

## Preface –

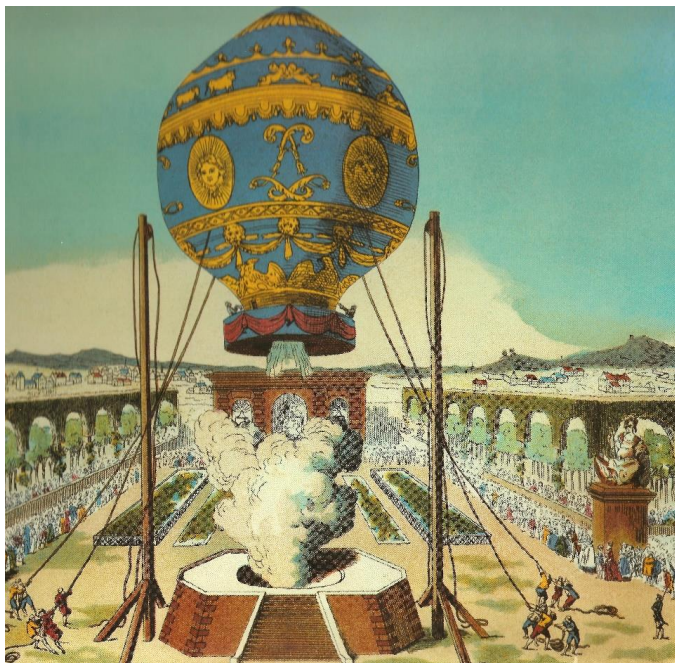
*A brief look at...*

## The Evolution of Transportations Systems

### Aviation's Transportation Pedigree

- The Aircraft Dispatcher Enters the Safety Equation

Over the course of mankind's evolution, humanity's experience with various means of transportation, gleaned over many thousands of years, has revealed a variety of threats to the effective, safe passage of people and commodities. Those engaging in transportation, out of necessity, have continuously sought out advancements to make travel safer and more efficient. Throughout many thousands of years, humans looked to the skies, envying the birds and longing for the freedoms which air travel might bring.



Humans finally, and often warily took to the skies in 1783 as pioneering hot air balloonists begin to experiment with flight. Throughout the captivating evolution of transportation, humans have universally discovered, often after failures or catastrophes, that certain fundamental concepts must be considered when operating any means of conveyance from point A to point B. The basic tenets have not changed. The journey's routing must be analyzed to aid in the avoidance of hazards and to ensure the selection of the most advantageous and agreeable travel plan. Determining optimal conditions for travel required some consideration of weather factors. For example, ancient mariners, setting out to sea into the face of an approaching storm quickly learned the necessity of seeking more favorable weather conditions for their voyages. They realized also that the capabilities and condition of their vessel must be evaluated to ensure the craft's suitability for the intended voyage. Pony Express riders delivering messages, newspapers, and mail between Missouri and California in the United States around 1860, learned the pitfalls of setting out in a blinding blizzard, or attempting travel along flooded, muddy

trails on a lame horse.

In a variety of transportation systems, especially in the railroad industry by the 1800's in the United States, the concept that two key individuals, similarly trained and charged with responsibility for the safe conduct of the trip, would make for an optimal safety team. The operator guiding the moving vehicle would have the tactical exposure to assess the immediate vehicle operation. The second collaborator or planner, based in a more centralized, stationary location could perform more detailed and strategic analysis of the journey, with a particular focus on the technical and safety aspects of the trip. By the mid 1850's, the profession of railroad dispatcher had evolved into a vital safety role along the steel rails in the United States.

The development of flight empowered humanity to achieve an enormous leap forward in the evolution of transportation systems. The ultimate manifestation of humanity's quest for faster, more efficient travel was achieved at the turn of the 20th century when heavier than air machines first took to the skies. At Kitty Hawk, N.C., the famous Wright Brothers from Dayton, Ohio successfully conducted the first flight of their Wright Flyer I on December 17, 1903, with Orville piloting. Two of the perennial benchmarks of effective conveyance; elapsed time and routing distance, were reduced to levels never before seen in human history by the airplane. The epoch of powered flight and its associated benefits had arrived.



By the time humans mastered the skies, the benefits of sharing responsibilities for transportation services between those controlling the transportation craft and a qualified, similarly trained partner on the ground were apparent, demonstrated over many years in other modes of transportation such as railroads and marine shipping. As was the case throughout prior eras, certain perennial consequences of operating transport vehicles in variable conditions posed challenges. Risk factors from potential weather impacts, vehicle limitations and facility constraints had to be considered. The concept of risk mitigation was understood and relevant, even to the earliest aviators. Those associated with the early development of commercial air transport organizations generally understood the complexities and challenges facing transportation systems. After a wave of preventable accidents, and in light of the aforementioned lessons of transportation history, a prevalent best practices concept grew among operators. It became apparent that a well-trained individual on the ground could serve as an indispensable asset to the pilot. Thus, even before regulations mandated aircraft dispatchers, this type of teamwork became an accepted tenant of commercial aviation. As the fledgling airline industry evolved, the indispensable person on the ground would ultimately become known as an aircraft dispatcher.

As the technology of powered flight emerged, the aforementioned, precursory transportation alliances would influence the evolution of commercial aviation's **operational control partnership** between a flight's Captain and Dispatcher in the United States. The unique challenges of aviation required operating procedures to be taken a step further. The importance of **shared responsibility** between two individuals, equally charged with safety of flight, proved to deliver optimal safeguards against the risks and hazards of flight, (versus airlines simply providing someone on the ground who merely was another information source for pilots) The significance of offering an additional set of eyes over the course of the entire flight from a person who had a broader systems perspective and who had access to numerous sources of detailed information that were unavailable to crews in flight would prove invaluable by the 1930's.

It is here then, where we will begin to examine the earliest roles and responsibilities of the Aircraft Dispatcher. During a time when conventional wisdom evolved with a demonstratively obvious acknowledgment of the benefits of two independent sets of highly skilled and well-trained individuals. The histories of the Airline Dispatchers Federation and the aircraft dispatcher profession itself both can proudly trace a transportation pedigree of lessons learned over many eras.

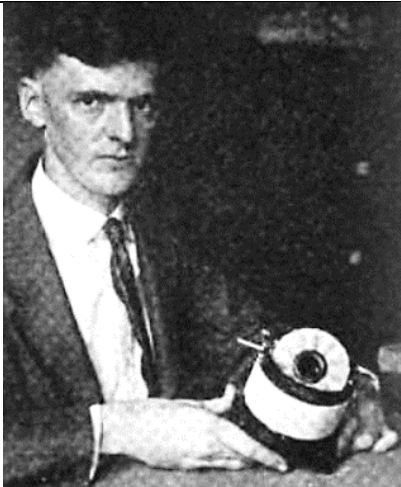
## HISTORY Snapshot

### DISPATCH FIRSTS: First Known Mention in Newsprint

THE Navy Department is working out a scheme, originally devised by one of its civilian experts, A. Crossley, for piloting airplanes over land routes by radio. In its essentials it resembles the method, of recent invention, whereby vessels are enabled to make their way safely into harbors on foggy nights by listening to signals from a cable laid in the water.

The combined use of radio telegraphy (or telephony) and the signaling stations along the route would enable aircraft to report their positions at various points, and thereby allow the **aircraft dispatcher** to make general arrangements for the arrival and departure of planes or balloons from the stations along the route.

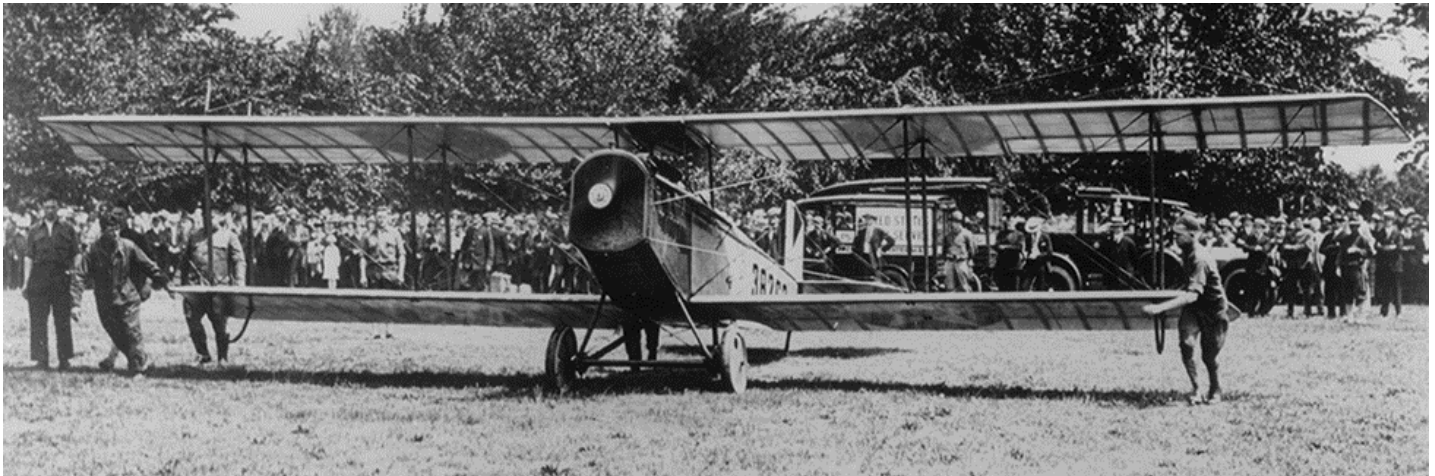
The experts of the Navy Department believe that adoption of this system will speed up air traffic, and make flying through fogs, clouds and bad weather as safe as railroad travel. It will render aerial navigation fool-proof, and hasten the date of entry of aircraft into competition with existing commercial carrier systems.



The text at left is the first known, widely circulated news story in which the term "aircraft dispatcher" appears. The story, under the headline "Radio Control for Air Routes"

appeared in newspapers in the United States in December 1922. It was published by the Public Ledger Company. U.S. Navy Radio Engineer, Alfred Crossley of Newark, New Jersey is credited in the article as devising "the system for piloting aircraft over land routes by radio." Crossley had been a wireless radio operator in the US Navy aboard ship during World War I. Although Crossley's expertise was in the field of radio and his transportation background involved maritime operations, his pioneering work in radio communications between operations personnel on the ground and pilots laid a fundamental foundation for the evolution of the dispatch profession, not to mention air traffic control systems.



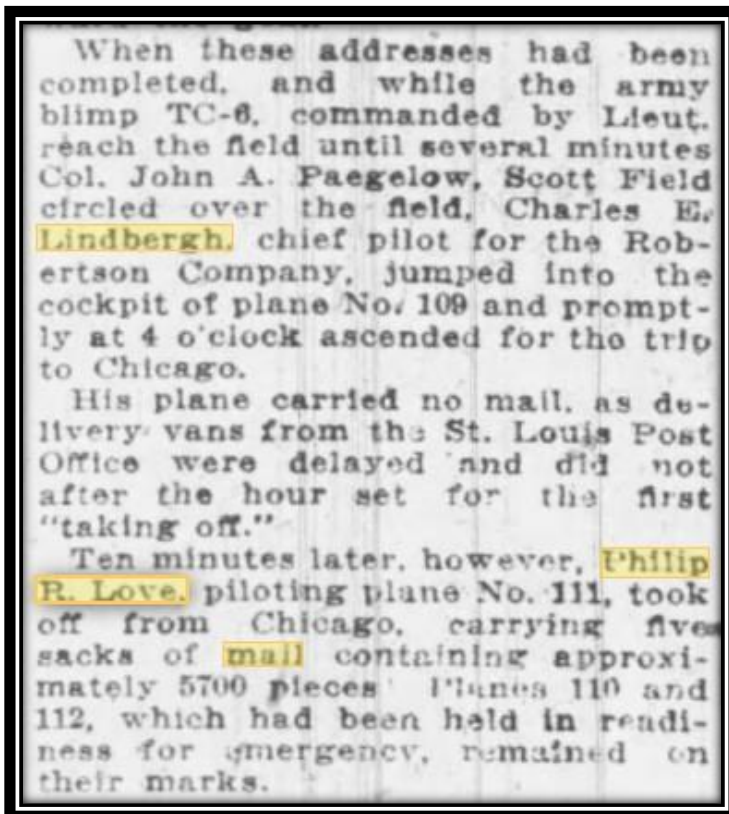


Within the United States, in broadest terms, the first (non-military) individuals in aviation whose job functions resembled that of today's aircraft dispatcher worked for the Post Office Department. Their appearance in workplace history dates to 1918 when the United States Post Office assumed control of airmail operations from Army fliers.

Following 52 experimental flights by the Post Office Department in 1911 and 1912, the first extended test of airmail service began on May 15, 1918, when the U.S. Army and the Post Office Department together began operations using US Army surplus World War 1 aircraft such as Curtiss JN-4H Jenny biplanes. The planes were flown by Army pilots operating on a 218-mile route between the old Washington Polo Grounds and Belmont Park in New York City, with an intermediate stop at Bustleton Field in Philadelphia. Included in those who were on hand for the departure of the first airmail flight were President Woodrow Wilson, U.S. Postmaster General Albert S. Bursleson, and Assistant Secretary of the Navy and future president, Franklin D. Roosevelt. That first northbound flight did not go well, with pilot Lt. George Boyle becoming disoriented after takeoff. Upon realizing that

he was lost, Boyle attempted to find out where he was by making an unscheduled landing in nearby Waldorf, Maryland. However, he broke the prop on his airplane when he made a hard landing, and the mail he was carrying had to be trucked back to D.C. The mail was flown to Philadelphia and New York the next day. Happily, the first southbound trip was a complete success, triumphantly completed later that same day.

The carriage of United States mail by aircraft was underway. Less than a decade later however, this role was transferred from the Post Office to the private sector when The Air Mail Act of 1925 authorized the Postmaster General to contract for domestic airmail service with commercial operators. By transferring airmail operations to private companies, the government effectively helped create the commercial airline industry.



At left, an excerpt from a wire story from April 1926 describing how Charles Lindbergh, Robertson Aircraft Corporation's chief pilot participated in initial air mail flights. Although Lindy has generally credited with carrying the first shipment of commercial airmail, this article confirms that aviator Philip R. Love flew 5 sacks of mail in a De Havilland DH-4 biplane between Chicago to St. Louis, on what was commercial US aviation's inaugural commercial air mail flight.

## ST. LOUIS POST-DISPATCH

ST. LOUIS, MONDAY EVENING, APRIL 12, 1926.

### SUCCESSFUL TEST FLIGHT OVER MAIL ROUTE TO CHICAGO

Two Planes of Robertson  
Corporation, Each Carry-  
ing Passenger, Beat  
Scheduled Time.

ST. LOUIS SERVICE  
STARTS THURSDAY

Carriers to Leave Here at 4  
P. M. Daily and at May-  
wood Field, Chicago, at  
6 A. M.

Flying through lowering clouds at a speed of more than 120 miles an hour, two mail pilots of the Robertson Aircraft Corporation yesterday made a test flight from Chicago to St. Louis over the postal route, in two hours and 10 minutes.

The trip, carried out before a tail wind with the Liberty engines of the De Havilland planes turning only at cruising speed, was 45 minutes faster than the scheduled fly-time time which will link St. Louis by air mail with Chicago, Cleveland, New York and Pacific Coast points, beginning Thursday when service is inaugurated.

The two airplanes, in charge of Charles E. Lindbergh and Phillip R. Love, former army pursuit pilots, left Lambert-St. Louis Field Saturday for the trip north, each carrying a passenger.

The flight to Chicago was accomplished in two hours and 50 minutes' flying time, or five minutes ahead of the schedule. The pilots took their planes at cruising speed, making stops at Springfield and Peoria where they will land each day for 10 minutes to pick up mail for delivery to the transcontinental route at Chicago.

#### Strong Shifting Winds.

Strong shifting winds greeted the pilots when they left Maywood Field, Chicago, for the return trip yesterday. Roaring across the field into the wind as the hangar clock struck 12, Lindbergh banked his ship steeply and swung off for Peoria. Love followed.

South of Chicago the pilots ran into heavy rain clouds which obscured their view of the ground. Now and then they swept down to check up on landmarks, but for the most part they kept an altitude of about 1000 feet.

An hour, to the minute, after they had left Chicago, the planes were circling over Peoria, having covered 125 miles. Dipping down over the river they swung off to the left toward Springfield, 60 miles from Peoria.

They were over the Springfield field in 28 minutes. Lindbergh headed through the mist toward St. Louis and Love landed to leave a Springfield newspaper man who had been a passenger from Chicago. He was off again in a minute.

#### Regular Schedule.

The regular mail schedule allows the pilots three hours and 15 minutes to make the Chicago-St. Louis trip. The time includes stops at Springfield and Peoria and is arranged to permit the St. Louis planes 15 minutes leeway to meet the transcontinental carriers at Chicago.

Mail planes will leave Lambert-St. Louis field daily at 4 p. m. except Saturday and Sunday and will arrive in Chicago at 7:15. Returning, they are scheduled to leave Maywood Field at 6 a. m., arriving at 9:15 here with mail posted the afternoon of the day before in New York and Cleveland.

This article describes test flights which preceded the actual inauguration of airmail service on Thursday, April 15, 1926.

The report discusses some of the weather hazards faced by early aviators at a time when dispatchers were not a part of the safety equation.

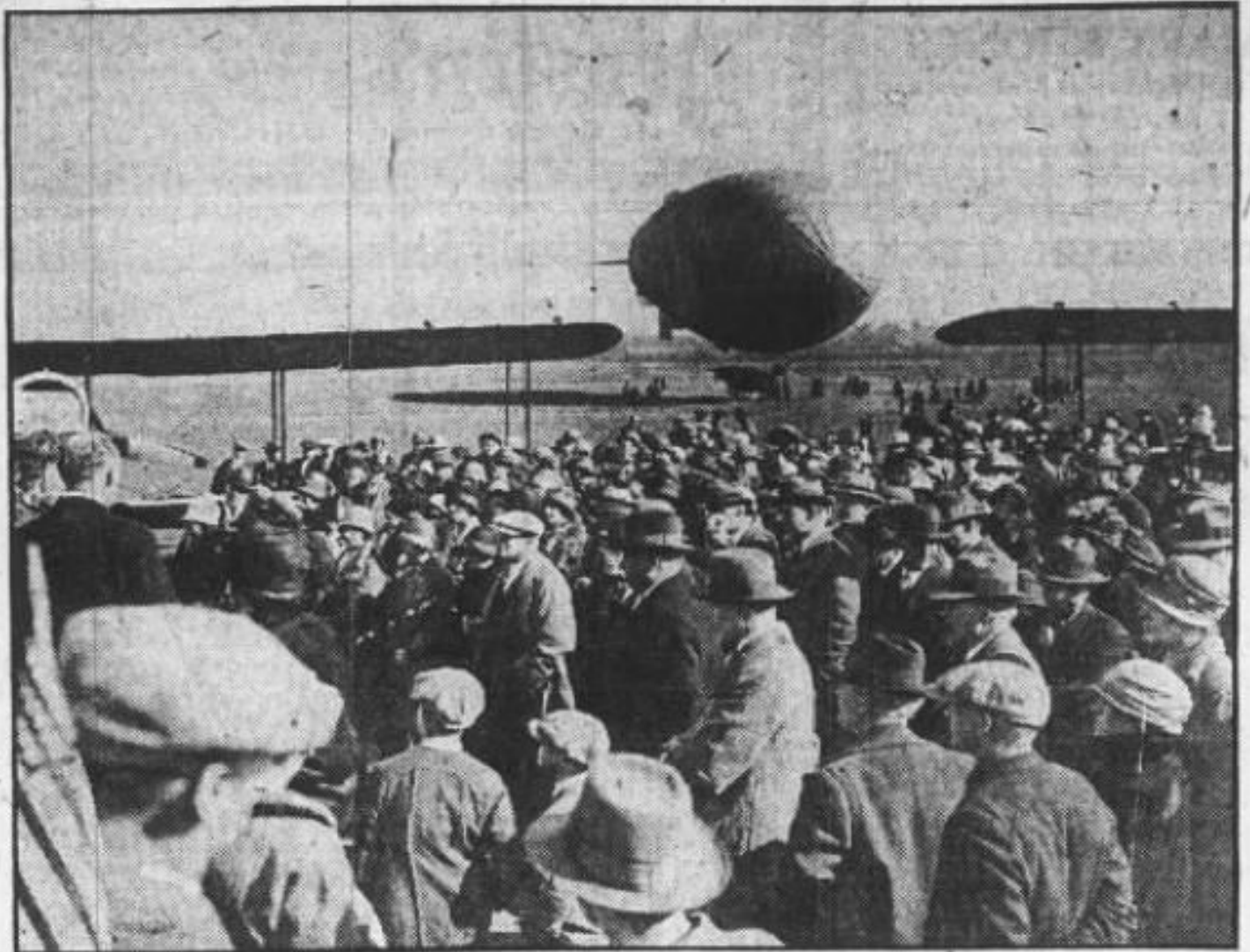


## St. Louis Globe-Democrat.

ION (Entered as Second Class Matter at Post Office, St. Louis, Mo., Under Act of Congress, March 3, 1879.)

ST. LOUIS, FRIDAY MORNING, APRIL 16, 1926.

### 2000 Spectators Attended Opening of St. Louis-Chicago **Air-Mail** Service



Just before the "hopoff" yesterday afternoon at the Lambert-St. Louis Flying Field, when the St. Louis-Chicago **air** mail service was formally inaugurated in the presence of 2000 spectators.

The carriage of airmail provided revenues which allowed entrepreneurs to establish profitable commercial flight route systems. This milestone event in aviation led directly to the formation of many early airlines in the United States.

In addition to the carriage of airmail, some of the first regularly scheduled passenger services were begun in 1925 and 1926. Taking a cue from railroad and maritime operations, early airline companies adopted a rudimentary system of control authorities over the initiation, conduct and termination of their flights. On the ground, a job function evolved to assist pilots with various aspects of air transportation. As private companies assumed responsibilities for the carriage of airmail, the new "airlines" hired former Post Office operations personnel to help plan and monitor aircraft movements. Former Airmail radio station personnel provided these early flight following services. Ground based individuals, sometimes called the Operations Manager or Superintendent, were responsible for analyzing numerous factors associated with flights under their charge including duties to evaluate weather conditions, confirming that airfields to be used were in service with respective navigation and communication facilities functional. Their analysis was shared with pilots prior to and during flight. Planned operating schedules and rudimentary "flight plans" were sent to stations along intended routes via radio telegraphy (or telephony).

Growing experience with passenger operations, and unfortunately, mounting aircraft accidents prompted additional government oversight in 1930 which required an airline to demonstrate that it possessed aircraft that were properly equipped and maintained, a sufficient number of qualified airmen, and an adequate ground organization for the services provided. By 1931, Air Commerce Regulations required a "Flight Clearance" form to be signed by both pilot and airline "operations manager". Federal Regulations also required "specific permission of the [airline] operations manager or his designated representative"

## Accident Rates in the Late 1920's

- In the United States during 1926 and 1927 there were a total of 24 fatal commercial airline crashes, a further 16 in 1928, and 51 in 1929 (killing 61 people).
- 1929 remains the worst year on record for fatal airline accident rates, at an accident rate of about 1 crash for every million miles flown.
- Based on the current number of flights in the USA today, this would equate to ~7,000 aircraft accidents per year.



before flights could proceed under instrument conditions. In 1933, regulations were enacted requiring that "each scheduled flight be authorized, delayed, suspended or cancelled by competent airline employees (on the ground).

A milestone event for the history of the aircraft dispatch profession occurred in October 1934, when revised safety requirements for airlines became effective, resulting from an amendment to the Air Commerce Act of 1926. Included was the requirement for every airline to divide its system into operating divisions, with each division's operating procedures subject to the approval of the Bureau of Air Commerce. Divisions were required to have approved operations manuals dealing with such safety matters as minimum altitudes of flight over specific airways, minimum ceiling for landing at specific



# PLANE WRECKED, 4 SAFE IN MOUNTAINS; RESCUERS TRYING TO LOCATE SURVIVORS

**Japan Scraps Naval Treaty With Demand For Equality**

Tokyo Calls for New Pact Wiping Out All Oceanic Weapons

Washington Notified

Sails Denounces Ratios: Says No One Wants Ship Building Race

Washington, Dec. 20 (AP)—Japan scrapped the Wash-

**U. S. Will Stage Great Navy War Game in Pacific**

Admiral Clegg, Dir. of Naval Operations, announced today that the United States will stage the largest and most elaborate war game ever conducted in the Pacific.

**Germany Jail American Girl in Hitler 'Slur'**

Miss Rita Stiegl, held at Waldenau for slanders trial.

U. S. Consul to Act

Girl Accused of Saying "Hitler Is of Jewish Descent"

**Wrecked Plane and Pilot Who Is Safe**

ATLANTA, Dec. 20 (AP)—The pilot of a plane that crashed in the Adirondacks today was safe and well.

**Radio Beam Is Used To Locate Position of Liner in Adirondacks**

Pilot's Wireless Call Reveals That All Are Safe and Believes Wreck Is Near Rockwood, N. Y.

PARTY BUILDS HUGE FIRE TO GUIDE SEARCHERS; HAS NO FOOD

Engineers Hope to Fix Liner's Position Before Her Radio Fades; Ship Lost in Storm After Leaving Syracuse



It is the opinion of the Accident Board that the probable cause of this accident is the failure of the company to have on duty in the Division Control Office a competent dispatcher in charge of flight control.

No recommendations for corrective measures are being made by the Accident Board due to the fact that regulations relative to dispatching and dispatching personnel are now in process and the company involved took immediate steps to protect themselves against a recurrence of an accident of this kind.

Respectfully submitted,

Eugene L. Vidal  
Director of Air Commerce

The probable cause of the accident was "the failure of the company to have on duty, a competent dispatcher in charge of flight control"

(continued from previous page) airports, procedures for takeoff in the event of forced landing, and weather minimums for specific routes. Other provisions included a requirement that dispatching procedures and dispatch personnel receive Bureau of Air Commerce approval.

Foreshadowing all future dispatch regulations, with authority came weighty responsibilities and associated accountability. During the investigation of an accident involving a Curtiss Condor of American Airways (see above and previous page) which crashed on December 28, 1934, the Bureau of Air Commerce determined that the probable cause of the accident was "the failure of the company to have on duty, a competent dispatcher in charge of flight control".

ENTON, PA., TUESDAY MORNING, JUNE 12, 1934

SINGLE COPY Three Cents | DAILY 12 Cents Week | DAILY & SUNDAY 15 Cents Week

## Plane That Carried Seven Persons to Death

New type 16-passenger Curtiss-Condor air transport of the American Airlines which was found wrecked in the mountains near De Bruce, N. Y. The bodies of four passengers, two pilots and a stewardess were found in the wreckage.

## Wrecked Plane Is Found; Seven Occupants Dead

### Recent Major Plane Disasters

NEW YORK, June 11. (AP) — The following is a list of major passenger plane disasters in this country in recent years:

- September 17, 1927—Seven killed when sightseeing plane crashed at Hadley Field, N. Y.
- October 17, 1927—Five killed in San Antonio, Texas crash.
- September 8, 1928—Mail plane crashes at Pocatello, Idaho, killing seven.
- March 17, 1929—Passenger plane crashes at Newark, with a loss of 14 lives.
- January 2, 1930—Ten die when two planes collide in mid-air and burn near Santa Monica, Cal.
- January 19, 1930—Sixteen persons, including eight women, burned to death when plane catches fire near Occanville, Cal.
- July 10, 1930—Five killed in crash at Arkansas Pass, Ten.
- March 31, 1931—Kathie Rockne and seven others die in crash near Bazar, Kansas.
- Nov. 8, 1931—Six killed when passenger plane crashes at San Bernardino, Cal.
- March 19, 1932—Seven die as a result of crash near Calimesa, Cal.
- March 25, 1932—Plane crashes into house near Hayward, Cal., killing eleven occupants of house and three in plane.
- June 11, 1932—Nine killed in crash of "Northern Light" on sightseeing trip from World's Fair at Chicago.
- November 12, 1932—Seven die in crash-up at Clumston, Ind.
- February 26, 1934—Eight killed when airliner crashes into mountain side in snowstorm near Salt Lake City, Utah.

### Airliner Crashed Against Peak In Catskills

#### Six of the Bodies Are Badly Burned

#### Searching Flier Sights Wreckage From Air — Scene of Crash Almost Inaccessible — Woman Who Lives Far Back in Hills Saw Plane Fighting Storm Saturday Night and Few Minutes Later Heard Crash but Was Unable to Get Word to Authorities

DEBRUCE, N. Y., June 11. (AP) — The charred wreckage of a New York-to-Chicago air "luxury liner," with the bodies of its seven occupants nearby, was found today smashed against the almost inaccessible slope of Last Chance hill, a 2,000 foot peak in the lower Catskills.

The twin-motored biplane, roaring through a fog and thunderstorm late Saturday, had cut a long gash through the thick tree tops and crashed half way up the rugged mountainside.

The wreck was sighted about noon by W. H. (Red) Haddock, piloting one of a score of planes in a widespread search for the vanished 16-seater ship.

The scorched brown gear against the green forest attracted his attention. Skimming the trees, he saw bits of the red-tile engine and blue fuselage. Quickly he communicated his discovery to the Newark airport, from which the liner had taken off for Chicago.

Haddock flew back to Livingston Manor, a few miles from here, with his companion, Lee Lord. Then he (Continued on Page Twenty-one)

### Pilot of Ill-Fated Plane

CLYDE HOLBROOK  
Pilot who died when the giant airliner crashed in the Catskill mountains.

### Airliner Crashed On Last Chance Hill in Catskills

#### Wreckage Scattered About Wide Area in Wooded Section

(Note: The following eye witness story of the wreckage of the Newark-Chicago air liner which carried seven to death in a remote section of the Catskill mountains was written for the Associated Press by Henry C. Miles, Birmingham Press reporter.)

By HENRY C. MILES

DEBRUCE, N. Y., June 11. (AP) — The beautiful orange and blue Newark-Chicago air liner is scattered over the timbered sides of Last Chance hill and the six men and one woman who rode it into the fog of the Catskill mountains last Saturday night are charred beyond recognition.

I just returned from the wreck, a wooded spot three miles north of Mongaup pond and eight miles from DeBruce, DeBruce is the nearest habitation.

The great liner with its twin motors, a Curtiss-Condor, was headed north when it plunged into Last Chance hill. The engines were torn loose, the wings riddled and the cabin with room for

### Plane Stewardess Who Died

MISS ADA HUCKEBY  
Former Chicago nurse who was killed in the crash of the American Airlines plane.

### 5 Killed, 6 Hurt As Plane Falls In Argentina

Three Americans Among the Dead as Airliner Plunzes

### Reporter Sees Wreck From Air

### Czechoslovakia

### \$20,000 Fund

Another in sequence of airliner accidents in the early to mid-1930's which encouraged additional safety regulations. The article observed that the plane crashed while "roaring through a fog and thunderstorm".



## The 1930's

**1931 Oct 1** Air Commerce Regulations require a "Flight Clearance" form to be signed by both pilot and airline "operations manager."

**1932 Dec 1** The Aeronautics Branch inaugurated regular transmission of U.S. Weather Bureau weather maps via teletypewriter circuits to 78 U.S. air terminals. Six times daily, the service provided a complete weather map of the United States, divided into three sections.

**1933 Jan 1** Federal Regulations required "specific permission of the [airline] operations manager or his designated representative" (later defined as an aircraft dispatcher) before flights could proceed under instrument conditions.



May, 1935:

Regulations require "each scheduled flight" to be "authorized, delayed, suspended or cancelled by competent employees..."

1935

## HISTORY Snapshot

# Women in Aviation The First Dispatchers

Men and Women have served side by side in dispatch roles since the earliest days of commercial aviation in the United States. Civil Aviation Regulations issued in 1937 recognized the experience of employees who were performing dispatch-like functions at various airlines. In this way, the government granted dispatch certificates to the first officially certificated aircraft dispatchers in the United States.

Among these were experienced women from the field. In 1936, several news agencies picked up on their story of Dispatcher Alice Marston claiming to be the first woman airline dispatcher in the country.

## Woman Lays Claim To 'First' Title

CONCORD, N. H. (UP)—Mrs. Alice L. Marston claims to be the first woman airline dispatcher in the country.

Since 1933 Mrs. Marston, the mother of a 7-year-old girl and wife of an airport official, has held this position at the airport here where she is employed by the Boston & Maine - Vermont Central airlines.

She wears a regulation blue-gray uniform, service cap and at her waist a leather-holstered automatic. Regulations require that she be armed to protect the mails.

Airmen in northern New England say she is one of the most efficient dispatchers in the east.

*Alice L. Marston is airplane dispatcher* for the Boston-Maine-Central Vermont Airways, a subsidiary of the Boston and Maine, the Maine Central and the Central Vermont Railways. She meets the express planes greets the passengers, handles mail bags, keeps a log of each flight and sends dispatching reports to inform pilots of weather conditions. Boss of the Concord Airport is Alice, and the pilots know it.

*Baltimore and Ohio Magazine, May, 1936*

## "Grandfathered" Airman's Certificate

### The First Dispatcher ?

"27.1055 Any person now or formerly employed by an airline for the purpose of dispatching and flight control of aircraft in airline service for the periods specified either in CAR 27.1050 or CAR 27.1051 may be deemed by the Secretary to have met these respective requirements as to prior dispatcher service." - From 1937 CAR



## Pilots' Errors in Airplane Accidents

Reports on Numerous Crashes Give Department of Commerce Reason to Believe That Better Judgment on Part of Pilots, or Strict Adherence to Regulations Might Have Spared Many Lives.

—H. H. S., In Milwaukee Journal.

THE United States department of commerce certainly would breathe more easily if dead men could only talk. It's having a tough time trying to fix the blame for all the recent major airplane crashes without the help of the pilots. Since most of these pilots died in their planes the government has to content itself with close scrutiny of vital parts of wrecked planes—motors, instruments and controls—statement of air line operators and their subordinates and possible competent witnesses.

From the conclusions reached the department prods air lines and its own subdivisions into developing new safety devices on planes and on the ground. The department is improving its radio beacon service in attempt to prevent beams from "swinging" and "bending." A "swing" or a "bend" in the beams has caused many a pilot to veer off his course until he has learned how to overcome it by manipulating his radio receiving sets. New directional radio transmitters and shielded antennae are now being produced to overcome some of these handicaps.

The department makes no pretense of being able to eliminate entirely the human hazard, but it is striving to enforce regulations to keep pilots from taking unnecessary chances. Reports on numerous crashes show that better judgment on the part of the pilots or strict adherence to regulations might have spared the lives of many. In a few cases it has been shown that pilots have been "pushed" by air line operators into risks, against their judgment, to keep up the reputation for schedules. But such cases have been rare.

### The Radio Beams

There have been attempts to place the blame for accidents on the department's network of radio beams. But in almost every instance it has been proved by the department that the beams at the time of the accidents were functioning properly. Most of the proof has been provided by pilots other than those killed, who were flying the same beams at the same time.

The department of commerce has given close study to types of aviators. This is vital for the entire future of aviation depends on them. If the pilots are cool headed, sober, alert and temperamentally stable, you can count on them for safe flying. If they are inclined to be moody, panicky in a tight spot, slow on the "trigger" and physically run down, chances are there'll be a crack-up before long. The department and the air lines are guarding against them. Sometimes a pilot of this type will have been in service for some time before he is discovered. When he is, there are no excuses or "another chance." He is promptly removed in the interest of society.

The department also has listed the pilots into two other classes—the oldtimers and the youngsters. Their experiences play a big part in the safety of flying. The oldtimers are those who learned to fly during or before the World war. In the war they flew patched up "crates" in all sorts of weather, without radio beams or the like, and their

forced landings were many. These pilots "could fly with their eyes shut." They learned to "feel" their way out of tight spots. Their war experiences made them invaluable for post-war transport purposes, such as the air mail when operated by the government. Many of them are flying today as air line pilots. The question arises as to whether this type of flier is the safest. The department points out that although they are excellent masters of their ships, some are inclined to "pooh-pooh" all these modern gadgets—blind flying instruments and directional radio control—even in bad weather. Flying by "feel" still is in their blood. And, with that "do or die" resolve they inherited in the war, they are at times inclined to try to sneak through hazardous weather when they really should either turn back or resort entirely to instruments and fly high, as prescribed by federal regulations.

The youngsters learned to fly after the war, mostly under the most favorable conditions, with the best of equipment. And during their training, generally speaking, they learned that blind flying and instrument control were as vital as their ability to handle the "stick." The department believes that this class of flier probably would be safer—if the oldtimers stick to their "old fashioned" methods—in bad weather. But they might be safer only so long as their instruments functioned properly. Should the artificial horizon, bank and turn indicator, or the glide and climb indicator give out, they would be at the mercy of their own ability to feel their way out. In that case the oldtimers, as a whole, would excel.

The department comes to the conclusion that mechanical failures are playing a small part in air line crashes. A resume of some of the crashes offers enlightening facts and evidence.

Last week a United Air Lines transport, flying from Los Angeles, to Oakland, Calif., crashed into San Francisco bay with the loss of 11 lives. According to witnesses, Pilot A. R. Thompson flew the plane into the airport at its destination, overshot the field and circled to the right over the bay in another apparent attempt to land. The plane, flying in the dark, dug its right wing into the water while banking, and sank, Edson E. Mouton, former federal inspector, pointed out that the plane should have circled to the left over land, under federal regulations, instead of veering out over the water, and that the pilot apparently didn't realize how close he was to the water in making a wide arc. (It is extremely difficult to judge the distance between a plane and water below to even the most experienced pilot.) Thompson was a veteran pilot with several thousand hours of flying to his credit.

### Other Instances

On Jan. 12, a Western Air Express plane, flying from Salt Lake City, Utah, to Burbank, Calif., crashed into a mountainside near its destination during a fog. The surviving pilot, William Lewis, said that ice began to form on his wings, and that he was forced to pancake into the side of the mountain when he failed to pick up the local radio guiding beam from Burbank, "because it was

busy at that time with about 100 persons, including the famed explorer, Martin Johnson, lost their lives. The department is convinced that Pilot Lewis was flying too low and by visual observation.

On Dec. 27, 1936, another transport, flying from San Francisco to Burbank, crashed near where Lewis' plane fell, with the loss of 12 lives. Evidence shows that the pilot, Edwin W. Blom, called the airport at Burbank for a local radio guiding beam and then crashed apparently a few seconds later. After calling the airport he told the operator to "wait a minute" he was lost in a fog. That was the last heard from him. His plane plunged into a mountainside, motors still at cruising speed, indicating that he had been flying too low over the mountainous territory in such weather.

An obvious case of the pilot being in error occurred when a Transcontinental & Western Air transport, piloted by Otto Ferguson, crashed into Chestnut ridge, 40 miles from Pittsburgh, Pa. Ferguson had taken off at Camden, N. J., early in the day for Pittsburgh, electing to fly a compass course. Near Harrisburg he flew into an "overcast." His log and other evidence show that, instead of resorting to instruments under the conditions as prescribed by federal regulations, and picking up the west leg of the radio beam out of Harrisburg by veering to the north slightly, he elected to continue by compass and partial visual contact. He continued that course, checking his positions now and then by other radio beams out of Mount Union, Buckstown and Pittsburgh. But he must have become confused. Instead of being, north of the course he thought he was following, he was south of it. At the hour he thought he was near Pittsburgh he radioed that he was 10 miles east of the airport. As a matter of fact, the records revealed, he was 35 miles south. Flying 100 feet off the ground, also against federal regulations, he was seen at Connellsville and Uniontown, Pa., wending his way up a ravine. Chestnut ridge must have loomed up suddenly before him through the fog. He crashed with motors at cruising speed.

At first the department of commerce was blamed for faulty radio beams, but evidence was offered by a dozen pilots flying at the same time that day, and some on the same beams that Ferguson should have followed, indicated that the beams were functioning at full strength and without "bending" or "swinging." Nellie Grainger, surviving hostess on the plane, revealed that Ferguson must have thought he was nearing the Pittsburgh airport, but was not preparing to land at the time of the crash, as previously reported. This was a case in which the pilot also was flying too low and violating regulations, the department concluded.

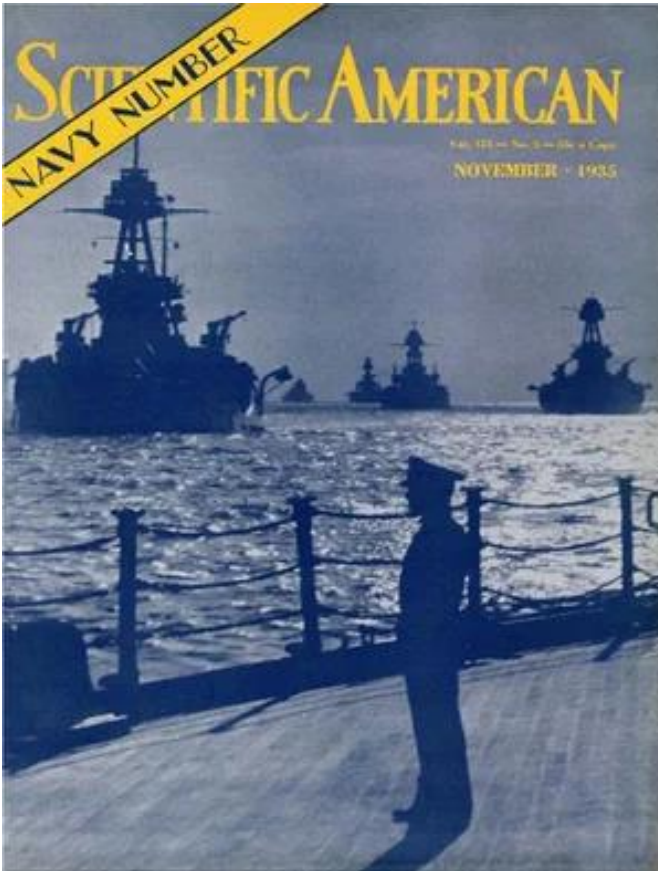
Of 21 crashes investigated since August, 1934, 15 of which resulted in one or more deaths, 10 were found definitely to have been caused by pilot errors.

This newswire article from 1937 illustrates some of the safety concerns which ultimately resulted in revisions to Department of Commerce regulations later in November of that year



Scientific American  
Vol. 153, No. 5, NOVEMBER 1935

## HISTORY Snapshot



In 1935, Scientific American magazine published a fascinating article which profiled the aircraft dispatcher.

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*“The coordination of all flying equipment on a specific division of an airway is made at the discretion of the dispatcher on duty, in this case, such a man is the division dispatcher who exercises full authority for the clearance of all trips within his sector*

*The division dispatcher is the senior authority on matters particularly regarding meteorology and operating problems. He is the final authority before any dispatching from an outlying station*

*Upon the division dispatcher, rests the responsibility of actually deciding with the pilot, whether a given trip shall take off under certain weather conditions. He is a combination dispatcher and meteorologist and is the man who is doing the most to remove guesswork from flying”*

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Copyright restrictions prohibit reproducing that article here in its entirety, however, a sample of the article appears on the next page.

The entire issue is available as a PDF at  
<https://www.scientificamerican.com/magazine/sa/1935/11-01/>



## TAKING THE GUESSWORK

**Definite Paths of Operation . . . Pilots Exchange Information on Conditions . . . Trained Meteorologists . . . What the Dispatcher Does**

**O**PERATORS of American air transport planes, from pilots down to the least important of the ground personnel, are rapidly learning how to avoid flirting with dangers in the air; they are also charting definite paths of operation which in recent months have removed more than half the guesswork which formerly attended the dispatching and flying of air transports on scheduled operation.

Let's take this case: Two pilots stand in the operating office of an airline at Oakland, California. One has just arrived from Los Angeles, 330 miles distant; the other is due to leave in 20 minutes for Los Angeles. Together they study two charts: One is a trip log made by the former during flight showing locations and types of clouds, altitude at which he flew, and any other pertinent information, including temperatures at various altitudes; the other is an analysis, based upon latest weather information, of the next projected flight. The second pilot checks the former's report as an aid in arriving at his flight forecast, and soon takes off, knowing precisely at what levels he should fly and what conditions he will encounter en route.

Although we have omitted one man from this brief picture, in the background stands the division dispatcher. Upon him rests the responsibility of actually deciding with the pilot whether a given trip shall take off under certain weather conditions. He, as a combination dispatcher and meteorologist, is the man who is doing the most to remove guesswork from flying.

**T**HE location of all flying equipment on a specific division of an airway is made at the discretion of the dispatcher on duty. In this case such a man is the division dispatcher, who exercises full authority for the clearance of all trips within his sector. This makes it necessary for dispatchers at outlying stations within the division to request approval of contemplated clearances before actually dispatching trips from



Looking into the cockpit of a transport plane. The pilot is communicating by radiophone with the ground station, receiving instructions and up-to-the-minute weather information

their respective stations. This is done so that the division dispatcher, the senior authority on such matters, particularly in regard to meteorological and operating problems, may hold the final authority before any dispatching from an outlying station is done.

To illustrate, let us assume that a trip is to be cleared from Fresno, an intermediate station of the coastwise run from San Diego to San Francisco. Conditions may be such between Fresno and San Francisco that it will be necessary to fly on instruments part of the distance, and fly over the top of the overcast for the remainder of the distance. In this event, the Fresno dispatcher notifies the division dispatcher at Oakland that he intends to clear the trip on instruments for the distance indicated and over the top for the balance of the trip. If, in the opinion of the



From the radio dispatch room constant communication is maintained not only with planes in the air but also with the other ground stations of the system





# The Evening Herald

*So They Say!*  
 Jolly place, this Hollywood. If you lunch with a lady, you're engaged. If you take her to dinner, you're virtually married—and I'm afraid to think of breakfast. — David Niven, British screen "find" reported engaged to Merle Oberon.

PROVO, UTAH COUNTY, UTAH, MONDAY, MAY 6, 1935 COMPLETE UNITED PRESS TELEGRAPH NEWS SERVICE PRICE FIVE CENTS

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## SENATOR CUTTING, NEW MEXICO, DIES WITH THREE OTHERS IN PLANE CRASH

### DEER CREEK FUNDS SAFE SAYS MEAD

Governor Blood Reports On Progress Made to Commissioner

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SALT LAKE CITY, May 6 —In a telephone conversation with Dr. Elwood Mead, director of the bureau of reclamation at Washington, D. C., Governor Henry H. Blood was assured Sunday that the \$1,000,000 remaining of the original \$3,700,000 set up to start Deer Creek operations, would hold the project in good standing and that more funds would be available as needed until the project is completed.

Progress Related— Governor Blood gave Dr. Mead a summary of the progress made on the project following a meeting attended by Mayor Louis Marcet of Salt Lake City, E. O. Larson, project engineer for the U. S. bureau of reclamation, City Engineer T. H. Humphrey. All recent developments on the project

### Freak On Relief Gets Too Fat For Circus Job

BOSTON, May 6 (U.P.)—The "Living Skeleton" familiar figure of the sideshow, was missing today when the ringling brothers-Barnum & Bailey circus opened at Boston Garden.

It seems that this freak, Imo by name, went on the relief rolls at Sarasota, Fla., the past winter and ate so much that he became uncomfortably stout — too stout, at least, to hold his job.

### PENSION ACT HELD INVALID BY U.S. COURT

First Social Security Law Under The New Deal Unconstitutional

WASHINGTON, May 6 (U.P.)—The railroad retirement act, first social security legislation to be passed under the new deal, was stricken down by the supreme court today as exceeding the constitutional authority of congress.

The court affirmed a decision of the supreme court of the District of Columbia which held the act unconstitutional. The legislation provided for a system of old age pensions for all railroad workers. The decision, read by Justice Owen J. Roberts, condemned many provisions of the law as arbitrary, placing an undue burden on the railroads and having nothing to do with safety and efficiency on the railroads. Chief Justice Charles Evans

Crash Victim



Senator Bronson Cutting, R., New Mexico, who was killed before dawn today when an eastbound airliner crashed in Missouri.

### Senate Plunged In Grief Over Cutting's Death

### Transport Liner Crashes In Fog; 7 Badly Injured

Only Two Passengers Escape Injury; Both Pilots Killed; Paramount Film Party Among Those Seriously Injured

MACON, Mo., May 6 (U.P.)—Senator Bronson Cutting of New Mexico, two air pilots, and a woman passenger believed to be Miss Jane Hillias, were killed today when a TWA transport plane crashed while trying to make an emergency landing through fog and darkness.

Of 11 passengers carried by the plane, including an infant, only two escaped severe injury, and the condition of Paul Wing, movie executive and father of Toby and Patricia Wing, screen stars, was regarded as critical. His chest was crushed.

The casualty list included:  
**DEAD:**  
 Senator Bronson Cutting, R., of New Mexico.  
 Pilot Harvey Bolton, Kansas City.  
 Co-Pilot Kenneth Grieson, Kansas City.  
 Miss Jane Hillias, Kansas City.  
**SERIOUSLY INJURED:**  
 Richard Wallace, Hollywood.  
 Henry Sharpe, Hollywood.  
 Paul Wing, Hollywood.  
 C. R. Drew, Hollywood.

### NEWS Wires

By United Press

90 MINERS ENTOMBED  
 TOKYO, May 6 (U.P.)—Ninety men were entombed by an explosion at Sorachi, on Hokkaido island. A Nippon Tempo news agency dispatch said today.

1 of 8

ENGLISH CLASSES  
 LONDON, May 6 (U.P.)—All English markets were closed today in celebration of the 25th an-

This TWA DC-2 accident took the life of a prominent United States political figure, Senator Bronson Cutting.

Multiple newspaper sources from the months following this crash indicate that the accident prompted calls for tighter safety regulations for the airline industry among politicians of the day.

The furor over this accident no doubt influenced some of the major changes associated with the Civil Aeronautics Act of 1938.



Crash site on hilly terrain in Macon County, Missouri



## 27.—AIRLINE DISPATCHER RATING



Effective November 1, 1937

**UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON, 1937**

### CONTENTS

## 27.—AIRLINE DISPATCHER RATING

		<b>Page</b>
27.0	<b>Provision for rating</b>	1
27.1	<b>Minimum requirements</b>	1
27.10	Dispatcher rating	1
27.2	<b>Airline dispatcher certificate</b>	3
27.20	Provision for issuance	3
27.21	Application	3

## 27.—AIRLINE DISPATCHER RATING

**27.0 PROVISION FOR RATING.**—Pursuant to the provisions of the Air Commerce Act requiring the Secretary of Commerce to provide by regulation for the rating of all airmen serving in connection with aircraft of the United States as to their qualifications for such service and for the issuance of airmen certificates and such other certificates and regulations as the Secretary deems necessary in administering the Act, airline dispatchers will be certificated in accordance with the provisions of the following paragraphs.

On November 1, 1937, a thorough revision and codification of Department of Commerce regulations pertaining to aeronautics, went into effect. Classification of the regulations into parts and sections numbered by an expansible decimal system began with this revision. Contained within these changes were expanded and more detailed regulations covering certification requirements for aircraft dispatchers

## Regulations Stemming From The Civil Aeronautics Act Of 1938

- New regulations created a formalized operational control structure consisting of a system of checks and balances for airline operations.
- One result of this regulatory action was the creation of a new Airman Certificate:

### The Aircraft Dispatcher Certificate

1938



By the latter part of the 1930's in the United States, most airlines employed well trained individuals who performed job functions which today we commonly associate with the dispatch profession.

But profound changes for dispatchers were on the horizon. A variety of factors led to a belief among many in the airline industry and government that a more effective system to regulate air commerce was needed. "The Civil Aeronautics Act of 1938" created a new government organization, the Civil Aeronautics Authority (CAA) to replace predecessor government aeronautics agencies including the Aeronautics Branch of the Department of Commerce and the Bureau of Air Commerce.

Broad, detailed and sweeping regulations, amendments and additions impacting the dispatch profession were added as a result.

Responsibilities within the CAA were divided into three separate divisions. A five-man board wielded broad authority over airline certification and routes. An independent Administrator and staff exercised enforcement authority pertaining to regulatory compliance. The Administrator was also charged with maintaining federal navigation and communication facilities. Finally, a three-man Air Safety Board investigated accidents, determined probable causes, and issued safety recommendations

## Civil Air Regulations Revision

**61.552 DISPATCHER COMPETENCY CERTIFICATE.**—Each dispatcher used by the airline for the purpose of dispatching airline aircraft shall be possessed of a valid dispatcher's certificate, in accordance with the provisions of CAR 27.

**61.553 ROUTE COMPETENCY.**—The following rules shall govern a dispatcher's route competency:

**61.55300 (a)** He shall have made at least one round trip over the route, or part thereof, on which he is to serve during the previous 90 days prior to dispatching any airplane over such route or part thereof.

**61.55301 (b)** He shall observe and be familiar with the prevailing weather phenomena peculiar to the route, or part thereof, for which qualification is sought.

**61.55302 (c)** He shall be familiar with the airline operation over the route, or part thereof, for which qualification is sought.





Of particular significance to our narrative herein, the Civil Aeronautics Act of 1938 amended existing regulations and added several new guidelines impacting the aircraft dispatcher. The legislation served to formalize the qualification standards of those serving in a dispatch capacity. Amendment 46 of the Civil Air Regulations stipulated new guidelines for dispatcher certification and laid down stringent qualification standards for air carrier dispatchers.

With the formalization of these detailed government regulations, the aircraft dispatcher's role would become a permanent fixture in the

airline safety equation in the United States.

An Eastern Airlines Captain's logbook from in 1939 shows his flying between New York, Washington, and Atlanta in Douglas DC-2 and DC-3 aircraft.

MAY 1939 EAL					
DATE	FROM	TO	TYPE OF AIRCRAFT	TYPE OF ENGINE	
1	125	NK	WA	DC-3 Douglas	P+W
1	174	WA	NK	"	Cyclone
2	21	NK	AG	"	"
4	22-3	AG	NK	"	"
6	21	NK	AG	"	"
9	2-8	AG	NK	DC-2	F2B
10	21	NK	AG	DC-3	G-2
12	22-11	AG	NK	"	"
15	21	NK	AG	"	"
17	22-16	AG	NK	"	"
19	21	NK	AG	"	"
21	22-20	AG	NK	"	"
23	21	NK	AG	"	"



## INTERLINE RESERVATIONS GUIDE

AIR TRANSPORT ASSOCIATION OF AMERICA

### CITIES ON AIR LINES — DECODING

<p><b>A</b></p> <p>AB Albuquerque, N. M.                      AG Atlanta, Georgia                      AH Alameda, Calif.                      AN Aberdeen, S. D.                      AP Abilene, Texas                      AQ Amarillo, Texas                      AW Augusta, Maine                      AX Akron, Ohio                      AZ Albany, N. Y.</p>	<p><b>G</b></p> <p>GC Greenville, S. C.                      GD Greenwood, Miss.                      GH Palm Beach, Fla.                      GI Grand Island, Neb.                      GK Garden City, Kan.                      GR Grand Rapids, Mich.                      GS Galveston, Tex.                      GT Great Falls, Mont.                      GW Greensboro, N. C.                      GX Glendale, Cal.</p>	<p><b>M</b></p> <p>MA Madison, Wis.                      MF Medford, Orego                      MK Milwaukee, Wis.                      MM Miami, Florida                      MO Moline, Illinois                      MP Minneapolis, Minn.                      MS Mobile, Alabama                      MT Millinocket, Maine                      MY Miles City, Mont.                      MX Missoula, Mont.</p>	<p><b>SQ</b> San Diego, Calif.                      SR Syracuse, N. Y.                      SU Spartanburg, S. C.                      SZ Sacramento, Calif.</p>
<p><b>B</b></p> <p>BB Bangor, Maine                      BD Bakersfield, Calif.                      BE Boise, Idaho                      BH Birmingham, Ala.                      BI Billings, Mont.                      BJ Buffalo, N. Y.                      BO Baltimore, Md.                      BT Butte, Mont.                      BU Burbank, Calif.                      BW Boston, Mass.                      BZ Big Spring, Texas</p>	<p><b>H</b></p> <p>HB Long Beach, Cal.                      HI Huntington, W. Va.                      HJ Houlton, Maine                      HK Lincoln, Neb.                      HL Helena, Mont.                      HN Hutchinson, Kan.                      HR Huron, S. D.                      HS Hyannis, Mass.                      HT Hartford, Ct.                      HU Houston, Texas                      HX Harrisburg, Pa.</p>	<p><b>N</b></p> <p>NA Nashville, Tenn.                      NE New Bedford, Mass.                      NK Newark, N. J.                      NN Nantucket, Mass.                      NO New Orleans, La.                      NQ North Platte, Neb.                      NV New Haven, Ct.                      NW Norfolk, Va.                      NY New York, N. Y.                      (N. Beach Airport)</p>	<p><b>T</b></p> <p>TA Tacoma, Wash.                      TG Traverse City, Mich.                      TJ Tallahassee, Fla.                      TL Toledo, Ohio                      TM Tampa, Florida                      TS Tulsa, Oklahoma                      TV Tyler, Texas                      TZ Tucson, Arizona</p>
<p><b>C</b></p> <p>CB Chattanooga, Tenn.                      CC Cincinnati, Ohio                      CF Charlotte, N. C.                      CG Chicago, Ill.                      CI Columbia, S. C.                      CN Concord, N. H.                      CO Columbus, Ohio                      CR Corpus Christi, Texas                      CS Charleston, S. C.                      CV Cleveland, Ohio                      CW Casper, Wyo.                      CX Cheyenne, Wyo.</p>	<p><b>I</b></p> <p>IA Williamsport, Pa.                      IB Caribou, Maine                      IC Wenatchee, Wash.                      ID Indianapolis, Ind.                      IE Glacier Park, Mont.                      IF Idaho Falls, Idaho                      IM Wilmington, Calif.                      IS Winston-Salem, N. C.                      IT Lewistown, Mont.                      IV Waterville, Maine                      IX Iowa City, Iowa                      IY W. Yellowstone, Mont.</p>	<p><b>O</b></p> <p>CA Oakland, Calif.                      OB Oak Bluffs, Mass.                      OH Omaha, Neb.                      OL Oklahoma City, Okla.                      OR Orlando, Florida                      OW Ottawa, Ontario</p>	<p><b>U</b></p> <p>UG Montgomery, Ala.                      UK Muskegon, Mich.                      UL Montreal, Quebec                      UM Meridian, Miss.                      UN Macon, Georgia                      UO Monroe, Louisiana                      UR Manchester, N. H.                      UV Barre-Mont., Vt.</p>
<p><b>D</b></p> <p>DA Dayton, Ohio                      DB Daytona Beach, Fla.                      DD Dodge City, Kan.                      DJ Del Monte, Calif.                      DL Dallas, Texas                      DM Des Moines, Iowa                      DO Detroit, Mich.                      DU Douglas, Arizona                      DV Denver, Colo.</p>	<p><b>J</b></p> <p>JA Jackson, Miss.                      JB Bristol, Tenn.-Va.                      JC Battle Creek, Mich.                      JD Boulder City, Nev.                      JG Burlington, Vt.                      JH Bar Harbor, Maine                      JI Brownsville, Texas                      JU Beaumont, Texas                      JX Jacksonville, Fla.</p>	<p><b>P</b></p> <p>PC Ponca City, Okla.                      PD Portland, Oregan                      PG Philadelphia, Pa.                      PH Phoenix, Arizona                      PO Pendleton, Oregan                      PQ Pocatello, Idaho                      PR Providence, R. I.                      PS Memphis, Tenn.                      PT Pittsburgh, Pa.                      PU Pueblo, Colorado                      PW Portland, Maine                      PX Pierre, S. D.                      PZ Pasco, Wash.</p>	<p><b>V</b></p> <p>VB Vero Beach, Florida                      VC Sault Ste. Marie, Mich.                      VD Augusta, Georgia                      VI Victoria, B. C.                      VN Provincetown, Mass.                      VR Vancouver, B. C.</p>
<p><b>E</b></p> <p>EC Bridgeport, Ct.                      ED Muscle Shoals, Ala.                      EH Cheboygan, Mich.                      EK Elkins, W. Va.                      EL Elko, Nevada                      EO El Paso, Texas                      EQ Presque Isle, Me.                      ER Erie, Pa.                      ET Lewiston-Auburn, Me.</p>	<p><b>K</b></p> <p>KC Kansas City, Mo.                      KJ Colorado Spgs., Colo.                      KM Camden, N. J.                      KN Charleston, W. Va.                      KX Knoxville, Tenn.</p>	<p><b>Q</b></p> <p>QB Quebec, Quebec                      QL Lethbridge, Alta.                      QR Regina, Sask.                      QW North Battleford, Sask.</p>	<p><b>W</b></p> <p>WA Washington, D. C.                      WC Waco, Texas                      WD Wichita, Kansas                      WF Wichita Falls, Texas                      WG Winnipeg, Man.                      WI Wilkes-Barre, Pa.                      WL Walla Walla, Wash.                      WO Winslow, Arizona                      WU Watertown, S. D.                      WZ W. Palm Beach, Fla.</p>
<p><b>F</b></p> <p>FM Fort Myers, Fla.                      FN Flint, Mich.                      FO Fargo, N. D.                      FT Fresno, Calif.                      FV Ft. Worth, Texas                      FW Ft. Wayne, Ind.</p>	<p><b>L</b></p> <p>LA Los Angeles, Calif.                      LH La Junta, Colo.                      LI Little Rock, Ark.                      LJ Lansing, Mich.                      LL Lakeland, Fla.                      LMJ Moose Jaw, Sask.                      LPA Prince Albert, Sask.                      LQ Las Vegas, Nev.                      LS St. Louis, Mo.                      LV Louisville, Ky.</p>	<p><b>R</b></p> <p>RA Raleigh, N. C.                      RC Rochester, N. Y.                      RK Bismarck-Man., N. D.                      RP Reno, Nevada                      RR Rochester, Minn.                      RS Sarasota, Florida                      RW Richmond, Va.                      RZ Rapid City, S. D.</p>	<p><b>X</b></p> <p>XA Allentown-Beth., Pa.                      XD Edmonton, Alta.                      XE Saskatoon, Sask.                      XN Austin, Texas                      XV Avalon, Catalina Island, Calif.</p>
		<p><b>S</b></p> <p>SA Seattle, Wash.                      SE Spearfish, S. D.                      SF San Francisco, Calif.                      SH Savannah, Ga.                      SI Saginaw-Bay City, Mich.                      SL Salt Lake City, Utah                      SM Spokane, Wash.                      SN South Bend, Ind.</p>	<p><b>Y</b></p> <p>YA Yakima, Wash.                      YB North Bay, Ont.                      YC Calgary, Alta.                      YP Pensacola, Fla.                      YU Kapuskasing, Ont.                      YX Sioux City, Iowa                      YZ Toronto, Ont.</p>
			<p><b>Z</b></p> <p>ZD Springfield, Ill.                      ZG St. Petersburg, Fla.                      ZH Shreveport, La.                      ZJ St. Joseph, Mo.                      ZK Santa Fe, N. M.                      ZN San Antonio, Texas                      ZP St. Paul, Minn.                      ZR Santa Barbara, Calif.                      ZV Springfield, Mass.                      ZY Sheridan, Wyo.                      ZZ Scranton, Pa.</p>

For decoding the logbook on the previous page, we present selected two-letter codes in use within the United States in 1939.





## How Dispatch Regulations Evolved: 1926-1938

**1926:** The First Air Commerce Regulations

Earliest Operating Rules for Airlines

**1934:** Amendment of Air Commerce Act Of 1926

Dispatching Procedures Must Receive Govt. Approval

Approved Clearance Signed by Licensed (sic) Dispatcher

**1937:** Civil Air Regulations

CAR Part 27. - Airline Dispatcher Rating

**1938:** The Civil Aeronautics Act

Formalized Certification Process for Aircraft Dispatcher

## PERSPECTIVE



**CRASHED IN FOG.**—Nose buried in woods near Bethel, Conn., is United Air Lines plane which crashed in fog yesterday. Nine passengers and the stewardess crept from the hatch (arrow) and rescued the imprisoned pilots.—*Story on page 25.*

## FIRSTHAND MEMOIR FROM 1934

This article, written by retired United Captain, Lorenz H Letson. He was the co-pilot of a United Air Lines Boeing 247 which ran out of fuel and crashed on a foggy night in 1934. It was forwarded to Carla Beck in 1996 for archiving. This flight operated in the days preceding modern day airline operational control.

We left Chicago at 5:00 PM and headed for our first stop at Cleveland. We were supposed to go on to Newark but the weather there was lousy and had been all day. Since it was the copilot's duty to check the gas before departure (stick the tanks) and thinking we might need all the gas we could get, I filled the tanks - ran them over - to be sure they were full (268 gals). Night had fallen by the time we left Cleveland. I was at the controls and Johnny Wolf,

the other pilot, requested clearance to Albany, N.Y. for better train connections for the passengers to New York. I headed for the Cleveland to Albany airway over to my left to follow the (airway) beacon lights to Albany. Johnny went back in the cabin and stayed quite a while taking to the passengers.

At a point up the line to Albany, Johnny came up to listen to the weather broadcast. We were near the north-south airway that crossed our route about 50 miles northwest of Newark. The weather at Newark on that broadcast was better than planned, 600 - 1/2. Johnny signaled me





# Transportation History

to head for Newark. When we got down to the Newark range marker, Johnny reported our position over that range. That surprised everyone at air traffic, for at that time we should have been nearing Albany. Johnny took the airplane and as we approached Newark, the weather was down again. Newark had centerline runway lights and I think they were 200 feet apart. Johnny did a good job on each approach. He would let her right down to the ground but on each try was off to the left side of the lights because of the strong winds there that night. I had my head out the side window and could see only one light - dimly - at a time. Also, we could not stay down there too long because hangars were close to each side of the runway and at the other end. On each pullout, the red hazard light on our hangar showed up much too close right off my wing tip. After the fourth attempt, we had to give up and go back up on top. The tops were 1200 ft, clear above with stars and moon out. The Empire State building was sticking out like a sore thumb. It was beautiful up there.

We were now on our last tank of gas with 36 gallons left. I had pumped the other two tanks dry. As I remember, those engines used about a gallon a minute, (Boeing 247, NC13334) so we had 36 minutes to do something. At about the 15-gallon mark Johnny started letting down slowly, hoping to get underneath. He looked for a flat area -apple orchard or corn field- we couldn't be fussy about an airport. I had my head out my side window, looking for breaks or a field or anything, when I noticed what appeared to be "white caps" behind the prop on my side! I thought we were out over the Atlantic, running out of gas, and I couldn't swim. I checked the altimeters and they showed 900ft. It then dawned on me that the "whitecaps" were the undersides of tree leaves. I horsed back on the wheel, and we busted out on top again at 1200 feet. That was a narrow escape - but we had more coming. I then suggested to Johnny that we turn 90 degrees to the coast and maybe we would run off (the edge of) the overcast and find an open field. We headed northwest but as far as we could see it was overcast. Now we were down to 4-5 gallons. Johnny started letting down slowly again - we didn't know what the hell was under us. Finally, I saw lights below under the clouds. - We were over a town. Johnny took a quick look and told me to kick out a flare. In just seconds the flare landed among a lot of houses. We went ahead for a minute and Johnny asked for the other flare. It wouldn't release. We had hit something that had partially closed the tube the flare slides out through. (We found out later we darned near knocked over a church steeple in this little town- which was Bethel, Conn.-70 miles northeast of Newark). By then we were down to 1 or 2 gallons of gas - nothing to do but level off - go straight ahead and get away from this town. Finally, after just a few seconds, the fuel pressure lights came on. I pulled my head back

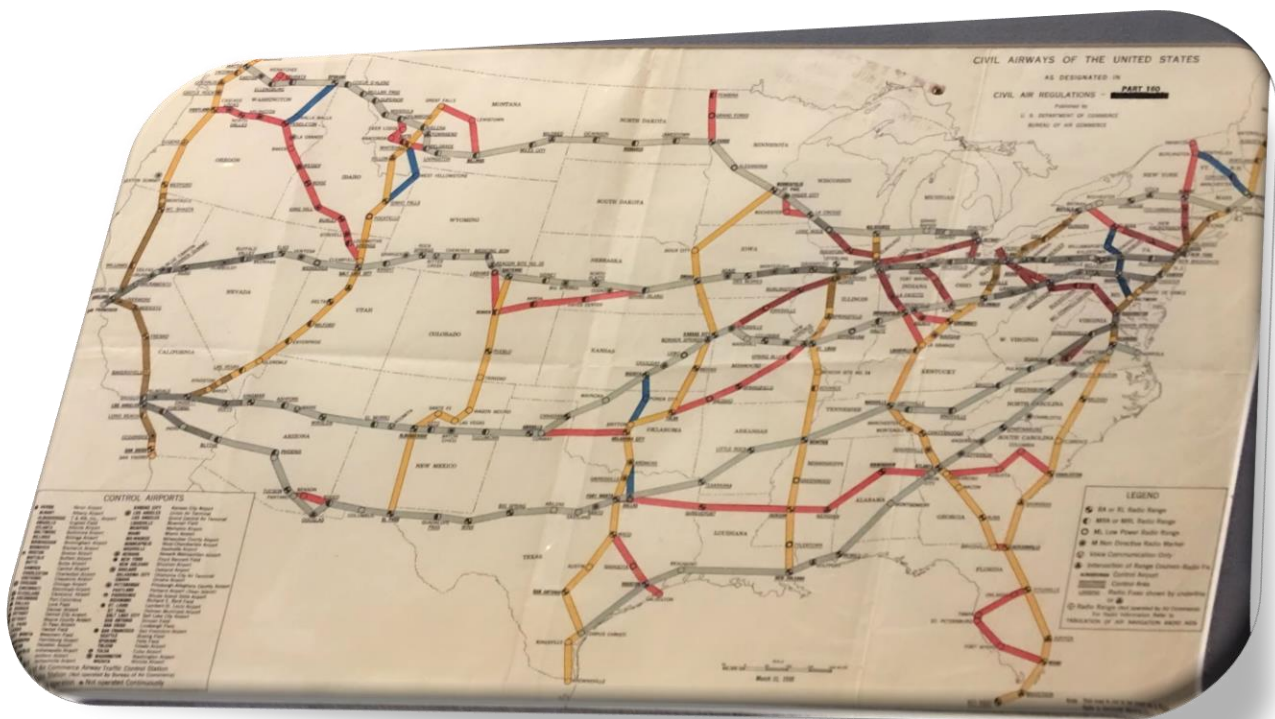
# Transportation History



in -"might as well hang on to it as long as possible", I thought. We said so long to each other - Johnny slowed her down as much as possible and the last thing I remember was seeing tree branches going by the right landing light which was turned on. When I "came to" it seemed as quiet as a vacuum. My first thought was, "this trip is over".

We had crashed 18 minutes after midnight, May 30, 1934. The tail section broke off behind the cabin door. It had whipped around and turned upside down. The end of the stabilizer leaned right up to the cabin door, so the passengers could slide right down it to the ground. We woke up this little town and a lot of people came over to the wreck and hauled the people over to Danbury, Connecticut. Hospital, 3 or 4 miles away.

That wreck, I think germinated a few ideas - like having an alternate before takeoff - reserve fuel - to get there and landing minimums. When landing back then, if I remember correctly, we had no minimums - if you could get in with 0-0 weather conditions-fine, there were no questions. Also, I think that might have been the beginning of thinking about approach lights, etc. I don't believe we had any of those things in '34.



Civil Airways of the United States from May 1938.



# Transportation History

DELTA AIR CORPORATION  
MONROE LOUISIANA

DAILY FLIGHT LOG  
ROUTE AM 24

FLIGHT SUPT White  
SHIFT 1

DATE December 4 19 41  
Thursday

FLIGHT	SHIP	FROM	TO	ALT.	TIME	CREW	EST. OFF	ACT. OFF	EST. OVR.	CHG. EST. OVR.	ACT. OVR.	G. S.	TIME OUT	IN	PASS.	REMARKS	CLRD. FM. TO	ALT. N	LANDING OR PASS.	MIL. GA		
1	41	AGBH	4	50		Davis	0955	0959	1054		1054		0953	1001	16/12	WX:43	HEF 1032	AG BH AG	(K) (7)	42		
		BHUM	4	56		Robertson	1124	1220		1226			1019		14		TU 149 GNV 1206	BH JA BH	(A)	52		
		UMJA	6	32		Porter	1226	1258						1207								
		JA UO	4	42				1325	1407	1414	1414			1221	21			TLH 1350	JA FU DL		42	
		UOZH	4	37				1411	1449		1453			1356				PAR 1434				60
		ZHDL	6	73		37-18-18		1516	1629					1410	1543	19	08 PsgRS	HWK 1603	WP 1617			42
		DL FV	2	13				1659	1716					1556	1614	1						60
2	41	FV DL	15	12		Whitaker	1052	1104					0946	1005	4	WX 35		FV ZH JA			60	
		DL ZH	3	64		King 18-13-33	1123	1227		1225			1019	1127	10		WF 114/HWK				60	
		ZH UO	3	36		M. Smith	1239	1315		1314			1136		11		PAR 1158	ZH JA BH			60	
		UO JA	3	36				1214	1350					1257								
		JA UM	5	31				1419	1424	1456	1454			1321	10	9 CATERING		JA BH BH			60	
		UM BH	5	47				1454	1541		1538			1442				GNV 1507		(R)		
		BH AG	3	46				1554	1638					1450	1638	9		HEF 1615				
3	41	AGBH	4	55		Cushing Deason	1955	1957	2052		2053		1950	1956	16	3:20 cargo	HEF 2027	AG JA ZH			42	
		BHUM	4	58		Banks	2108	2106	2204		2104		2005	-	15		TU 130 GNV 2148					
		UMJA	4	31		Farrish	2204	2204	2235		2131			-	2145	-				(R)		
		JA UO	4	41				2308	2350		2359			2203	-	21	02 CARGO	TLH 2334	JA FU DL			
		UOZH	2	39				2350	2359	0038	0045	0045		-	2219	-		APD 0020				
		ZH DL	4	41																		

Delta Air Lines Dispatcher "Daily Flight Log" from December 4, 1941. This Thursday afternoon unfolded just prior to the following Sunday's attack on Pearl Harbor. At the time, Delta was operating the Lockheed 10B Electra, the DC-2 and DC-3 aircraft.



(left) Douglas DC-2



Douglas DC-3 (right)

## World War II

- The Dispatch Profession Matures
- High Altitude Flight
- Rapidly Evolving Tools and Techniques
- Facility Improvements and Augmentation
- Meteorology



1940's






Delta's dispatch office in Atlanta shown shortly after the end of World War 2.

Fascinating observation below from the CAB contained in a 1947 aircraft accident report.

## A Bit of History



❖ “It may be noted at this point that salaries provided controllers under existing regulations are such that it can be hardly expected that men enticed by these rewards can be entrusted with much responsibility”.

- CAB - 1947

CIVIL AERONAUTICS BOARD  
SAFETY BUREAU

ACCIDENT INVESTIGATION REPORT

Adopted: \_\_\_\_\_ Released: \_\_\_\_\_


UNITED AIR LINES, INC., - LAGUARDIA FIELD, NEW YORK - MAY 29, 1947

The Accident

A United Air Lines' C-54, NC 30046, Flight 521, crashed while attempting a take-off from Laguardia Field, New York, at approximately 1905<sup>00</sup>, May 29, 1947. Of the 48 occupants, 43 were killed, four sustained serious injuries, and one, the pilot, received only minor injuries. The aircraft was demolished by impact and partially consumed by fire.

History of the Flight

United Air Lines' Flight 521 of May 29, 1947, was scheduled to depart from Laguardia for Cleveland, Ohio, at 1840. Captain Benton Baldwin, the pilot, reported at 1730 in United's dispatch office, consulted the company meteorologist, and studied route weather data. He found that thunderstorm conditions existed which resulted from a cold front and prefrontal squall line, located at the time west of the New York area. The flight plan based on this weather information and prepared by the Captain and his co-pilot, Robert E. Sands, specified instrument flight at 4,000 feet via Newark and Youngstown to Cleveland with Detroit (Willow Run), Michigan, as an alternate.



## Dispatching the Post War Props



- Regional Dispatch Offices
- Operational Control Responsibility Shifts with the Progress of Flights
- Face to Face Pilot Briefings
- Air Traffic Control Involvement
- Hand Calculations and chase around charts



1950's

## Early 1950's



1956





## Two Pilots and Two Engines



**Dispatcher's  
role more  
important than  
ever as  
cockpit work  
load increases**



**1960's**

AS I THINK OF HOW MANY OF THE ORIGINAL GROUP HAVE PASSED. PEOPLE WHO BUILT ADF WITH THEIR SWEAT AND SACRIFICE. PEOPLE LIKE MIKE NADON AND JIM MULHALL, SO MANY OTHERS. WE OWE THEM A LOT AND FOR THOSE OF US STILL BREATHING, A MOMENT, A TRIBUTE AND A CELEBRATION FOR GETTING OUR ACT TOGETHER, REORGANIZING INTO A MORE EFFECTIVE ORGANIZATION, BUILDING ITS PRESENCE AND ITS CREDIBILITY TAKING A STAND AND CHANGING AVIATION FOR THE BETTER.

WHAT A RIDE!

ADF PRESIDENT EMERITUS - BILL LEBER -2020.



Scene from the 1957 movie Zero Hour



**ADF Flight 30 is about ready for departure.**

**Sit back, relax, make yourself comfortable and please enjoy this journey back in time as we explore ADF's history, and that of the dispatch profession which ADF has represented proudly for more than 30 years.**