***Across the Pacific***

***Episode 2: Latin Laboratory***

**Final Script 4/19/20**

**NARR:** Previously on *Across the Pacific* …

*Sikorsky sketches the S-38.*

IGOR SIKORSKY III, most in VO

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

*Dissolve from mechanical drawing to footage of the plane emerging from water*

Author Robert Gandt VO

This was an airplane that could land almost anywhere, in rivers and swamps and open sea.

*Photo of prosperous looking Sikorsky with investors*

IGOR SIKORSKY III VO

The S-38 became the first realAmerican success.

*In the Pan Am Key West radio shed, engineer Ferris Sullinger speaks to chief engineer Andre Priester.*

Ferris Sullinger

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

*Aboard a Pan Am mail plane, captain and co-pilot hear the engines sputter, give each other a look.*

Pilot robert fatt

We’re going in.

*Engineer Hugo Leuteritz hurries to the back of the plane and braces himself.*

HUGO LEUTERITZ

The next thing I knew, the lights went out.

*Leuteritz is violently thrown forward and the screen goes to black.*

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

historian david Courtwright, most in VO

If a plane could crash 300 miles off course on a journey of 90 miles, how could he ever cross the oceans?

*Leuteritz and Priester along at night in the radio shed*

Leuteritz to Priester

Andre, something has to be done about navigation.

*Footage of the vast Pacific*

AUTHOR ROBERT DALEY VO

Without radio navigation, Pan Am could go nowhere over open water.

Leuteritz to priester

We’re going to need a direction finder.

*Photo of early mail plane*

Former Pan AM VP THOR JOHNSON, starting in VO

In the early days, the entire airline industry, it was built by the Post Office.

*Re-enactment of Trippe negotiating with the founders of Pan Am*

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. 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.

*Photo of young Juan Trippe*

BOB GANDT

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

*Trippe walks around the globe, hands on hips.*

AUTHOR ANTHONY MAYO, mostly in VO

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

**Title Sequence**

**Funder Credits**

**The European Threat**

*Footage of Trippe looking satisfied as he surveys the South American wall map*

**NARR:** By late 1927, Pan Am president Juan Trippe was right where he wanted to be.

*Animated map of Key West-Havana route*

**NARR:** Having landed America’s first foreign airmail route, from Key West, Florida, to Havana, Cuba …

*Trippe at the globe*

**NARR:** … he now had the inside track on all future international air routes from the United States. The world was his for the taking.

*Images of European airlines in the 1920s – Lufthansa, Air France, BOAC*

**NARR:**  Trippe soon discovered the international arena posed even greater challenges than the cutthroat world of domestic aviation in which he had failed.

JUAN TRIPPE to camera

On the international airways, America does not face small, independent airlines. Our competitors are great national air transport systems with the power and prestige of their governments behind them.

*Images of European airlines in the 1920s – Lufthansa, Air France, BOAC*

HISTORIAN Jenifer Van Vleck, mostly in VO

Many western European governments were investing lavishly in state-run airlines that were really empowered to be kind of a single, government-operated carrier. They received levels of government support that were far higher than anything the U.S. aviation industry was getting.

*Trippe in his office*

HISTORIAN David Courtwright, mostly in VO

The dilemma that Trippe faced was that foreign competition had government support. So that if he was going to crack that market, he was going to need support from his own government.

*Photos of Congress, Harding and Coolidge*

**NARR:** But for much of the 1920s, Republican presidents had taken a hands-off approach to aviation, leaving America’s fledgling airlines to flounder.

*Map of the spread of European airlines around the world*

**NARR:** Meanwhile, their European counterparts soared.

JUAN TRIPPE, mostly in VO

We saw them spread their wings over the trade routes of Europe, Asia and Africa, with the French and the German companies reaching even making their way across the Atlantic to South America. And while all this was under way, America did nothing.

*Tilt up to image of Graf Zeppelin over Rio*

HISTORIAN David Courtwright

By the late 1920s, the success of European, and in particular German, airlines in Latin America was causing alarm in the U.S. government. It seemed an obvious impingement on the Monroe Doctrine, the idea that goes back to James Monroe, our fifth president.

*Cartoon of Monroe Doctrine*

HISTORIAN Susan schulten

The Monroe Doctrine is essentially the principle that the United States has a kind of quasi-sovereignty over what goes on in the western hemisphere and that Europe should remain hands off when it comes to Latin America.

*Image of Monroe*

HISTORIAN Jenifer Van Vleck

James Monroe argued that the western hemisphere should be closed to further colonization by European powers – but also that the United States should maintain economic dominance in Latin America.

*Images of European airlines in South America*

HISTORIAN David Courtwright

And here European airlines, backed by their governments, were flourishing.

HISTORIAN Susan schulten

That’s a wakeup call for the United States to begin to aggressively pursue air routes of their own.

**Scadta**

*Archival photos of SCADTA’s operation. The airline’s full name is spelled out on screen: Sociedad Colombo-Alemana de Transportes Aéreos*, *with Alemana highlighted as Germany is mentioned.*

**NARR:** The biggest threat to U.S. supremacy in the region was an airline known as SCADTA. Based in Colombia, it was largely controlled by German pilots, managers and investors.

*Photo of SCADTA’s director, Peter Paul von Bauer*

**NARR:** Under the leadership of its suave Austrian director, Peter Paul von Bauer ...

*Photos of SCADTA’s operation*

**NARR:** ... SCADTA had begun offering airmail and passenger service in the early 1920s, when most U.S. airlines were struggling to get airborne.

*Map graphic showing SCADTA’s routes and the proposed extension to Panama.*

**NARR:** By the late ‘20s, von Bauer was pushing hard to extend SCADTA’s service throughout the Caribbean, including a stop near the U.S.-controlled Panama Canal.

**Crossroads**

*Photo of a ship on the canal, then photo of the U.S. Capitol in winter circa 1927*

**NARR:** The prospect of German aircraft flying over a waterway so vital to American interests sent a chill through Washington.

*Photos of the war and military officers*

Historian Jenifer van Vleck

The memory of war with Germany was very fresh in Americans’ minds. And so U.S. military officials were extremely worried. And yet, they could not forestallthe establishment of commercial aviation in the Caribbean region forever.

*Photo of von Bauer*

**NARR:** Von Bauer kept pressing his case, circulating a petition among U.S. corporate executives doing business in Colombia.

Historian Jenifer van Vleck

A number of American businessmen who were in Latin America actually supported it, because air mail and air services would obviously benefit them.

*Re-enactment of the Aviation Committee meeting, with dialogue drawn from the minutes. Eight officials, including a general and an admiral, settle into their chairs.*

**NARR:** In November 1927, with pressure building for a decision, the State Department convened a special committee with representatives from the Army, Navy, Post Office, and the Treasury and Commerce departments. Secretary of State Francis Kellogg chaired the meeting.

Secretary of State Frank Kellogg

The reason I've called you all here today is to get your thoughts on von Bauer and this SCADTA business.

*A scan of the room reveals attentive faces.*

HISTORIAN JENIFER VAN VLECK, partly in VO

Kellogg was particularly concerned about von Bauer’s petition, which had been signed by virtually every American company doing business in Latin America.

*Kellogg ticks of the list companies that had signed the petition.*

KELLOGG continues

Gulf Oil … General Electric … Du Pont …

*He looks up at the others.*

KELLOGG continues

Frankly, it will be very difficult for us to refuse this request unless there is an American company ready to offer similar service.

AUTHOR JOHN HILL

They needed to find another carrier that could serve that purpose. And therefore they could say, “No, thank you,” to SCADTA.

*Shot of White in the meeting*

NARR: Assistant Secretary of State Francis White asked if an American-owned company already operating in the Caribbean might be persuaded to help.

*Assistant Postmaster Irving Glover explains the obstacles.*

ASS’T SEC’Y OF STATE FRANCIS WHITE

... to extend service to Central and South America.

Ass’t Postmaster Irving Glover

It’s not as easy as that, Francis.

ASS’T SEC’Y OF STATE FRANCIS WHITE

Why not?

Ass’t Postmaster Irving Glover

Under current U.S. law, the Post Office is required to award all mail contracts to the lowest bidder.

*Sound up. MacCracken questions Glover.*

Ass't Sec'y of Commerce William MacCracken Jr.

Why is that a problem?

Asst Postmaster Irving Glover

These European airlines in South America, they're backed by the treasuries of their countries. France alone has put up almost $4 million.

*Discussion continues.*

**NARR:** With that kind of financial backing, European companies would be able to bid low enough to win whatever new airmail routes the Post Office advertised.

Ass’t Postmaster Irving Glover

American companies will never have a chance.

Ass't Sec'y of the Navy Edward P. Warner

That's unacceptable. We've got to have Americans operating down there.

HISTORIAN David Courtwright

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

ASS’T SEC’Y OF STATE FRANCIS WHITE

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

*The discussion continues under the following narration and sound bite. We see all the members raise their hands as a vote is taken.*

**NARR:** By the time the meeting adjourned, the committee had unanimously agreed it was imperative to establish a *U.S.-owned* airline in Latin America as soon as possible.

*The committee members rise to leave.*

HISTORIAN JENIFER VAN VLECK, starting in VO

The meeting was really a turning point in American political and economic history. From then on an American airline doing business in Latin America could be assured that it could get basically whatever it wanted from the federal government in terms of financial and diplomatic backing.

*Footage of Pan Am trimotor in flight.*

**NARR:** Only one American airline was in a position to capitalize on this new government largesse: Pan Am, which had begun carrying mail to Cuba one month earlier.

**The Chosen Instrument**

*Train footage*

**NARR:** Juan Trippe wasted no time. The week after the Aviation Committee meeting, he was on a train for Washington.

*Hambleton photo*

**NARR:** Joining him was John Hambleton, Pan Am’s handsome, charming, Harvard-educated vice president, a decorated World War I fighter pilot.

AUTHOR Robert Daley, partly in VO

Trippe used people in many ways, and one of them was to put somebody like Hambleton forward in any sort of negotiation or meeting, while he himself stayed in the background.

*Graphic map of Hambleton’s Washington lobbying campaign, with photo inserts of the people he met with, including future president Hoover.*

**NARR:** Relying on Trippe's Yale connections to open doors, Hambleton met with Francis White at the State Department ... Commerce Secretary Herbert Hoover ... and officials in the War and Treasury departments.

*Trippe meets with Glover in his office. We hear snatches of their conversation.*

JUAN TRIPPE

In order for us to expand overseas, we’re going to need to build all that ourselves.

**NARR:** Meanwhile, Trippe met with Assistant Postmaster General Irving Glover, urging him to set the airmail rate high enough to make international service profitable.

IRVING GLOVER

A dollar a mile is as far as I’m willing to go.

JUAN TRIPPE

Our investors will never go for that. You need to make it worth our while financially to expand beyond the borders of the United States.

*Photo of the Capitol building*

**NARR:** Early the next year, Congress passed the Foreign Air Mail Act, promising payments of up to two dollars a mile for each overseas mail flight, regardless of how much mail the plane carried.

*Trippe listen to Glover.*

**NARR:** These were exactly the terms Trippe had proposed.

HISTORIAN DAVID COURTWRIGHT

And that formula virtually guaranteed a profit to the successful bidder.

*Photo of Capitol building*

**NARR:** The law also removed the requirement that each airmail contract be awarded to the lowest bidder.

AUTHOR ANTHONY MAYO

Itdoesn’t have to go to the lowest bidder butto the bidder who actually could serve the best interest of the country. And so that was a fundamental change.

*Trippe and Glover talk.*

HISTORIAN Jenifer Van Vleck VO

It basically enabled the United States government to choose which airline it wanted.

*Reprise of White from Aviation Committee meeting, focus on White*

**NARR:** Before long, the Aviation Committee, chaired by Trippe’s fellow Yale alum Francis White, was openly aiding Pan Am.

*Headline about Pan Am's plans from the* New York Times, *Jan 10, 1928. Pan Am plane in flight.*

HISTORIAN JENIFER VAN VLECK, starting in VO

The government had not simply acted to keep SCADTA and other foreign airlines out of Latin America. It had selected one airline that would be its representative in the region. From then on, Pan Am was effectively a chosen instrument of the United States in the realm of aviation.

*Graphic of the proposed route (FAM5)*

**NARR:** That spring, the Post Office advertised the new Canal Zoneroute and, a month later, awarded the contract to the only bidder, guaranteeing Pan Am more than $1 million in additional revenues each year.

**A Man with a Business**

*Photo of Betty’s parents with dog, then photo of Betty*

**NARR:** The upper-class Stettinius family might still have misgivings about the young man wooing Elizabeth, but there was no denying now that Juan Trippe "had a business."

*Photos and home movies of the Trippe-Stettinius wedding*

**NARR:** In June 1928, Juan and Betty were married at the Stettinius estate on Long Island, the 800 guests arriving by private yacht and chartered buses from the city. In Betty, Trippe had found a partner whose sparkling personality offset his reserve.

*Wedding photos and footage continue.*

AUTHOR Marylin Bender, mostly in VO

She was a very warm-hearted woman, who always left people thinking that they were the most important person in the world, because of the attention that she lavished on them.

ED TRIPPE, mostly in VO

My mother was a real silent but extremely important partner for Dad. She remembered everybody’s name, and he was hopeless remembering names.

AUTHOR Marylin Bender VO

Juan Trippe wouldn't give the time of day to anyone who was not immediately important to him and his business.

ED TRIPPE, partly in VO

Dad was not a people person. He commanded huge respect, because he was quietly just very sure of himself. But my mother was great with people. While he was quiet and silent and stubborn, she was effusive and responsive.

AUTHOR Marylin Bender VO

She really was Juan Trippe’s better half.

*Bustling office scene. Trippe dictates a letter.*

JUAN TRIPPE

Sincerely, JTT, so on and so forth. Make sure it goes out in today’s mail.

**NARR:** With no time for a honeymoon, Trippe was back at work the following Monday …

ANDRE PRIESTER (to Trippe)

With rising passengers, we need to expand the Havana line.

**NARR:** … driving his staff at a grueling pace.

JUAN TRIPPE (to Priester)

Let’s add a 1 pm, and add a return flight as well.

JUAN TRIPPE (to another Pan Am executive)

John …

**NARR:** There were new schedules to be draw up … and new bids to prepare.

PAN AM EXECUTIVE (to Trippe)

We’ll need one of the S-38s for that run.

JUAN TRIPPE

Contact Sikorsky’s office and have it delivered.

**NARR:** There was equipment to be bought … and new routes to map.

HISTORIAN DAVID COURTWRIGHT

He would keep secretaries at work until midnight in his office, typing up correspondence for the next day without so much as a thank you. He could be kind of a cold fish and certainly be distant.

*Priester distributes bonus checks to his staff while they help themselves to refreshments.*

**NARR:** So the staff was shocked when, a few days before Christmas in 1928, Trippe sent out for refreshments, handed out bonus checks – and then began to speak to no one in particular.

*Trippe begins to speak haltingly. The surprised staff quiets to listen to the unexpected soliloquy.*

JUAN TRIPPE

As we, uh,conclude our first full year, I’d, um, like to say a few words about our future. We’re going down the west coast of South America and up the east coast. After that we’ll cross Atlantic and then the Pacific. We’re going around the world.

AUTHOR MARYLIN BENDER, partly in VO

And they looked at him as though he were a mad man. This dinky little airline?

*When Trippe finishes, there is a momentary silence before the staff resumes its revelry.*

**Narr:** Far-fetched as it sounded, their shy, taciturn boss had shared his dream with them.

**Riding a Star**

*Archival photos, footage and headlines about the Lindbergh trip*

**NARR:** The dream began to take shape just a month later, when Charles Lindbergh arrived in Miami to open the new airmail route to the Canal Zone. Fifty thousand people jammed the roads, hoping to catch a glimpse of the famous aviator as he piloted the S-38, the latest creation of Russian-born designer Igor Sikorsky.

*Headline about Lindbergh trip*

HISTORIAN DAVID Courtwright, partly in VO

Lindbergh’s association with Pan Am added tremendous prestige to what was a very small and struggling operation.

*Two-shot of Lindbergh and Trippe*

AUTHOR ROBERT GANDT VO

Here was the world’s greatest hero now a part of Trippe’s airline. And Trippe shamelessly used that image of Lindbergh everyplace.

*Re-enactment: Sikorsky reads the paper in his office, pleased with the coverage.*

HISTORIAN DAVID Courtwright

Lindbergh’s prestige rubbed off on Sikorsky, too, because of course Pan Am was using Sikorsky equipment and Lindbergh was very much involved in that process.

Igor Sikorsky III

This was one of the happier times for my grandfather: to have a successful design actually pioneering these routes in conjunction with Lindbergh. It was really this pretty amazing, fateful collision of these great minds.

*S-38 takes off*

**NARR:** After making seven flights over Miami, Lindbergh headed south to Panama.

*Headlines about the trip*

HISTORIAN DOROTHY COCHRANE

Thousands of people just came at every stop along the way. It was perfect for Juan Trippe, perfect for Lindbergh, and perfect for Igor Sikorsky.

*Photo of the two couples*

**NARR:** Seven months later, Juan and Betty Trippe joined Lindbergh and his new bride, Anne Morrow Lindbergh, aboard the S-38 for a triumphant tour of the Caribbean.

*Graphic map showing what became known as the "Lindbergh Circle," a loop around the Caribbean that foreshadowed Pan Am's future air routes.*

**NARR:** They visited many of the countries to which Trippe hoped to be offering air service soon.

**NARR:** And with Lindbergh at his side and the press following their every move, the tour bestowed a priceless air of legitimacy on two-year-old Pan Am.

AUTHOR ROBERT GANDT

Just the fact of having him at the helm of these pioneering Pan American airplanes gave Pan Am immense credibility.

*Press coverage of the trip.*

**NARR:** But as bright as Pan Am’s future now looked, the airline was still missing one essential thing: a navigation system for guiding its planes safely over its growing network of routes.

**Navigating by Radio**

*Reprise of restaurant scene from Episode 1.*

**NARR:** Radio engineer Hugo Leuteritz was determined to create one.

JUAN TRIPPE

How’s the hip?

HUGO LEUTERITZ

Still a bit gimpy, but much better, thank you.

**NARR:** Still recovering from injuries sustained in the fatal crash of a Pan Am mail plane called the General Machado, he had left RCA to become Pan Am’s communications director.

*They raise a glass.*

*Then Leuteritz builds his first direction finder: Helped by Ferris Sullinger, he winds wire around a large wooden square, marks a pie plate nails it beneath the completed loop.*

**NARR:** Now, working with fellow engineer Ferris Sullinger, he began building a radio navigation system by fashioning a wooden frame four feet square.

AUTHOR ROBERT Daley

And he wraps wire round and round and round all four sides.

**NARR:** This would be what radio engineers called a loop antenna, the length of wire matched to the radio frequencies Leuteritz had found most reliable.

AUTHOR ROBERT Daley

And then he goes and he buys a pie plate in the five and ten cent store. And that becomes his compass rose.

*The two men chat about the compass rose.*

Hugo Leuteritz VO

We calibrated it to 360 degrees and nailed it to a stand underneath the loop.

*Wide shot of Leuteritz using the loop*

**NARR:** When attached to a radio receiver, the result was a direction finder capable of pinpointing planes anywhere along their route between Key West and Havana.

*Animation of Commerce Department radio range*

**NARR:** At about the time Leuteritz was doing this work, the U.S. Department of Commerce was developing a system of radio beacons that sent out signals pilots could follow into American airports.

MIT ENGINEER JOHN HANSMAN

What Leuteritz did at the beginning was the reverse of what the Department of Commerce was doing.

*Graphic shows signal coming from plane*

MIT ENGINEER JOHN HANSMAN

He had the loop on the ground and had the airplane transmit a signal. And by using that loop antenna he could determine which direction the airplane was from the ground station in Key West.

Hugo Leuteritz to camera

I felt strongly that at this early stage it was no good to have the pilot doing his navigating in the air. You have a little engine fluctuation and by the time you get back to navigation you’re way off course. Better to have the calculations done by someone sitting comfortably in a chair on the ground.

*In the radio shed, Leuteritz pitches the Pan Am pilots on the benefits of letting ground-based radiomen do the navigating. The pilots are skeptical.*

**NARR:** But to take advantage of this tool, Leuteritz needed the cooperation of Pan Am’s pilots.

HUGO LEUTERITZ

If there’s one thing the crash of General Machado taught us, it’s that radio will play a crucial role in the future of aviation. If Sullinger had any way to communicate with the aircraft, when Fatt changed course he could have told us we were heading further out into the Gulf. We could have rerouted and landed safely. Nobody would have died.

**NARR:** Even after the crash of the *General Machado,* it was a tough sell.

HISTORIAN David Courtwright

Many of the early pilots were resistant to any form of instrument flying. They didn’t necessarily trust the equipment, especially equipment that could be unreliable, like the radio.

*Sullinger talks to pilots.*

FERRIS SULLINGER

What Hugo and I are going to do is design a system that allows us to track you by radio.

MIT ENGINEER JOHN HANSMAN, ending in VO

And, in fact, they were threatened by the navigation, because the pilots were used to operating on their own. And now someone was looking over their shoulder and saying, “Oh, you’re off course.”

FERRIS SULLINGER

If you wander off because of weather, wind, visibility, we will be able to stay in contact with you …

*Pilot scene continues*

WARREN LEUTERITZ, starting in VO

The pilots did not like the fact that they were being controlled from the ground. This was a problem from Day 1.

**NARR:** Leuteritzfound only one pilot willing to cooperate.

*Musick rises and says:*

ED MUSICK

I’ll give it a go.

**NARR:** His name was Ed Musick.

*Overhead photos of Key West circa 1928, with matching graphic to illustrate the calibration process.*

**NARR:** To calibrate his navigation system, Leuteritz painted a yellow cross on the roof of the airport office.

*Musick in the cockpit of the Fokker trimotor*

*Animation shows the plane lining up with the Optimo Cigar Factory, the Sand Key Lighthouse, a church steeple.*

**NARR:** Musick flew out a few miles and lined up a series of landmarks with the cross.

ED MUSICK (to co-pilot)

Keep an eye for that cigar factory, Alfonso.

*Shots of Sullinger pressing telegraph key aboard the plane, Leuteritz making readings in the radio shed*

**NARR:** Sullinger would then hold down the plane’s radio telegraph key, allowing Leuteritz to take a bearing on the plane.

*Overhead graphic overlaid with grid system, animation showing how the course correction worked. A plane moving across the grid is going to miss Key West on its current heading.*

**NARR:** From this data Leuteritz fashioned a navigational grid, dividing the Key West-Havana flight path into a checkerboard of five-mile squares.

*Leuteritz listens on the radio and adjusts the loop antenna.*

Hugo Leuteritz

All we had to do was determine the direction of the signal, and we could tell if the plane was east or west of course.

MIT ENGINEER JOHN HANSMAN

 From there they would send a Morse code signal to the airplane.

Hugo Leuteritz

We would send them a dot for every five miles off course they were to the east, a dash for very five miles off course to the west.

*In the animation, the plane corrects course to the east.*

MIT ENGINEER JOHN HANSMAN

 And then the pilot could steer back towards the course line.

AUTHOR ROBERT Daley

It’s not high technology, but nothing in aviation was high technology, at least not by our standards.

*Shots from radio shed and aboard plane continue.*

MIT ENGINEER JOHN HANSMAN

At the time, it actually was pretty high tech. Just having the radios was extremely high tech. Pan Am was the first airline that even was thinking about using it for communication. So to use it for navigation was really out of the box. And it worked pretty good.

**Southward Bound**

*Graphic map of Latin America with Key West-Havana and Canal Zone routes already in place. New routes added as the Pan Am empire expands, beginning with FAM 6, a route running along the spine of Cuba to Haiti, the Dominican Republic, Puerto Rico and Trinidad, with inset photos as needed.*

**NARR:** Meanwhile, Trippe had set his sights on the next foreign airmail route, from Cuba to the Dominican Republic and beyond.

*Archival photos of West Indian Aerial Express operation and pilot Basil Rowe.*

**NARR:** A Dominican airline formed by American pilot Basil Rowe was already operating over much of this route.

*Photo of Rowe*

**NARR:** But while Rowe awaited the Post Office’s decision, confident his foothold would win the day …

*Trippe meets again with Glover.*

**NARR:** … Trippe was meeting with Assistant Postmaster Irving Glover …

JUAN TRIPPE (to Glover)

But many of the people behind West Indian are Dominican. We don’t know where their loyalties lie.

*Glover takes this in, not saying anything for a moment.*

**NARR:** … arguing that the nation’s interest would best be served by an all-American company.

AUTHOR ROBERT Daley

He realized early on that all these battles were going to be won in Washington, not out in the boondocks where some daredevil pilot ran an airline.

*Photo of forlorn Basil Rowe*

**NARR:** Pan Am won the route. “While we had been developing an airline in the West Indies,” Rowe said ruefully, “our competitors had been busy on the much more important job of developing a lobby in Washington.”

*New routes added to map*

**NARR:** Over the next two years, Pan Am’s network of routes continued to snake southward, helped in part by the Post Office.

*Trippe meets with Glover.*

AUTHOR MARYLIN BENDER, partly in VO

Glover let him see the bids of competitors.

*Glover pushes a folder toward Trippe and says:*

IRVING GLOVER

I need to step out for a moment.

*Trippe takes a peek inside the folder.*

AUTHOR ANTHONY MAYO, starting in VO

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

*Glover returns.*

IRVING GLOVER (to Trippe)

Thank you for explaining Pan Am’s position.

*Continuing shots of Trippe and Glover*

AUTHOR ANTHONY MAYO VO

They actually became a bit of a bit of a co-conspirator with Trippe so that he had an inside window into the competition in a way that others did not have.

*In animation, Pan Am’s network of routes continues to grow.*

HISTORIAN DAVID COURWRIGHT, starting in VO

One reason, of course, for the relentless expansion of Pan Am was the continued support of the U.S. government. But we should also give credit to Trippe, because he negotiated like nobody’s business. He knew every trick in the book.

*On a graphic map of Latin America, we see the Pan Am network grow as each new route is added. Photo inserts (Von Bauer, Hoover, O’Neill, etc.) as needed.*

**NARR:** To win the new airmail route to Mexico City, Trippe quietly bought a Mexican airline, knowing that Mexico would allow only a local company to carry mail within the country’s borders.

AUTHOR ROBERT DALEY

He gets to Latin America, and he runs into the Grace Steamship Company. Well, they're bigger than he is. What does he do?

*Panagra photos*

**NARR:** Trippe formed a Pan Am-Grace partnership known as Panagra to pursue air routes down the west coast of South America to Peru and beyond.

*SCADTA image. State Department building ca 1930.*

**NARR:** When SCADTA threatened to block Pan Am by denying landing rights in Colombia, Pan Am’s lawyers worked with the State Department to draft America’s first international air agreement, signed just in time for Trippe to bid on the new airmail route to Chile.

HISTORIAN Susan Schulten

Pan Am’s business was international, not domestic. And so every new route required wrangling with a foreign government.

*Latin American airline footage*

HISTORIAN Jenifer Van Vleck, partly in VO

Latin American governments were not always so eager to allow a U.S. airline to come in and fly in their countries. So it was really important that the State Department was giving so much diplomatic support to Pan Am.

*Graphic: Route map showing the next route to be bid, down the western coast to Peru and Chile*

**NARR:** When a competitor threatened to underbid for the route to Peru and Chile, Trippe arranged for a letter of welcome to be delivered from Peru’s president ...

*Photo of Hoover circa 1929*

**NARR:** ... to newly elected American President Herbert Hoover during his goodwill tour of Latin America. “You go right ahead with your plans,” Hoover told Trippe’s emissary. “We’ll make sure you get your airline.”

*Trippe completes western routes on his wall map.*

FORMER Pan am vp THOR JOHNSON VO

And so now Trippe had all of the western coast of South America.

*NYRBA images*

**NARR:** Trippe next turned his attention to South America’s east coast. Here he faced stiff competition from the New York, Rio & Buenos Aires Line, or NYRBA, which was already operating over much of this territory.

AUTHOR ANTHONY MAYO, starting in VO

And so when the foreign airmail contracts were being awarded for that part of the world, they thought, hey, we have an inside track.

*Images of NYRBA operation*

**NARR:** But NYRBA had spent heavily to establish the service – without having enough airmail revenue to cover the cost.

*Trippe buttonholes Glover.*

JUAN TRIPPE

We could, um, use a little more time on the east coast bid.

IRVING GLOVER

January give you enough time?

JUAN TRIPPE

That’d be fine.

**NARR:** Trippe persuaded the Post Office to delay putting the airmail route out for bid, hoping his rival would spend itself into bankruptcy.

*Stock market crash images*

**NARR:** Hit hard by the 1929 stock market crash, the NYRBA board sold out to Pan Am for the bargain price of $2 million.

*O’Neill photo*

**NARR:** When Trippe offered NYRBA founder Ralph O’Neill a job managing Pan Am’s new east coast division, O’Neill bitterly declined: “You can steal my house, but you can’t ask me to run it for you,” he said.

JUAN TRIPPE to camera

They were nice young men who thought they would like to run an international airline. But they really didn’t know what it was all about.

*Trippe adds new routes to his wall map.*

FORMER Pan am vp THOR JOHNSON, partly in VO

He managed to capture the Caribbean, all of Mexico, all of South America. He had bought out all of his competitors, one by one as they failed.

*Trippe takes a puff on his pipe as he admires his map of South America.*

*Dissolve to graphic of the Pan Am system in 1930, encompassing all of Central and South America*

**NARR:** In less than three years, this 31-year-old executive had turned a single 90-mile airmail route into the most far-flung airline in the world, with 21,000 miles of routes through 29 countries.

**Flying Forest**

*Tilt up from shadow of S-38 to plane in the air*

**NARR:** But Trippe was just getting started.

HISTORIAN David Courtwright, starting in VO

Trippe wants to do more than haul the mail. He also wants to carry passengers. And he knows that that’s going to require larger equipment.

*Image of S-38*

IGOR SIKORSKY III, starting in VO

He realizes that more S-38’s are not going to be the way that commercial air travel is going to succeed. The growth is going to be in bigger planes.

AUTHOR ROBERT Gandt, starting in VO

The bigger the airplane, the more passengers you can carry.

*S-38 production shots*

IGOR SIKORSKY III, mostly in VO

So he turns to Igor, even while the S-38’s are still rolling off the line, and says, “I need a 40-passenger ship. It’s got to go half again as far. And we need this plane in a year.”

*Photo of Sikorsky in Russian airplane factory*

HISTORIAN Bow Van Riper, starting in VO

If there was anybody Trippe could have asked that would have been able to make that kind of a leap in the space of a year, it was clearly Sikorsky.

*Photo of Sikorsky in front of one of his big Russian planes, then soldiers on the Ilya Muromets*

AUTHOR ROBERT Gandt, starting in VO

As a very young man in Russia, he had designed and built the world’s largest air transport, the Ilya Muromets. So he, more than anybody else, is qualified to respond to Juan Trippe’s request.

*In Sikorsky’s office, Trippe, Lindbergh and Sikorsky examine the drawings of the S-40.*

**NARR:** Sikorsky responded to Trippe’s tight timetable by basing his next plane, the S-40, on what he already knew.

IGOR Sikorsky

I felt that the best thing to do would be to build on the success of the S-38. So, as you can see …

*We see Sikorsky highlight the wings in the drawing, then dissolve to animation based on IS3’s description. The S-38 becomes the S-40.*

IGOR SIKORSKY III, starting in VO

He takes the S-38 design, stretches the wings out, adds two more engines, makes a bigger fuselage. It’s a giant S-38. Ungainly by all measures (laugh).

*Wide shot of Lindbergh frowning*

**NARR:** Lindbergh could not conceal his disappointment with the design.

*Animation continues, showing the features of the plane.*

AUTHOR ROBERT Gandt VO

He thought it was retro. It wasn’t modern enough. It wasn’t sleek enough.

AUTHOR ROBERT DALEY, mostly in VO

This plane had lots of struts, each one representing drag, loss of range, loss of speed.

IGOR SIKORSKY III

All of those struts and wires and cables are holding the ship together, but they’re slowing the plane down in flight.

*S-40 animation*

AUTHOR ROBERT DALEY VO

The engines hang from the wings like bottles hanging in a wine rack. And that's drag, too.

IGOR SIKORSKY III

I can just imagine Lindbergh like, “Really?”

*Continuing re-enactment*

CHARLES Lindbergh

Igor, it’ll be like flying a forest through the air.

IGOR Sikorsky

You’re right about the resistance, Colonel. But I’ve designed it this way for a reason. This I know we can do. The S-38 has given us experience.

AUTHOR ROBERT Gandt, startign in VO

Sikorsky himself talked about the art of the possible. And what was possible at that time required these braces and struts and things that made it look like a flying pterodactyl.

IGOR Sikorsky

And we believe this should be the next step. After that, we will design the plane that you’ve suggested.

IGOR SIKORSKY III

It was a stopgap measure. Get a bigger plane out there.

*Lindbergh relents.*

CHARLES Lindbergh

All right, but no more than two planes.

JUAN Trippe

When we can expect delivery?

IGOR Sikorsky

We can have the first plane ready for you by October.

*Trippe shakes hands with Sikorsky and leaves.*

AUTHOR ROBERT Gandt, starting in VO

By ordering the S-40, which was truly the first, great American flying boat, Trippe established himself, not just as a buyer of airplanes for his airline, but he actually instigated the development and the design of it.

*Sikorsky manufacturing plant*

AUTHOR ANTHONY MAYO, ending in VO

He actually was one of the first to go to the aircraft manufacturers with specifications of what he wanted from them. He doesn’t say, “What do you have for me?” but “what I need from you.”

AUTHOR ROBERT Gandt VO

This was a whole new thing in the aviation business. No other airline to my knowledge caused a transport to be built for their purposes.

*Photos of the S-40 during construction*

**NARR:** Built at the new Sikorsky plant in Stratford, Connecticut ...

*Archival photo of the christening ceremony*

**NARR:** ... the S-40 was christened by Mrs. Herbert Hoover on Columbus Day 1931 and went into service on Pan Am’s South American routes.

*Footage of the S-40 in flight*

IGOR SIKORSKY III, partly in VO

It was not a fast plane. It wasn’t tremendously efficient. But it could fly 40 people from Miami down to Rio de Janeiro in six days.

AUTHOR ROBERT DALEY, partly in VO

It changed everything. It could carry enough passengers to make money.

*Dissolve from S-40 to Clipper ship*

**NARR:** Trippe named the plane the *American Clipper* in memory of the swift sailing ships that had carried American goods overseas in the early 19th century.

AUTHOR ROBERT DALEY, starting in VO

Trippe, from the very beginning, was oriented towards the Navy. And when he started envisioning planes of his own, he wanted to call them clippers. He loved the whole idea of the clipper ships, which once were the fastest things around the oceans.

*Photos of the plane and crew in naval uniforms*

**NARR:** From then on, all new Pan Am planes would carry the *Clipper* name, and all their crews would dress in blue or white uniforms reminiscent of naval officers.

*Photo of nautical interior*

**NARR:** The nautical theme carried over to the plane’s interior, with life rings hanging on paneled walls.

HISTORIAN Bow Van Riper

It was the captain and the first officer, not the pilot and the copilot, who were behind the controls.

AUTHOR ROBERT DALEY

And the flight attendants of today were called the stewards, as aboard a ship.

HISTORIAN David Courtwright

Uniformed attendants would call out, “All aboard.” Bells chimed out the hours. Just like you were on a ship.

*Photo of crew in white uniforms*

HISTORIAN Dorothy Cochrane, starting in VO

The S-40 introduced a level of luxury that had never, of course, been seen in any type of aircraft before.

*Photos of the S-40 interior, including table setting*

**NARR:** Passengers sat in padded armchairs. There were backgammon tables … a smoking lounge in the rear of the plane … and linen tablecloths set with heavy silverware. Pan Am was one of the first airlines to offer meals in flight.

AUTHOR ROBERT DALEY, partly in VO

And they were hot meals, because Trippe realized that planes couldn’t go very far if you couldn't feed the passengers.

*Footage of Clippers landing and taking off from Dinner Key in the 1930s, crowds watching*

**NARR:** The elegantly appointed clippers became an icon of popular culture in the 1930s – so alluring that crowds gathered at Pan Am’s Dinner Key terminal in Miami just to watch the planes take off and land.

*Dinner Key footage*

HISTORIAN SUSAN SCHULTEN, partly in VO

Throughout the 1920s and 1930s Americans have a kind of love affair with aviation – not because they’re traveling on airlines. Most Americans would not travel on a plane in their lifetime.

HISTORIAN Jenifer Van Vleck, partly in VO

Only a tiny minority of Americans could afford to fly themselves. But aviation was phenomenally popular in American culture. Even just regular commercial flights were a form of public spectacle. And people would come out to airports and watch.

*S-40 footage*

**NARR:** The S-40 gave Pan Am the plane it needed to serve all of South America: four engines, a range of 900 miles and a seating capacity of 40 passengers – five times as many as the S-38.

*Trippe at window, advertising posters*

**NARR:** To fills those seats Trippe launched an advertising campaign to persuade people that airplanes were not just for business travel.

*Montage of promotion images – see Pan Am art folder*

**NARR:** Pan Am was one of the first American airlines to promote air tourism as a whole new form of travel.

*Images of cruise ships or advertisements*

**NARR:** Up to this point, the South American tourism industry had relied entirely on ships.

HISTORIAN Bow Van Riper

Yes, it might take you days to get there but you traveled in luxury. You traveled in style.

HISTORIAN David Courtwright, starting in VO

Aviation’s big advantage was speed. You can get to the destination faster.

*S-40 photo, interior photo, poster*

HISTORIAN Bow Van Riper, mostly in VO

Trippe did an extraordinarily smart thing. He sold speed, but he also sold luxury, comfort, a sense of the same, refined elegance that ship travelers enjoyed, transplanted into the cabins of his airliners.

AUTHOR John Hill

The promotional department at Pan Americanhired artists to create posters, for instance, that have these great, colorful images of these faraway destinations with this beautiful airplane up in the corner.

*Pan Am Havana poster*

HISTORIAN Bow Van Riper, partly in VO

With the Pan Am posters of the late twenties and the early thirties, you see the Pan Am flying boat with the buildings of old Havana to one side. And more often than not, down there on the ocean, you see an ocean liner, as if to say, yes you could take a ship, but wouldn’t you really rather take a Pan Am flying boat and travel in the most luxurious, modern style?

**Flying Down to Rio**

*RKO Radio Pictures tower logo*

**NARR:** But Trippe’s most brilliant promotional stroke was to collaborate with RKO-Radio Pictures on a Hollywood musical.

*Airplane spins out movie poster*

**NARR:** *Flying Down to Rio* is remembered today principally for one thing.

*Astaire and Rogers dance the carioca*

HISTORIAN BOW VAN RIPER, starting in VO

A couple of contract players named Fred Astaire and Ginger Rogers were the second couple in the film. And this was their first on-screen pairing.

*More movie images*

Historian JENIFER VAN VLECK, mostly in VO

*Flying Down to Rio* is this very kind of frothy, you know, kind of typical Depression era spectacle of a musical, replete with women walking on the wings of the plane and dancing.

HISTORIAN David Courtwright, mostly in VO

But the film also is a wonderful illustration of the way that Hollywood and the airlines collaborated to promote American interests abroad in the 1930s.

*Photo of Cooper*

**NARR:** The man behind the movie was Merian C. Cooper, the production chief at RKO Radio Pictures.

*Archival photos of Merian Cooper in uniform, business suit*

**NARR:** A former World War I pilot – and a member of the Pan Am board – Cooper was committed to changing the way people felt about flight.

*King Kong movie poster*

**NARR:** So in the midst of producing what would be his most famous picture, [King Kong,]

*Posters of and/or clips from Cooper’s other pro-aviation films, including production stills of Katharine Hepburn as a female pilot in* Christopher Strong.

**NARR:** ... he launched a series of aviation-themed films ... including one starring a young Katharine Hepburn as a pilot reminiscent of Amelia Earhart.

*Cooper telegram, with key sentence highlighted*

**NARR:** And in 1932, he wired Trippe to suggest that Pan Am work with his studio on a musical about the linking of North and South America by air.

*More wing dancers, then photo of FDR*

**NARR:** In *Flying Down to Rio,*Trippe and Cooper used film to help America’s new president launch a foreign policy designed to remake Uncle Sam’s image in Latin America.

*Cartoons of overbearing Uncle Sam from Latin point of view*

Historian Jenifer Van Vleck, mostly in VO

Throughout the teens and twenties the United States had militarily intervened in Latin American countries many times.

*Images of Latin American interventions*

HISTORIAN DAVID COURTWRIGHT, mostly in VO

Older people remember the War of 1898. They remembered that the United States had intervened in Panama, in the Dominican Republic, in Nicaragua. So there’s still a lot of suspicion of the United States in Latin America.

HISTORIAN BOW VAN RIPER

When Franklin Roosevelt took office in early 1933 he was determined to inaugurate a new approach to South America.

*Photo of FDR at first inauguration, with excerpt from first inaugural address*

PRESIDENT Roosevelt audio

I would dedicate this nation to the policy of the Good Neighbor.

*Cartoons showing better relations between the U.S. and Latin America*

HISTORIAN BOW VAN RIPER VO

The Good Neighbor policy was built on the idea of a partnership between the US and Latin American countries.

Historian Jenifer Van Vleck

The United States would still be the dominant power in the hemisphere, but its dominance would not be based on military might.

*Cartoon: Uncle Sam bestride North and South America wielding a big stick labeled Monroe Doctrine*

HISTORIAN DAVID COURTWRIGHT, mostly in VO

We’re not going to go back to the bad old big stick days. We’re going to be much more diplomatic, much more commercially oriented.

*Pan Am ad: The Good Neighbor Who Calls Every Day*

Historian Jenifer Van Vleck

In one of its advertisements, Pan Am described itself as the Good Neighbor who calls every day.

*Pan Am plane on the water*

HISTORIAN DAVID COURTWRIGHT, mostly in VO

And in that sense Pan Am fit in with the new look of American diplomacy in Latin America.

*Photo of a theater marquee*

**NARR:** *Flying Down to Rio,* premiering in December 1933, was designed to underscore Roosevelt’s new Good Neighbor Policy.

*Images of Rio, three European villains*

HISTORIAN Bow Van Riper VO

It was built around the idea that Rio de Janeiro is a bustling, exotic city that would be a thrilling place to visit. It featured villains who were European executives meddling in the affairs of Latin America.

European Villain

That contingency will not arise. Steps will be taken.

*In a clip from the movie, a Brazilian character asks the plane's captain if he can perform marriages.*

BRAZILIAN CHARACTER

Can you legally marry people?

Pan Am Captain

Well, yes, if they’re fools enough to ask for it.

BRAZILIAN CHARACTER

Fine.

*Closeups of the couple*

HISTORIAN Bow Van Riper VO

And the film ends symbolically with the Anglo leading man played by Gene Raymond and the Latina leading lady played by Delores del Rio marrying one another.

Historian Jenifer Van Vleck, mostly in VO

It enacts the Good Neighbor Policy as a literal romance between an American man and a Brazilian woman. North America and South America get married on an airplane. And not just any airplane, a Pan American Clipper.

*Dissolve from movie footage to Pan Am Flying own to Rio poster*

**NARR:** The political message was unmistakable: North and South America could live in harmony … with Pan Am’s help.

*Photos of passengers boarding the S-40*

**NARR:** *Flying Down to Rio* was also a powerful sales tool reaching millions of moviegoers with precisely the messages Pan Am hoped to convey.

*Photos of people aboard the luxurious plane*

HISTORIAN Bow Van Riper

Air travel is safe. Air travel is reliable. Air travel is elegant and quiet and smooth. And it’s associated with these people who live exciting lives.

*Graph showing the rise in South American passenger traffic*

**NARR:** It worked: Though the Depression-era numbers were still small, Pan Am flew nearly 50 percent more passenger miles the year after the movie’s release than it had the year before.

**Eye on the Oceans**

*Trippe examines the globe, pipe in hand*

**NARR:** But even with all of Latin America firmly in his grasp, Trippe wasn’t satisfied.

*Trippe turns to globe to the Atlantic.*

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.

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.

*Photo or footage of Pan Am’s Latin American operation.*

**NARR:** For Trippe, Latin America had always been a laboratory where Pan Am could work out the challenges of long-distance flying.

AUTHOR ROBERT daley

All the time, he’s thinking about the Atlantic, where the money is.

*The blast of a ship's horn introduces archival film and photos of Atlantic cruise ships, passengers, docks and cargo circa 1925-30.*

**NARR:** The North Atlantic was thebusiest trade route in the world. In 1925, more than a million steamship passengers made the voyage between Europe and North America, along with hundreds of millions of pounds of cargo. Trippe’s plan was to skim off the cream of this traffic with a North Atlantic air route.

AUTHOR ROBERT DALEY

Trippe from the very beginning as a businessman was looking for competition that he could beat.

*Train footage*

**NARR:** Airlines flying over land faced stiff competition from trains, which could run all night and in bad weather.

AUTHOR ROBERT DALEY

So how do you make money? How do you offer something which no one else can offer? And as Trippe saw it, the way to do that is over water.

*Cruise ship footage*

AUTHOR ROBERT DALEY VO

If he could get one percent of the ship traffic in first class passengers and first class freight, he could make a lot of money, and really nothing could stop him. It couldn’t go wrong.

*Trippe scans a map of the North Atlantic laid out on the large table in his office.*

**NARR:** In 1928, as Pan Am was just getting started in Key West, Trippe was already beginning to lay the groundwork for the ocean crossing, examining detailed maps of the North Atlantic.

*Trippe traces the three routes with his finger. We dissolve to animation for a clearer view.*

**NARR:** The maps revealed three logical routes to Europe:

* The Northern Route ... via Labrador ... Greenland ... and Iceland.
* The Great Circle Route ... via Nova Scotia ... Newfoundland ... and Ireland.
* And the Southern Route ... via Bermuda ... and the Azores ... to Portugal.

*Distances over water appear in the animation*

**NARR:** The Northern Route offered the shortest distances over water. But could it be flown in winter? The other two routes both required over-water flights of 1,900 miles or more – far beyond the capabilities of any current commercial plane carrying mail and passengers.

*Reprise of Yale re-enactment*

**NARR:** But as far back as Yale, Trippe had been confident this great divide would one day be crossable.

AUTHOR ROBERT gandt, starting in VO

Trippe had this uncanny vision. He saw things that were not possible, that would not be possible for quite a while. But he clung to them and ultimately saw them happen – and in some cases made them happen.

**The Big Boats**

*Trippe draws up a list of specifications, including range: 2500 miles. Cut to animation showing his requirements.*

**NARR:** In June 1931, Trippe invited America’s leading airplane manufacturers to submit designs for a multi-engine flying boat with the unheard-of range of 2,500 miles.

*Airplane construction photos*

**NARR:** Four of the manufacturers told him it was impossible; the plane he wanted simply couldn’t be built.

AUTHOR ROBERT DALEY

Well, Trippe didn't like the word impossible. And to some extent, he was right. All he had to do was find a dreamer like himself, and a way would be found.

*Sikorsky sketches the S-42.*

**NARR:** Igor Sikorsky was one such dreamer. Always eager to build big, he would respond with a plane called the S-42.

*Photo of Glenn Martin*

**NARR:** But another airplane designer also rose to the challenge: Glenn L. Martin.

*Photos of Martin’s airplane plant in Baltimore and some of his successful bombers*

**NARR:** A former barnstormer, Martin had formed a company that had great success building bombers for the military.

*Side-by-side silhouette-like drawings of the M-130 and the S-42, showing their relative sizes*

**NARR:** Martin proposed an even bigger craft called the M-130.

*Trippe meets with Sikorsky.*

JUAN TRIPPE

And you can have this ready in a year?

**NARR:** In November 1932, Trippe ordered three planes each from the two manufacturers.

*Detailed drawing of plane*

AUTHOR John Hill, partly in VO

Juan Trippe was not willing to just sort of pick an airplane out of the catalog. He would put forth very specific requirements.

AUTHOR ANTHONY MAYO, partly in VO

One of Trippe’s biggest contributions to aviation is his push on technology – forcing these airplane manufacturers to push themselves in a way that they otherwise would not have.

*Headline announcing the commissioning of the two Big Boats and the planned Atlantic crossing. Article highlighting the two planes.*

**NARR:** Charles Lindbergh told the press Sikorsky’s S-42 would be ready by early 1934, the Martin M-130 later that year. The Atlantic crossing would not be far behind.

**S-42**

*Footage of the S-40*

**NARR:** Igor Sikorsky’s new plane had actually begun to take shape a year earlier, as the S-40 was making its maiden voyage from Miami to the Canal Zone.

*Overhead shot of the plane*

**NARR:** Pilot Charles Lindbergh hadn’t forgotten his distaste for the plane.

*Photo of Lindbergh and Sikorsky in the cockpit*

HISTORIAN DOROTHY COCHRANE, mostly in VO

He relinquished the controls to one of the Pan American pilots and moved back into the cabin of the aircraft where Igor Sikorsky was, as one of the first passengers.

*Photo of Lindbergh and Sikorsky together on the S-40*

AUTHOR ROBERT DALEY, starting in VO

Lindbergh sits down beside him and says he wants a plane with no struts; he wants all kinds of things to save weight, to save drag**.**

*Photo of Cuban or Jamaican restaurant circa 1931*

**NARR:** The conversation continued over dinner at each stop along the way.

AUTHOR ROBERT Gandt, starting in VO

During their layovers, the two of them, with this chemistry they had between them, would jot ideas for improving this airplane they already had.

*Lindbergh and Sikorsky at restaurant in animated discussion.*

IGOR SIKORSKY VO

Lindbergh and I would take a menu, turn it upside down and make sketches of the airplane we had imagined.

*Lindbergh turns over menu and starts drawing.*

CHARLES LINDBERGH (to Sikorsky)

This is the wing.

IGOR SIKORSKY to camera

At those dinners we laid down the basic principles for the design of a transoceanic flying boat.

AUTHOR ROBERT GANDT

Sikorsky ultimately developed this breakthrough airplane, the S-42, which was the first true ocean-going flying boat.

*Photos of the plane being built*

**NARR:** To minimize air resistance, its all-metal skin was attached with flush rivets.

*Animation begins*

**NARR:** And the plane sported a number of other innovative features that gave it a new, streamlined look.

*Photo of the embedded engines*

AUTHOR ROBERT GANDT, ending in VO

The four engines were embedded in the leading edges of the wings instead of suspended beneath the wings as they were on the S-40. It was a clean airplane.

It was a slick airplane.

*Continue animation of plane, ending with identification of flap on the rear of wing*

**NARR:** Sixty percent faster than Sikorsky's earlier model, the S-42 also featured what’s known as a flap.

IGOR SIKORSKY III VO

This is a movable feature on the rear, trailing edge of the wing that would actually change the shape of the wing in the air.

*Back to animation, we now see how the flap is used in takeoff*

**NARR:** The flaps allowed the S-42 to take off and land at safe speeds but then increase its speed once off the water.

 IGOR SIKORSKY III

It becomes a different aircraft flying in the air.

*In the animation, the propellers are now highlighted*

**NARR:** The S-42 was also one of the first commercial airliners to employ variable-pitch propellers. It was like giving the plane a “second gear.”

*In the animation, we see how the propeller blade angles changes once the plane is in flight.*

AUTHOR ROBERT GANDT, mostly in VO

It gave the airplane a much more efficient bite for takeoff. And then, changing that blade angle for cruise, they get more miles per gallon.

*Archival film of the plane undergoing flight tests*

**NARR:** Sikorsky took the plane out for its first test in March 1934.

IGOR SIKORSKY, partly in VO

Our test pilot carefully taxied the big ship down the river into the Long Island Sound. He let the plane accelerate to about 50 percent power, but he didn’t have a chance to make many of the tests we had planned, because a moment later we were up in the air.

*Test flight footage*

**NARR:** The S-42 was so airworthy it had made an unplanned take-off on its own.

*More takeoff footage*

AUTHOR ROBERT GANDT, starting in VO

When it first flew, it broke speed records, distance records, payload records. That airplane thrust America into the forefront of air transport. Nothing in Europe could touch it.

**The Long-Range DF**

*Trippe examines Atlantic maps*

**NARR:** But to make the Atlantic crossing safely, Trippe would need a navigational system to guide the S-42 to the stepping stones along the route.

HISTORIAN Bow Van Riper

The best airplane in the world is of no use to you if you can’t reliably get to it to that destination.

*Leuteritz ponders his options.*

**NARR:** To meet that challenge, Pan Am Communications Director, Hugo Leuteritz, knew he would need to improve on the loop he had created for the Caribbean.

MIT ENGINEER JOHN HANSMAN

The loop antenna idea works pretty well. But one of the problems is, it’s not real precise.

*Leuteritz operates the loop.*

**NARR:** In turning the loop to determine the direction of an incoming radio signal, Leuteritz might be off by a few degrees.

*We see the imprecise measurement.*

MIT ENGINEER JOHN HANSMAN, partly in VO

That works okay for short ranges. But if you’re starting to go thousands of miles, a few degree error is going to put you hundreds of miles off course. So they needed something that was more precise.

*Leuteritz reviews book describing Adcock antennas. Drawing of Adcock antenna.*

**NARR:** Searching for an alternative, Leuteritz learned of a British design called the Adcock antenna, consisting of four poles oriented to the points of a compass. The Adcock could determine the direction of a radio signal in much the way our ears can tell where a sound comes from.

*Ear illustration*

AUTHOR ROBERT DALEY, starting in VO

There's only a fraction of a second between the time the sound reaches your right ear and your left ear, but you can tell where the sound is coming from. In theory, the Adcock worked the same way.

*Adcock animation showing incoming radio signal arriving first at northern antenna*

AUTHOR ROBERT DALEY VO

If a plane sent a signal from the north, the northern post would pick up the signal quicker than the post to either side or the post to the rear.

MIT ENGINEER JOHN HANSMAN VO

That would then allow you to figure out very precisely, to within a degree, the direction that the signal was coming from.

AUTHOR ROBERT DALEY

You could then send a signal to the pilot, “Hey, you're off course by so much,” and he could correct.

MIT ENGINEER JOHN HANSMAN

And that was really key for the long distances you would ultimately need for the ocean.

*Graphics showing the arrangement of Leuteritz’s antenna poles, with a radio shack in the center.*

**NARR:** When Leuteritz asked for $10,000 to develop a long-range Adcock direction finder, or DF, Trippe immediately agreed.

*Over water footage*

AUTHOR ROBERT DALEY, starting in VO

He’s got to have radio navigation. Because without radio navigation, Pan Am could go nowhere over open water. The world is a big place, and if you can't get accurate readings on where you are, you go down at sea.

*Animation shows how the sky wave would work.*

**NARR:** The original Adcock design was limited to short ranges. To improve on it, Leuteritz substituted higher radio frequencies that bounced off the underside of the ionosphere and returned to earth many miles away. This “sky wave” was just what Pan Am needed.

MIT ENGINEER JOHN HANSMAN, starting in VO

They could communicate with airplanes that were over the horizon, thousands of miles away.

*Leuteritz on the radio at night.*

**NARR:** After months of testing, Leuteritz had perfected a system that worked at night and in bad weather and could accurately locate planes more than a thousand miles away.

*Graphic showing how the Adcocks would guide planes across the Atlantic*

**NARR:** With Adcock antennas on either end of the flight, and at stations along the route, this would allow Pan Am to cross the Atlantic.

*Trippe looks out the window in anticipation of his imminent success.*

**NARR:** Trippe now had a plane that could cross the Atlantic – and a navigational system that could guide it safely across.

*Reprise of the graphic showing the three routes across the Atlantic*

**NARR:** But when the time came to launch Pan Am’s transoceanic service, a series of events conspired to block his path.

*Photos of Lindbergh’s difficult Arctic trip. The first of the three Atlantic routes fades away.*

**NARR:** Lindbergh’s survey of the Northern Route had revealed it was impassable in winter.

*Headlines about the Aeropostale scandal; the Azores route fades away.*

**NARR:** When France’s Aeropostale collapsed in scandal, the southern route was closed, because the company controlled landing rights in the Azores.

*Only the Great Circle Route is left*

**NARR:** That left only one option: the Great Circle Route controlled by Britain.

*Headlines about the impasse, photos of the inferior British planes*

AUTHOR John Hill

The British, however, were adamant that a route across the Atlantic would have to be two ways. And they demanded landing rights in North America at the same time.

AUTHOR ROBERT GANDT

But the British didn’t have an airplane like the S-42. And until the British had an aircraft equally capable of flying the same route, they would deny the use of their ports to Pan American.

*In his office, Trippe paces, gazes at the globe … then walks around to look at the Pacific.*

**NARR:** Six years of expensive surveys and painstaking negotiations had come to nothing. Juan Trippe had six ocean-crossing flying boats, costing $2 million, about to be delivered – and no ocean to cross.

**The Switch**

*Trippe sits at a table with Priester, Leuteritz and another man. We hear snatches of their Trippe listens to the discussion, then interjects.*

Pan Am Executive

Damn Brits have put us in a box. What are we going to do with these big boats if we have no ocean to cross?

**NARR:** On a summer morning in 1934, Trippe discussed this predicament with Hugo Leuteritz, chief engineer Andre Priester, and other Pan Am executives. One option they considered was to renege on the contracts for the big flying boats.

Hugo Leuteritz

Why don’t we cancel the Sikorsky and Martin orders?

AUTHOR ANTHONY MAYO

But that’s not his style. He’s not going to cancel those orders. He’s not going to make it look like Pan Am is on the wane in any way.

AUTHOR MARYLIN BENDER

Suddenly Trippe piped up [laughs].

JUAN TRIPPE

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

*The others are incredulous.*

Hugo Leuteritz

Across the Pacific?

JUAN TRIPPE

Right across the middle.

AUTHOR MARYLIN BENDER VO

The other executives stared at Juan in disbelief.

Andre Priester

But Juan, the Pacific, that’s where pilots go to die. Look what happened in the Dole Race.

*Press coverage of the deaths in the 1927 Dole race and photos of the lost pilots.*

**NARR:** The Pacific had been a graveyard for aviators. More than a dozen pilots had lost their lives there – ten of them in 1927 alone, when pineapple magnate James Dole offered a $25,000 prize for the first flight from San Francisco to Hawaii.

*Re-enactment continues: The stunned Pan Am executives pepper Trippe with questions.*

Pan Am Executive

And that was just to Hawaii. How would we get from there to China?

*Wide shot*

**NARR:** To the level-headed Pan Am executives around the table, the idea of flying to Hawaii – *and then another 6,000 miles beyond it* – seemed crazy.

JUAN TRIPPE

We’d establish island stations all the way across.

Pan Am Executive

On what islands?

JUAN TRIPPE

Midway, Wake, Guam and the Philippines.

ED TRIPPE, partly in VO

It’s absolutely mind-boggling how anybody could have said, “We’re going to do this,” and somebody believe him.

Andre Priester

Wake?

Pan Am Executive

How big is it?

JUAN TRIPPE

About two square miles.

AUTHOR ROBERT DALEY, partly in VO

So from one day to the next, without even telling anybody, he switches his sights. He drops Europe for the time being and fixes on the Pacific.

Hugo Leuteritz

Juan, the navigational challenges. If you miss it, there’s nothing else for a thousand miles.

JUAN TRIPPE

Well, that’s why you developed the Adcock system.

AUTHOR ROBERT GANDT, mostly in VO

Mind you, doing this without particularly consulting his board of directors or even consulting experts who could tell him whether or not that was feasible.

Pan Am Executive

But the S-42 doesn’t have the legs for the 2,400 miles to Hawaii.

AUTHOR ROBERT GANDT, mostly in VO

He had no airplane yet available to do that. He had no ocean stations where they could land. Nor did he have permission even to do that.

Andre Priester

But we have no idea what the weather aloft will be.

JUAN TRIPPE

Well then we’ll establish weather stations, just like we did in South America.

*The executives are silent, momentarily out of questions.*

AUTHOR ROBERT GANDT, mostly in VO

Nonetheless, he made this announcement. That was classic Trippe.

JUAN TRIPPE

We can make this work.

*Fade to black*

*S-42 flies overhead.*

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

*Trippe scans letter, then crumples it up*

AUTHOR ROBERT GANDT, ending in VO

When Trippe announced his plan to cross the Pacific, there were plenty of critics stepping forward to explain why it was too dangerous.

*Footage of open ocean*

FORMER PAN AM VP THOR JOHNSON, mostly in VO

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

HISTORIAN JENIFER VAN VLECK

Many people believed that it couldn’t be done.

*Trippe picks up phone and asks for operator.*

author Robert DALEY, mostly in VO

Not Juan Trippe. He was a gambler, and he was betting everything he had.

*Footage of Wake Island lagoon*

author Robert DALEY, starting in VO

The lagoon was studded with coral heads.

*Underwater footage of coral heads*

AUTHOR ROBERT GANDT VO

Each of which can rip open the hull of a flying boat.

*Footage of lagoon*

author Robert DALEY VO

You can’t land on this lagoon.

*Construction worker prepares to set off dynamite.*

AUTHOR ROBERT GANDT, ending in VO

There’s no other choice. There’s no alternate field within a thousand miles.

*The underwater charge explodes, sending a geyser of water skyward.*

*Trippe, Sikorsky and Priester wait by the phone for news of the plane.*

JUAN TRIPPE

Still no sign of them.

AUTHOR ROBERT DALEY, starting in VO

The headwinds were ferocious. It was like a hand holding the plane up in the middle of the ocean.

*Wives anxiously look out window for any sign of the plane.*

AUTHOR JOHN HILL, starting in VO

And they were an hour late, and they were two hours late.

*One wife finally gets up the nerve to ask:*

IONE WRIGHT

How long can they stay in the air?

*China Clipper takes off.*

AUTHOR ROBERT GANDT

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