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Flying the Boeing 314 Flying Boat

by William B. Nash

Crossing the South Atlantic Ocean from Natal, Brazil, to Fisherman's Lake, Liberia, in one of Pan American Airways' huge Boeing 314 Flying Boats, Captain Frank Briggs and I could see that ahead, completely across the horizon, were perpetual flashes of lightening stabbing out both vertically and horizontally.

The Captain said, "Don't worry, son. Just remember what you've learned about flying through fronts and line squalls."

I remembered that "flying by the seat of one's pants" is an old adage to describe proper flying - even when flight instruments were sparse.

When a proper turn is made one feels nothing on one's bottom but a downward pressure - as in steep turns and rolling from one turn to the other. If the turn is made using uncoordinated movements of the elevator, ailerons, and rudder, the pilot's bottom is slung into a skid or the other way into a slide. Imagine doing that to an airliner full of passengers' bottoms. Thanks to a young inventor, named Lawrence Sperry, we had gyroscope instruments for flying by instruments. He had perfected the early gyroscope experiments made by the Germans during World War I, which had been essentially forgotten after that war.

Prior to high altitude jets, we had to fly through wide storms rather than over them. To do so, we did develop a "seat of the pants" technique where-in our bottoms, rather than slipping or sliding, were being bumped.

Crossing the ocean, approaching a "line-squall" full of tightly-packed thunderstorms which would stretch 200 miles across the entire horizon, we knew that we would burn too much fuel trying to go around such weather. Neither could we fly over it. We had no cabin pressurization in those days, and our cruising altitude was anywhere from 500 feet to 12,000 feet for enough oxygen for crew and passengers. Near the

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No Password Needed for Members Only Section of the Website

Please note - we have changed the access to the online newsletters so that you will no longer need a password to access them. GO TO OUR WEBSITE AT: www.clipperpioneers.com. To request a current membership list, email sue@clipperpioneers.com with your request. Click on the "Members Only" button on the righthand side to access the current and previous newsletters.

Flying the Boeing 314 Flying Boat

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equator, such storms could reach altitudes of 55,000 feet, and in temperate zones 35,000 feet to 40,000 feet.

As we neared the line of cumulonimbus storms we selected a penetration course between the lightening flashes at night, or between the tallest clouds in daytime. That was to avoid the powerful updrafts in the core of each thunderstorm. That procedure aimed us between the first two storms, but now we were in the clouds on instruments, and there were many other storms ahead of us. That's where our fannies came into play.

If we were flying into the "core" or "cell" of another huge storm, which could have within it vertical updrafts of up to 300 miles per hour, we could begin to feel little bumps on our seats. The bumps would gradually increase in hardness and frequency. We knew then that we were pointed at a cell that we could not see. To avoid it we would take a 45 degree turn away from it, and as our gluteus maximus became less beaten upon, we would resume course. When the next tattoo on our rears told us to change heading we would make the next 45 degree turn in the opposite direction to average out our course.

In the meantime, to avoid being blinded for five or ten minutes by constant lightening, we had the instrument lights turned up full bright, and the overhead flood light at its brightest. That kept the pupils of our eyes small, to keep the brilliant lightening flashes from exposed retinas. We had the autopilot turned off. It could react too violently to the severe turbulence and damage the airplane. Flying by hand, we could "ride with the turbulence", moving the controls more gently in non-rough opposition to it.

Today we have the luxury of jet aircraft to fly over much of these boiling storm masses, cabin pressurization for oxygen supply, and radar to show us the dangerous cores, to enable us to fly around those depictions of violence on the screen.

Also we can more easily avoid the spookiness of electronic shows which electrical storms put on for us. Saint Elmo's fire would appear dancing and flashing around our windshield, or a blue-white ball of visible static electricity would gradually build up on the nose. We would have to remove our headsets then to avoid going deaf from the crackling and hissing noise, which would finally explode into one's ears with a loud "crack" as the ball on the nose disintegrated.

To avoid any spark jump and resultant fire when a plane is struck by lightening, all metal parts are bonded together where necessary with braided metal straps to allow a smooth flow of current through and out of the airplane, finally exiting through short rope-like static dischargers on the wings' trailing edges.

When crossing an ocean in a large Pan Am Flying Boat, such as the Boeing 314, we navigated celestially using an octant, sometimes called a Bubble-Sextant. Each Pan Am pilot was required to learn two methods of star computations to lay a position on a chart. The two I learned were "214", which called for a row of large ledgers we carried, and "208", which only called for a small thin reference book but required more

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We'd like to have more stories to share! If you have a story you'd like to send, please send it in sooner rather than later! We appreciate you and the interesting stories you send in for all to enjoy! Email to: sue@clipperpioneers.com.

Don't forget to check out our website at: www.clipperpioneers.com

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Flying the Boeing 314 Flying Boat

mathematics. The charts we used were Mercator projections developed by Gerhard Kremer, a Flemish geographer, which distorted apparent distances and sizes of land masses, but used ninety degree angles at intersections of meridians and parallels. Learning to locate the navigational stars and planets of both north and south hemispheres was necessary.

On the Boeing 314 Flying Boat we had a glass hatch atop the cabin through which to shoot the stars. We applied a correction for the prismatic effect of the glass. This hatch was located on the center of gravity for the least movement. To obtain our position celestially we first shot a star ninety degrees to our left or right, which gave us the track line we were flying along. Next we would shoot two more stars forty-five degrees off bow or stern and plot them. The last shot line we moved by ground speed up to the time the first diagonal line had been plotted. That gave us the smallest triangle that we should be in.

When the sky was partly cloud covered we plotted whatever navigational stars we could see.

If the sky was overcast we could not use our octants. Drift sights, taken often from a drift meter in the starboard wing, could keep us on course. When the sea was calm in daytime there were no whitecaps upon which to see the drift. We had a rack of bombs which were about ten inches long with guide fins next to the drift sight, and a small sliding door in the bottom of the wing through which we could drop them. The magnesium or sodium in these bombs would burst into flames upon contact with the sea, giving us fire at night and white smoke in daylight, at which we could aim our drift sight.

In daylight we could see "wind streaks" on the surface of the sea, shiny lines running ninety degrees to the waves. The wind direction was along these lines but the lines did not tell us from which of the two directions, 180 degrees apart that the wind came from. However, by observing the swells, we knew that the foam slid down the backside of the swells - into the wind. By experience we learned to judge the approximate force of the wind by observing the whitecaps.

If we had cloud cover below us as well as above us we would navigate by dead-reckoning, using the wind we thought we had.. If clear below and we passed a ship we could see, we could compare our position with its position. We would plot its position on our chart, the time of sighting and its heading and approximate speed by its wake in daylight, or its running lights at night. This was useful information if we were forced to land at sea due to a malfunction. Landing beside a ship we had a better chance of rescue, so we kept these little islands of humanity located. Radio navigation was useless until we were within 100 to 150 miles from shore. Even then it could be messed up by electrical storms.

Approaching a coast, such as much of the African shore, which could be a mass of jungle, while receiving poor or no radio signals, we aimed at the shore off course 30 degrees left or right of where we considered the destination most likely to be. When we arrived at the coast we then followed the shore to our destination. If we had flown straight at the destination and saw nothing we would not have known which way to follow the coast.

TO BE CONTINUED NEXT ISSUE

Pan Am Historical Society has a Facebook page. You can view it here:
<https://www.facebook.com/pages/Pan-Am-Historical-Foundation/226994925218>

Make Plans for our Next Cruise in 2020!

Dear Pan Amer's: I trust all of you got home safe and sound from our fabulous TransAtlantic cruise. It was wonderful meeting up with old friends and making new ones. I'm very happy to announce our next adventure is a great 11 day cruise to the Caribbean. This is for all the Pan Folks and friends. Come join the fun, It is a great cruise and one of the very few for the entire year that will visit Panama and the best price of all. It's a great itinerary. If interested, get a deposit to Carmen, the only cabins available are those listed below.

Serenade of the Seas Mar. 2, 2020

Inside \$1050 / Outside \$1250 / Balcony \$1950

RATES - are "from", Non-Refundable, per person, cruise only, double occupancy and based on availability at time of booking. Port / government taxes are additional (\$398. per person); surcharge for amenities (gifts, cocktail parties, etc.) is \$125. per person.. Deposit is \$450.00 per person. Major credit cards accepted but checks are preferred. Make out to Interline Travels, 456 Merlin Ct., Tallahassee, FL 32301.

To reserve call Carmen direct 786-252-7838; INTERLINETRAVELS@YAHOO.COM. For questions and further information call Stu Archer (for Pan Am pilot and cruise coordinator) at 305-238-0911.

VISITING PORTS OF CALL

PUERTO LIMON - Come to Puerto Limon ready to meet a raw and beautiful side unlike any other in Costa Rica. Go off-road and through prehistoric forests in places like the famous Veragua Rainforest Park. Jump onboard a Costa Rica cruise and glide on a canoe over the Tortuguero Canal, meet wild creatures at the Costa Rica Wildlife Sanctuary, or get in some of the region's best surfing at the Salsa Brava reef break, just an hour's drive south of the port.

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What Some of our Members are Saying

Just had my 86th birthday and it's Clipper Pioneers that keeps me going! Keep 'em coming!
~John Mason

Thanks for ALL your great work! ~Eugene Woerner

I very much appreciate all you're doing for us. ~Roland W. Root

Enjoy the many stories submitted. Thank you for your efforts past, present & future. ~Tak Walts

Great job. Please keep up the great work! ~Mike Meffert

Look forward to this newsletter every month ~Steve Walton

I enjoy the newsletter. Thanks for your work! ~Joe Anding

Still a great "family", PanAm ~Earl G. Kelley

Members might be interested in a new book just released: "PAN AM AT WAR...HOW THE AIRLINE SECRETLY HELPED AMERICA FIGHT WORLD WAR II" by Mark Cotta Vaz and John H. Hill.

~George Rogers

CRUISE: VISITING PORTS OF CALL –

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Tortuguero Canal, meet wild creatures at the Costa Rica Wildlife Sanctuary, or get in some of the region's best surfing at the Salsa Brava reef break, just an hour's drive south of the port.

COLÓN, PANAMA - Home to the Panama Canal's Atlantic Ocean entryway, Colón is the second-largest city in Panama. Start your adventure at the Gatun locks, where you can watch ships being raised by water lifts to the higher elevation of the canal. Then, visit the Portobelo Natural Park and take in the beauty of its 16th century forts. Or head to the beach at Playa Maria Chiquita for clear Caribbean Sea waters and white sands. Cruise to Colón, Panama and check out Portobelo National Park, where you can see 17th-century Fort San Lorenzo or go bird-watching along the Achioté Trail in San Lorenzo Protected Forest. Or take the one-hour trek to Panama City, the Caribbean's urban heartbeat. Experience the Panama Canal in all its engineered glory as you witness ships being lifted in the Gatun locks to enter Gatun Lake. Ships then traverse through the lake and exit the canal on the Pacific Ocean side, going down again in the Miraflores locks. Panama City Tour & Canal Locks - CO52

CARTAGENA, COLOMBIA - Cartagena de Indias boasts romantic colonial architecture and a Caribbean coast glittering in shades of bright white and aquamarine. Saunter through the leafy Plaza de Bolívar, photographing multicolored streets like Calle Segunda de Badillo. Cruise to Cartagena to dance to the beat of merengue, salsa and Colombia's very own cumbia at places like Bazurto Social Club. Discover Proclamation Square, where the town people gathered in 1811 in support of the declaration of independence from Spain, and walk the 16th-century fortifications of Castillo San Felipe de Barajas. Enjoy Cartagena's natural grandeur on its many beaches, like Bocagrande, Playa Blanca and placid Rosario Islands National Park, just 45 minutes away from the city.

ORANJESTAD, ARUBA - Welcome to Aruba— or as the locals say, Bon bini. Here Dutch traditions mix with island charm. The capital and port town of Oranjestad, is best known for its colorful Dutch Colonial 'gingerbread' houses painted in bright Caribbean hues. While Aruba is only 20 miles from tip to tip, it is packed with incredible contrasts. Cruise to Aruba and go from relaxing in a tropical paradise to trekking rugged desert in no time. The southern coast is one giant photo op— a bustling port town surrounded by powdery white beaches and crystal-clear aquamarine waters. To the north, waves crash onto a rocky coast, scattered with cliffs, cacti and divi-divi trees. Best of all, you don't have to choose which spots to hit— just which to hit first.

WILLEMSTAD, CURACAO - Curaçao is a treasure trove of cultural attractions, rich history, and natural scenery — from desert landscapes and rugged cliffs to 38 spectacular, and mostly secluded, beaches. Sint Anna Bay separates the two sides of the capital of Willemstad. Punda, the original settlement, is a tidy grid filled with shops and unique markets, restaurants and open-air cafes. Not to mention the famous tropicalized Dutch architecture in vibrant hues. Otrobanda (literally, "the other side") is a maze of narrow streets and even narrower alleyways. And at only 40 miles long, a wide variety of island adventures are within easy reach during your Curaçao cruise.

Treasurer's Report

The current bank balance is \$18,189.08 as of July 25, 2019. We have received enough funding to print the newsletter for another full year! Checks to be written from that balance will include printing, mailing and website hosting & updates, and maintenance / updates of the membership list.

Pan Am Philadelphia Area Pilots (PAPAP)

We meet the second Tuesday of every quarter at the Continental Inn in Yardley, PA at 1200 for a bit of BS before going to our private conference room upstairs for lunch.

Been going on since 1992 and it's a great way to stay together. Contact: Chris Blaydon [215 757 6229](tel:2157576229) or cblayd@aol.com

Come Join the Santa Rosa Breakfast Group!

The Santa Rosa Breakfast group meets about every six weeks. They have 17 pilots, FA's and FEO's that get together to discuss the old days. Anyone in the Sonoma, Napa, and Marin county areas north of San Francisco who would like to join them should email Dave Criley at davecriley@comcast.net, and send your email contact. They started out with 5 and have grown to 17. ~from Dave Criley

Flying Boat Reunion clip now available for viewing

A 15-minute special that aired April 27, 2016 on Ireland's popular RTE TV show "Nationwide" is now available for viewing. China Clipper First Officer Robert Hicks (94); Merry Barton, daughter of Folger Athearn (Pan Am's station manager in Noumea, New Caledonia in 1941); Director of the Foynes Flying Boat Museum Margaret O'Shaughnessy; Ed Trippe and Mary Lou Bigelow were interviewed during the Foynes Flying Boat reunion. <http://www.rte.ie/player/us/show/nationwide-21/10566026/>

Layovers for Pan Am

Check out Pan American layovers at www.paacrewlayover.com, where some 81 cities and over 161 hotels are shown in photos.

Check Out the Lockerbie Website

A website has been created for Lockerbie. It can be viewed at www.lockerbie103.com. It might be a worthwhile site to check out, especially for those who plan on visiting Lockerbie. Be sure to enter the web address in the browser (not Google Search, etc.) with the www. Otherwise, they will get hundreds of Lockerbies and 103s and may not find the web site after 15 pages. ~Claude Hudspeth

Pan Am -- Personal Tributes to A Global Aviation Pioneer

The Pan Am Historical Foundation recently published the highly acclaimed *Pan Am – Personal Tributes to a Global Aviation Pioneer*, a book that caught the attention of Pan Amers and aviation enthusiasts around the world. Visit <https://www.panam.org/shop/669-panam90-book> to order.

Thank You for the Stories You're Sending In! Keep 'em coming!!

We've been getting some good stories about memories of your times with Pan Am, and we want you to know we appreciate it! Keep them coming, and you will see them in the upcoming issues! Are there memories you've written down that you'd like to share with us in this newsletter - short or long? Have you come across an interesting article that you'd like to share with us? Would you share pieces from a book you've written? Send them to sue@clipperpioneers.com or jerryholmes747@gmail.com

*...and God will lift you up on Eagle's Wings, bear you on the breath of dawn,
make you to shine like the sun and hold you in the palm of His hand.*

IN MEMORIAM

William James Lee Bradley III, 99, died April 15, 2019 at home in Acton, Massachusetts. From 1940 to 1980, Bill worked for Pan American World Airways, including seven years as a Flight Engineer on the Boeing Clipper B-314. He did his foreign service in Lisbon, Portugal and was on hand to help with the rescue of passengers after the crash of the Yankee Clipper. On return he was assigned to LaGuardia and flight as a flight engineer. He was sworn into the Navy and served as part of the Naval Air Transport Service. He stopped flying in 1947 and went to ground service. He and his wife, Eleanor, were married for 66 years. He is survived by his three children, seven granddaughters and ten great-grandchildren. His lasting legacy is that he instilled in us all the love of travel.

Maurice "Morie" Turner Legare passed away on July 12, 2019 at the age of 86. He was born on March 20, 1933. Morie attended Whitworth College, Spokane, Washington, where he participated heavily in the Young Life ministry, and excelled in sports and academia, graduating in 1955. After graduation from Whitworth, he joined the U.S. Navy, went to flight school, and became a Naval Aviator. He was a combat helicopter pilot in Vietnam, and in 1966, was appointed Officer in Charge of Search and Rescue Detachment 5, and flew missions from the USS King (DLG-51). He and his men (dubbed "Legare's Bears") participated in many heroic rescues, but one memory he often shared was when he and his crew made two water rescues of F-105 pilots who were hit over North Vietnam, and managed to ditch or parachute into the Tonkin Gulf. It was an important and historic event, which is recorded in the operational history of the USS King. For this and other feats, Morie earned the Air Medal, the Vietnam Service and the Republic of Vietnam Campaign Medal, along with the National Defense Service Medal. He earned the rank of Lieutenant Commander, and served in the Navy for 10 years. After his military career, Morie served as a Flight Engineer (FE) for Pan American World Airways from 1967-1991. His family loved hearing about the many adventures, life-saving calculations, and narrow landing victories Morie experienced in that role. When Pan Am was sold to Delta Airlines in 1991, Morie was able to transfer to Delta, and was a senior FE until his retirement in 2002.

For more information and full obituaries about each of these friends who will be missed, click on "In Memory Of..." at our website: www.clipperpioneers.com. Know of someone from Pan Am who has passed? Email the obit to Jerry Holmes at jerryholmes747@gmail.com or sue@clipperpioneers.com, or mail to: Sue Forde, P. O. Box 3457, Sequim, WA 98382

Tips about keeping safe on your computer

1. Use an antivirus program and keep it up to date.
2. Do not open email messages from unknown sources or suspicious email attachments even if you know the sender.

***Please update your email address and phone number if it's been changed!
Email or write to Sue Forde, P. O. Box 3457, Sequim WA 98382
or email to: jerryholmes747@gmail.com or sue@clipperpioneers.com***

Update on the Clipper Pioneers Newsletter

Our thanks to the 164 so far who have donated \$50.00 or more to help cover the cost of creating, printing, mailing and maintaining the website. And for the many great comments many of you sent in!

We'll be getting in touch with those who haven't responded to be sure you want to stay on our list.

If you haven't yet sent in a check, and would like to keep receiving the newsletter, please fill out the form below and send in your check for \$50.00 (or more, if you'd like to contribute more), payable to Clipper Pioneers.

Those of you without email or internet, please so indicate on the form. Thank you!

Since we'll be printing for another year at least, please send in your stories / memories or other items you'd like to see in the newsletter. If there are times we don't have enough "new" stories to run, we'll run some of the stories from issues that were printed years ago that bear another telling. :)

Looking forward to keeping Pan Am - the greatest airline - alive in memory and in print. We'll also be updating and revamping the website to modernize it.

PLEASE MARK ALL THAT APPLY:

☐ YES, I'd like to contribute \$50.00 (or more) toward the continuation of the print issues of the Clipper Pioneers newsletter. Please send me the newsletter by mail. Enclosed is my check for \$_____.

☐ I would prefer to receive the newsletter by email. My email address is:_____.
I am enclosing my contribution to help cover the expense of the newsletter in the amount of \$_____.

☐ I do not have an email address.

☐ I would like to contribute more toward keeping the newsletter going. I'm enclosing \$_____.

☐ I do not wish to continue receiving the newsletter. and understand that this is the last issue I will receive.

Your Name:_____ Date:_____

Email Address:_____

COMMENTS:_____

Mail to: Clipper Pioneers, P. O. Box 3457, Sequim, WA 98382.
or email to: sue@clipperpioneers.com
or fill out the form at www.clipperpioneers.com