

# WINTERMAIL

EAA CHAPTER 25

MINNEAPOLIS / ST PAUL, MN

APRIL 2014

## Consistent Wood Rib Construction

By Pat Hoyt



The wing ribs for my current project are made out of spruce and plywood. The main ribs each consist of 14 different pieces of spruce capstrip, 2 different spruce blocks, and 9 plywood gussets of various sizes.

There are 24 of these main ribs, which are all the same size. 4 of these are entirely sheathed in plywood. There is also a single pair of root ribs which are different and thus require their own jig.

*(Continued on page 4)*

## Air Force C-118 Liftmaster Disappears in North Atlantic

By Lt. Col. Lou Martin USAF (ret.)

*The missing Malaysian B-777 reminded me of the missing aircraft I was involved in, in 1956.*

In 1956, I was a 28-year-old Air Force captain, a senior pilot, a flight commander, a green instrument cardholder and flying C-119Gs from Neubiberg Air Base Germany. Part of my job was to insure that my assigned pilots were proficient in both day and night formation. On 10 October of 1956, I was leading a three-ship formation on a night round-robin cross-country flight designed to fulfill one of our combat readiness

requirements. We departed Neubiberg at 8 p.m. with a scheduled return time of midnight. When approaching Neubiberg on our return leg, I was advised that the weather conditions had deteriorated and that the airport was now below published landing weather minimums. They added that they expected the conditions to remain below minimums for the rest of the night and I was directed to take my flight to Rhein Main Air Base, Frankfurt, Germany (about 250 miles to the North) and remain there overnight.

*(Continued on page 5)*

**"Say Intentions"**  
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# "Say Intentions"



-an update from Kim V. (Gudgeon Pin) Johnson, EAA Chapter 25 President

Doesn't it feel good to start planning flying and fly-outs again after a long, tough winter!

At our Chapter meeting on April 16, 2014, Jason McCann, lead CFI at Exclusive Aviation at Downtown St. Paul Holman Field will, weather permitting, fly a Cessna 162 Sky-catcher to the BSAEC, and tell us about the

airplane and all that Exclusive Aviation has to offer.

At our May 21<sup>st</sup> meeting, we will be going to the North Memorial helicopter hanger to view their equipment (presuming they are not needed for an emergency) and get an overview of their operations. In June, our own Mike Tompos will tell us about his experiences this spring flying in Southern California airspace, including what it is like flying VFR Corridors with their special flight rules and flying in and out of the Catalina and Santa Monica Airports.

Don't forget about the May 17<sup>th</sup> Young Eagles event. It coincides with Girls Aviation Day at Airlake and a fly-out to Canby, MN to support the kids who came and spoke at our January meeting. In addition, Discover Aviation Days will be held at the Anoka-Blaine Airport on May 31 – June 1.

Don't forget to bring a package of: pre-cooked brats, hot dogs, hamburgers, buns, condiments, deli salads, beans, chili, chips, cookies, plastic utensils, paper plates, cups and paper towels, soft drinks and water and bring them to the Chapter meeting. Perhaps it would make it easier if we asked for a Food Coordinator and cooks on a monthly basis.

Every Wednesday evening that there is not a Chapter meeting, there is a Chapter 25 Pietenpol building project in which you can participate. We start at 6:00 pm at Dale Johnson's workshop in Burnsville. Come ready to work and we'll give you a task to do in the building of a Pietenpol Air Camper. Find a Piet builder to talk to if you have questions about this.

There is no lack of opportunities for involvement in Chapter 25 activities. We will work it out so that you can participate at your own level of availability. We are looking for a Food Coordinator, a BSAEC hangar maintenance task force, newsletter writers (write a story about an aviation experience or an interview someone about their aviation interest) and a librarian. See me if you are interested in serving in any of these capacities.

"To be really great in little things, to be truly noble and heroic in the insipid details of everyday life, is a virtue so rare as to be worthy of canonization."

--Harriet Beecher Stowe, American writer

Looking forward to seeing you at the meeting!



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# ON FINAL



Minneapolis/St. Paul

Visit our website at [eaa25.org](http://eaa25.org)

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# ***This Month: Wed Evening Apr 16th—BSAEC at Airlake***

## **Grill on at 6pm, Meeting starts at 7pm**

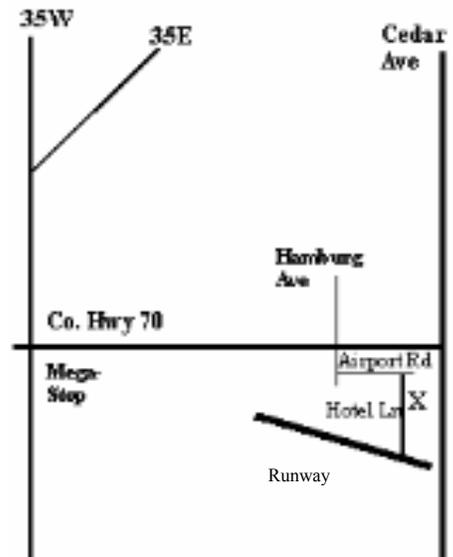
Please bring something to share: pre-cooked brats, hot dogs, hamburgers, condiments, deli salads, beans, chili, chips, cookies, plastic utensils, paper plates, cups and napkins, soft drinks and water. We also need a couple volunteers to cook!

**Program:** Jason McCann, lead CFI at Exclusive Aviation at Downtown St. Paul Holman Field will, weather permitting, fly a Cessna 162 Skycatcher to the BSAEC, and tell us about the airplane and all Exclusive Aviation has to offer.

**Saturday Apr 19th Young Eagles** To volunteer to help with young eagles, contact **Kris Olson:** 651-675-6826 [ksimpson2@yahoo.com](mailto:ksimpson2@yahoo.com)

**Saturday May 17th Young Eagles and Girl's Aviation Day at Airlake, 9 am.**

**Directions to BSAEC (Chapter Hangar at Airlake):** South on I-35 to Hwy 70 (Megastop), then East to Hamburg Ave (3rd stop sign.) Right turn and South to airport perimeter road. Left on airport perimeter road then right on Hotel or India Lane. If the surface is firm, please park on space between hangars.



## **EAA Chapter 25**

### **Meeting Minutes for Wednesday 19 March 2014**

**Presiding Officer, Kim Johnson, President**

**Bert Sisler Aviation Education Center  
at Airlake Airport, Minnesota**

The meeting was called to order by Kim Johnson, President. Member Lou Martin led the pledge of allegiance. Lou told the story that he was grateful when people thanked him for his service to our country, but that he was thankful himself for the opportunity and privilege of serving. The Treasurer's Report was passed around to members for review and comment.

Thanks were given to Member Kris Olson for coordinating the food and to Vice President Ned Lebens for cooking. President Johnson reminded members once again that a volunteer is needed to serve as Food Coordinator. He suggested that members volunteer for one month at a time.

Scholarship recipient Juan Villalobos played the guitar and spoke about his experience at Air Academy, Oshkosh WI, last summer. Juan also gave his thanks to the chapter for supporting him.

Member Wayne Koshi completed his first solo flight in a Cessna 162. He told about his experiences training for Light Sport Pilot. His instructor, Jason McCann, plans to bring the Cessna to our next chapter meeting.

Coordinator Kris Olson reported that the next Young Ea-

gles flights are scheduled for April 19. President Johnson announced that the chapter should begin planning for the annual Banquet and Raffle and that volunteers would be appreciated. Chapter members were reminded to share their thoughts on the Support General Aviation Pilot Protection Act which includes the elimination of the requirement for a third-class medical in some flying conditions. Details are available on the chapter's Yahoo Group site.

The program was Member Plans Night. Eight members presented a summary of homebuilt planes that they are working on and displayed the plans and pictures around tables. Members were invited to visit the tables and ask questions. Several members presented more than one airplane.

Thirty-four members and one guest signed the attendance log.

There being no further old or new business, President Johnson adjourned the meeting.

Submitted by Gordon Duke, Secretary

### ***Final Approach Trivia Quiz from John Schmidt***

In 1958, over 25 Sikorsky HO4S helicopters were stationed at US coastal cities by the Coast Guard for search and rescue, when Operation Tugbird was initiated. What was Operation Tugbird?

***Answer on page 8***

# Wood Rib Construction

(From Page 1)

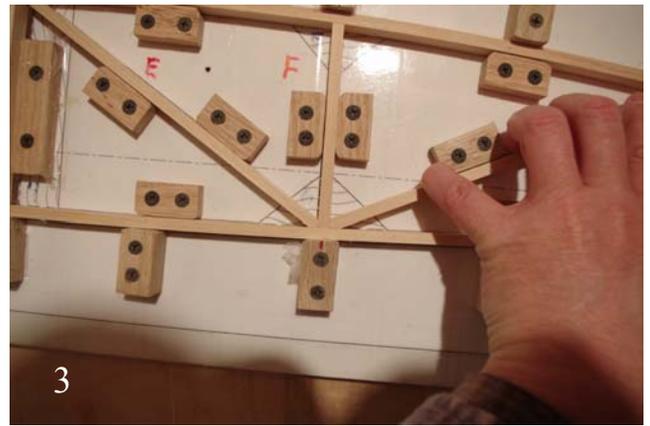
I wanted an organized and repeatable way of consistently making all these ribs.

First thing to do was to build a Wing Rib Jig. I decided to use just one jig, so that all of the resulting wing ribs would be as close to "the same" as possible. To make this jig, I attached a full-sized wing rib drawing to a large board, and covered the whole thing in clear packing tape (so that glue would not stick to it). Small guide blocks were cut out of oak and attached to the appropriate locations on the jig.

With the rib jig completed, I started cutting the spruce and plywood needed to make a "template wing rib". I made each individual piece exactly the way I wanted it, and then used that piece as a pattern to make 23 more just like it (I would make 40 of each of the gussets, since they went on both sides of most of the ribs). Each "batch of individual pieces" was labeled and stored separately. One bag for "Piece A", one bag for "Piece B", and so forth. In less than a week I had essentially manufactured my own wing rib kit (Photo on page 1).

I quickly discovered that sometimes the dry capstrips were difficult to bend into the required shape without breaking. Soaking them in hot water for a couple hours allowed them to be more flexible. I built a bending jig out of some scrap wood (Photo 2), and after clamping the wet capstrips in it overnight, they dried and assumed the shape that I wanted.

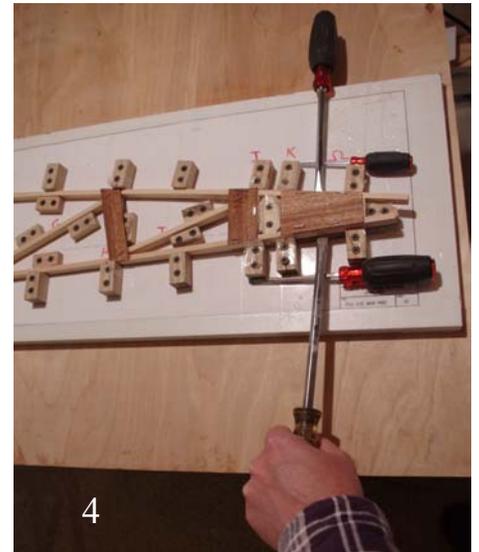
With all the gussets and capstrips cut and formed to size, it was time to start building the ribs. Having a separate container for each individual piece helped, as did having each corresponding position on the rib jig labeled. I could simply grab one piece, slip it into it's designated position, then place the next one, etc (Photo 3). T-88 epoxy was used, and the plywood gussets were secured with staples from a modified stapler (see the March 2014 of "On Final" for details). I would glue up one wing rib in the evening, and let it cure overnight. The following evening I would remove it from



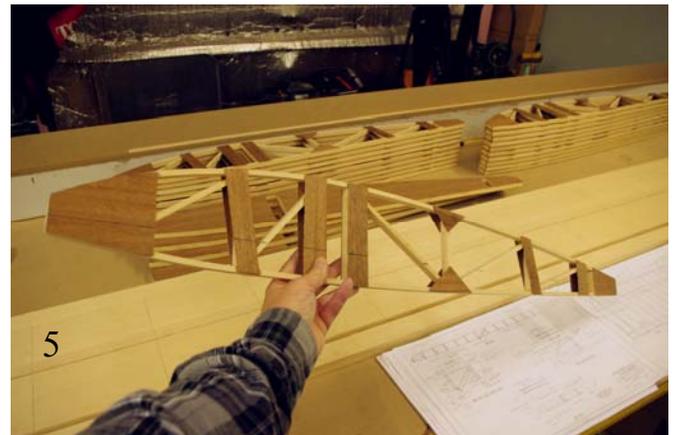
the jig by gently prying up with screwdrivers (Photo 4), and then glue the next rib. On the weekend I would remove staples, flip the ribs over, and glue gussets on the other side, assembly-line fashion.

Eventually I had a stack of ribs. I randomly selected one to serve as the "master rib", and cleaned it up with a sanding block.

One-by-one, I would attach each rib to this "master rib", and then run it across my router table while using a "pattern bit" (a router bit with a bearing on one end that "rides" on one workpiece and cuts an attached piece exactly the same). In this way I was able to quickly remove any remaining dried glue or overhanging gusset material. The result was that every finished rib was exactly the same (Photo 5).



Patrick Hoyt



# C-118 Disappears

(Continued from Page 1)

Approaching Rhein Main the tower operator advised that we should expedite our approach as fog was starting to form in all quadrants. We landed at around 2 a.m. and before we were able to turn off the runway the fog bank had rolled in. The visibility was now so bad that it was difficult to follow the yellow guidance line when taxiing to the parking ramp. Based on my five years of flying experience in Europe I thought that we would very likely be stuck in Rhein Main for two or three days while waiting for the weather to improve.

We were not prepared for an extended overnight stay so after being transported to the transient flight crew billets we visited a small all-night BX and purchased toothbrushes, a couple cases of beer and two decks of playing cards. We figured that we could buy fresh underwear and anything else we would need for an extended stay from the main BX the next day. In the meantime, the six pilots in my flight would gather in my room for our favorite pastime of playing poker and drinking beer. We continued in this amusement until around 7 a.m. With the airport “socked-in” we were not concerned about having to “rise-and-shine” in the early morning. However, at around 7 a.m. the lack of sleep and the soothing effects of the German beer convinced us that it was time to hit the sack. My poker friends left and I drifted off into a beer-induced sleep around 7:30 a.m.

About two hours later, a loud knocking on my door awakened me. I struggled to the door and opened it to see who was performing this unwanted pounding. A bright-eyed airman told me that a Major Hurst in Neubiberg Air Base was requesting to speak to me on the phone. I slipped on my flight suit and like a sleepwalker walked to a telephone in the hallway. Major Hurst, our operations officer, without any explanation said, “Lou get dressed, wake up your crew and return to Neubiberg ASAP.” I reminded him that the weather in Rhein Mian was below published takeoff and landing weather minimums and I was not sure of the weather in the Munich area. He said that the weather in Munich was improving and I should be able to land with no problem. Moreover, since I had a Green Instrument Card if I could see well enough to taxi to the end of the runway, I could sign my own flight plan and legally takeoff. He emphasized that he needed the aircraft for a special mission that he would brief me on when I returned.

(In 1956 Air Force pilots authorized to file instrument flight plans were issued either an AAF Form 8 White Instrument Card or an AAF Form 8a Green Instrument card. To qualify for the white card a pilot had to log 10 hours as PIC in actual weather conditions and satisfactorily pass an instrument flight check in an aircraft. To qualify for a green card a pilot had to have been a pilot for five years, have logged 100 hours as PIC in actual weather conditions and satisfactorily



C-118 Liftmaster similar to the one lost in 1956

pass a more demanding instrument flight check in an aircraft. The white card pilot was required to adhere to all published takeoff and landing weather minimums and have his flight plan approved by an operations officer. However, a green card pilot could approve his own flight and was not bound by published takeoff and landing weather minimums. The white and green card designations, due to many accidents, were discontinued in 1962 and all pilots thereafter were required to comply with published takeoff and landing weather minimums.)

I woke up my copilot and crew chief and told them to get dressed as we were flying back to Neubiberg ASAP. I told them that if they needed toothpicks to keep their eyes open, I had plenty. Thirty minutes later, we were transported to base operations where I filed and signed an instrument flight plan to Neubiberg. The visibility at Rhein Main was about 100 feet so I instructed the “follow-me” vehicle driver who drove us to our airplane to stand by while we started the engines and then to lead us to the end of the active runway. He seemed somewhat surprised in my request but agreed to comply. (The visibility was so bad that I did not want to taxi though a crowded ramp area loaded with parked airplanes without external guidance).

When positioned over the partially obscured runway marker for 25 left, I turned on the landing lights, set the directional gyro on a heading of 250 degrees, locked the brakes, shoved the throttles to full takeoff power, turned on the water injection, turned on the wind shield wipers and released the brakes. The aircraft, being empty, accelerated to takeoff speed of 125 knots in about 15 seconds. (Apparently I stayed somewhere near the middle of the runway during the takeoff roll since we became airborne without hitting any runway lights.) Still in the fog, we raced through the critical “Safe-single-engine-speed” of 145 kts and established a climb speed of 175 kts. At around 3,000 feet, the sun broke through the fog

(Continued on page 6)

# **C-118 Disappears**

*(Continued from Page 5)*

and we entered a clear blue sky. We leveled off at 7,000 feet and set course for Neubiberg Air base, two hours to the south.

En route all I could think of was heading for my off-base apartment after landing for a home cooked breakfast and a long rest. The weather at Neubiberg had improved considerably and we landed around 2 p.m. Taxiing into our squadron-parking ramp I noted an unusual amount of activity in and around the area. Aircraft were being refueled, crewmembers were pre flying C-119s and vehicles were scurrying about everywhere. It was obvious something was up but I did not know what! As the propellers were spinning down Major Hurst came to the cockpit and instructed us to go home, pack a bag and return ready to fly ASAP. He added, "By the time you return long range auxiliary fuel tanks will be installed in your cargo compartment, the aircraft fuel tanks will be topped off, a navigator will be added to your crew and in-flight lunches will be onboard." When I asked him where we were going he said, "Lajes Airport in the Azores to join in the search for a MATS R6D-1 C-118 Liftmaster that disappeared yesterday (10 October) on a flight from RAF Lakenheath, England, to Lajes Field in the Azores. Its last known position was 400 miles south of Lands End but the entire programmed flight track is being searched in case radio contact was lost." He continued, "According to the latest information there were 50 passengers and nine crew members onboard. The 50 passengers were all members of the Air Force's Bombardment Wing at Lincoln AFB, Nebraska returning home after 90 days TDY." He continued. "They have been searching for the lost aircraft for two days but with no contact and since survival time in the cold North Atlantic is critical the Air force is launching an all out effort to find possible survivors. We are contributing to this endeavor by sending three C-119s to join in the search. So get moving and return ready to fly ASAP."

Two hours later, I was back at Neubiberg and departed at 4 p.m. for a twelve-hour flight to the Azores. Fighting the need to sleep we landed at Lajes Air Port around 1 a.m. local time and parked on a ramp loaded with C-54s, C-47s, C-118s and C-119s. As the engines were shut down, I told my crew that perhaps we would now be able to hit the sack for eight hours of well-deserved rest. However, this was not to be! We were met by an Air Force major who identified himself as the search-and-rescue coordinator. He inquired if our aircraft was operational. When I told him that it was he said, "Fine report to billeting to obtain a bunk, get something to eat and be back in three hours for breakfast and an aircrew search briefing." With less than two hours sleep, we were roused out of bed by a sergeant going through the barracks banging on a steel triangle.

The briefing room was standing room only and was called to attention when a bird colonel entered. He walked to a large wall map and pointed to a section of open water that reflected the flight track the missing C-118 would have flown en route to the Azores. He said that its last reported position was about 400 miles from England but nothing was heard from it since. He then pointed to sectional squares on either side of the estimated flight track that were identified with numbers and letters. Navigation folders were then issued to each aircraft commander, identifying the specific area his crew would search. The colonel stated that the individual search areas would be criss-crossed at an altitude of 500 feet for nine hours, unless you make contact, which should allow you to return to Lajes before sunset. He briefed on discrete radio frequencies to be used for reporting sightings or in communicating with the search and rescue command post. He stated that our area of search would be the southern half of the planned C-118 flight track with aircraft and ships from England covering the northern half. He concluded his briefing with a time hack while stating that since the present weather was VFR (visual conditions) we were free to taxi out and takeoff when ready but wanted all aircraft airborne at 6:45 a.m. (one hour before sunrise). The room was called to attention and we were dismissed.

We taxied out behind a long stream of aircraft and after takeoff flew to our designated search area about one hour flight time away. We crisscrossed the area repeatedly at 500 feet for nine hours without spotting anything specific. However, in my tired state of mind I often thought I saw floating life rafts or survivors bobbing in the water, but after careful scrutiny, they turned out to be nothing more than hallucinations created by waterspouts or large whitecaps. I had to keep pinching myself to keep from falling asleep since flying over open water at 500 feet was not a safe time to fall asleep. Fulfilling our required search pattern, we departed for Lajes Airport and were faced with another problem that was preventing me and my crew from getting some needed rest.

A 1,000-foot overcast now covered the airport with cloud tops of 3,000 feet. Approximately 25 aircraft, all on visual flight plans and some low on fuel were returning to land at the same time. Lajes Approach Control was overwhelmed with the sudden arrival of so many aircraft seeking an approach clearance and made the following radio call in the blind. "All aircraft seeking an IFR (instrument) approach clearance to Lajes Airport are to maintain their own visual separation above the clouds and establish individual sequencing for an NDB (non-directional beacon) approach."

The first aircraft to arrive over the station at 3,500 feet advised that he was initiating a NDB approach and succeeding aircraft should follow at three-minute intervals. In a very short period of time there were numerous aircraft arriving overhead and calling out their individual tail numbers as they initiated a holding pattern 500 feet

*(Continued on page 7)*

## Stuff for Sale/Wanted

For Sale: Flightcom Model 403mc Voice Activated Monaural Aviation Intercom.

Four place, panel mount. New in box. Email roehler533@gmail.com

Wanted: Your dusty old VFR instruments for my Pietenpol project. Please contact Ned Lebens 952-567-3329 or [nlebens@gmail.com](mailto:nlebens@gmail.com)

For Sale: Ellison EFS-2 Throttle Body Injector  
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## C-118 Disappears

(Continued from Page 6)

above the aircraft in front of them. On our own initiative, we allowed aircraft that were short of fuel to jump to the head of the line. The rest of the aircraft kept descending in the visual stack at 500-foot increments as the aircraft at the bottom broke out for his approach and landing. It took about an hour for all aircraft to land safely! After landing, I was advised that we could expect to fly another nine-hour search mission the next day but in the meantime, a hot meal was waiting for us at the mess hall. However, I was too tired to think about eating since I had only slept about six hours and flown almost 30 hours in the last three days. I passed out on my bunk, fully clothed, and slept for seven hours before my bladder demanded attention. I then slept through the rest of the night.

I was expecting to be awakened around 4 a.m. by a sergeant banging on a steel triangle but instead I was awakened at around 9 a.m. by noisy activity in the barracks. Surprised that I had not been alerted for another search mission I asked a fellow pilot packing a bag what was going on. He told me that a search vessel from England had found a floating C-118 nose wheel assembly, a life raft and life preservers about 400 miles southwest of Lands end. He added that there were no outward signs of a fire or explosion and no trace of the crew, passengers or additional wreckage. Based on this, further aircraft search mission were canceled and we were released to return to our home bases. After a hearty breakfast of steak and eggs, we departed the Azores for a long ten-hour flight back to Neubiberg Air Base, Germany.

Author's Note: Military transport aircraft at the time were not equipped with cockpit voice recorders or flight data recorders (black boxes). Moreover, even if they had been the wreckage was never recovered so they would not have assisted in determining the cause of the accident. I believe the aircraft experienced a catastrophic in-flight break up for unknown reasons or the pilot experienced a mechanical problem serious

(Continued on page 8)

## Red Wing Soaring Association

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## Chapter Events

**Apr 16th Chapter Mtg at BSAEC, 6 pm**  
(see page 3 for map & directions)

**Apr 19th Young Eagles at Airlake**  
contact Kris Olson (see p2) if you can volunteer

**May 17th Young Eagles at Airlake**

**May 17th Girls Aviation Day at Airlake**

**May 31-June 1 Discover Aviation Days at Anoka Blaine Airport**

**Future meetings** 5/21, 6/18, 7/16, 8/20, 9/17, 10/15, 11/19, 1/21, 2/18, 3/18, 4/15

## C-118 Disappears *(Cont'd from Page 6)*

enough to cause him to attempt a ditching in the notorious unforgiving turbulent North Atlantic Ocean, which was unsuccessful. Based on the limited information available the cause of the accident was listed as undetermined. The bottom line, the 59 brave Americans who lost their lives that day were part of the thousands of lives lost during the Cold War but not eulogized on a wall in Washington. We owe all of them a huge debt of gratitude.

The above is an edited excerpt from my book "Close Encounters with the Pilot's Grim Reaper"

Lou may be contacted on [Pilotlou@aol.com](mailto:Pilotlou@aol.com)



### Answer to Final Approach Quiz *(See page 3)*

Commander Al Flanagan, an engineering and maintenance officer, is credited with the idea of using the helicopters as a tow vehicle. Outfitted with a quarter-inch steel cable, Sikorsky's towed aircraft tractors, a 4x4 personnel carrier, and a bus along runways. This list grew to include ships, including the 794-ton Juniper, and towing the 165-foot cutter Nemesis around Tampa Bay.

The crewmen/hoist operators were schooled in lowering the tow cable to the ship through an opening in the fuselage floor.

In January 1964, the engine of the fishing vessel *Pirate II* quit near the entrance to San Francisco Bay. The wind rapidly pushed the ship toward Seal Rocks. Some 20 minutes later, with *Pirate II* just 50 yards from being dashed to pieces, the towing began. The waves were 15 feet and winds were gusting to 32 mph; the gauge showed topline tension surging to 3,100 pounds—100 pounds over the recommended maximum. But soon *Pirate II* was pulled free from danger.

The program ended in 1964.

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