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The Father of Blind Flying

- By Mark Wolverton

William Charles Ocker knew there were times when a pilot couldn't trust his senses.

A typical flight instructor in 1917 would point to the instruments in a cockpit and tell his students to "pay no attention to them." In aviation's early days, pilots flew by the "seat of their pants." They trusted their eyes and gut feelings, even though doing so sometimes killed them, especially when vertigo set in at night or during bad weather. Such loss of equilibrium was considered part of the business, a rite of passage that fliers just had to handle. A pilot who relied on any instruments other than the compass, and perhaps the altimeter, was a lightweight - or even worse, a coward.

William Charles Ocker, "the father of blind flying," didn't buy into such macho posturing. As an Army pilot in World War I, he had known too many competent fliers who became disoriented and died needlessly; he himself had narrowly escaped death in 1918 while testing one of Elmer Sperry's early turn indicators. Lost in clouds with no visibility, Ocker discovered that the indicator showed his plane in a turn while his senses told him he was straight and level. The confusion sent him into a spiral dive: emerging from the clouds, he had just enough time to regain control. Others might have blamed the instrument. Ocker understood that, despite his training and experience, his pilot instincts had failed him.

The bowlegged, bifocal-wearing Ocker hardly fit the stereotype of a daring pilot or one who might challenge conventional wisdom but he had a passion for flying and a fierce sense of mission. Born in

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Please note - we have changed the access to the online newsletters so that you will need a password to access them. We're hoping this will help past members who haven't paid their dues to do so, in order to read the newsletter. This password will also give you access to the membership & phone list. GO TO OUR WEBSITE AT: www.clipperpioneers.com.

Click on the "Members Only" button on the righthand side. The password will be: captain.

Dues are \$20 a year or \$60 for the 3 remaining years. Make them payable to Clipper Pioneers, and mail to Jerry Holmes at 192 Foursome Dr., Sequim, WA 98382.

The Father of Blind Flying

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Philadelphia, he enlisted in the Army at 18 and fought in the Spanish-American War and the Philippines as an artilleryman.

In 1909 Corporal Ocker met the Wright brothers while guarding their Wright Flyer during military tests at Fort Myer, Virginia. Fascinated by airplanes, he transferred to the Signal Corps' Aviation Section in 1912. Starting out as an aircraft mechanic, he earned his wings in 1914 and an officer's commission three years later.

Throughout his career, Ocker remained haunted by his close call and the reasons why it happened. A routine physical exam in 1926 at Crissy Field in San Francisco finally provided him with some answers. The flight surgeon, Capt. David Myers, sat Ocker in a Jones-Barany chair, a swiveling, spinning seat designed to measure a person's sense of balance and equilibrium, and challenged him to take the exam with his eyes closed. Ocker discovered that when robbed of visual cues he couldn't tell whether the chair was spinning or stationary, or even what direction he turned. Myers had recreated the same disorientation that Ocker had experienced eight years earlier.

Ocker devised a way to beat Myers' test by rigging a turn indicator and penlight inside a covered shoe box with a viewing hole cut in one end. Seated in the chair, he held the box up to his face and watched only the instrument. Even though he was "flying blind," he could now tell Myers precisely which way he moved and how fast. Ocker had proved that conflict can exist between a pilot's subjective perceptions and the readings of his instruments and that he should trust the instruments, not his instincts, when that occurred.

With great zeal, Ocker spread news of his discovery to other pilots. He perfected his "Ocker box" by adding standard aircraft instrumentation such as a compass and artificial horizon so that pilots could use the box in conjunction with the Jones-Barany chair as a training device. Even the most experienced, instrument skeptical aviators could not help but be convinced after a spin in Ocker's rudimentary flight simulator.

Despite the evidence, the Air Corps stubbornly insisted that "blind" instrument flying was unnecessary, dangerous, and would not become part of its pilot training program. Many pilots learned it anyway under Ocker's tutelage. Some of his superiors remained suspicious of this odd officer who liked to spin in chairs, more than once forcing him to undergo psychological examinations. Ocker persisted, taking his ideas with him to his new assignment at the Air Corps' main training center at Brooks Field in Texas. Along with the Ocker box, he invented the notion of the covered cockpit in which a pilot has to rely strictly on instruments in flight training. The Army Air Corps might have disapproved but Pan American Airways soon adopted his methods in its flight school. He challenged the instrument-flight skeptics further by making the first cross country flight in a completely covered cockpit, a nearly 900-mile jaunt from Brooks Field to Scott Field, Illinois, on June 24, 1930. (The year previous, young Army officer Jimmy Doolittle had become the first pilot to take off, fly, and land completely on instruments, but that had only been a brief circle around an airport.)

Ocker's research caught the attention of Lt. Carl J. Crane, another pilot who'd had a close call when he lost his bearings on a flight in 1925 and just missed the top of Detroit's Statler Hotel with a Congress-

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The Father of Blind Flying

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man's son in the back seat. Ocker and Crane conducted numerous experiments on instrument flying and pilot's disorientation, most famously by tossing blindfolded pigeons out of an airplane in flight. They found that these birds exhibited the same disorientation as did pilots when confronted with severe cloud cover or darkness. (Most of the birds recovered their bearings or managed to shed their blindfolds.)

In 1932, Ocker and Crane distilled their research into the world's first instrument flight manual, *Blind Flight in Theory and Practice*. While the U.S. military was slow to acknowledge the book's value, the Soviet air force quickly adopted a pirated edition as a standard text.

Ocker's restless energy led him to pursue other aviation innovations. In 1938, along with Lt. George Smith, he patented a propeller with hinged blades for quieter flight. In 1941 Ocker and Crane created a "preflight reflex trainer," essentially a ground flight simulator "pilot buggy" with a cockpit that could move in three axes, powered with a one-cylinder engine and complete with a .22-caliber blank-firing machine gun for target practice. Ocker also invented a "flight integrator," a gyroscope-driven instrument that displayed a plane's movements with a miniature plane on a screen depicting a sky complete with clouds. More concerned with the welfare of his fellow flyers than with profit, he assigned his patents to the government.

Controversy continued to stalk Ocker. In 1934 he was court-martialed for supposedly making insubordinate comments about a superior officer. When he proved that the officer had falsely doctored Ocker's medical records to keep him grounded after an accident, he was quickly acquitted.

Ocker also made some influential friends along the way including Orville Wright who called him a "missionary" with "more influence in bringing about the use of instruments than any other person." He counted Eddie Rickenbacker, Billy Mitchell, and Jimmy Doolittle among his supporters. Charles Lindbergh, Amelia Earhart, and pioneering Australian aviator Charles Kingsford-Smith learned about instrument flying from him personally. When he retired as a full colonel, he was the oldest serving pilot in the U.S. military.

Ocker died at Walter Reed Hospital in Washington, D.C., on September 15, 1942. The following year, military authorities finally made his instrument training procedures standard for all pilots. Few remember Ocker today; no airports, aviation companies, or museums bear his name. Yet he would be happy enough to know that he rides with every pilot who relies on instruments to find the way home.

(from August 2015 RUPANEWS)

WILL THIS BE YOUR LAST NEWSLETTER?

**If your envelope date ended with 2015,
your dues need to be paid for 2016.**

**IF YOU DON'T SEND IN YOUR CHECK,
THIS WILL BE YOUR LAST NEWSLETTER UNTIL YOU DO.**

**Don't miss an issue of the Clipper Pioneers' newsletter -
send in your check today!**

**Make payable to: Clipper Pioneers
c/o Jerry Holmes, 192 Foursome Drive, Sequim, WA 98382.**

Remembering “THE OLD GIRLS”

By Dick Edwards

In April 1942, when I started with PAA in Miami, there were two seaplanes still in passenger operation: The Sikorsky S42 and the S43. (The M130 –China Clipper-- doesn't count because it was being used on a special assignment.) There were three additional seaplanes on hand; the Sikorsky S38; S40; and Consolidated Aircraft Commodore; these three were being used as training assets. It was just a short four months since Pearl Harbor, remember, and every effort was being made to ramp up air operations everywhere. PAA had the leading role in the world because of its almost sole source of experienced, on hand flight crews and airplanes.

Each of the three old out-of-passenger-service airplanes ---The Old Girls--- filled a key role; the little S38 was quite unique. When taxiing on the water, it looked like it was half submerged!! The fuselage somewhat resembled a slipper; and when taxiing along looked like it had a wing, two 400 hp engines, and a mess of struts, wings, and tail assemblies tagging along just above it!! In spite of its looks, it did a very good job qualifying and building flight time for pilots. Its max speed was listed as 104 knots.

The big old 4 engine S40 was a great deal larger than the S-38 and its fuselage rode much higher above the water surface. A side view of it taking off was much the same, however; four 660 hp engines; along with a mess of struts, wings, and tail assemblies tagging along just above the fuselage!! Its cruise speed was listed as 100 knots. PAA had three S-40s and to the best of my knowledge, they were used exclusively to transition US Navy seaplane pilots into Heavy Transport Seaplane pilots (under a contract with the Navy).

The Commodore ---there were five of them still in service--- were the work horses of the retired passenger seaplanes. From my view they were the best looking of “The Old Girls”. These five airplanes were primarily used to train flight navigators for the Royal Air Force. In the process it also trained a lot of new flight crews for PAA; from new guys in the left seat, and brand new young guys in the right seat, to brand new young flight radio guys in the seat just behind and below the copilot. Every flight was really just a plane load of trainees; the students getting flight navigation training; and the flight crew getting new on the job training and much needed experience under their belts. The exception to the on board souls was the highly experienced old PAA navigator; now instructor; who just sat on a stool in the middle of the cabin calmly overseeing his stable of students!!!

When I talk about new PAA crew members, I really mean new. I have personally known a new left seater who was 23 and just getting his taste of pilot in command. I also knew young copilots who were making their debut in the world of commercial flying. And the radio operators ---of course; one was me at just a hair under 19 yrs--- eagerly trying out their hands at the newly learned game of navigation; plus trying to fit into PAA's outstanding world of communications ---all in Morse code, of course. The world of aviation was fast moving to satisfy the needs of war and we were all pulled along by the company to higher competency at an incredible rate. It was an exhilarating time to be involved with the company and aviation in general.

Before we ---FROs--- were assigned to our first flights, each had to complete PAA ground schools in Navigation and meteorology; plus prove our knowledge of radio (now called electronics !!). Morse code practice was also required until reaching the fast code speeds and message handling of the Pan

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Remembering “THE OLD GIRLS”

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Am communications networks. Our first flight assignments, following school graduation, were on the Commodore day navigation training flights. The day trips were the navigation student's ---and the new PAA FRO's--- first taste of real airborne navigation. The flights were generally layed out in three legs and three hours long. After several day flights we graduated to the night navigation training flights. The night flights were normally five hours in length and of three or four legs.

The Commodores were ideal for flight navigation training because of their slow speed. (As Bill Nash said in his newsletter story ---they take off at 75; cruise at 75; and land at 75). The relative effect of the wind on the slow moving Commodore served to emphasize the wind's importance to the new “to be” navigators.

On night training flights it was normal to have five student navigators; four were assigned as “tracking navigators” and one assigned as “The Navigator” of the flight. One night we had a “The Navigator” who was eager to show his newly learned Sextant skills. He came forward and pushed back a sliding hatch in the overhead to view the stars. The next thing I knew, he was climbing the ladder up and out of the airplane !! I jumped out of my seat and grabbed the guy around his legs and made him climb back down in the cabin. He was a little miffed with me, in a traditional British way, because he said that all he wanted to do was sit up top so that he could have a better view of the stars!! ---Why Not ; after all, our airspeed was only 75 knots!!

A lesson I learned the hard way on the Commodores stayed with me for all of my seaplane flying days; reel in the trailing wire antenna before landing!!! I spent a whole month on the midnight to eight in the morning shift working in the hangers at Dinner Key to impress upon me the importance of that little chore. (I bet I should stop here and explain what a trailing wire antenna is; On the Commodores we had a (1) very small transmitter with a power output of 10 watts. To assure continuous communications throughout the flight it was necessary to attach a long antenna to the transmitter. The antenna was on a hand operated reel and was reeled out of the airplane to a length required to “tune” the transmitter to its operating frequency. To keep the antenna hanging down and away from the airplane, there was a large lead ball weight attached to the end of it. The transmitter was located in the very tail of the Commodores so one had to remember well before landing, to go reel it in!) To continue with my penalty; I was making so many lead ball antenna weights; more than could ever be used; that I was quickly transferred to the battery maintenance area to finish out my penalty time; developing acid eaten coveralls as proof of my close attention to my work. Also, while on the battery maintenance chore, about 5 am, I was required to visit each morning's departing airplanes and check all of the radio equipment and batteries in each to assure on time departures. If that sounds like a huge task; remember, each airplane only had two receivers and one transmitter, plus the manually operated battery charging control panel. It was the FRO's responsibility to keep the batteries charged; the theory being, he would be the first to know the batteries were getting low because his radios would begin to fade out on him!! On the plus side, the controller made a nice hand warmer!!

In today's world the penalty I was given might sound like a rather harsh and unnecessary penalty for such a minor infraction; not so for me; it was a learning experience and I was better for the exercise. In fact, a fall out from the exercise allowed me to informally join the navigation training classes where I first learned Celestial Navigation; leading, years later, to my FAA Flight Navigator's Certificate.

In closing, it is well to remember that the airplanes we used where quite old, but they and the Pan American crews and instructors together were still able to produce the best airmen in the world at a time when they were most urgently needed. You can't ask better than that from “The Old Girls” !!!

PAN AM REUNION CRUISE EXPLORER OF THE SEAS MAY 27,2016

Dear Pan Amer's:

I was delighted with all your gracious letters of thanks in your last Transatlantic reunion cruise. It was a great success and now we call attention to our next 2016 reunion cruise which will be Alaska.

Alaska: Now bigger than ever. Explorer of the Seas® takes on the Last Frontier, as the biggest, most innovative ship to ever cruise Alaska. Enjoy views from every room, thanks to new Virtual Balconies that bring real-time outdoor sight to interior staterooms. No journey stays with you, mind and soul, like an expedition through Alaska. From the blue ice of massive glacial fields to the stunning grandeur of the scenery and wildlife, everything big, bold and breathtaking. The ship is beautiful and packed with all the action of Royal Caribbean's Signature innovations—with plenty of time for relaxation, fine dining, and beautiful ocean views. Not to mention experiencing the awe and wonder of being up close to the fascinating glaciers in Alaska. Cruise to the Hubbard Glacier, as well as Tracy Arm Fjord, where the twin Sawyer Glaciers can be seen. Look out for harbor seals, wolves, bears and other wildlife that inhabit this glacial wonderland.

We take this opportunity to invite you, your family and friends to join us on this fabulous Pan Am cruise. The ship sails roundtrip Seattle making transportation easy to get to and return home. Great rates are being offered so everyone may choose the best cabin for your budget.

Itinerary –		Departs	Arrives	
Fri 27 May 2016	Seattle, Washington		4:00 PM	Boarding
Sat 28 May 2016	Cruising			Cruising
Sun 29 May 2016	Alaska Inside Passage			Cruising
Sun 29 May 2016	Juneau, Alaska	12:00 PM	9:00 PM	Docked
Mon 30 May 2016	Skagway, Alaska	7:00 AM	8:30 PM	Docked
Tue 31 May 2016	Tracy Arm Fjord, Alaska	7:00 AM	12:00 PM	Cruising
Wed 01 Jun 2016	Cruising			Cruising
Thu 02 Jun 2016	Victoria, British Columbia	9:00 AM	6:00 PM	Docked
Fri 03 Jun 2016	Seattle, Washington	6:00 AM		Arrival

Prices:

Inside Cabins from \$599. / Outside Cabins \$1059. request Balcony from \$1389.

Rates - per person, double occupancy (singles pay 200%) and based availability at time of booking. Port charges, taxes and fees are additional at \$412.91 per person. Deposit is \$250. per person (credit card or check). Book Early and lock in your price. Once our allotment is sold, cabins will be at prevailing rates. More information with your invoice. This invitation is open to all Pan Am, their family and friends. To reserve or for information please call Interline Travels ASAP or you may miss out on these prices. It's going to be a good one – DON'T MISS OUT !!

Carmen Jaquet, Pan Am Cruise Coordinator INTERLINE TRAVELS

1-888-592-7245 / cell 786-252-7838 interlinetravels@yahoo.com .

Stu Archer, former Pan Am pilot & cruise consultant

305-238-0911 (stujune@aol.com)

INTERLINE TRAVELS, 456 MERLIN CT. , TALLAHASSEE, FL 32301

*...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

Bob Barber passed away in 2014. He was a PAA Flight Engineer on the West coast hired in 1941.

Paul Arvid Taipale passed away peacefully at home on Oct. 9, 2015. He became a Pan Am pilot in 1951. Flying in the heyday of the airline industry, Paul relished his travels, enjoying the highlights of cities across the globe from Istanbul to Beirut, from Buenos Aires to Tokyo. He flew out of Pan Am bases on both the East and West Coast of the U.S., as well as Berlin, Germany and, after Pan Am sold its Pacific routes, he flew three years with United Airlines. The airlines gave him the opportunity to expand his worldview and live out a multitude of adventures that made for dinner table tales that were both harrowing and hilarious.

Captain Patrick F. Levix (retired) passed away on Oct. 2, 2015. He died at home from a heart attack. His wife Hazel was with him to the end. Pat will be missed by all those who knew and loved him.

For more information 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

Printed Roster Coming

*Over the next few months in 2016,
we will be forwarding pages of the Roster
as a part of this newsletter.*

*Please update your email address and phone number if it's been changed!
Email or write to Jerry Holmes - 192 Foursome Drive, Sequim, WA 98382
or email to: jerryholmes747@gmail.com*

**REMINDER: Clipper Pioneers NEWSLETTER's
LAST PRINT EDITION WILL BE DEC. 2018**

Having trouble viewing the membership list online? When you open the list, go to the top of your screen - you should see that it is set at a percentage. Click on that to make it larger.

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The Single-Engine Pilot vs. the Multi-Engine Pilot

The best reason for training to become a multi-engine rated pilot is that you get to be a better pilot (who thinks he's) in command—whether you want to be or not!

One primary difference between a multi-engine pilot and a single-engine pilot is their flight planning.

One does planning before the engine starts, the otherafter the engine stops.

There's that old story about the fighter pilot who requested priority for landing because his single-engine was running "a little rough".

The military base tower controller told the fighter that he was number two, behind a B-52that had one engine shut down.

The feisty fighter pilot replied, "Ah, that dreaded seven-engine approach."

On track, chugging away like a locomotive, the B-52 continued to the runway.

Share the Memories...

You are a part of this wonderful "family". Are there memories you've written down that you'd like to share with us in this newsletter? Please send them to Jerry or Sue by email to: sue@clipperpioneers.com.

Have you come across an interesting article that you'd like to share with us? Send that along, so others can enjoy! We'd love to hear from you!

Pan Am Reunion planned at Foynes Museum in 2016

Pan Am Captain Don Cooper (coop@maxthrust.net) and Margaret O'Shaughnessy (margaret@flying-boatmuseum.com) have been working together on plans for a Pan Am reunion at the Foynes Museum next year. Details are not available yet, but bus tours around Ireland are planned. Contact John Madden (jmadden@asktravelworld.com) about tours.

Clipper Pioneers Christmas Dinner / Dance - Sunday - Dec. 13, 2015

The Clipper Pioneers Christmas Dinner / Dance will be held on Sunday, Dec. 13, 2015 at the Coral Reef Yacht Club (near Dinner Key), 2484 South Bayshore Drive, Coconut Grove, Florida. An "Attitude Readjustment Hour" will start at 6 p.m, with dinner at 7:30 p.m. Charge is \$45.00 per person - guests are welcome. There will be a cash bar (actually, credit cards only). Please RSVP prior to Wednesday, Dec. 9, 2015. For reservations, complete the following:

Attendees Names: _____

Menu Entree Choices: _____ N.Y. Sirloin Steak with Wild Mushroom Sauce OR
_____ Grouper Meuniere sauteed in White Wine Sauce

Checks payable to: Wm. H. Benefield;

Mail to: Harvey Benefield, 1261 Algardi Avenue, Coral Gables, FL 33146-1107.

PLEASE NOTE: The following two pages were included in your previous newsletter; however, a number of newsletters went out with duplicate pages 1 and 2, and NO pages 3 & 4. We are, therefore, including pages 3 & 4 here. If you've already received these, you can disregard them.

We sincerely apologize for the mixup. Rarely, human error occurs, and a mistake is made. We will make every effort in the future to see that this does not happen again.

Thank you for your understanding. Your next newsletter will be in February 2016.

Here's hoping that you have a wonderful Christmas and New Year's with family and friends!

Turning Finals: Iced Up *(last part of the story run in the Nov. 2015 issue)*

worked with us nicely. We flew a long, tortuous, sweeping pattern, making a fifty-mile half circle around the airport. I kept testing the ailerons every few minutes, and suddenly there was a lurch, and the SP bumped into a ten degree bank. "Hey," I exclaimed. "Something's happening! It feels like it's breaking loose!"

I wrestled the airplane back level, and it responded reluctantly. Another few miles and we would be lined up on final for runway 31 left, the longest of JFK's runways. Down at two thousand now, the gear came out as we crossed the salt marshes, sparkling blue in the afternoon sun. The closer we got the more normal the roll control seemed, and the landing was almost an anti-climax. The speed brakes popped from the top of the wings, and we slowed to taxi speed. As we turned off the runway I did a control check, and everything was smooth as silk. The captain and I looked at each other — we were no closer to an answer than we had been over the Aleutians hours earlier.

We taxied to the gate and shut the big bird down. We were met by a small army of maintenance foremen, technicians, and curious onlookers. As we were finishing up the checklists and gathering up our stuff to deplane, we heard heavy steps bounding up the stairs to the cockpit. The lead foreman appeared in the doorway. "Captain, we've got Something downstairs that I think you'll be interested in," he said.

We all followed him down the stairs and out the airside door to the tarmac. There was a growing knot of men gathered under the airplane at the right body gear wheelwell. They were gazing upward, gesturing; everyone was talking at once. The group parted as we approached. We looked up into the cavernous well, and no further explanation was necessary. We were looking at a huge block of solid ice, at least three feet in diameter, that was wrapped around the control cables where they passed through the wheel well. Dripping slowly in the afternoon heat, it made a widening puddle on the ramp at our feet. Suddenly everything was clear. A small leak from the pressurized compartment had found its way into the wheel well, where in the sub-zero temperatures it had dripped onto itself, slowly building a strangling mass that had held the aileron cables in a death grip. When we had descended into the warmer air it had slowly started to melt until by the time we landed we had full control. A simple answer to an unusual and bizarre problem, that fortunately had a happy ending. We wondered what would have been the outcome had it been the dead of winter, with no balmy air to solve our problem.

HOME ON THE RANGE

by Dave Bridges

On my ATR or now ATP rating check, I was sent out in the DC 3 with a CAA certified PAA check Captain, a very strict and kind of hard nosed person.

No extra words were wasted, only do this or that. The air work for the DC3 rating took some time but the orientation or locating position on the radio range took a longer time.

The radio ranges were on a low frequency such as 227 KC (which is below the standard broadcast band).

The station broadcasted an N tone (da-dit) in the north south quadrants and an A tone (dit da) in the East West quadrants. The places where these signals meet form four steady on course tones only, or legs, (about 90 degrees apart) with out bound headings listed on a diagram card.

In the center of the quadrant a clear A or N signal is heard and as the legs are approached, a steady background tone is heard over the A or N until it builds to a steady tone on the leg. The main idea is to get on the approach leg and descend from the center of the station (high cone of silence) to a procedure turn and back descending to 300 feet over the low cone and if no contact within sixty seconds, a pull up is done.

The orientation is started by listening to the signal and following one of three procedures by turning to a compass heading and listening for a change in the signals, visualizing position, memory and referring to the card only. Also flying by needle ball and a small artificial horizon. . No ADF or DME in those days.

I did my low over and at 58 seconds, declared a pull up at which time the check captain pulled the windshield cover and said to land. I slipped it in and taxied back to the Ad Building and just as I put on the parking brake he was up and gone from the plane, I secured everything and went into the crew rest room in the Ad Building and he was sitting on the sofa with papers spread out.

I stood in front of him (it seemed for 20 minutes) but maybe it was 8 minutes or so. Finally he looked up at me and said "well there is nothing here that I can legally flunk you on but if you had gone one second more on your procedure turn or one second more on your pull up I would have flunked you, get your certificate tomorrow in the chief pilot office".

"Whew"

Out of five in our group up for a rating, I and one other person passed it the first time, two more passed it on the second try and the fifth took it three times, flunked and was released from the company.

SUCH WERE THE DAYS ON THE RANGE

(This page is a repeat from the previous issue. See page 9 for explanation.)