take-off from all except specially-designated areas; (5) installation of two-way recording equipment in the Newark Airport Control Tower, and (6) notification of all pilots using Newark of the new regulations.

(24) Civil Aeronautics Airports Division Bulletin, op. cit., p. 4.

The National Air Transport Coordinating Committee emphasized, however, that there would have to be some modifications of the proposed system of runway use under certain wind conditions, but its experts estimated that these would not occur more than 15% of the time. Since the re-opening of the Airport, pilots have always been advised by the control tower as to which runway to use to minimize flight operations over populated areas.

Studies by the coordinating committee of the effects at Idlewild and LaGuardia airports of experimenting by having transport planes hold a minimum of 1,200 feet of altitude whenever possible indicated that the procedure substantially reduced complaints about low-flying. Before the Newark closing there was no regulation to prevent departing aircraft of any major commercial airfield in the city from flying at low altitudes for relatively long distances after taking off, or from executing low-level turns toward their flight destination.

The Port Authority, to reduce noise, conducted tests to determine which areas of Newark Airport would be best to divert engine "run-up" noises away from the ears of residential communities. The run-ups are necessary to insure high maintenance work standards. Port Authority engineers secured areas that insured "minimum noise annoyance."

Notwithstanding new safeguards installed to eliminate potential dangers to the operation of the Newark Airport, some New Jersey groups filed injunction proceedings against the resumption of full service at the Airport. Even before the Airport was reopened, the Mayors' Committee, Incorporated met in Elizabeth, on November 6, 1952. The Committee decided that it would concentrate on gathering information pertaining to the noise menace and hazard factors that they maintained would become prevalent

once more after November 15th, reopening date of the Airport. It chose this time to take this alternative rather than question the effectiveness of the safeguards that the Port Authority would install.(25) The Committee took three steps with respect to the noise nuisance:

(1) It attempted to secure information through the distribution of 10,000 card questionnaires that were distributed in the Clinton Hill and Ironbound sections of Newark, and to the people living in the municipalities, like Elizabeth, who are members of the Mayor's Committee, Incorporated. To date, there has been no published acknowledgments of the results of this survey.

(2) It placed mechanical devices at vantage points, devices intended to measure the noise volume that will be used to support the information obtained from the cards received, and

(3) It asked the Newark Health Department to conduct a survey in the Weequahic, Clinton Hill and Ironbound sections of Newark and adjoining areas, to determine the effect the noise has on people who are victims of the noise and who live in aforementioned sections.

A fund of $25,000 was raised by residents of Newark, Elizabeth, Hillside, Union and Linden with which to start immediate legal proceedings in the event of another crash within the city limits.

Certain segments of residents in the vicinity of the Airport, it appears, are still resentful over the continuation of operations and have continued to complain about noise nuisance. There are therefore, those segments, perhaps for political, economic, or social considerations, which have stubbornly clung to their original stand to have the airport moved

(25) Mayors' Committee Report, op. cit., p. 3.

to another location. It is evident that a great deal had been done prior to the opening of the Newark Airport to improve the operating conditions in keeping with the suggestions and recommendations of the various investigating committees mentioned above. It appears equally evident to the writer that those most intimately concerned with the re-opening did not bring out for public consumption all that they had done and thereby did not avail themselves of the opportunity to improve the Airport's relations with the public.

CHAPTER VI

PUBLIC RELATIONS INTERPRETATION

Airports are today essential to the very existence of our nation. A community which expects to keep up with the progress of mankind must be served by an adequate airport to meet the community's needs from this rapidly developing modern means of transportation. But airports cannot be mere contrivances left alone after they are built for use or enjoyment by those needing them. Their plans and policies, their views and programs, in fact, their whole existence in the light of future and present day activities and development should be the primary concern of those charged with administering them.

It is unfortunate that the three crashes which occurred in the heart of Elizabeth, New Jersey, have been blamed on the Newark Airport, specifically, because of its proximity to Elizabeth and adjacent communities all within the glide-paths area of aircraft. No evidence was brought during the investigation to support allegations that the airport was poorly designed and constructed. One may pause for a moment, therefore, to ask whether the closing of the Airport was justified or not? Or was its closing necessary and expedient at such a time? Or could it be that its authorities realized it was high time to suspend operations because of the emotional effects the crashes had had on the public, who, at that time, were firmly convinced that the Airport was the cause of these air disasters? Or could it also be that its authorities were becoming aware that certain of the Newark Airport's policies and programs were being reflected in unfavorable public opinion?

A. CRITICISMS:

From a study of the facts and figures brought out earlier in this paper, it becomes evident that the re-opening of the Newark Airport was effected by acts of omission or commission, direct or indirect, in a manner suggestive of a lack of awareness of certain guideposts in public relations. The authorities concerned, in their desire to emphasize the role of the Airport in the economic set-up of the community, failed to realize at the same time that the Airport-Community relationship is dual in nature; that the Airport is not the principal "but a participating unit which casts its shadow on the whole pattern to the extent of its importance and influence."(26)

When the Newark Airport was established in 1929, public considerations of its operation began to grow in size and scope. It meant that it should sell itself to the public every single day-not just occasionally. It meant a deeper need and awareness to understand that the character of the public changes so rapidly from day to day. It meant a conglomeration of problems that demanded advance public relations consideration in order to prevent them from developing into an emergency. This emergency had reared its ugly head in the case of the Newark Airport, replete with problems which needed solutions that were no longer of a preventive nature but problems which needed positive and curative actions.

Let us attempt to evaluate and analyze, from a public relations point of view, the methods, procedures, and techniques utilized in the re-opening of the Newark Airport, while considering at the same time,

(26) Rex F. Harlow and Marvin M. Black, Practical Public Relations, (Harper & Bros., New York, 1947), p. 197.

certain factors involved since its establishment in 1929.

In the history of the Newark Airport prior to the three crashes, there was no attempt made by the authorities in charge to create a sound and healthy relationship with its publics. Airline companies individually try to promote their own interests regardless of whether or not it affects them as a whole. They operate on the theory that they owe no particular allegiance to their competitors and to the localities in which they operate. They have, to a considerable degree, failed to interpret themselves and the cause they represent to the public, by means of facts and figures, and through the employment of accepted tools to gain public support and confidence. While it is obvious that their main interest is to cater to potential customers, to wit, passengers and cargo, they have altogether ignored the interests of the residentiary and non-passenger public.

If the chief responsibility of an entity or organization is to be a good citizen, its first task is to make a careful study of its community and neighbors. To date, the Newark Airport, through its operators, has not conducted such a study and, because of this, it has no way of ascertaining the relationship it actually bears to the cities of Newark, Elizabeth, and adjoining areas. It failed, in the words of Harlow and Black, "to put each community under a magnifying glass. The strong personalities within it, the cross-currents of prevailing public opinion, the major trends representing its interests and goals, its important institutions both public and private--everything having a significant bearing upon its life and growth.."[27] It would seem apt to state that these authorities were

(27) Harlow and Black, op. cit., p. 198.

laboring under the impression that these areas have to grow with the Newark Airport although it is obvious that the partnership is irrevocable. The same policy is equally true in the case of the various airlines utilizing the Newark Airport and its facilities. The Port authorities and the Airlines key men were deeply aware of the economic aspects of the communities, but they seem to have forgotten the sociological and psychological impact that air transportation has had upon the community as well.

After the first crash, no constructive action was taken towards appeasing the community. There was no attempt made to acquaint the public of the true facts. The New York Port Authorities merely sat back and waited for the Civil Aeronautics Administration to take action. No attitude survey was undertaken to measure the pulse of public opinion. And neither were attempts made to educate and inform the public that all modes of transportation have their problems, particularly accidents which are the result of human limitations, psychologically and physiologically; that research conclusively points out that air travel is the safest.

Likewise, after the second crash, nothing was done to assuage the sentiment of an outraged citizenry; neither was an attempt made to regain the confidence, there was ever any at all, of the publics involved. All the Port Authorities did was to stick to the usual practice of sit-and-wait, and then rely on the findings of the Civil Aeronautics Administration which, very often, attribute causes of accidents to pilot error, poor judgment, and faulty landing or take-off technique.

After the third air crash, the Port Authorities, in what appeared to be a battle of nerves, and in total desperation, could no longer hold on to its favorite technique and had to accede to the existing demands of

the public to have the Airport closed. It is remarkable to note, at this juncture, that the closure was an action which the public could not bring about in 57 days. What an undeniably expensive result, requiring for its completion a toll of 87 lives!

The National Air Transport Coordinating Committee, though composed of leading ailines representatives throughout the country, did not strictly represent the interests of individual airlines, ignoring as it did, the common goal of the aviation industry for which it was established.

The participation of all airlines was brought about only after the three crashes and only because the immediate closure of the Airport vividly brought to their attention the need for cooperation among themselves. They were becoming affected by the Airport's closure. It was the Doolittle Commission which gave them the impetus to align themselves together as a group willing to seek their own betterment at the same time recognizing their responsibilities to the affected communities.

The annual reports regularly issued by the operating airlines at the Newark Airport were surely eloquent testimonies that nothing was wrong so far as financial equilibrium was concerned. These reports, however, strictly adhere to the tradition that the best financial report was one that said the least. These reports contain a minimum of factual information on the local level. Each participating airline did not take cognizance of the fact that the local community plays an important role in their overall operations.(28) Many members of the community of Newark and environs who were interested in the activities of the Airport, particularly as it

(28) "Interpreting Business and the Company to Neighbors and Employees," Industrial Marketing, December, 1943, p. 31.

affects their areas, were always faced with the task of ascertaining the creditability of information and source.

Any reputable organization recognizes that good community relations can break down in the face of bad publicity.(29) It seems, however, that the Newark authorities have not developed and maintained sound and healthy relationships with the press as is evidenced by a series of editorials and news releases pointing to the Airport as a "community menace".(30) A New York newspaperman who was assigned to cover the airport casually remarked: "They were perfectly willing to give us newspapermen full facts about their safety records but when an accident occurred, they refused to answer questions or give out facts, saying that only after the Civil Aeronautics Administration had disclosed its findings could they furnish us what we wanted." When the second crash occurred, no assistance was given to reporters and photographers assigned to cover the accident. When the third crash occurred, however, this attitude of those charged with the operation of the airport had considerably changed for the better.

Because unfavorable opinion about an organization or entity often stems from lack of information, misinformation, or misconceptions of the facts, there is great need for a frank and factual relationship with the press, the radio, and other communications media. If the Newark Airport authorities had only shown interest in periodic press conferences, for example, during which certain problems confronting the Airport could have been presented, reports of the tragedies and public reaction would not have been as vehement.

(29) Verne Burnett, "Press Relations" You and Your Public(New York: Harper & Brothers, 1943), pp. 130-136.

(30) New York Times, December 17, 1951, p. 1.

It is true that each individual airline operating at the Airport makes use of the radio as a medium for reaching the public. The airlines have utilized this medium to the fullest extent by sponsoring news and entertainment programs. But in a great majority of cases, the passing commercials have merely stressed speed and economy by air travel. Let us consider a full-page advertisement of the American Airlines, Inc., one common to all airlines' selling-approach which appeared in the Daily Record, July 3, 1953:

> New American brings Boston the finest low-cost air-travel to Los Angeles via DC-6 air tourist service effective July 1ist. The cost is $106 plus tax: 300 mile-per-hour pressurized DC-6's: regularly scheduled daily service: over 25 years experience in coast-to-coast operation: regular American airlines flight crews and maintenance. For reservation phone Liberty 2-6700 or your travel agent.(31)

This type of advertisement typical of all airlines is also broadcast in radio and television. It seems to provide answers to educational and informative broadcasts for the airlines.

When the Newark Airport was reopened for full operations in November 15, 1952, no attempt was made by the Airlines and the Port authorities to inform the public, through the radio and television that changes and modifications to suit the demands of the public for a safer airport had been met. The news of the re-opening would not have been known if the newspapers in New York and in New Jersey had not carried it and radio news commentators had not mentioned it in their regular broadcasts.

Today the radio ranks with the press as an important source of news, entertainment, and information for millions of people.(32) Through

(31) Boston Daily Record (Boston, Mass.), Vol. 281-Number 3, p. 9.
(32) Cantril and Allport, Psychology of Radio.(New York: Harpers,1935),p. 2.

a wise use of them, the Newark Airport could have informed the public that it is carrying out to the letter the many safeguards set up by the Civil Aeronautics Administration and other government agencies for the protection and welfare of all concerned. They have failed to acquaint the public of the strict regulations laid down by the government for the pilot, operator, designer and manufacturer, and control agencies: that high standards of physical fitness and mental alertness are prerequisites for the modern job of flying the present aircraft; that the geographical location of the airport had no bearing on the crashes; that the causes of the accidents were purely technical in nature; that the problem of nuisance is being attended to, and that care and concern by research and studies are now being undertaken at the instance of the airlines and the aviation industry as a whole. It is regrettable that too much stress has been placed upon passenger comfort and convenience and not enough on consideration of the non-flying publics who live close to the Airport.

There is also an apparent lack of close liaison between the government agencies and the operating airlines. In many instances, investigations of crashes by government agencies have become routinary in nature. Some of these agencies, while charged with the task of digging deep into the causes of accidents, have acted like doctors treating symptons rather than diseases. And many of their reports and recommendations deal in generalities. There is too much significance placed upon performance charts, keeping of schedules, and not enough concern shown towards pertinent publics, particularly on safety.

As has been mentioned earlier in this chapter, an organization or institution desiring to fit itself permanently to the community, must keep apace with significant changes as they come. It has to adjust itself

to its environment by seeing changes from afar and make necessary preparations to cope with these changes, whether gradual or sudden. Apparently the Newark Airport authorities were aware that certain segments of the adjoining communities were not willing parties to the acceptance of these changes, even before the crashes occurred. Yet they waited for the hour when this small group, constituting 4 per cent of the community, began to exert a great influence into the thinking and attitude of the majority.

Again, since its start of operations in 1929, the Newark Airport and its officials have failed to utilize a public relations technique in creating and mainting a favorable public attitude toward it. Many residents living in the proximity of the Airport, when asked what they know about the Airport, its plans, policies, and programs, sarcastically answer in the following vein: "I know the Newark Airport is a great provider....of noise. After, all,this is what ears are for." It is conjectured that many a resident of these areas adjacent to the airport has viewed flying as a matter-of-course and has accepted it without any knowledge of the intricacies utilized in the operation and maintenance of aircraft, and the problems confronting the Airport itself.

Had the Airport authorities opened house regularly, perhaps on a yearly basis as is usually conducted by reputable and well-meaning business and industrial institutions throughout the country, favorable impressions among its visitors would have brought about a series of chain-reactions among various publics, resulting in public acceptance and recognition of the fact that for every accomplishment involved there are accompanying risks; that changes brought about by modern living are wrought with hazards and difficulties; that prospective rewards identified with the Airport outweigh estimated dangers.

This open house approach is a sound way of providing citizens in those areas factual information about the Airport, its operations and maintenance, its human relations program, and its place in the community. (33)

It is true that airline operators have been providing their stockholders with financial reports. But these reports, in general, contain merely a summation of profit and loss, without dealing in more detail particularly in the comprehension of time, effort, and studies in aircraft maintenance and operation.

The Doolittle Commission recognized that the Newark Airport, while substantially safe, was a local problem, particularly from the point of view of noise nuisance and risk analysis. It recommended that operating procedures be followed by both aircraft and airport in the matter of landings and take-offs; provided for maintenance of not less than 1,200 feet of altitude for as long as possible before actual start of landing and attainment of the same altitude as soon as possible after take-offs and before making turns. This altitude was found to minimize the effect of noise generated by the engine in flight. (For complete evaluation of Report, See Appendix A).

The Commission was frank enough to admit that absolute safety for the individual is an ideal, one which is ever sought but never attained. At the same time, it underscored the American concept of and acceptance of calculated risk, viewing it as an inescapable condition to the enjoyment of life in a mechanical age such as we now live in.

(33) Rex F. Harlow, Public Relations in War and Peace.(New York: Harper & Brothers, 1942), pp. 108-115.

But while the Doolittle report was as a whole an ideal solution to the problem of safety in commercial aviation, it did not go deep enough into the over-all safety program inherent in aviation of this kind. The results of its findings on all the three crashes did not disclose any direct fault or discrepancy with the airport itself, nor did it reveal causes directly attributable to the pilots.

It is only logical to assume, therefore, that if there had been no malfunctioning of the three aircraft, there would have been no crashes and the consequent loss of lives. Had the crashes occurred many miles away from the airport, the airport would not have been closed. (Buffalo, Rochester and Syracuse did not censure nor investigate their airports although the American Airlines Convair did take off from them respectively prior to its crash in Elizabeth enroute to Newark Airport.)

It appears that the element of time had worked against various interests that desired the Airport re-opened. But it is even more proper to say that these interests were behind the times. For example, the Newark Chamber of Commerce only realized the importance of a survey of the communities affected by the Airport's closure when it appeared that the closure was working against its objective and also against the members' interests.

One thing can be said for the Newark Chamber of Commerce, however. It seemed to have been guided by correct public relations when it did not resort to lobbying tactics to have the Airport re-opened. It did not view this much-talked-of procedure commonly used by power blocs as an effective instrument to literally force the government and its agencies to have the Airport resume full operations. It considered the community as the final arbiter. By a sincere presentation of the fact that

business and industry in New Jersey are interwoven into the fabric of the community and that the same are dependent upon the Airport for their existence, the Chamber received overwhelmingly favorable replies to have the Airport re-opened.

B. SUGGESTIONS:

The Newark Airport is a commercial asset, particularly to cities and towns around it. It benefits these areas directly as an employer of local labor. It is a trade resource to the many industries in the vicinity. It has not only played an important role in the development and progress of the communities in close proximity to it but has also been a most notable participant in the master plan of aviation expansion to meet the requirements of an industrial era.

In the re-opening of the Newark Airport, however, certain important considerations were not taken into account or possibly lost sight of, from a public relations point of view. There is no doubt, however, that the authorities in charge of the re-opening had done their best under the circumstances for the greatest good of the public.

Following are the considerations which might have effectively served as guideposts in the re-opening of the Airport, and which, notwithstanding the lapse of a number of months of its renewed operations, may still well be utilized:

1. Formulation and implementation of a well-defined and integrated policy which must be for the greatest good of the greatest number. This policy must be strictly adhered to under a long-range planning point of view for the Airport.

2. A penetrating and analytical study of the communities surrounding and in close proximity to the Airport must be made to determine the

residents' attitude, the complexity of relationships between and among various groups as for example, wealthy sections, the slums, minority settlements, racial groups, etc. Different communities within the areas affected must also be studied.

Likewise, the major trends representing goals and interests, the cross-currents of prevailing public opinion, the strong personalities within each, and everything which has a significant bearing upon the life and growth of the Airport must be taken into account.

3. An exhaustive and scientific study of the Airport itself, the position it occupies, the service it performs, and everything which characterizes its role in the communities must be undertaken as soon as possible.

4. A program of action aimed at winning back the support and confidence of the publics involved must be carried out. This program should be based on an attitude survey to be conducted by an independent survey organization.(34) The tools of public relations; particularly publicity, institutionalaadvertising, printed materials, employee activities, stockholder reports, publications, and other media must be exploited for full use and benefit.

5. The National National Air Transport Coordinating Committee should take a more active part and put increased effort into its public relations functions. It shouldssee to it that individual and group interests of the airlines it represents are equitably represented.

6. The mere fact that practically all of the employees of the Airport had sided with the Port Authorities in the matter of the re-opening of the Airport is not a necessary indication that labor and employee relations are on a high level. A clean-cut, definite, comprehensive and

(34) Harlow, op. cit., pp. 108-115.

understood labor policy must be developed and made to work effectively.(35)

7. Relations with the press should be strengthened.

8. Arrangements should be made to include for membership in the National Air Transport Coordinating Committee non-scheduled airlines utilizing the Newark Airport as well as other leading airports. There should be a two-way communication between non-scheduled airlines operators and the scheduled airlines operators. This is a step towards minimizing the influence or power of pressure groups.

9. A safety program should be launched among the airlines utilizing the Newark Airport, particularly in the matter of maintenance and operation. There should be less effort to cut cost of maintenance on paper for greater profits with the resulting rise in insurance costs due to accidents.

10. There should be a better laison between and among the public, the airlines, government agencies, and the maintenance crews.

11. The Newark Airport should be open for guided tours to the public, with accent on visual display of operational procedures by the use of films and pilot talks. Interrogation by the public during the tours should beeencouraged.(36)

12. The communities and various publics concerned should be kept well informed of changes or modifications in plans and operations before these are to take effect.(37)

13. There should be no attempt whatsoever to create an air of mystery about crashes; it is the unknown which makes people panicky and fearful. Truth and accuracy should be the guiding considerations in all reports of investigations of accidents.

(35) Dale Yoder, Personnel Management and Industrial Relations,(New York: Mc-Graw-Hill Book Company, 1944), pp. 390-401.
(36) Philip Lesly, Public Relations Handbook,(Prentice-Hall,New York,1950), pp.154-1
(37) Ibid. p. 63-68.

CHAPTER VII

ADDITIONAL CONSIDERATIONS

Any of the much publicized crashes identified with Newark Airport could all have been avoided by the application of good maintenance methods and adherence to proper operation techniques by the airline companies involved. Scientific improvements of materials and technology have taken the hazards out of air transportation. But new scientific improvements and new concepts must be taken advantage of before air transportation can fully realize its potential goal. The aircraft operators and government agencies involved must change their attitudes; they must perceive that theiindustry is in a stage of rapid growth. They must, therefore, be guided accordingly.

Fog is still the nemesis of the aviation industry. Fog, the result of conditions of nature, however, is not the greatest hazard that envelops the industry at present. The mental confusion, the lack of perception of the needs and goals that shrounds the aviation program is the fog that clouds the issue. This fog referred to is that which covers the entire industry from the drawing board to the manufacturer to ultimate operation. Manmade, it hinders the rapid development of air transportation facilities.

The crux of the problem of air safety lies in the area of the maintenance and operation of equipment and facilities pertinent to air transportation. The major trouble of air travel operators has been the fact that they have always treated symptoms, not diseases. Investigations only temporarily correct the situations; they never effect permanent cures.

The present policy of investigations by themselves will bring no panacea, for only symptoms, not causes, are being considered. The existing system runs in vicious circles, really a mutual protective association corporation. It is evident that the air public, pedestrian and resident, is entitled to some protection for the millions being spent annually of taxpayers' funds.

New legislation is urgently needed to correct the present methods. Congress should immediately create an independent air safety board, a separate air commission divorced entirely from control of the now governing agencies. A commission composed of members who are not allied to any political hierarchy or combine, whose primary function will be re-writing a new code of safety for the design, maintenance and operation of aircraft and airport alike. A code that will insure protection to air passenger, innocent bystanders and residents. The new code must be one tailored to meet the needs of the present and the future trend of aviation; not an alteration or modification of the present rules and regulations.

The system now in use was written for planes travelling at 120mph. Today, that is landing speed. Trying to regulate the modern air carrier with a speed of 300 mph, 5 miles a minute and up to the speed of sound, by these obsolete rules is fantastic.

There are three major aspects of this failure of the air carrier:

1. The design of both airport and aircraft has not kept pace with the industry.
2. The maintenance and operation of aircraft has not kept abreast of the technological advances made by science.
3. The codes of safety, i.e., methods and procedures, utilized by the controlling agencies are outmoded, and have outgrown

their usefulness.

Air design needs new concepts evolving around an additional factor- the element of time-not miles per hour but feet per second. They should use psychological research for the answers to today's aviation problems.

An airplane pilot at the controls cruising along at 300 mph, 5 miles a minute, 440 feet a second has to act with swift mental reflexes, instantaneous appraisals of situations, split second timing. (For the uninitiated, the words "one thousand and one" measure exactly one second or the time to travel 440 feet.) Take for example the failure of the DC-6 aircraft which figured in the third crash.

With the least pause, doubt, or hesitancy on the pilot's part, there are catastophic results. No second trials are possible after these momentary failures. That DC-6 takeoff grossed 83 thousand pounds, exceeding the maximum permissable load for landing by 6,800 pounds. Consequently, prior to landing the equivalent or 1,333 gallons of gasoline had to be jettissoned. One mistake-turning the wrong valve, pushing the wrong lever, could mean lossoof fuel pressure. An air lock in the fuel system either results in instant failure of all motors or inadvertently reversing propellor blades with consequent loss of power. In any event, with the death of the pilot, the true cause of the crash may never be known.

The airline pilot is loaded down with regulation upon regulation, formulas and procedures from the manufacturer to the operator to the controlling agencies with the why, when, where and how to perform under all contingencies, plus the care of passengers, cargo, and mail. The above is but a brief outline of the duties and responsibilities of the pilot in any emergency. Thus the major need of the designer is to enable

the pilot to accomplish his task with expediency. Simplicity of design without complexity is of paramount importance if the pilot is expected to cope with emergencies.

The remedy needed is a continuous educational program, both for mechanic and plane operator. The practice of pilots flying low in marginal weather close to the ground or in proximity to the airport should be discontinued at once. Once the plane changes its altitude from the level, as in turing of sudden loss of power, the danger of quick stalls and out of control characteristics increase, especially at low and critical speed.

A careful examination of the most recent data on aviation developments discloses the fact that attention and efforts have been directed mainly to the evolvement of the methods which increase reliability and efficiency of a plane, but one may, with safety, say that practically no effort has been made towards decreasing, if not completely nullifying, the element of human error in aircraft accidents. What could be the reason behind this?

The general tendency has been to improve the powers of the human being--i.e., by centering the emphasis on his potentialities for skill, judgment, memory and other physical and psychological attributes. A broader consideration of the subject will yield the fact that human error in aircraft operation is less possible of reduction through such stress on the improvement of the human being since these attributes, unlike the technical factors which can very well be predicted with accuracy and can be handled according to man's wishes, do not remain constant from day to day, and consequently do not admit of perfection. And where certain factors cannot be predicted with accuracy, undesirable consequences are

impossible of prevention.

This being so, how, then may one reduce or minimize the danger of aircraft accidents, happenings which have brought tragedy to countless people in recent months and years? At this point, it would seem worthwhile to recall a principle of human life, and this is: Errors are relatively rare when the task to be performed is easy, as a corollary of which we have the following: As the task increases in difficulty the possibility of the occurrence of errors correspondingly increases. Thus, it would seem logical to conclude that by reducing the difficulty or difficulties encountered by humans in the performance of any task, the number of errors would be reduced.

Lately, too high a degree of dependence has been placed upon the powers of the individual and his infallibility with regard to aspects of aerial operation. A more sensible view would be to look upon certain other objective factors not only in nature but also in the operating conditions, among which may be mentioned: better flying conditions, more reliable motors, more accurate weather forecasting, improved lighted runways, and other similar factors which would make the task of the pilot easier.

If the aircraft designer in his mania for performance would consider the pilot's physical limitations and so design the aircraft with a simplified control panel, the governing agency with simplified regulations, and the company give frequent refresher familiarization courses in safe flying, then and only then can the pilot be qualified to make the split-second decision which comes to all pilots at one time or another.

The instrument panel must be simplified. These instruments are designed to show any change from normal operation. As long as the instruments remain within safe operational limits, there is no need for the pilot to constantly check and recheck. Thus, if an electrical flap which would unmask the instrument the instant it shows any variation from the normal, were used, it would relieve the already overburdened pilot. (For example, observe any modern telephone switchboard in operation.)

Let us now look at the pilot when an emergency looms. Travelling at 440 feet per second, a decision has been made which means life or death to many. It is suggested that research be conducted as to whether the pilot should have more mental freedom of action for immediate decision based on his appraisal of the situation or wait an answer from the ground control miles away with no knowledge of the situation on hand.

Another factor concerned with air crashes survival is that the designer must take cognizance of hitherto neglected built-in passenger safety on the air transport carrier, with better entrances, and adequate exits in case of emergency landings and other contingencies.

The airline with government supervision must devise a modern inspection system and maintenance plan whereby the operation of all aircraft can be accomplished with efficiency and safety. This plan should include all facilities, instruments, equipments, and airports utilized by the air carriers. The plan should also insure the constant indoctrination and training of all personnel on new technological changes as they appear. Science is rapidly solving the problems incidental to safe flight. New materials, better and more durable, new radio equipment, lighter and more lasting, and improved facilities are constantly being made available. Therefore, continuous schooling is necessary for the operating, maintenance

and governmental personnel involved in the proper use and employment thereof.

A suggested method of determining causes of aircraft accidents: The many causes underlying airplane crashes aressometimes difficult to analyze generally because there are never any survivors to recall the facts that bear directly on the accident. Causes have to be assumed from the charred remains of the wreckage.

All planes should carry enclosed in a shock and fireproof container an instrument to record all the plane's movements and appurtenances from take-off to landing. A written record is available for the scientist to study in order to reconstruct the flight, causes of failure, performance enroute, and all pertinent data, if necessary.

Finally, flight control needs drastic revision in order to contend with the rapid changes incidental to modern air travel. The horsepower, weight, and speed characteristics have become so diversified that they automatically, of necessity, divide the aircraft into classes.

There are four main sub-divisions to be considered commercially:

1. Multi-motored transport with super-charged motors, pressurized cabins and altitude equipment, the business executive type in like manner.
2. Medium and small twin-motored type of business and pleasure flying.
3. The fast single motored transport, and,
4. Training and small pleasure type craft.

With all aircraft properly classified, the next step is to allocate to each class separate and exclusive altitudes for their individual use; for example, divided as follows: sea level to 5,000 feet; 5,000 to 10,000 feet; 10,000 to 20,000 feet; 20,000 feet and above for the long distance

coast to coast and trans-oceanic air carriers. These air transports, by doing so, would be above the weather and consequently minimize all hazards involved in IFR flight (instrument flight rules), collision enroute, contact with obstacles, down drafts and the like.

Accurate flight control, to, around, and from airports could be maintained at all times; also elimination of dangers incident during inclement weather, dispatch of fast aircraft overtaking slower craft enroute. This separation of air flights would virtually end all collision and IFR troubles. There would be no IFR flights except by qualified and trained, licensed personnel.

Recapitulating, we note the need for the following:

I. A separate Air Safety Board

II. New rules and regulations

III. Airlines coordinate among themselves

a. Uniform safety measures

b. System of In-Flight Inspection

c. More comprehensive maintenance and preflight

d. A continuous educational program for all personnel

IV. Positive and rapid adjudication of all violators--prompt publication of true causes of airplane crashes--exclude face-saving reports.

ABSTRACT

Since its establishement in 1939, the Newark Airport has played a major role in the development of air transportation and has contributed immensely to the economy of the areas adjacent to it in particular, and of the nation in general. Its sudden closure, brought about by a succession of tragic accidents, raised a controversial issue: thatiits present location constituted a serious hazard to the safety and security of the people of the neighboring cities and towns and, therefore, must be closed permanently or moved to another location. The group that sought the Airport's closure constituted a small minority. Regardless of their number, however, they successfully swayed public opinion to their side. But their victory was short-lived when the Airport was ordered re-opened, notwithstand their objections. The re-opening was ordered by the New York Port Authorities, operators of the Airport.

An attempt was made in this paper to analyze and evaluate the methods and procedures direct or indirect, utilized in the re-opening, with its attendant problems, involved economic and political considerations. But it also involved as well vital public relations considerations inextricably linked with every phase of approach in the resolutions of the issue. On this latter consideration, however, lack of awareness and recognition of public relations guideposts by the authorities charged with the problem of the Airport's re-opening is plainly visible.

It was shown that the problem was approached only from an economic and business point of view and not perceived as one replete with situations and circumstances that apparently needed a generous amount of ethical

considerations and human understanding. They failed, too, to recognize to a considerable extent, an inherent Community-Airport relationship engendered with the Airport's establishment.

APPENDIX

PERTINENT PORTIONS OF THE DOOLITTLE REPORT

AS IT AFFECTS THE NEWARK AIRPORT

Establishment of the Commission was an outgrowth of a sequence of tragic accidents in the New York-Northeast New Jersey metropolitan area. The fact that these mishaps were confined, by coincidence to a singlecommunity accentuated the fears of many Americans that aircraft represent a serious hazard to ground-dwellers. They also served to increase awareness of nuisance aspects in themuse of airports, particularly with regard to noise.

Along with every other vehicle invented and used by modern man, aircraft suffer occasional accidents with resulting fatalities to their occupants. More rarely, people and property on the ground are also involved. Incidents of this sort are most likely to occur near airports because operations are somewhat more hazardous at terminals than en route. Current improvements in equipment and in operational procedures, however, offer the possibility that accidents of all kinds will be further reduced. Accidents involving aircraft on airways and at air terminals should eventually fall well below rates now considered normal for other forms of commercial transportation.

AIRPORT GROWTH:

Many airports are approaching saturation. Some of them are badly out of balance due to deficiency in one or another of their facilities. For example, some of our large municipal airports now have traffic control capabilities permitting a great many landings and take-offs per hour but their runways or servicing facilities on the ground which were once adequate

have not kept pace.

Airport use becomes more complicated when there is joint use by civil aviation and the armed services. In the interest of economy it is common practice for air defense, military air transportation or air reserve training units to be based on municipal airports. Combat airplanes are generally noisy and will probably become noisier with the advent of more powerful jet types. Because of the noise of military operations (especially on weekends) and because accidents have occurred, people living near such airports have complained.

Joint military and civil use of major airports is undesirable. Separation should be effected whenever it is economically feasible. Military operations over thickly settled regions should be prohibited.

COMMUNITY ENCROACHMENT:

Another aspect of the problem deals with the technical and economic forces which are pressing for airport expansion and whic , in turn are opposed by the encroachment of the surrounding community. Many communities are approaching an impasse arising from limitations to safe operations on existing airports combined with physicah inability to improve or extend them because homes or factories have been built close to the ends of the runways.

ZONING:

This Commission has two suggestions to make in this connection: (1) that certain extensions or over-run areas be incorporated in the airport itself, and (2) that larger areas beyond such extensions be zoned by proper authority, not only to prevent the erection of obstructions that might be hammful to aircraft, but also to control the erection of public and residential buildings as a protection from nuisance and hazard to

people on the ground.

FEDERAL ASSISTANCE:

In general, the program calls for financing airport projects on a "matching" basis, with the Federal Government providing grants-in-aid to the communities concerened. Unfortunately, this program has lagged because of inability to synchronize the availability of federal and local funds.

RUNWAY DESIGN:

A solution to many aspects of the airport problem is, in the mind of the commission the early acceptance of the single or parallel runway design of airport with approaches over relatively clear areas. By this means, airport development could proceed along economical lines with minimum hazard and annoyance to neighbors. The single or parallel runway airport has one shortcoming-difficulty of operation in strong crosswinds-but this is being overcome through pilot training techniques, the use of tricycle gears and the further development of special crows-wind landing gears.

RUNWAY LENGTH:

Some manufacturers suggest that future transport planes (derived from current long-range high speed bombers) could be designed to have a marked gain in performance and efficiency if airports with runways several miles long with clear, flat approaches of several additional miles at each end were available. Such configurations for a few new airports projects might prove economically feasible, but for existing municipal airports such extensions are impracticable. Standard runway lengths for different categories of airports have been proposed. Major air terminals should

eventually provide at 8400 feet, a length of 10,000 feet, which should accomodate all types in the foreseeable future.

NUISANCE FACTORS:

The public cannot be expected, however, to anticipate technical developments and it should be informed and protected by the responsible authorities. The public deserves a clear explanation of necessary airport procedures, accompanied by valid assurances that everything possible is being done to alleviate both noise and hazard. For example, in low visibility, incoming aircraft sometimes must be "stacked up" near an airport under precise traffic control to prevent collisions. The public will understand and accept this necessity if it is assured that, within the limit of safe operation, the holding areas are selected so that the stacks will not be a source of nuisance. Operators, pilots, and airport controllers must be indoctrinated to consider the people on the ground and to make every effort consistent with safe flying practice to reduce hazard and noise.

Aircraft designers and manufacturers must also assume a share of the noise alleviation task. So far, they have been concerned mainly with noise levels within the airplane. They should also strive to minimize noise outside the airplane. If the manufacturer is given a penalty for high noise, or better yet, a premium for low noise level, it will stimulate competition in the development of quieter aircraft.

STANDARDIZATION AND TRAINING:

It is believed that through standardization and training, accidents due to pilot error can be reduced. There is, at the moment, a regrettable lack of uniformity of design and arrangement of transport aircraft cockpits. Not only is the variation between different types of aircraft, but also

variations in the same type, depending on the ideas of individual airlines. A useful step in improving the training of pilots in emergency procedures would be the standardization and simplification of equipment in cockpits. Simplified emergency procedures naturally would follow. The pilot's job would be easier and safety would be increased.

More training in emergency procedures should be required. Simulated emergency drills in airplanes without passengers should be conducted periodically. Such training flights should of course, be conducted over uninhabited areas. A method of training crews without hazard is through the use of flight simulators. These are complicated devices duplicating the cockpit and flight decks of the airplane. The equipment and instrumentation are operated by an instructor to simulate various emergency conditions. The crew then deals with the situation as it would in flight. Necessary practice is thus provided without risk. Since flight simulators are expensive for each type of aircraft, it may be necessary to purchase and use them on a cooperative basis.

Section 2: RECOMMENDATIONS:

1. Support required for airport development. New Airports will be needed and present airports must be improved. State, country and municipal governments should be prepared to assume their proper share of this expense.

2. Expand Federal-Aid-Airport Program. Authorization of matching funds for Federal Aid to airports should be implemented by adequate appropriations. Highest priority in the application of Federal aid should be given to runways and their protective extensions incorporated into the Airport, to bring major municipal airports up to standards recommended in this report.

3. Integrate municipal and airport planning. Airports should be made a

part of community master plans, completely integrated with transportation requirements for passenger, express, freight and postal services. Particular attention should be paid to limited access highways and other transportation facilities to reduce time to the airport from sources of air transportation business.

4. Incorporate cleared runway extension areas into airports. The dominant runways of new airport projects should be projected by cleared extensions at each end at least ½ miles in length and 1000 feet wide. This area should be completely free from housing or any other form of obstruction. Such extensions should be considered an integral part of the airport.

5. Establish effective zoning laws. A fan-shaped zone, beyond the ½ mile cleared extension described in Recommendation 4, at least two miles long and 6000 feet wide at its outer limits should be established at new airports by zoning law, air easement or land purchase at each end of dominate runways. In this area, the hhight of buildings and also the use of the land should be controlled to eliminate the erection of places of public assembly, churches, hospitals, schoobs and the like, and to restrict residences to more distant locations within the zone.

6. Improve existing airports. Existing airports must continue to serve their communities. However, cities should go as far as possible toward developing the cleared areas and zoned runway approaches recommended for new airports. No further building should be permitted on ruway extensions and whereever possible, objectionable structures should be removed. Operating procedures should be modified in line with Commission recommendations for minimizing hazard and nuisance to persons living inthe vicinity of such airports.

7. Clarify laws and regulations governing use of airspace. Authority of

the Federal, State, or municipal governments with respect to the regulation of the use of airspace should be clarified to avoid conflicting laws and regulations.

8. Define navigable airspace in approach zones. The limits of the navigable airspace for glide path or takeoff patterns at airports should be defined.

9. Extend Civil Aeronautics Act to require certification of airports. The Civil Aeronautics Act should be amended to require certification of airports necessary for interstate commerce and to specify the terms and conditions under which airports so certified shall be operated. Certificates should be revoked if minimum standards for safety are not maintained. Closing or abandonment of an airport should be ordered or allowed only if clearly in the public interest.

10. Maintain positive air traffic control. Certain air traffic control zones in areas of high density air traffic should be made the subject of special regulations to insure that all aircraft within the zone are under positive air traffic control at all times regardless of weather.

11. Raise circling and maneuvering minimums. Present straight-in instrument approach minimums are considered satisfactory but the minimum ceilings and visibilities under which aircraft are permitted to circle and maneuver under the overcast in congested terminal areas should be raised.

12. Accelerate installation of aids to air navigation. Research and development programs and installation projects designed to improve aids to navigation and traffic control in the vicinity of airports, especially in congested areas, should be accelerated. Installation and adequate manning of radar traffic control systems should be given high priority.

13. Revise present cross-wind component limits. Existing cross-wind component limitations should be reviewed to establish more liberal cross-wind landing and take-off specifications for each transport-type aircraft.

14. Develop and use cross-wind equipment. Although modern transport aircraft can operate successfully in any but very strong cross-winds, the further development and use of special cross-wind landing gears should be accelerated.

15. Extend use of single runway system. New airports should adopt a single or parallel runway design. This should be adequate except under strong wind conditions, in which case a shorter runway at 90 degrees to the main one may be required. Present airports should plan to develop the dominate runway at the expense of those less used. Airport expansion should be achieved through additional parallel runways.

16. Meet standard requirements for runway length. For each category of airport a standard runway length has been established consistent with its future planned use. Airports should bring their runways up to the standard. For intercontinental or transcontinental airports, the length of the dominant runways should be 8400 feet with possibility of expansion to 10,000 feet if later required with clear approaches as per recommendations 4 and 5.

17. Accelerate ground noise reduction programs. Engine run-up schedules and run-up locations should be adjusted to minimize noise near airports. Adequate acoustical treatment in run-up areas and at test stands should be provided.

18. Instruct flight personnel concerning nuisance factors. A tight discipline with respect to airport approach and departure proceedures to

minimize noise to people on the ground (within the limits of safe operating procedures) should be maintained at all times.

19. Arrange flight patterns to reduce ground noise. Airways and flight patterns near airports should be arranged to avoid unnecessary flight over thickly settled areas to minimize noise, but only within the limits of safe flight practice.

20. Minimize training flights at congested airports. Flight crew training should be conducted, as far as practicable, away from thickly settled areas and with a minimum number of flights into and out of busy airports.

21. Minimize test flights near metropolitan areas. Production flyaway from aircraft factories under proper conditions is acceptable but all flights of experimental aircraft and best flying of production models near built-up areas should be reduced as far as possible.

22. Avoid military training over congested areas. Although the basing of reserve air units at airports near cities has been considered generally desirable, and the location of certain combat units there is sometimes necessary, training maneuvers, particularly with armed military aircraft, should be conducted only over open spaces. Rapid shuttle service to an outlying military training field offers minimum interference with civil air operations and maximum safety and freedom from nuisance to people on the ground.

23. Separate military and civil flying at congested airports. Military aircraft should not be based on congested civil airports except when it is not economically or otherwise feasible to provide separate facilities for them nor should commercial aircraft operate regularly from busy military airports.

24. Provide more flight training. Every flight crew should be required to have frequent drills in emergency and instrument procedures. This can be accomplished in part in flight simulators. These flight simulators should be located at convenient points and should be available to all operators on a fair basis.

25. Develop helicopters for civil use. Concurrent with military helicopter development, interested government agencies should encourage civil helicopter development for inter-airport shuttle services, and for short-haul use, emphasizing safety, reliability, and public toleration factors.

Part II AVIATION--A National Asset

In the short span of fifty years since the invention of the airplane, aviation has become essential to our defense and indispensable to our national economy. Although only a fraction of our total population is directly engaged in the design, manufacture or operation of aircraft, every citizen is an indirect beneficiary.

United States airlines last year did approximately $776,000,000 worth of business. They also are a major employer of people. Nearly 90,000 persons now work for the airlines of this country. The business of air transportation is spread over all parts of the United States and contributes to the welfare of many communities.

But in spite of remarkable progress in the past fifty years, it must be remembered that air transportation is still in an early stage of development. Other transportation systems, on land and sea, have many years of experience behind them. Modern air transportation is new to this generation.

Part III

Section 1. Airport characteristics and the airport

While airports cannot be extended every time a new transport plane is proposed, progress in the aeronautical field must be anticipated by the airport designer to provide necessary margins against early obsolescence.

The landing speed of an airplane is of primary importance in determining the runway length needed for its safe operation. This speed is closely associated with the airplane's maximum speed and cruising speed.

While the size and weight of the airplane have no specific bearing on the over-all size of the airport, they do not affect the required strength of airport runways, taxiways, aprons, and their widths and space requirement.

Transport airplanes have shown a pronounced and steady increase in size with time. Development of improved structural techniques, materials, and power plants has made this increase possible, but the actual size at any one time has been dictated largely by economic considerations, such as load potentials, operating costs, and trip frequency requirements. Such considerations, make it difficult to make any timed prediction of size.

No airport exists by itself, and the usefulness of each depends upon the quality of its neighbors. Fundamental to United States' transportation is a well-integrated system of airports which provide adequate facilities both at original and destination points.

To formulate such a system it is necessary to (1) determine present and future airport needs for all types of communities and various air operations; (2) evaluate existing facilities; and (3) to propose such additional facilities as may be needed to safeguard human life--both in the air and on the ground--and to expedite transport traffic.

DESIGN AND CONSTRUCTION

Runways. Four factors govern runway construction--length, width, grades, and strength. Of these, runway length is of the greatest concern in airport planning.

Taxiways. Runways should be used by aircraft only in takeoffs and landings. It is essential to have well designed taxiways, so that the aircraft can expeditiously move from or to runways, loading and servicing areas, and hangar and storage areas.

Run-up aprons. Between each runway and and the taxiways, run-up aprons are desirable because they afford flexibility in the choice of take-off sequence. The size of the run-up apron will depend principally on the rate of peak traffic on the particular runway.

Guidance. Pilots should be provided with proper routes of travel from or to a runway and with guidance indicators such as taxiway lights. To reduce radio talk between the pilot and traffic controller, signs readable both day and night should be installed along the runway to indicate turn-off points and destination areas. The runways should be marked by a uniform and well-defined pattern, of distinctive shape and color, painted on the paved surfaces. The pattern should be of composition that is readily discernible to a pilot upon touchdown, informing him of his location and providing a further guide to turn-off points. This is particularly important on long runways and under conditions of low visibility. High intensity approach lights with variable brightness control are of value under adverse weather conditions.

Section III the Noise nuisance.

While airports are vital assets of the communities they serve and of the

nation as a whole, they can also be a nuisance to the people who live near them. The principal nuisance factor is noise. As the frequency of flight and the power of the airplane have increased, adverse public reaction to the noise nuisance has been aroused. Now that most major airports, once remote from urban centers, have become surrounded by residential areas, it is imperative that efforts be made to prevent further increase in aircraft noise and where possible to reduce current noise levels.

The source of objectionable noise in the neighborhood of airports can be put into two general categories, (1) noise associated with ground operations of aircraft, and (2) noise of flight operations. On airports adjacent to aircraft manufacturing plants, and on those having large airline maintenance and overhaul shops, considerable noise is generated by the running of engines in test stands.

Section 4. An analysis of Risk

Absolute safety for the individual is an ideal which has ever been sought but never attained. Because man does not have full control over his environment, the very function of living has inherent hazards which become more pronounced as the scheme of living grows more complex. Thus, since absolute safety is a theoretical concept, one can speak only of relative safety.

By constantly struggling to reduce the risks which cause accidents, the people of this country enjoy a high degree of individual safety. The trend in total accidental death rates is downward. Relative safety, therefore, has increased. (See pages 49-54)

Part IV. The Airport as a National Problem.

Section 1. Some mechanical and human factors--In the final analysis, the

direct sources of hazard to people on the ground are the airplane and the crew who fly it. If one or the other fails, a crash may result. Anything, therefore, that makes the machine more reliable, or the crew less subject to failures contributes to the safety of people on the ground.

For a good many years aviation has been a carefully regulated business. Few, if any, industries function under such stringent laws and inspection systems. Certainly no other transportation medium is so completely supervised. The potential danger to passengers in airplanes provided sufficient stimulus to create this regulation.

The airplane designer cannot dissociate himself from the problem. He is, after all, the creator of the dynamic half of the airplane-airport combination. As the airplane becomes more nearly "fool-proof" everyone will benefit.

One important design objective is to minimize the effect of possible mechanical failures. A short circuit in the propeller control, for example, must not start a chain reaction which will result in the propeller suddenly reversing in flight. Designers must anticipate the results of failure of any system or component part and must provide for such contingency in a way that will not jeopardize the aircraft's ability to continue flight. This is known as the "fail-safe" theory of design.

The crew of a present day airplane is selected with great care and subjected to stringent medical examinations. This is particularly true of the pilot who is both airplane captain and the man at the controls. His two most important qualifications are professional competence and judgment. Lack of either characteristic in a pilot could lead to serious

difficulty.

Professional competence in a transport pilot is a definable combination of many things: knowledge of the airplane itself; highly developed flying ability; good coordination; excellent eyesight, good hearing, and generally good health. Judgment, on the other hand, is an intangible. A pilot acquires judgment in direct ratio to his experience. All things being equal, the older the pilot, the better his judgment. This build-up continues for many years. Ultimately, however, a point will be reached where age slows a pilot's reflexes and begins to offset his accumulated experience and judgment.

NATIONAL AIR TRANSPORT COORDINATING COMMITTEE

EIGHT POINT PROGRAM

Removal of all training flights from Newark Airport except qualification flights required at the airport by the Civil Aeronautics Administration regulations.

Maintenance of at least 1,200 feet of altitude near the airport for as long as possible before starting to land.

Attainment of 1,200 feet of altitude by all aircraft as soon as possible after leaving the runways and before making turns toward their destinations.

Conduct of ground engine run-ups, except for pre-take-off run-ups, in areas specifically designated by the Port Authority to reduce noise annoyance.

Installation of two-way recording equipment in the Newark Airport Control Tower.

Notification of all pilots using the airport to comply with all of these Newark Airport procedures.

The "preference runway usage system" will be in effect at all times when wind velocities are not more than 15 miles an hour and the wind is blowing from a point not exceeding 80 degrees of the direction of the runway in use, and when there is 1,000 feet between the clouds and the ground and three miles visibility. It is estimated that these conditions prevail over 85% of the time on a yearly basis. Under this system, pilots are advised by the control tower which runway to use in order to minimize take-offs and landings over populated areas. The system has been success-

fully installed at LaGuardia and New York International Airports but has never been fully operative at Newark.

The Newark Airport runways are designated as Runway 10-28 and Runway 4-22 (new Runway "A"). The numbers show the compass headings of the runway ends. Runway 10-28 is the east-west runway at the field. Its easterly end is aligned toward Newark Bay with its westerly end toward the Weequahic section of Newark.

Runway 4-22 is the north-south runway. Its southerly end is in the direction of Elizabethport and the waterway known as Arthur Kill. Its northerly end is aligned toward the Kearny Meadows.

The industry's preference system has as its aim a maximum number of landings and take-offs over Kearny Meadows and a minimum number of landings and take-offs over Weequahic and Elizabethport.

Under the system, first choice for landings will be either Runway 22 directing aircraft over the Kearney Meadows, or Runway 28 directing aircraft over Newark Bay. The next choice for landings at Newark will be Runway 4, directing aircraft over Arthur Kill and Elizabethport.

Last choice for landings will be Runway 10 directing aircraft over Weequahic Park.

TAKE-OFFS

First choice for take-offs at Newark will be either Runway 10 directing aircraft over Newark Bay, or Runway 4 directing aircraft over Kearney Meadows. The next choice for take-offs will be Runway 22 directing aircraft over the Arthur Kill and Elizabethport.

Last choice for take-offs will be Runway 28 directing aircraft over

Weequahic Park.

The industry committee emphasized that the use of the preference runway system completely depends upon the direction and strength of the wind. Because of this fact, aircraft taking off and landing will not avoid every community near the airport at all times. But, when wind conditions and weather permit, the system will result in aircraft landing and taking off over Newark Bay and over the Kearney Meadows.

TRAINING FLIGHTS

The government requires each airlines pilot to make periodic flights to prove that his competence to fly is being maintained. It is the practice of all airlines to require additional periodical competency flights by each of its pilots, in excess of those prescribed by Federal Regulations. Normally, all of these competency flights for pilots based at Newark would be conducted at Newark Airport. Under the N.A.T.C.C. plan, they have been transferred to other locations, or are conducted in ground training devices. Therefore, the only training flights at Newark Airport will be those few flights necessary to qualify a pilot originally into the airport. At the time the airport closed, more than 800 training flights a month were being conducted there.

OTHER NEW FLIGHT PROCEDURES

Aircraft making circling approaches are required to enter the traffic pattern at Newark at a minimum altitude of 1,200 feet. Previously, there was no restriction as to when the aircraft could then descend to lower altitudes. Under the N.A.T.C.C. procedure, all aircraft must main-

tain 11200 feet of altitude until the performance characteristics of the aircraft require that the final descent begin. The same procedure applies to aircraft flying straight-in to the airport without circling.

Departing aircraft are now required to attain 11200 feet of altitude as soon as possible after take-off and before turning on course toward their destination. Previously, there was no requirement to prevent departing aircraft from flying at low altitudes for relatively long distances after leaving the runways, or executing low-level turns toward their destinations.

N.A.T.C.C. asserted that both of these procedures have substantially reduced low flying over communities near LaGuardia and New York International Airports.

ENGINE RUN-UPS ON THE GROUND

It had previously been the practice at Newark to conduct ground engine run-ups on various parts of the airport. The run-ups are necessary to insure high standards of all maintenance work. Under the new plan, the Port of New York Authority will designate areas for these run-ups to avoid noise annoyance to nearby communities. In the interests of flight safety, the committee pointed out, however, that it is necessary that preflight run-ups (those conducted immediately prior to take-off) be continued to be made at the end of the departure runway.

TWO-WAY RECORDING EQUIPMENT

This permits accurate assessment of aircraft traffic control efficiency by the review of all communications between pilots and the tower and from the tower to aircraft. In the past such study was impossible because only tower-to-aircraft communications were recorded. (The new equip-

ment is scheduled for installation by January 1).

NOTIFICATION OF PILOTS

Distribution of information on the new Newark plan started last week with thousands of mailings throughout the country. In addition, the operations departments of all major airlines are posting the Newark procedures on bulletin boards and taking other steps to insure that they reach every pilot using Newark Airpot. Also, the Air Line Pilots Association and the Port of New York Authority are circularizing other groups of individual pilots.

NEW RUNWAY EQUIPMENT

The Port Authority's new $9,000,000 instrument runway has been equipped with appraoch radar, glide scope and runway localizer, high intensity approach lights, compass locators, high frequency radio markers, and the most modern type high intensity runway lights and markings.

The National Air Transport Coordinating Committee, with Captain E. V. Rickenbacker, president and general manager of Eastern Air Lines, as chairman, is comprised of: Air Transport Association of America; Aircraft Industries Association of America, Inc.; Air Coach Transport Association; Inc.; Air Line Pilots Association, International; Aircraft Owners and Pilots Association; Civil Aeronautics Administration; Corporation Aircraft Owners Association, Inc.; Independent Military Air Transport Association, and the Port of New York Authority.


Southfields
Greenwood Lake
Sterling Lake
Tuxedo Lake
Tuxedo Park
Sterling Forest
Awosting
Hewitt
Ringwood
Milford
Sloatsburg
Ramapo
Suffern
Mahwah
RAMAPO VALLEY
Monsey
Wanaque Res
Midvale
Wanaque
Haskell
Oakland
Butler
Wyckoff
Ramsey
Pompton Lakes
Pompton Plains
Pequannock
Lincoln Park
Mountain View
TOTOWA WAYNE
WILL WRIGHT
Singac
Little Falls
Essex Fells
Roseland
Montclair
Livingston
Orange
Cranford
Roselle
Linden
Rahway
Elizabeth
NEWARK
NEWARK RADIO 341 EWR
JERSEY CITY
Weehawken
SKY HARBOR
PATERSON
PATERSON 337 PNJ
Ridgewood
Radburn
Hackensack
Garfield
TETERBORO
LITTLE FERRY
LAMBROS
MELLOR-HOWARD
Waldwick
Hillsdale
Westwood
Emerson
Closter
New Milford
Englewood
Park Ridge
Harrington Park
Northvale
Tappan
Camp Shanks
Orangeville
Pearl River
Nanuet
Spring Valley
COUNTY
New City
CHRISTIE
Congers
Haverstraw
W Haverstraw
Thiells
Stony Point
Verplanck
PEEKSKILL
Sandyfield
Nyack
NYACK
Piermont
Sparkill
DOBBS FERRY
Hastings-on-Hudson
Dobbs Ferry
Irvington
Elmsford
Tarrytown
Ossining
Croton-on-Hudson
CROTON
Crotonville
HUDSON RIVER
Yorktown Heights
Katonah
New Croton Res
Bedford Hills
Mt Kisco
Bedford
Poundridge
Chappaqua
Briarcliff
Pleasantville
Armonk
WESTCHESTER
WESTCHESTER CO INSTR LDG SYSTEM
Kensico Res
REYNOLDS CENTRAL
Valhalla
Rye Lake
LOCALIZER
White Plains
Ardsley
Scarsdale
YONKERS
Mt Vernon
New Rochelle
NEW ROCHELLE 275 RWC
Mamaroneck
Rye
Port Chester
PORT CHESTER
Greenwich
Glenville
Old Greenwich
Cos Cob
Stamford
SCHOFIELD
STAMFORD
Shippan Pt
Greenwich Pt
Long Ridge
High Ridge
New Canaan
NEW CANAAN
Silvermine
Wilton
WILTON RADIO
Darien
Norwalk
Noroton
Sheffield I
Long Neck Pt
Westport
Saugatuck
Southport
Fairfield
Owenoke
Cockenoe I
BRIDGEPORT
Stratford
Devon
Trumbull
Nichols
Aspetuck
Weston
Hemlock Res
Lordship
Stratford Pt
STRATFORD SHOAL
CONN NY
LONG ISLAND SOUND
LONG ISLAND
SMITHTOWN BAY
Eatons Pt
Huntington Bay
Asharoken
Crab Meadow
Northport
Huntington
Halesite
East Northport
Kings Park
Smithtown Branch
St James
Stony Brook
East Setauket
Crane Neck Pt
Old Field Pt
Centereach
Lake Ronkonkoma
Ronkonkoma
MacARTHUR
Central Islip
Bohemia
SAYVILLE
Sayville
Islip
East Islip
West Islip
Bay Shore
Brentwood
DEER PARK
Deer Park
BENDER BRENTWOOD
SMITHTOWN
Commack
CARLL
Melville
Wyandanch
REPUBLIC
Farmingdale
ZAHN
Babylon
BABYLON
Lindenhurst
Amityville
FITZMAURICE
Massapequa
Seaford
Bellmore
Merrick
Freeport
MITCHEL AFB
MITCHEL RADIO
Hempstead
Hicksville
Westbury
Jericho
Syosset
GRUMMAN
Oyster Bay
Bayville
Cold Spring Harbor
Glen Cove
GLEN COVE 248 GNC
Glen Head
Sea Cliff
Greenvale
Roslyn
East Hills
East Norwich
Mineola
Manhasset
Port Washington
SANDS POINT
Manor Haven
Great Neck
LA GUARDIA RADIO (CLASON POINT)
LA GUARDIA
FLUSHING
Flushing
QUEENS
NEW YORK
MIDTOWN
BROOKLYN
FLATBUSH
UPPER BAY
STATEN ISLAND
St George
LINDEN
Jamaica
NEW YORK INTNL
ELMONT
Lynbrook
ROCKAWAY
Fire Islands
FIRE ISLAND
Ocean Beach
Cherry Grove
Sexton I
GREAT SOUTH BAY
AMBER 7
RED 3
RED 21
RED 23
BLUE 18
042°
028°
208°
210
240
058°
222
218°
038°
051°
231°
141°
093°
273°
068°
248°
245°
238°
129°
182°
121°
301°
120
180
150
160

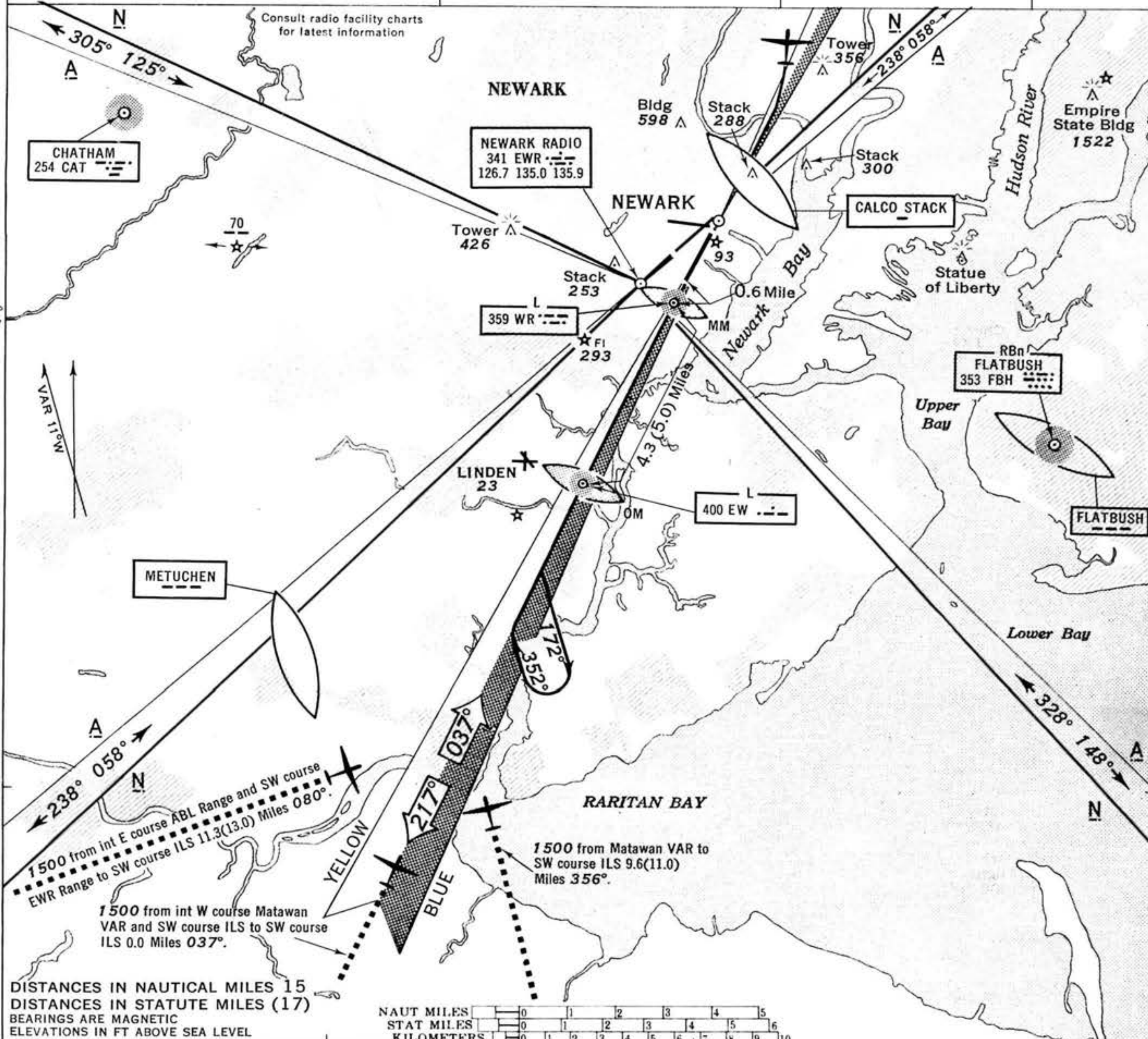
HACKETTSTOWN
Long Valley
090°
125°
273
Morristown
MORRISTOWN
Chester
Mendham
Florham Park
Livingston
Roseland
Montclair
CHATHAM 254 CAT
Madison
Chatham
Middle Valley
Orange
Califon
Gladstone
Peapack
Bernardsville
Basking Ridge
SOMERSET HILLS
Millington
Stirling
Berkeley Heights
Summit
NEWARK
NEWARK RADIO 341 EWR
Elizabeth
JERSEY CITY
NEW YORK
Weehawken
LITTLE FERRY
LA GUARDIA RADIO (CLASON POINT) 209 LGA
Great Neck
Port Washington
Manhasset
Roslyn
Mineola
Flushing
QUEENS
FLUSHING
LA GUARDIA
GREAT NECK
BELMONT
MITCHEL
NEW YORK INTNL
Jamaica
Lynbrook
LOCALIZER
High Bridge
Cokesbury
Oldwick
Bedminster
Far Hills
Liberty Corner
Cranford
Roselle
Westfield
Linden
Rahway
Lebanon
Annandale
N Branch Raritan R
Fluckemin
White House
SOMERSET
White House Station
Watchung
Plainfield
WESTFIELD
Dunellen
METUCHEN
STATEN ISLAND
St George
Travis
UPPER BAY
BROOKLYN
FLATBUSH
JAMAICA BAY
BROOKLYN
ROCKAWAY
NAS NEW YORK
Island Park
ISLAND PARK
Long Beach
Rockaway Beach
IDLEWILD RADIO 379 IDL
Rockaway Point
FLOYD BENNETT 532 NSC
NAS NEW YORK (FLOYD BENNETT)
Coney Island
CONEY ISLAND
Midland Beach
Hoffman I
New Dorp
MILLER (ARMY)
DONOVAN HUGHES
RICHMOND CO
STATEN ISLAND
FLATBUSH 353 FBH
Martinsville
GREEN 3
SOLBERG-HUNTERDON
Raritan
Somerville
Bound Brook
Bradley Gardens
HADLEY
South Plainfield
Oak Tree
Iselin
Menlo Park
Woodbridge
Sewaren
Perth Amboy
Kreischerville
Great Kills
LOWER BAY
042°
328°
Centerville
298°
Three Bridges
Manville
Flagtown
BELLE MEAD
Neshanic Station
Neshanic
East Millstone
Millstone
New Brunswick
Highland Park
Pleasant Plains
Tottenville
RARITAN BAY
NY
NJ
206
South Amboy
222°
042°
RBn AMBROSE 286 · Etc 20m-30m & 50m-60m
040°
Reaville
119°
Middlebush
NORTH BRUNSWICK
Belle Mead
Neshanic River
060°
056°
116°
NEW BRUNSWICK
Sayreville
Laurence Harbor
Union Beach
Keansburg
Sandy Hook
RBn SCOTLAND 294 Continuous Carrier
SCOTLAND
SANDY HOOK BAY
Ringoes
236
Griggstown
Milltown
Farrington Lake
V 10
South River
Cliffwood Beach
Keyport
Port Monmouth
WALLING
Cheesequake
Old Bridge
Hazlet
Matawan
Belford
Atlantic Highlands
Navesink
Highlands
222°
148°
220°
Hopewell
Blawenburg
Rocky Hill
058°
PRINCETON
Kingston
Monmouth Junction
Dayton
TURNPIKE
ZIGFIELD
Spotswood
Helmetta
Manalapan Brook
MATAWAN RADIO
Middletown
MATAWAN
Rumson
Sea Bright
Fair Haven
Red Bank
AMBROSE
A T L
Princeton
238°
University
Stadium
Institution
157
AMBER 7
NEW JERSEY
Jamesburg
GREEN 3
Holmdel
Lincroft
RED BANK
Fort Monmouth
Shrewsbury
BLUE 18
296°
Pennington
PENNINGTON
PRINCETON-NASSAU
Penns Neck
Plainsboro
Prospect Plains
Cranbury
Marlboro
Englishtown
Washington Crossing
Lawrenceville
238°
Princeton Junction
Dutch Neck
Millstone River
Camp Charles Wood
Long Branch
Oakhurst
242°
GREEN 5
MERCER CO
West Trenton
Ewingville
Hightstown
HIGHTSTOWN
Edinburg
Assunpink Creek
COLTS NECK
Colts Neck
Yellow Brook
Freehold
Wayside
Allenhurst
Mercerville
Hamilton Square
Windsor
Manalapan
Millhurst
FREEHOLD
253°
026°
Woodside
MORRISVILLE
Morrisville
TRENTON
Robbinsville
TRENTON-ROBBINSVILLE
Roosevelt
Perrineville
Smithburg
Manasquan River
Adelphia
Asbury Park
ASBURY PARK
ASBURY PARK AIR TERMINAL
Ocean Grove
Farmingdale
Clarksburg
Fallsington
WOOLF
N Phila
10°W
74°45′
74°30′
To Lakehurst 520 NEL
To Philadelphia 266 PHL
74°15′
To Lakehurst 520 NEL
74°00′
11°W
73°45′
Kilometers
Nautical Miles
Statute Miles
LONG BEA
15′

INSTRUMENT APPROACH CHART - ILS

MINIMUM SAFE ALTITUDES
100 Nautical Miles *6300*
25 Nautical Miles *2600*

NEWARK AIRPORT
NEWARK, N. J.

NEWARK APPROACH CONTROL	NEWARK LOCALIZER	NEWARK TOWER	ELEV
341 126.5 126.18	Z 110.3 I•• EWR	278 118.1 126.18	*18*

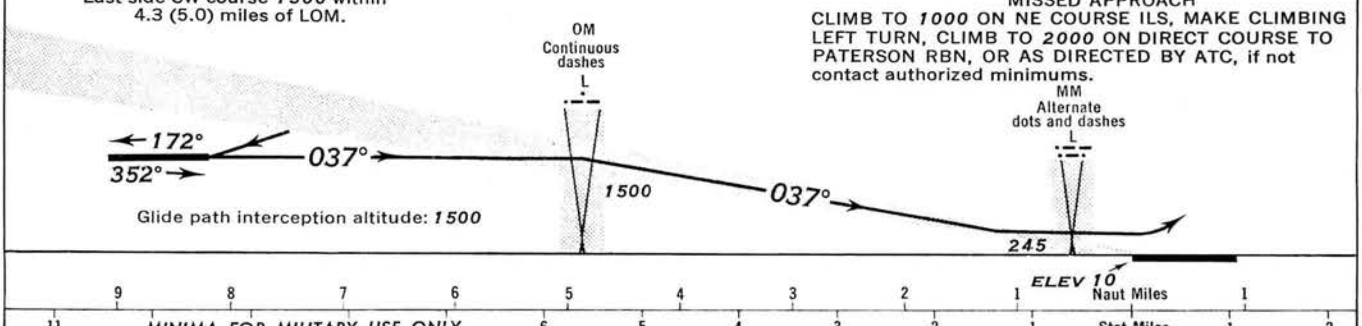


74°20′
74°10′
74°00′
Consult radio facility charts for latest information
305° 125°
A
N
NEWARK
CHATHAM 254 CAT
NEWARK RADIO 341 EWR 126.7 135.0 135.9
Bldg 598
Stack 288
Tower 356
238° 058°
Stack 300
Hudson River
Empire State Bldg 1522
NEWARK
CALCO STACK
Tower 426
70
93
Stack 253
0.6 Mile
Newark Bay
Statue of Liberty
40° 40′
L
359 WR
FI 293
MM
RBn FLATBUSH 353 FBH
VAR 11°W
4.3 (5.0) Miles
Upper Bay
LINDEN 23
L
400 EW
OM
FLATBUSH
METUCHEN
172°
352°
Lower Bay
037°
328° 148°
40° 30′
238° 058°
217°
RARITAN BAY
1500 from int E course ABL Range and SW course EWR Range to SW course ILS 11.3(13.0) Miles 080°.
1500 from Matawan VAR to SW course ILS 9.6(11.0) Miles 356°.
YELLOW
BLUE
1500 from int W course Matawan VAR and SW course ILS to SW course ILS 0.0 Miles 037°.
DISTANCES IN NAUTICAL MILES 15
DISTANCES IN STATUTE MILES (17)
BEARINGS ARE MAGNETIC
ELEVATIONS IN FT ABOVE SEA LEVEL
NAUT MILES 0 1 2 3 4 5
STAT MILES 0 1 2 3 4 5 6
KILOMETERS 0 1 2 3 4 5 6 7 8 9 10

STANDARD INSTRUMENT APPROACH PROCEDURE

PROCEDURE TURN
East side SW course *1500* within 4.3 (5.0) miles of LOM.

MISSED APPROACH
CLIMB TO *1000* ON NE COURSE ILS, MAKE CLIMBING LEFT TURN, CLIMB TO *2000* ON DIRECT COURSE TO PATERSON RBN, OR AS DIRECTED BY ATC, if not contact authorized minimums.



MINIMA FOR MILITARY USE ONLY

LANDING		MIN ALT	CEIL	VIS		MIN ALT	CEIL	VIS
STRAIGHT-IN	DAY	*418*	400	1	NIGHT	*418*	400	2
CIRCLING	DAY	*618*	600	1½	NIGHT	*618*	600	2

RATE OF DESCENT - FEET PER MINUTE

KNOTS	90	110	130	150	M.P.H.	100	120	140	160	180
	445	540	645	745		430	515	600	690	775

PRICE FIVE CENTS

Compiled and printed to ICAO standards by the U. S. Coast and Geodetic Survey under authority of the Secretary of Commerce

THE NEWARK AIRPORT-MAYORS' COMMITTEE

c/o Mayor Nicholas Sylvester La Corte
City Hall
Elizabeth, New Jersey

HELP YOUR OFFICIALS RELIEVE A PLAGUE

Please answer the following questions, YES or NO

Does the noise from low-flying planes

(a) Interfere with the normal peace of mind of yourself and other members of your family? Yes No

(b) Does it disturb the sleep of yourself and other members of your family? Yes No

(c) Does it affect the health of yourself and other members of your family? Yes No

Please furnish the following information concerning low-flying planes between December 22, 1952, and January 3, 1953

Date and Exact or Approximate Time	Extent of Noise and Vibration	Approximate Height Above Roof

I cannot approximate as to the exact time and height of the planes breaking violations. Of most concern to me and my family are flights on evening and night schedules. Some are so low that it is emotionally shocking. The aftermath of its vibrations has a sleep deterring effect.

Name.....Mr..Roman.Maieran.....

Address.....205.Erie.Street.....

No. in Family..2..No. of Adults..2.....Ages of Children.....

Please mail to me. Postage is prepaid.

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BIOGRAPHICAL SKETCH

Subject — Francis C. Crowley

Education — Graduate
Boston College Prep--Boston College, Mass.
Air Force Engineering School, Dayton, Ohio
Air Force Photographic School, Rantoul, Illinois
M.I.T. Gound School, Boston, Mass.
U.S. Air Force Flying Schools

Flying Experience — Pilot--World War I and II
Present rank-Colonel, USAFR
Rating-Command Pilot, Technical Observor, Green Instrument Card
Member: Aircraft Accident Boards (Pres. Empire State Crash Inquiry Board)
Massachusetts Aeronautics Commission
Royal Air Force Personnel Transfer Board
Newspaperman's American Legion Post
Aero Club, Massachusetts

Boston-New York Night Airmail Pilot 1929

Log Time-over 10,000 hours of all types, single and multi-engined aircraft

Served as: operations, maintenance, squadron, and air base commanding officer in the United States and Great Britain.-U. S. Controller of air-craft movements from Britain to Africa (8th Air Force)-Technical Inspector-Air Inspector-Deputy for Engineering-Staff Member