***Across the Pacific***

***Episode 1: Airborne***

**Final Script 4/19/20**

**Prologue**

*Wide shot of 1934 scene with four Pan Am executives gathered around table*

Andre Priester

Gentlemen, we have a problem.

**NARR:** When the air route across the Atlantic was blocked ...

*Tight on Pan Am executive*

Pan Am Executive

What are we going to do with these big boats if we have no ocean to cross?

*Shot of Juan Trippe listening*

**NARR:** ... he saw another option.

JUAN TRIPPE

Here's what we'll do. We'll fly from California to China.

Hugo Leuteritz

Across the Pacific?

JUAN TRIPPE

Right across the middle.

Andre Priester

But Juan …

*Animated discussion continues.*

**NARR:** No airline had ever taken such a risk.

FORMER PAN AM VP THOR JOHNSON

There was a huge number of people that thought this was just an absolute folly.

JUAN TRIPPE

We can make this work.

*Tilt down to China Clipper at mooring in newsreel.*

Radio announcer VO

Good afternoon, everyone, from the rim of the Pacific Ocean.

**Super: November 22, 1935, San Francisco Bay**

Radio announcer VO

The occasion of this broadcast is the inauguration of the first transpacific airmail service by Pan American Airways’ *China Clipper.*

*Photos and footage of the takeoff ceremony*

Author Robert Gandt, partly in VO

The departure of the *China Clipper* was probably the most hyped, most anticipated, most publicized event of that era.

*Photo of people looking skyward at Apollo launch in the 1960s*

HISTORIAN JENIFER VAN VLECK, partly in VO

In a sense it was akin to the rocket launches of the sixties.

*Photo of family listening to the radio*

RADIO ANNOUNCER VO

The *China Clipper* in front of us weighs …

FORMER PAN AM VP THOR JOHNSON, partly in VO

Everybody was tuned to their radios. Everybody that could was out there looking.

*Footage of crew*

AUTHOR ROBERT Gandt, partly in VO

Part of the mystique of this event, I think, was the implied danger of the journey itself.

*Footage suggesting the vastness of the Pacific*

FORMER PAN AM VP THOR JOHNSON, starting in VO

There’s 2,400 miles that you’ve got to go, and there is nothing, nothing but water.

HISTORIAN BOW VAN RIPER, ending in VO

You’re aiming at a tiny speck of land in the middle of a vast, trackless ocean.

*Footage of empty sea*

AUTHOR ROBERT Gandt, starting in VO

It was a great adventure that could possibly end disastrously. Nobody knew yet.

*Photo of crew working on the China Clipper*

**NARR:** Behind the adventure were hundreds of men and women …

*Photo of Charles Lindbergh standing by the Spirit of St. Louis*

**NARR:** ... from the famous …

*Photo of the North Haven crew*

**NARR:** … to the unknown. Like the NASA engineers and astronauts who would later put a man on the moon …

*Footage of Sikorsky sketching a plane, Lindbergh examining a design, Leuteritz aboard a plane with radio headphones on, Juan Trippe on the phone.*

**NARR:** … these earlier aviation pioneers were trying to achieve the impossible in less than a decade.

JUAN TRIPPE

Bill, it’s a go.

*Animation of tiny flight path from Key West to Havana*

**NARR:** They had begun in 1927 with a single, 90-mile airmail route.

*Globe swings around to show a route 100 times as long.*

**NARR:** Now, just eight years later, they stood at the water’s edge, poised to vault a vast and dangerous ocean.

Juan Trippe via Radio

*China Clipper,* are you ready?

*Plane taxis off as music concludes.*

**Title Sequence**

Funder Credits

**Open**

*The first sight of what will be a recurring image in the film: water passing beneath a plane*

**NARR:** Almost as soon as airplanes were capable of flying, pilots began flying them over water. *Could you make it across?* That was the test of pilot and plane.

*Archival photos of Louis Bleriot and Roland Garros*

**NARR:** Frenchman Louis Blériot flew the 21 miles of the English Channel in 1909. His countryman Roland Garros crossed the Mediterranean in 1913.

*Banner headline about the U.S. Navy’s attempt to cross the Atlantic, footage of the attempt*

**NARR:** And World War I was no sooner over than the press turned its attention to the next aviation milestone: the U.S. Navy’s attempt to fly across the Atlantic Ocean.

*Navy photo of Juan Trippe, then re-enactment of Trippe typing*

**NARR:** Among those following the attempt was 20-year-old Juan Trippe, fresh out of the Naval Air Corps and now back in school at Yale.

*Map graphic of the Navy flight plan and the destroyers stationed along the route. Footage of the attempt.*

**NARR:** Even with a string of ships to guide them over the long leg to the Azores, two of the three Navy seaplanes came down at sea. The third took 11 days to reach Lisbon. Yet Trippe remained sanguine.

*Trippe continues typing. We see the key phrase on the page. He looks out the window.*

**NARR:** The successful crossing, he wrote in a college magazine, showed that a flight across the ocean is “a perfectly safe and sane commercial proposition.” He would spend the next 16 years pursuing that goal.

AUTHOR ANTHONY MAYO, starting in VO

The funny thing about Trippe, it wasn’t about making money. It was really about conquering the world.

*Time cover of photo older Trippe at the height of his powers*

**NARR:** Trippe would go on to become one of the most influential airline executives of the 20th century ...

*Map of Pan Am routes at their height*

**NARR:** ... the head of Pan American World Airways.

*Photo of older Trippe lighting pipe*

AUTHOR ROBERT GANDT, starting in VO

Juan Trippe *was* Pan American. Imperious. Aloof. Arrogant. And visionary.

AUTHOR ROBERT daley

Trippe’s achievement, uh, it’s enormous. Aviation is the way it is today because of him.

*Photo of Trippe and Lindbergh together, photo of Lindbergh in front of the Spirit of St. Louis*

**NARR:** But Trippe did not do it alone. Among his key collaborators were Charles Lindbergh, whose solo flight across the Atlantic electrified the world …

*Re-enactment: Sikorsky sketches at his desk. Photo of Russian revolution. Sikorsky packs up and leaves.*

**NARR:** … Igor Sikorsky, a brilliant airplane designer who had fled Russia after the 1917 Bolshevik revolution …

*Leuteritz in the shed with radio*

**NARR:** … and an unheralded young engineer namedHugo Leuteritz, who thought radio might have a role to play in aviation.

*Photo animation of the four characters*

**NARR:** Four men, each with his own dream. But when they joined forces, they would help transform the nascent aviation industry.

Historian BOW VAN RIPER

Trippe looked at aviation in the 1920s and said, yeah, it looks like this now …

*A series of re-enactment shots showing Trippe working with Lindbergh, Leuteritz and Sikorsky*

HISTORIAN BOW VAN RIPER VO

… but he never wavered in his belief that with the help of people like Lindbergh, Sikorsky and Leuteritz, he could grab it and mold it and reshape it into something fundamentally different.

*Trippe turns from globe to window.*

Author Robert Gandt vo

Trippe had a vision, but he also had the tenacity to go with his vision. He had this great assurance that he could make this happen.

*Fade to black*

*Archival footage of 1927 Lindbergh take-off*

**NARR:** On a rainy morning in May 1927, hundreds of aviation enthusiasts gathered at a Long Island airfield to watch a little-known pilot named Charles Lindbergh take off on his attempt to fly across the Atlantic Ocean. Lindbergh was the latest contestant for a $25,000 prize for the first nonstop flight between New York and Paris.

*Footage of crash, headline about deaths*

**NARR:** Six men had already died in the attempt, but the aviators kept coming.

*Photos and footage of other contestants and*

HISTORIAN BOW VAN RIPER, starting in VO

Most of the groups competing for the Orteig Prize were doing it with multi-engine aircraft, large ground crews, enormous amounts of equipment.

HISTORIAN JOSEPH CORN, mostly in VO

Others had at least two but usually three, even four people aboard to relieve them when you get tired at the controls, because the flight would be a matter of a day and a half, and the safe thinking said that you need more than one person to do that.

*Footage of* *Lindbergh preparations*

HISTORIAN JOSEPH CORN, mostly in VO

Lindbergh rejected that way of thinking. He was flying a single-engine aircraft, and he was also flying alone.

*The plane bumps along the runway and takes off.*

HISTORIAN BOW VAN RIPER VO

He was dubbed the Flying Fool. Everybody thought that he was going to take off from Long Island, vanish into the fog and never be heard from again.

HISTORIAN BOW VAN RIPER

And, of course, he proved them all wrong.

*Headline: Lindbergh Lands in Paris*

**NARR:** After thirty-three and a half hours in the air, Lindbergh arrived over Paris in darkness, with Le Bourget Field lit up below.

*Photos and footage of arrival*

HISTORIAN JOSEPH CORN, ending in VO

He finally lands to tumultuous applause and this just surge of humanity.

HISTORIAN BOW VAN RIPER, ending in VO

Paris went collectively nuts for Lindbergh. And the rest of the world quickly followed suit.

*Footage of Lindbergh’s arrival in New York Harbor*

historian david Courtwright, mostly in VO

When Lindbergh arrived back in New York, not only was there a huge crowd waiting for him at the dock, but the harbor itself was teeming with ships.

*Photos and footage of ticker tape parade*

HISTORIAN JOSEPH CORN, ending in VO

He was given a ticker tape parade that apparently exceeded anything before or since in New York City.

**NARR:** A crowd estimated at four million people turned out to greet him.

HISTORIAN JOSEPH CORN, mostly in VO

Which was greater than the population of Manhattan. Just amazing.

*Photo of the Commodore Hotel*

**NARR:** But amidst the hoopla, Lindbergh took time out to meet with an unemployed airline executive named Juan Trippe, whom he’d met during his days as an airmail pilot.

AUTHOR ROBERT DALEY, mostly in VO

Trippe goes to meet with Lindbergh, and he manages to talk to him for a few minutes, probably as pilot to pilot.

*Re-enactment: Trippe and Lindbergh meet in a hotel suite. They shake hands and chat.*

Juan Trippe

Hello, Charles. Congratulations on the flight. It’s a great day for aviation.

AUTHOR ROBERT DALEY, ending in VO

And Lindbergh complains that everybody’s all over him; he doesn't know what to do.

*The two men sit.*

JUAN TRIPPE

May I make a suggestion?

CHARLES LINDBERGH

Of course.

AUTHOR ANTHONY MAYO, starting in VO

He actually counsels Lindbergh, “Don’t do anything until you’ve thought through all the possibilities. Don’t even negotiate with me.”

*Lindbergh listens to Trippe.*

AUTHOR ROBERT DALEY VO

And Trippe advises him to get a lawyer, because Trippe had a proposition for him.

*Photo of young Juan Trippe*

**NARR:** Trippe’s first airline had gone bust; he’d been fired from his second.

*Re-enactment continues, now with a lawyer present. Trippe lays out a map and sketches his plans for the new airline. We hear snippets of their conversation.*

**NARR:** But a week later, when they met again, the 28-year-old businessman calmly laid out his plans for the new airline he was about to form.

JUAN TRIPPE

 We think that’s the next step towards an airline that can span the world.

CHARLES LINDBERGH

The world?

*The discussion continues.*

AUTHOR ROBERT DALEY VO

Trippe was a big, young man, slightly heavy, but tall. And he carried himself and behaved like a much older man.

*Trippe sketches out his plans with the help of a map*

**NARR:** It would be an international airline, flying first to the Caribbean, then to South America, and finally across the oceans.

CHARLES LINDBERGH

But Juan, I’ve just crossed the Atlantic. For a plane carrying mail and passengers, it’s thousands of miles between stops. How do you intend to do that?

JUAN TRIPPE

By the time we’re ready to take on the oceans, there’ll be a whole new generation of planes.

*Discussion continues.*

ED TRIPPE, starting in VO

Dad had this aura of confidence. He would present his argument, let it sink in, and then be quiet.

LINDBERGH’s lawyer

What would Mr. Lindbergh’s role be in this new airline?

AUTHOR ROBERT DALEY, mostly in VO

Trippe is offering Lindbergh at this point a contract and $10,000 a year, to be paid by an airline that doesn't even exist yet.But he’s a pilot. He wants to explore the world as a pilot. And Trippe is offering him the world.

CHARLES LINDBERGH

Sounds intriguing.

AUTHOR ANTHONY MAYO

I think what Lindbergh sees in Trippe is a kindred spirit. They’re both passionate about the possibility of aviation.

HISTORIAN BOW VAN RIPER

He was looking at him and saying, “Here, come with me. Let’s build this together.”

*Discussion continues.*

**NARR:** By the end of the meeting, Lindbergh had agreed to work as a technical advisor to the new airline.

LINDBERGH’S LAWYER

Send us your proposal.

*The men rise and shake hands. Trippe exits.*

**NARR:** It was a huge coup for Trippe – one that would pay many dividends as he pursued his lifelong ambition.

**Trippe**

*Photos of young Juan Trippe and father*

**NARR:** Trippe had been hooked on aviation since the age of ten, when his father, a New York investment banker, took him to see a demonstration flight by Wilbur Wright.

*Photos/headlines from the 1909 Wright flight around the Statue of Liberty*

HISTORIAN JOSEPH CORN, mostly in VO

Wilbur took off in Manhattan, flew south along the Hudson River, and then around the Statue of Liberty and back. And literally hundreds of thousands of people lined the shoreline.

historian david Courtwright, ending in VO

The flight around the Statue of Liberty was a huge event in terms of the number of people who, for the first time, saw someone fly.

*Photo of the Wright Flyer over the Statue of Liberty*

HISTORIAN BOW VAN RIPER, starting in VO

It would surely have captured Juan Trippe’s ten-year-old imagination.

*Photo of the plane in flight*

historian david Courtwright VO

And it stayed with him for the rest of his life.

*Fade to black*

*Photos of Trippe as a Yale undergraduate*

**NARR:** Trippe still had flight on his mind when he arrived at Yale in the fall of 1917, just months after America had entered World War I.

*Photo of Yale Aviation Unit*

AUTHOR JOHN HILL, ending in VO

A lot of his classmates, particularly the upper classmen, were already very interested in aviation. And a lot of these young boys went off to Europe and flew for the allies.

*Photo of Trippe in Navy uniform*

**NARR:** Trippe followed their lead, quitting Yale to train as a Navy pilot.But the war ended just as he was about the ship out.

*Trippe in undergrad aviation photo*

**NARR:** Back at school, he was active in the Yale flying club …

*Photo of Trippe in football gear*

**NARR:** … played football … and rowed crew.

ED TRIPPE, mostly in VO

He was very proud of being an oarsman, being a football player. And through both of those sports he met a great number of people, and they became lifelong friends, and important to him in life.

*Yale student photo*

Former Pan AM VP THOR JOHNSON, starting in VO

People like the Vanderbilts, the Whitneys, the Rockefellers. The big names in American finance, the guys that had made the huge fortunes.

*Group photo of Yale undergrads*

AUTHOR ANTHONY MAYO, starting in VO

They became great friends and actually supported Juan Trippe throughout his career. They got caught up in the sense of passion of what the airline industry could become.

*Photo of Trippe in his 20s*

**NARR:** After graduation, Trippe went to work on Wall Street.

*Wall Street photo*

ED TRIPPE, ending in VO

He sold bonds, which didn’t excite him. In fact, it drove him nuts.

AUTHOR ANTHONY MAYO

He called them the dullest years of his life.

Author Robert Gandt

Finally walked out the door determined that, for better or worse, he would make his future in aviation.

*Footage dog fights, World War I planes, photo of postwar planes*

**NARR:** Trippe had no idea what a struggle it would be. World War I and the demands of aerial combat had led to bigger, faster and more durable planes, but it wasn’t clear what they’d be good for in peacetime.

*Barnstorming footage*

historian david Courtwright VO

A lot of these airplanes are simply sold off to the public. They’re bought up by people who go off barnstorming, taking people on thrill rides.

*Air show footage*

**NARR:** Others used their war surplus planes to provide entertainment at air shows.

historian david Courtwright, mostly in VO

After World War I, aviation quickly developed a reputation as a kind of carnival side show. You paid money to sit in bleachers and get your tonsils sunburned by staring up at these daredevils who were performing these acrobatics.

*Footage of horrific crash*

historian david Courtwright VO

And, frankly, one of the reasons why people went was they wanted to see people risk their necks. And sometimes they were not disappointed.

*Footage of airmail planes taking off, including in snow*

HISTORIAN BOW VAN RIPER, ending in VO

The United States government was also pioneering airmail during this period, the incredibly dangerous job of flying the mail across mountains, through storms, through snow and sleet and, yes, even gloom of night.

*Airmail plane footage*

JUAN TRIPPE, partly in VO

I remember being there at the start of the first night airmail flight in 1925. The plane was a frail, temperamental wartime DH-4 in whose box-like nose a Liberty engine clattered away. It carried a hatful of mail and a few hours’ gas. The lone pilot had no blind flying instruments and few safety aids except for his parachute. Ahead of him were no marked airways, no chained airports, no radio beams to guide him. And his weather service was a head cocked aloft and a prayer.

*Air mail footage*

historian david Courtwright, starting in VO

Of the first 40 pilots hired by the mail service, something like three-quarters of them were dead within eight years. So people definitely associated the airplane with death by the 1920’s.

*Daredevil footage*

HISTORIAN BOW VAN RIPER VO

Aviation is exciting. It’s thrilling. But it does not make you want to get in an airplane yourself.

historian david Courtwright VO

It really wasn’t a serious proposition in terms of transportation.

*Photo of Trippe in airplane in early ‘20s*

**NARR:** Yet a few people, including young Juan Trippe, had an unshakeable faith in the future of flight.

Author Robert Gandt, partly in VO

Trippe saw beyond the hullaballoo and the spectacle of aviation. Somehow he sensed there was a great commercial future to this: the transport of passengers.

*Photo of stock certificate*

**NARR:** Leaving Wall Street behind, Trippe formed a company called Long Island Airways.

AUTHOR ANTHONY MAYO

 And this is the first time he goes to the well with his wealthy friends from Yale.

*Photo of float plane*

**NARR:** Trippe bought seven war surplus seaplanes for $3,500 ...

*Photos of socialites*

**NARR:** ... and began offering New York socialites rides to their summer homes in the Hamptons and down to Atlantic City.

*Photo of pilots*

historian david Courtwright, ending in VO

Interestingly, when he started that service he hired other people to be the pilots.

AUTHOR ROBERT DALEY, starting in VO

Pilots were somebody you hired, like chauffeurs, and he wanted to be seen as something different.

*Photo of very young Juan Trippe*

historian david Courtwright VO

So almost from the beginning Trippe saw that his role would be on the business side of aviation.

*Dissolve to photo of young Elizabeth Stettinius*

**NARR:** In May 1925, Trippe met the younger sister of one of his fraternity brothers, a 20-year-old brunette named Elizabeth Stettinius.

*Photo of the Stettinius home*

**NARR:** Invited to spend the weekend at the Stettinius home on Long Island, Trippe brought his golf clubs.

*Photos of a golf club circa 1925, Betty with club, feet of man at tee*

 ED TRIPPE, mostly in VO

Dad was an avid golfer, a very good golfer. And my mother was a pretty good golfer herself. And they got to the third hole, so the story goes, and Dad hit first and hit a nice long drive, as he always did.

*Photo of Betty Stettinius with golf club, sound of club striking ball*

ED TRIPPE VO

And my mother came up to her tee, and she just whacked one. And he just turned and said, “Wow! She hits a hell of a ball.”

*Re-enactment: Juan and Betty chat on park bench*

**NARR:** Juan and Betty would see a lot of each other over the next few years.

*Photo of Betty and father*

**NARR:** But Betty's father – a partner at J.P. Morgan & Company – would not give his blessing to the match until Trippe abandoned his "crazy flying schemes" and found a real career.

*Daredevil footage*

AUTHOR ROBERT DALEY, starting in VO

Aviation was for reckless young men who liked to walk on wings and barnstorm and crash airplanes. And here Trippe was trying to put on a business basis something that wasn't a business.

*Photo of Mr. and Mrs. Stettinius with disapproving dog*

ED TRIPPE, starting in VO

The Stettinius familywere convinced that he was a nice guy. If he would go into a reasonable occupation, undoubtedly he would be very successful. But they saw this young man as being close to a lunatic in terms of trying to earn a respectable living.

*Photo of Trippe in his float plane*

**NARR:** Trippe's prospects – for marriage and career – dimmed further when Long Island Airways went out of business after two summers.

**Airmail Act**

*Early airline footage*

**NARR:** His was a common experience in the 1920s.

historian david Courtwright VO

Commercial aviation in the United States was a struggle. There wasn’t much of a market, and passengers were few and far between.

AUTHOR ROBERT DALEY, starting in VO

These little airlines were starting up all over the place and going bankrupt almost as fast as they started.

*Photo of early airline plane*

HISTORIAN BOW VAN RIPER, mostly in VO

There was no stable way to make a living in the air in the 1920s until the government begins to delegate mail contracts to the airlines.

*Photos of airline plane with “U.S. Air Mail” label, then congressional chamber*

**NARR:** The turnaround in aviation’s fortunes came when Congress passed the Airmail Act of 1925.

Former Pan AM VP THOR JOHNSON, starting in VO

A lot of people don’t realize that in the early days, the entire airline industry, it was built by the Post Office.

*Photo of men loading mail aboard U.S. Mail plane*

**NARR:** Instead of operating its own planes to deliver the mail …

*Map of U.S. Air Mail routes*

**NARR:** … the Post Office would turn over the job to commercial carriers, awarding contracts for specific routes.

Author Robert Gandt

 And that suddenly made it a moneymaking business.

*Photo of airline hangar and plane*

HISTORIAN BOW VAN RIPER VO

What this did for the airlines was to give them a reliable source of income.

*Route 1 – New York to Boston – on a map*

AUTHOR ANTHONY MAYO, ending in VO

And this was just what Trippe was looking for. So he goes back to some of his wealthy friends from Yale and asks them to back him in another enterprise to secure the airmail contract from Boston to New York.

**Colonial**

*Photo of Gov. Trumbull*

**NARR:** Facing formidable competition from a group headed by Governor John Trumbull of Connecticut ...

*Graphic: Eastern Air Transport and Colonial Airlines merge to become Colonial Air Transport.*

**NARR:** ... Trippe engineered a merger into a company called Colonial Air Transport.

*NY Times headline added to graphic*

**NARR:** Colonial won the New York-Boston route and named Trippe its managing director ... a decision the board would soon regret.

*Photo of pilot in single-engine Colonial mail plane*

**NARR:** Instead of delivering the mail in single-engine planes, as its government contract required ...

*Photo of Fokker and his trimotor*

**NARR:** ... Trippe ordered much larger trimotor planes made by Dutch designer Tony Fokker.

*Colonial brochure*

AUTHOR ANTHONY MAYO, starting in VO

So he’s figuring, “If I can get a bigger plane, I can accommodate passengers and I can accommodate the mail.”

*Photo of Trippe with pilots in front of Colonial mail plane*

Author Robert Gandt, starting in VO

Trippe was already thinking of international travel, particularly to Latin America.

*Photo of Fokker in front of one of his planes*

AUTHOR ROBERT DALEY VO

He went on a junket to Cuba in a Fokker trimotor piloted by Fokker himself.

*Footage of Fokker trimotor in flight*

AUTHOR ANTHONY MAYO, starting in VO

Before they’ve even delivered the first airmail packages, he’s already all the way down to Cuba thinking about the possibilities of this future airline.

AUTHOR ROBERT DALEY

Is that who you want running your business?

*Airmail route map: pan from New York-Boston route to much longer Chicago route.*

**NARR:** When the company struggled to make money on the short New York-Boston route, Trippe got into a dispute with the board over how much to bid for a longer route to Chicago. When the question was put to a stockholder vote, he lost.

ED TRIPPE

So he was out.

AUTHOR ROBERT DALEY

They gave him back his investment and told him to take his Fokker trimotors with him.

*Photo of Mr. and Mrs. Stettinius*

**NARR:** This setback only reinforced the Stettinius family’s misgivings about the young man pursuing Elizabeth.

AUTHOR ROBERT DALEY VO

They saw Trippe as somebody who had only failures behind him. He was 26 years old and obviously going nowhere.

*Ocean liner departure footage*

AUTHOR ROBERT DALEY, starting in VO

And they shipped her off to Europe, which is what you did with young girls at that time if you wanted to break up a romance. So here he’s out of a job, no future, and no girlfriend.

*Re-enactment: Trippe writes a letter. Footage of ship departing New York.*

JUAN TRIPPE VO

My dearest Betts, I can’t tell you how much I miss you, or how lost I feel with you on the ocean going farther and farther away from me every minute. I miss you more and more each day, with a sort of dull pain that takes all the joy out of life.

ED TRIPPE, mostly in VO

The letters show a very human side to both of them – and also this deep affection between the two of them.

*Betty writes a letter.*

BETTY STETTINIUS TRIPPE VO

My dearest Juan, how will I ever bear being away from you for even a week – to say nothing of the months I’ll be abroad? I just couldn’t stand it if I didn’t realize you’re going to miss me too.

*Photo of Betty in frame*

JUAN TRIPPE

If it wasn’t for the picture I have of you on a little table beside my bed, I’d be absolutely sunk.

*Footage of Juan at writing desk*

**NARR:** Betty’s departure only increased Trippe’s resolve to make a success in aviation.

ED TRIPPE

He was discouraged often. But he was never discouraged to the point that he gave up hope in the future of aviation.

**Lindbergh Boom**

*Lindbergh footage*

**NARR:** Then came the event that changed everything.

*“Lucky Lindy” song begins over selection of archival images from Lindbergh's national tour*

**NARR:** After his triumphant return to New York, Lindbergh embarked on an aerial tour of the country.

*Personal homages to Lindbergh, including footage of the Lindy Hop*

**NARR:** The American people poured out their adoration in poems, paintings, knickknacks, songs – even a popular dance step renamed the Lindy Hop.

HISTORIAN JOSEPH CORN, mostly in VO

The scope of this Lindbergh mania was just extraordinary.

*Photo of Lindbergh by his plane*

**NARR:** It also signaled a new day for aviation.

HISTORIAN BOW VAN RIPER, starting in VO

Lindbergh’s flight in 1927 is that moment for aviation when it goes from being daredevil stuff to being: This is serious. This is the future.

*Photo of sober Lindbergh in cockpit*

HISTORIAN BOW VAN RIPER VO

For all that they’d called him the Flying Fool, he was an incredibly sober, careful person.

*Lindbergh takeoff footage*

**NARR:** Lindbergh’s successful flight had been due not to luck but to his obsessive pursuit of a unique strategy.

historian david Courtwright, starting in VO

Lindbergh’s plan was to maximize fuel and minimize all other weight. There’s even a story about him trimming out the unnecessary parts of the map that he was taking with him.

*Photo of Lindbergh in goggles*

HISTORIAN BOW VAN RIPER, ending in VO

He made being a pilot boring, which is terrible if you’re trying to stage an air show, but it’s essential if you’re running an airline and trying to convince people to put their lives in your hands.

*Photo of passengers gathered under 1920s plane*

historian david Courtwright, ending in VO

People started to think, well, if Lindbergh can cross the Atlantic on one engine then maybe it’s safe for me to fly a shorter distance over land in a multiple-engine plane.

*Photo of 1920s passenger plane*

Historian Jenifer VAN VLECK, ending in VO

Lindbergh’s flight across the Atlantic catalyzed what became known as the Lindbergh Boom.

*Images of aviation stocks*

author MARYLIN Bender, ending in VO

Not just wealthy people, but even small individuals wanted to own an aviation stock. So it looked like there was a real business there to invest in.

**Birth of Pan Am**

*Trippe spins globe to look at the Caribbean.*

**NARR:** Sensing his opportunity, Trippe – a two-time failure as a *domestic* airline executive –formed a new company and turned his attention to the *international* airmail routes the Post Office would soon begin awarding.

*Graphic map of the Caribbean, showing Florida and Cuba and the proposed route from Key West to Havana*

**NARR:** His first target was a 90-mile route from Key West, Florida, to Havana, Cuba. But two other companies had their eyes on the same prize.

*Photo of Hap Arnold. Cut to re-enactment of John Montgomery seated at table, rack focus to Richard Bevier alongside him.*

**NARR:** Major Henry “Hap” Arnold of the Army Air Service had founded a company called Pan American Airways ... now being run by former military officer John Montgomery and his partner, Richard Bevier.

*Shot of Richard Hoyt at the table, Trippe standing next to him*

**NARR:** Also in the running was noted aviation financier Richard Hoyt, a partner in the Wall Street investment firm Hayden, Stone. Trippe joined forces with Hoyt and set out to engineer a merger with Pan Am.

JOHN MONTGOMERY

Well, we like the position we’re in. General Arnold’s stature gives us the inside track on the route.

RICHARD HOYT

But the Post Office isn’t going to award this route to anyone unless we consolidate.

RICHARD BEVIER

(laughs) That’s not what we’re hearing.

RICHARD HOYT

Gentlemen, why don't you come take a spin on my yacht and you can hear it from Glover himself?

*Glover photo*

**NARR:** Under pressure from Assistant Postmaster Irving Glover ...

*Wide shot of re-enactment*

**NARR:** ... the three groups agreed to work out a merger, and the Post Office awarded the Key West-Havana airmail contract to Pan Am.

*Four-month calendar with the two key dates circled.*

**NARR:** But service must begin three months later, on October 19th.

*Re-enactment: Tripe writes to Betty.*

**NARR:** As the merger negotiations dragged on that the summer, Trippe sent updates to Betty in Paris.

Ed Trippe, starting in VO

The letters expressed this frustration about what was going on in the founding of the company – all the arguments that are going on, the ups and downs.

*Trippe reads a letter, then crumples it in frustration.*

JTT letter Excerpt VO

When I wrote you last Thursday, everything looked rosy. This morning, the deal is off.

*Betty writes.*

Betty Stettinius VO

Don’t be discouraged, dear. I know you’ll beat the game. I just feel it in my bones.

Ed Trippe

At one point in September or October, Hayden Stone pulled out totally, and the whole financing fell apart.

*Juan writes*

JUAN TRIPPE VO

Darling, I don’t want this to come between us. Perhaps it might be better thing to acquire a little more experience in a business with a more assured future.

*Juan ponders.*

Ed Trippe, ending in VO

He was writing to her saying, “I’m going to go do something else. Maybe I have to go back to Wall Street.”

BETTY STETTINIUS TO CAMERA

What do you mean “starting again?” Do you mean in some field other than aviation?

*Trippe looks disconsolate, Betty writes.*

Ed Trippe vo

He said on a couple of occasions, “I … I … I can’t make it go. And she would come back and say, “You can’t quit. You’re going to make it work. I have such confidence in you.”

*Re-enactment: Trippe dictates to secretary;others come and go.*

**NARR:** Instead of quitting, Trippe redoubled his efforts.

JUAN TRIPPE

Dear Dick …

AUTHOR ROBERT DALEY, partly in VO

Trippe was a fantastic negotiator, even at the age of 28. He just kept on and on and on with whatever he had that you didn't have.

*Re-enactment of merger negotiation continues: Trippe pulls letter from pocket.*

JUAN TRIPPE

Something you should consider: No airline can deliver mail to Cuba without landing rights …

*Montgomery reads the letter.*

**NARR:** What he had in this case was a trump card – exclusive landing rights in Cuba, secured from President Gerardo Machado during that junket that so angered his bosses at Colonial.

*Montgomery looks up, realizing he’s been beaten.*

John Montgomery

How would you see the merger working?

RICHARD HOYT

This will take some time to sort out, but there will be roles for all of us.

*Trippe sits.*

**NARR:** When the three groups finally agreed to the terms of the merger, the company named Juan Trippe its president and general manager.

*Continuing shots of re-enactment*

AUTHOR ANTHONY MAYO VO

If you looked at the key players for this first, foreign airmail contract, you’ve got Richard Hoyt, who is quite experienced and quite wealthy. You’ve got Hap Arnold and then his successor John Montgomery.

*Trippe completes the Key-West Havana route on his wall map, the first step in the construction of his empire.*

AUTHOR ANTHONY MAYO VO

And then you’ve got 28-year old Juan Trippe. But he ends up outmaneuvering the two of them to ultimately become the head of Pan Am.

*Trippe enters office, takes off jacket. In the foreground is a calendar with the date of October 19th circled.*

**NARR:** But with the October 19th deadline looming, there was no time to celebrate.

*Now October 13th is circled.*

AUTHOR ANTHONY MAYO, starting in VO

This merger actually comes together comes together on October 13, 1927. They’ve got six days now to consummate this particular airmail contract.

*October 19th circled on calendar*

Ed Trippe, starting in VO

That date of October 19th sat out there as a major problem.

AUTHOR ROBERT DALEY

 If he doesn't make that flight, he’s got nothing.

*Photo of Fokker trimotor*

Author Robert Gandt, starting in VO

 He had his Fokker trimotors in place, but the runway in Key West was flooded.

*Re-enactment of work on flooded Key West runway*

AUTHOR ROBERT DALEY, starting in VO

He’s got men down there trying to tamp down the Key West airport, which it turns out is practically a swamp. It’s full of holes.

*CU of shovel and rake on wet runway*

Author Robert Gandt, starting in VO

And every time they would grade it and make it almost serviceable, the rains would come and wash it away again. And the clock is ticking away.

*While pacing, Trippe has an idea, goes to his desk, picks up the phone and dials.*

**NARR:** In desperation, Trippe had an idea:

Juan trippe

Operator, get me Key West.

**NARR:** A seaplane could land off Key West and in the harbor at Havana.

*CU of Trippe on the phone*

AUTHOR ROBERT DALEY, starting in VO

So now he has people scouring every city for miles around, begging for some pilot to come down to Key West and carry the mail to Havana.

Author Robert Gandt, ending in VO

And finally, at the last moment appeared this angel in disguise with a Fairchild float plane.

*Photos of Cy Caldwell and his float plane*

**NARR:** For two hundred dollars, the pilot was persuaded to add a stop to his planned route.

AUTHOR ROBERT DALEY, partly in VO

They fling the mail bags on board, and he takes off and an hour later lands in Havana and unloads the mail and keeps going. That's the shortest footnote in aviation history. His name isCy Caldwell. That's the one mention of him you'll ever see. Hello and goodbye Cy Caldwell. But he saved Pan Am.

*Photo of the General Machado in Havana*

**NARR:** Nine days later, a Fokker trimotor began regular airmail service to Havana, where it was christened the *General Machado* after the Cuban president.

Ed Trippe

And Dad sent this wonderful telegram to my mother.

*Juan writes on telegram form.*

JUAN TRIPPE VO

Business completely settled, departing Florida Saturday, returning two weeks to meet your boat.

*Betty reads telegram, breaks down in tears.*

Ed Trippe, ending in VO

And when she saw the words, “First flight successful,” she broke down into tears, with just happiness and joy.

Betty Stettinius VO

Sailing Mauretania, November 19th. Counting the hours. Love, Betts.

**Ugly Duckling**

*Trippe ponders.*

**NARR:** Even with the Havana service under way, Trippe realized he had a problem:

*Footage of passengers boarding land planes*

**NARR:** Land planes like Fokker trimotors would encounter more swampy runways as he worked his way south.

*Trippe picks up the phone and asks for operator.*

**NARR:** Seeking a more adaptable plane …

*Photo of Sikorsky*

**NARR:** … he reached out to a Russian aircraft designer now working on Long Island. His name was Igor Sikorsky.

*Photo of Sikorsky in Russia*

**NARR:** In Russia, Sikorsky had been an aviation legend ...

*Photo of soldiers on the wings of the giant Ilya Muromets*

**NARR:** ... building four-engine bombers for the Russian Army in World War I.

*Images of the Russian revolution, photo of Sikorsky with soldiers*

**NARR:** But after the Russian Revolution of 1917, Sikorsky’s close ties to the military made him a target of the Bolsheviks.

*Photo of Sikorsky in his Russian office*

Author DOROTHY COCHRANE VO

He was now an enemy of the people.

**NARR:** Warned he was on a list of people to be executed, Sikorsky fled.

Author DOROTHY COCHRANE

He actually escaped with his life and only with his life.

*Sikorsky gathers up his plans, turns out the light and leaves his Russian office.*

IGOR SIKORSKY III, partly in VO

He was advised by friends: “Get away. Come back when all this settles down.” So he gathered up his plans and set his sights on America.

*Photos of Sikorsky on New York street and a field filled with surplus WWI aircraft*

**NARR:** But when he arrived in New York, Sikorsky discovered that America’s glut of cheap war surplus planes left little demand for new aircraft.

*Photos of Russian immigrant community ca 1919-23*

**NARR:** For four years, he supported himself by teaching math and astronomy in New York’s tight-knit Russian immigrant community.

*Photos of early Sikorsky volunteers*

IGOR SIKORSKY III, mostly in VO

Eventually this group of Russian immigrants convinced him to get back into the aviation field. Nearly 30 workers, many of them out of a job anyways, threw their lot in with him.

*Photo of Sikorsky and coworker*

**NARR:** Sikorsky set up shop on a Long Island chicken farm and began building a large passenger plane.

*Photos of chicken coop, outdoor construction of the S-29A*

**NARR:** The chicken coop served as the machine shop, but with no hangar the plane had to be built outside, weather permitting.

*Group photo of Sikorsky and supporters, plane in the background*

Author DOROTHY COCHRANE

The band of supporters all lived on the chicken farm, kind of in a communal fashion, and worked together as a team to build this transport.

*Construction photos*

**NARR:** Funds were so short that discarded hospital bed frames, scrounged from the local dump, were built into the fuselage of Sikorsky’s first American plane.

IGOR SIKORSKY TO CAMERA

As I look back at that time, I sometimes wonder that we had the courage to go on with such makeshift parts. But in fact, the airplane was very strong.

*Photo of Sikorsky piloting the S-29A*

**NARR:** Even so, Sikorsky found no buyers. There was simply no market for large passenger planes.

*Re-enactment: Sikorsky stands at a drafting table, speaking to an assistant in Russian.*

IGOR SIKORSKY

Nicolai …

**NARR:** By 1927, Sikorsky had designed nine American airplanes, all of them technically sound, but had few orders to show for it. His little company was struggling to survive.

*Photo of Sikorsky in front of S-35, footage of S-35’s ill-fated takeoff*

**NARR:** Worse, his effort to win the Orteig Prize had ended tragically, when his S-35 was unable to get airborne with its heavy load of fuel.

*The S-35 spins around and bursts into flames.*

**NARR:** Rene Fonck and his copilot were able to scramble free, but seconds later the plane burst into flames, trapping the other two crew members in the inferno.

*Sikorsky is crushed by the loss.*

Author DOROTHY COCHRANE, mostly in VO

Sikorsky, of course, was devastated by this, the loss of life, most especially, and his inability to make sure that the aircraft was robust and ready for the flight.

*Sikorsky’s hand drop onto his drafting table; he is unable to continue.*

IGOR SIKORSKY III, mostly in VO

I can only imagine the anguish that he would go through. It would be easy to think that now would be a good time to give it up. It’s just not going to happen.

*Archival footage of Lindbergh excitement*

**NARR:** But the excitement caused by Lindbergh’s triumphant flight had given Sikorsky new hope.

IGOR SIKORSKY, partly in VO

A rapid development in aviation appeared to be around the corner. So we determined to make one more effort to create a new plane.

*Sikorsky sketches a new plane, clearly excited about this new design.*

**NARR:** Sikorsky knew that many parts of the world, like Key West, still had no suitable runways.

*Map showing these cities on waterways*

IGOR SIKORSKY III, mostly in VO

However, New York City, Boston, Havana, Chicago, LA … All these major cities are all on big waterways.

*Sikorsky draws the hull of the S-38 – clearly a different kind of plane, with a fuselage that looks like the bottom of a boat.*

IGOR SIKORSKY III VO

So he has an idea that that is really where commercial aviation is going to get its foothold.

*Hand double now draws in wheels.*

IGOR SIKORSKY III, partly in VO

He started experimenting with amphibious aircraft. These are aircraft that can land on water and also have the capability of dropping wheels and landing on land.

*Sikorsky continues sketching.*

**NARR:** The fruit of Sikorsky’s experiments was a plane called the S-38.

*An animation displays the S-38’s features as Igor and Dorothy describe them.*

IGOR SIKORSKY III, mostly in VO

This is a bizarre looking airplane. It has a parasol wing that is attached to the rest of the aircraft only by struts and wires. It has a fuselage slung below that.

Author DOROTHY COCHRANE VO

And that started with a boat hull – the bottom of a boat with a long snout in the front.

IGOR SIKORSKY III VO

Between the two, attached to the struts, are two engines. And the tail surfaces are way back behind the aircraft, added on what looks like an afterthought with these tail booms.

*Photo of the completed S-38*

**NARR:** One critic called it “a collection of airplane parts flying in formation.”

IGOR SIKORSKY III

It’s kind of an ugly duckling.

*Footage of the S-38 taxiing up ramp*

Author DOROTHY COCHRANE, starting in VO

But it worked. It was able to carry eight passengers, and even though it was ugly in many people’s minds, it served the purpose.

*Footage of the S-38 in flight*

Author Robert Gandt, starting in VO

This was an airplane that could land almost anywhere, in rivers and swamps and open sea. It turned out to be a superb airplane. And versions of it are still flying today.

*Photos of Sikorsky and the S-38 under construction*

IGOR SIKORSKY III VO

Somehow my grandfather knew he was onto something. And he didn’t build one. He built ten. Before the ten came off the line, there was an order for ten more.

*Photo of Sikorsky at the wheel of the S-38*

IGOR SIKORSKY III, starting in VO

The S-38 became the first realAmerican success – and, in fact, his most successful aircraft in his designing career.

*Images of the S-38, including the camouflaged plane of explorers Martin and Osa Johnson and those of a variety of airlines from around the world*

**NARR:** More than a hundred S-38s would ultimately be built at Sikorsky’s new Long Island factory – sold to explorers …corporate executives … and airlines around the world.

*Photo of prosperous of Sikorsky with his investors*

**NARR:** The S-38 finally put Sikorsky’s company on a firm financial footing ...

*Photo of Trippe in front of S-38*

**NARR:** ... and it was the foundation of a long relationship with Juan Trippe, who would buy nearly 40 of the planes for Pan Am.

*Photo of S-38 surrounded by Latin Americans*

Author Robert Gandt, starting in VO

It was a particularly useful airplane for Latin America, where you had bodies of water to cross, you had ports to land in, you had inland destinations where there were no air fields, only a little dirt runway. And the S-38 was suitable for all that.

*Pan Am S-38 on dirt runway*

Author DOROTHY COCHRANE VO

So it was a perfect plane for the time.

*Fade to black*

**Key West**

*Side view of the cockpit of a Fokker trimotor flying through clouds*

**NARR:** While Sikorsky was developing his new plane, Pan Am was discovering the challenges of operating an airline in the tropics, without a communication system of its own.

WARREN LEUTERITZ, ending in VO

When a plane took off in Key West, they would send a telegram to Havana saying the plane was on its way. Invariably the telegram would get to Havana after the plane landed.

*Re-enactment: Inside the Pan Am office/radio shed at Key West, Andre Priester is handed a telegram. Priester crumples up the telegram and tosses it in the trash.*

**NARR:** These problems didn't sit well with Pan Am’s chief engineer, Andre Priester.

*Photos of Andre Priester and the early Key West operation*

Author Robert Gandt, mostly in VO

Priester was a little, gnome-like man, a bald-headed Dutchman who had immigrated to the United States in the early twenties.

AUTHOR ROBERT DALEY, mostly in VO

And he spoke imperfect English, and the pilots were always mocking the way he spoke. But the man had a vision of what aviation should be, could be.

Author Robert Gandt, mostly in VO

And he demanded perfection. He’d fire people on the spot for being slovenly or disrespectful or being out of uniform.

AUTHOR ROBERT DALEY, mostly in VO

Priester was a nut about safety. He was a nut about cleanliness. He was a nut about so many small things, which made Pan Am what it was.

*Priester picks up a phone and places a call.*

**NARR:** Realizing the young airline would need a communication system to meet his high standards …

Andre Priester

Juan, we need radio down here right now.

**NARR:** … Priester summoned the engineer who’d been trying to interest Pan Am in radio.

Andre Priester

Yes, get that Leuteritz fellow from the RCA.

**Leuteritz**

*Leuteritz examines glowing tubes in the shed*

**NARR:** For three years, Hugo Leuteritz had been trying to sell aviation executives on another emerging technology: radio.

*Photo of Marconi with headline about his first transatlantic message*

AUTHOR ROBERT DALEY, starting in VO

The first transatlantic radio message was 1901; the first flight, 1903. These were two technologies starting out together. Nobody had any idea where or if they would go.

*Photos of boys and radio*

Historian SUSAN SMULYAN, starting in VO

Young men at the turn of the 20th century loved playing with radio. They would make their own radio sets. And it was just magical. They could hear something out of the air.

*Boyhood photo of Leuteritz*

Hugo Leuteritz, starting in VO

I was an amateur radio man by the age of 13. I got one of these cardboard Quaker Oats oatmeal containers and wound wire around it to make a coil. That was my first radio set.

*Leuteritz tinkers with a radio in his shed.*

AUTHOR Robert daley, mostly in VO

He was as in love with radio as Trippe and the others were with airplanes and aviation.

**NARR:** In 1919, Leuteritz was hired by the brand new Radio Corporation of America.

*Photos of him outside doing tests*

**NARR:** With broadcasting still a few years off, RCA put him to work doing basic research into the mysterious properties of radio waves.

*Biplane takes off.*

**NARR:** Then, in 1925, RCA asked Leuteritz to investigate a potential new market.

HUGO LEUTERITZ

They said: “Look into this aviation thing. It might be interesting from a business point of view.” So what I had to do was to go out and get the feel of the thing.

*Leuteritz is perched on a pile of mailbags in the cockpit.*

AUTHOR ROBERT DALEY

Leuteritz took to riding in the airmail planes, many of them biplanes still left over from World War I. He’d sit on top of the mail bags, and he realized very early on that the pilots were constantly lost.

*The plane flies low over a railroad track.*

HUGO LEUTERITZ, partly in VO

Whenever they ran into lousy weather, they didn’t know where the hell they were. So they would come down and fly along a railroad track until they could read the sign on the station.

AUTHOR ROBERT DALEY, mostly in VO

That was navigation at the time. And he saw that radio could help them. They’d be in contact with their base, wherever that was, and then maybe there was some way to navigate via radio.

*Animation of a ship using a radio beacon*

**NARR:** For nearly a decade, ships had been using radios as beacons to find their way.

*Photo of huge marine radios*

AUTHOR ROBERT DALEY VO

But the radio sets of the day were enormous. No airplane existed that could lift them off the ground.

HUGO LEUTERITZ

I asked RCA for $25,000 to develop some lightweight radios for use on airplanes. RCA turned that down. They said aviation was not ready for spending that kind of money.

*Leuteritz works with a lightweight radio set.*

**NARR:** So Leuteritz built his own prototypes and offered them to the airlines. But he found no takers ... until the phone call from Pan Am.

*Inside the cabin of a Fokker trimotor in flight, Leuteritz listens to the radio on headphones.*

**NARR:** Leuteritz arrived in Key West in July 1928. RCA had given him two months to test his belief that radio had a role to play in aviation.

AUTHOR ROBERT DALEY, starting in VO

It was the only nibble he had got so far. And he began to put his theories and his researches and his contraptions into practice.

*CU of Leuteritz listening*

**NARR:** Flying between Key West and Havana, he searched for the radio frequencies that would best cut through the static of the tropics.

*In the Key West office/radio shed, Leuteritz listens for a signal that never comes.*

HUGO LEUTERITZ, partly in VO

I couldn't do the flying and the ground measurements at the same time, so I relied on the crew to do the air work. All the flight mechanic had to do was hold down the telegraph key at certain times. But I couldn't depend on the man in the air, because he had other things to do. To him this radio business was secondary.

*Shot of Sullinger aboard the plane*

**NARR:** So Leuteritz sent for radio engineer Ferris Sullinger from New York.

*Aboard the Fokker trimotor, Sullinger operates the telegraph key.*

**NARR:** Aboard the plane, one of them would press the telegraph key ...

*In the radio shack at Key West, Leuteritz listens to Sullinger's signal. We hear the long dash of the telegraph key.*

**NARR:** ... while the other would listen on the ground to identify the frequencies that came through best.

*Leuteritz and Priester talk at night in the Key West office/radio shed. The scene begins with VO from Leuteritz’s recollection, then continues live.*

Leuteritz VO

After three or four flights across there, I said to Priester one night:

Leuteritz to Priester

Andre, you’ve been in aviation longer than I have, but it seems to me that something has to be done about navigation.

Priester

What do you mean?

LEUTERITZ

The pilots think they’re flying in a straight line, but they’re not.

*Leuteritz goes to a wall map of Cuba to show Priester the problem.*

Leuteritz

Depending on wind conditions, we’ve made landfalls as far east as Matanzas. In other cases we’ve wound up 60 or 70 miles down the coast *west* of Havana.

*Footage of Pan Am trimotor in flight*

**NARR:** Leuteritz had put his finger on one of the challenges Pan Am would face as it ventured out from the security of the American shore.

MIT Engineer JOHN HANSMAN

When you’re flying over land, you actually can see features on the ground. And in fact, over land we tend to navigate by flying, particularly at the time, from feature to feature.

*Drone footage over water*

MIT Engineer JOHN HANSMAN VO

When you’re flying over water, often the water looks the same. So you don’t really have a good way of knowing exactly where you are.

*Animation: A plane flies south from Key West toward Havana.*

**NARR:** In 1928, pilots would use a compass to point their planes in the right direction.

*Graphic animation of the phenomenon of drift. We see how wind can push a plane off course.*

MIT Engineer JOHN HANSMAN VO

But if there was a wind, a cross wind, what would happen is the airplane would drift off the course.

*In the animation, the plane is pushed west of Havana, despite pointing due south from Key West.*

**NARR:** Cuba was a big enough target that the pilots could easily compensate.

*The plane makes landfall and turns east toward Havana*

MIT Engineer JOHN HANSMAN VO

The pilots would hit Cuba, have to figure out where they were and go either left or right along the coast to find Havana.

*In the animation, we now zoom in to tiny Key West.*

**NARR:** But on the return trip, Leuteritz realized the tiny target of Key West made the margin for error much smaller.

*The Leuteritz-Priester scene concludes.*

WARREN LEUTERITZ mostly in VO

And he said to Priester, “We have to come up with a method to communicate with our airplanes and help them get to wherever they want to go. And I think I can do that.”

Leuteritz to priester

We’re going to need a direction finder.

*Priester looks back, not quite understanding.*

*Photo of loop antenna, dissolve to matching animation*

**NARR:** Early radio manufacturers often sold their sets with antennas in the shape of a loop, just as a way to save space. But engineers quickly discovered that the orientation of a loop had a profound effect on how well it picks up an incoming radio wave.

MIT Engineer JOHN HANSMAN (demonstrating with hand)

If I rotate it so the wave is coming right at the edge of the loop, I’ll get the maximum signal.

*Animation of loop principle*

**NARR:** Turn the loop 90 degrees and the radio signal falls off to nothing.

MIT Engineer JOHN HANSMAN VO

So by rotating the loop and listening to the strength of the signal, I can figure out what direction the wave is coming from. You can use that as a way to navigate.

*Aboard the Fokker trimotor, Sullinger operates the telegraph key. In the office/radio shed at Key West, Leuteritz uses the loop to take bearings on Sullinger's signal.*

**NARR:** With Sullinger's help, Leuteritz set out to apply these principles to flight, using a loop antenna to take bearings on a radio signal from a plane – and thereby determine the plane’s location.

*In the Key West office/radio shed, Leuteritz is holding forth on the benefits of radio.*

Hugo Leuteritz

All right, listen up, guys.

**NARR:** Leuteritz next tried to sell Pan Am’s pilots on the benefits of radio.

Hugo Leuteritz

I began flying with the airmail pilots three years ago, and I could tell immediately that radio could be helpful. It could help figure out where the hell you’re going. I’ve designed a set of light-weight receivers and transmitters …

*The assembled pilots are unimpressed.*

**NARR:** But they were cool to the newfangled technology …

Hugo Leuteritz

… and Sullinger and I would love it if you fellas would help try ‘em out.

**NARR:** … none moreso than Robert Fatt.

PILOT ROBERT FATT (to Leuteritz)

I’ve thrown better radio equipment off my plane than you can build.

*The other pilots laugh. Leuteritz and Sullinger share a look.*

MIT Engineer JOHN HANSMAN, partly in VO

There was nothing really like this in aviation, at the time. So when he tried to communicate that there was another way to navigate, it was actually hard for the pilots to relate to.

**Crash**

*Re-enactment of the crash of the General Machado, shot from inside the plane, and Priester following the path of the plane on the ground, with lines drawn from the actual radio transmissions and interviews with Leuteritz. We hear the droning of a plane in flight.*

*Inside the cockpit of a Fokker trimotor, Fatt is at the controls, a co-pilot at his side. No worries. Fatt cracks a joke and co-pilot laughs.*

**NARR:** A few weeks later, Fatt took off in the *General Machado* on a late-afternoon flight from Havana to Key West.

*Shot of Leuteritz at his position with mic in hand*

Warren Leuteritz VO

And my father was onboard as the radio operator.

*Pilot peers out window*

Warren Leuteritz

The pilots in those days, they would go up to approximately 10,000 feet. And because it was only 90 miles in distance, they could see Sand Key Light … normally.

*View out windscreen from cabin shows only haze.*

**NARR:** Visibility had been good when they left Havana, but twenty minutes into the flight they ran into a thick haze.

*Fatt peers out the windscreen, still unable to see anything.*

**NARR:** Fatt dropped to a lower altitude in search of clearer air … to no avail.

*Sullinger and Priester listening in Radio Shed – no alarm yet.*

Hugo LEUTERITZ VO

Visibility poor. No sign of Key West yet. Stand by.

*Fatt tells co-pilot to look for Sand Key Light*

Robert Fatt (to co-pilot)

Look out that side for Sand Key Light.

**NARR:** An hour into the flight, they still hadn’t spotted Key West.

LEUTERITZ VO

I used the radio transmitter to give the people on the ground a running account of everything we were doing.

*Leuteritz reports in to Key West on the radio.*

LEUTERITZ VO (sound of radio transmission)

Things running smoothly. Have not sighted anything yet.

*Sullinger and Priester listening in Radio Shed. Now they’re worried.*

Ferris Sullinger (to Priester)

Andre, something’s wrong. They should be here by now.

Andre Priester

What’s holding them up?

Ferris Sullinger

Low visibility. They can’t see anything.

warren Leuteritz

The receiver that had been in the aircraft was on the ground in Key West for repairs. He couldn’t receive, but he could send. So the people in Key West were very aware that the plane was in trouble.

*Fatt peers out the windscreen, still unable to see anything.*

Robert Fatt (to co-pilot)

You see anything out there?

*Co-pilot shakes his head.*

HUGO LEUTERITZ VO

It normally took an hour and 15 minutes to fly back, but after an hour and 45 minutes, Fatt still saw nothing.

*Fatt turns the plane to the left.*

**NARR:** Based on the winds measured at takeoff, the pilot decided he must be east of the Florida Keys, so he headed northwest, expecting to find them.

HUGO LEUTERITZ

Fatt turning northwest in search of Keys.

*Inside the Key West office/radio shed, Sullinger turns the loop to get a fix on the plane.*

**NARR:** Using Leuteritz’s loop antenna, Sullinger could tell that ...

*Graphic animation shows the plane heading north from the Keys.*

**NARR:** … Fatt had turned in the wrong direction and was now headed out over the Gulf of Mexico.

MIT Engineer JOHN HANSMAN VO

It turns out that the wind had actually blown them to the west. So when he turned to the west they just got further away from land.

Ferris Sullinger (to Priester)

He’s heading over the Gulf.

Andre Priester

Can’t we warn him?

Ferris Sullinger

We can’t, because the receiver is right here (slapping the receiver). It was acting up yesterday, so we brought it back for repairs. (beat) We have no way communicating with them.

*Fatt peers out through the windscreen, scanning the horizon left and right.*

**NARR:** As Fatt continued scanning the horizon for any sign of land ...

 *In the Key West office/radio shed, worried Priester listens to the radio transmissions.*

**NARR:** ... Priester and the others continued to monitor the plane’s radio transmissions in Key West. Afternoon turned to evening as the flight reach two hours ... two and a half ... three hours …

HUGO LEUTERITZ

Gas running low.

*Uneasy passengers, having heard Leuteritz, give each other a look.*

**NARR:** … three and a half.

*Sullinger paces. Fatt and co-pilot hear the engines sputter, give each other a look.*

Pilot robert fatt

We’re going in.

*He turns to talk to Leuteritz.*

Pilot robert fatt

Hugo, we’re going to make a water landing. Prepare the passengers.

*Sullinger, Priester and Musick listen to radio transmissions.*

HUGO LEUTERITZ (sound of radio transmission)

Spotted tanker. Attempting to make a water landing alongside. Stand by for further updates.

*Inside the plane cabin, Leuteritz rushes toward the rear of the plane, sits behind the two passengers and grips each of them by a shoulder. The three men brace themselves as the plane tips downward.*

HUGO LEUTERITZ

The next thing I know, the lights went out.

*Leuteritz is thrown forward in his seat by the impact of the crash. The picture goes to black with the sound of the crash and water.*

*In the Key West office/radio shed, there is silence.*

Ferris Sullinger

They’re down. (beat) They’re in the water.

AUTHOR ROBERT DALEY, starting in VO

Leuteritz himself was knocked cold. And when he comes to, he’s inside the cabin, which is filling up with water.

HUGO LEUTERITZ, partly in VO

So I managed to get a lungful of air and pulled myself forward. I felt something slide underneath me, so I pulled it along too. It turned out to be one of the passengers.

*Sullinger and the others react to the loss of the plane.*

**NARR:** Four of the five men aboard were rescued by a nearby tanker, but the second passenger drowned, and Leuteritz was hospitalized with a fractured pelvis.

*In the Key West office/radio shed, Priester picks up the phone to call Trippe in New York.*

Andre Priester

Juan ... I have bad news.

*Headline about Pan Am's disaster*

**NARR:** The plane was lost, and news stories describing the crash dealt another blow to the public’s confidence in aviation.

*In his office, Trippe grimly reads the newspaper. Animation shows the spot where the plane crashed.*

Author Robert Gandt, mostly in VO

It was a huge black eye for Pan Am, because here’s an airplane that on only a 90-mile trip wound up 300 miles off course.

*Trippe looks worried.*

historian david Courtwright, partly in VO

After the crash of the General Machado, even Trippe’s confidence was shaken. If a plane could crash 300 miles off course on a journey of 90 miles, how could he ever cross the oceans?

*Over water footage*

MIT Engineer JOHN HANSMAN, starting in VO

When you start thinking about going across the ocean, you’re talking about going thousands of miles. You’re never going to be able to do that unless you had a precise way to navigate.

historian david Courtwright

This accident, more than anything else convinced Trippe that he needed to solve the problem of navigation. And to solve that problem he needed Hugo Leuteritz.

**Poised**

*At a restaurant table, Trippe scans Leuteritz’s report.*

**NARR:** After sending Trippe a report on his findings ...

Juan Trippe

It’s very impressive.

Andre Priester

He would be as asset.

*After a moment, Leuteritz, using a cane, joins him and Priester at the table.*

Hugo Leuteritz

Andre …

*Priester rises and shakes Leuteritz’s hand.*

**NARR:** ... Leuteritz got an urgent call from Andre Priester: Trippe wanted to see him.

JUAN TRIPPE

How’s the hip?

HUGO Leuteritz

Oh, still a bit gimpy, but much better, thank you. Should be fully mended in about a month or so. (To bartender) I’ll have a martini too, as well.

TRIPPE

Andre told me what happened at Key West. I want to you to join Pan American to head up communications.

LEUTERITZ

Juan, you only have a few airplanes and one airmail route. That’s not enough to keep me busy.

TRIPPE

We’ll have a whole fleet of planes soon enough. Next year we’ll be flying to South America, and after that we’ll cross the Atlantic, and then the Pacific.

*Shots of the three men*

AUTHOR ROBERT DALEY, mostly VO

Trippe offered him a full time job. And his reaction was, “I know what I can do, I don't know what you can do. Maybe I'd be better off staying with RCA.”

*Leuteritz thinks it over, clearly doubtful.*

Warren Leuteritz, mostly VO

My father was not really convinced yet that long distance aviation had a future.

TRIPPE

Andre will have nobody else but you.

LEUTERITZ (softening)

Well, I’d have to talk it over with Alice … and I’d have to give some notice.

TRIPPE

That’d be fine.

*Restaurant scene continues. The three men raise their glasses.*

**NARR:** A few days later, Leuteritz secured a leave of absence from RCA to join Pan Am.

AUTHOR ROBERT DALEY

 And at that point, Trippe’s dream of conquering the world became possible.

*Reprise scene of Trippe and Lindbergh in animated conversation*

**NARR:** In Lindbergh, he had a world famous aviator who could pioneer Pan Am’s new routes, lending enormous credibility to the young airline.

*Sikorsky sketching*

**NARR:** In Sikorsky, he had a partner who could build the kinds of planes he would need.

*Leuteritz listening on radio headphones*

**NARR:** In Leuteritz, he had the man who could develop the technology to guide those planes safely to their destinations.

*Trippe at globe, moves to reveal South America behind him on wall map.*

**NARR:** And by securing the Key West-Havana route, he had a taken the first step toward conquering a continent.

*Fade to black*

**NARR:** Next time on *Across the Pacific …*

*Photo of Graf Zeppelin over Rio de Janeiro*

HISTORIAN David Courtwright, starting in VO

The United States really didn’t have an aviation presence in Latin America, and we needed to get one fast.

*Aviation meeting footage*

ASS’T SEC’Y OF STATE FRANCIS WHITE

So, to guarantee a U.S. presence in Latin America, we have to change the law.

*Committee members raise their hands in unison*

HISTORIAN JENIFER VAN VLECK VO

The meeting was really a turning point in American political and economic history.

*Trippe meets with Assistant Postmaster Irving Glover*

Irving Glover

January give you enough time?

AUTHOR ROBERT Daley, starting in VO

He realized early on that all these battles were going to be won in Washington, not out in the boondocks.

*Glover slides folder toward Trippe*

Irving Glover

I have to step out for a minute.

*Glover leaves, and Trippe takes a peek.*

AUTHOR ANTHONY MAYO, mostly in VO

People would say it was collusion today [laughter] between a business and the government. And it certainly was.

*Trippe adds a new route to his wall map.*

FORMER Pan am vp THOR JOHNSON

He managed to capture the Caribbean, all of South America.

*Trippe admires his empire on a wall map.*

AUTHOR John Hill, starting in VO

Trippe was not willing to just sort of pick an airplane out of the catalogue.

JUAN TRIPPE (to Igor Sikorsky)

And you can have this ready in a year?

*Footage of three flying boats*

AUTHOR ROBERT Gandt VO

He actually instigated the development and the design of the aircraft. This was a whole new thing in the aviation business. Those flying boats thrust America into the forefront of air transport.

*Trippe stands at window.*

AUTHOR ANTHONY MAYO, mostly in VO

Trippe thought: I don’t want to just conquer Central and South America. I want to conquer the world.

*Trippe glances at globe.*

ED TRIPPE, starting in VO

Dad had a vision a vision of making Pan Am a global airline. So his focus from the beginning was to cross the oceans.

*Trippe turns the globe to reveal the Atlantic Ocean.*