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# South Carolina Aeronautics Commission Aviation Newsletter

No. 8

AUGUST 1977

Vol. 27

## NEW MEMBER APPOINTED TO AERONAUTICS COMMISSION



THOMAS L. GREGORY

On June 15, Governor James B. Edwards appointed Thomas L. Gregory, of Columbia to serve as a member of the S.C. Aeronautics Commission from the 2nd Congressional District. Mr. Gregory replaces Mac Singletary on the Commission. The 2nd Congressional District includes Richland, Lexington, Calhoun, Orangeburg, Barnwell, Allendale and Bamberg Counties.

Mr. Gregory, President of Gregory Electric Company, Inc., holds a private pilots license with a

multi engine rating. He formerly owned a Beech Bonanza and a Baron. Gregory Electric currently operates a Cessna 421.

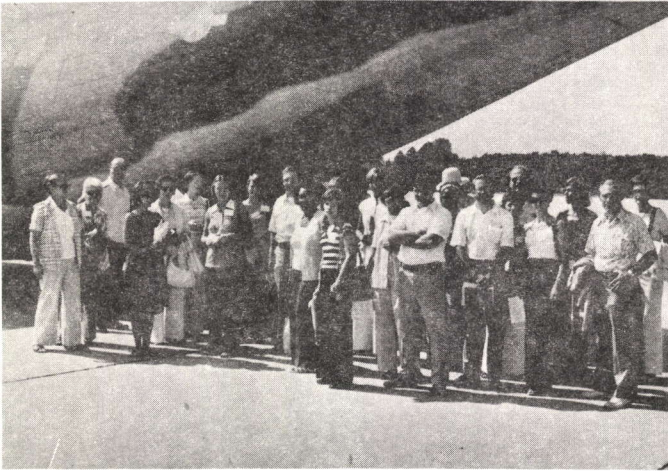
Mr. Gregory is a graduate of the University of South Carolina with a B.S. degree in Electrical Engineering. He is married to the former June Rabon, of Columbia, and they have two daughters Carol and Kaye.

During War World II, Mr. Gregory served in the Navy as an Aircraft Electronics Technican. He also served for 12 months in Korea when the S.C. Air National Guard was called to active duty. He is active in many Civic and Professional organizations in the State.

Other members of the S.C. Aeronautics Commission are Chairman, Joseph Wilder of Barnwell, Member At Large; Norris M. Thomas of Charleston, 1st Congressional District; W.A. Coward of Aiken, 3rd Congressional District; Ralph Schmidt of Greenville, 4th Congressional District; Dr. James T. Anderson of Chester, 5th Congressional District; Wilson Buie, Jr. of Kingtree, 6th Congressional District .

Commissioners from the Congressional District serve for four year terms and the member at large for a six year term.

AVIATION EDUCATION WORKSHOP 1977



Preparing to Board a C-123

Thirty-eight public school teachers completed the 25th Annual Aviation Education Workshop at the University of South Carolina on July 29, 1977. The three week workshop, which is sponsored by the South Carolina Aeronautics Commission and the Civil Air Patrol, was directed by John F. Barry, Deputy Director of the Aeronautics Commission. The course is designed to give the teachers an orientation in all phases of aviation, both military and civilian, and carries three semester hour graduate credit at the University.

Three orientation flights were included in the three week program. The teachers flew in general aviation aircraft to Stevens Beechcraft at the Greenville-Spartanburg Jetport and toured Stevens Facilities, and also visited the FAA Air Traffic Control Facilities. Capt. Childress of the U.S. Army Aviation Section at Fort Jackson provided an interesting program on Army Aviation and orientation flights in the Huey helicopters.



At the Air Space Museum

The group went on a Field Trip to McEntire ANG Base, where they were briefed on the mission of the S.C. Air Guard and saw a bombing and strafing exhibition at Poinsett Range.

One of the highlights of the workshop was a flight to Andrews Air Force Base and a tour of the National Air Space Museum at the Smithsonian Institution. This trip was provided by the Air Force through the Civil Air Patrol.

Featured speakers on the three-week program were: Betty McNabb, Hospital Consultant; Jack Barker, Regional Public Affairs Officer, FAA; Frances Miller, Miller Aviation; Captain W.W. Owen, Eastern Airlines; Al Shurett, Delta Airlines; L.F. Hembel, S. C. Helicopters; John Purvis, Chief, U.S. Weather Bureau; Fred Begy, Midlands Aviation Corporation; Frank Kelley, FAA; Bill Reynolds, Director Aerospace Education, Washington; Captain Kay Mellert, CAP; Capt. Jim Baker of American Airlines; Col. Puffenbarger, and Capt. Parker, AFROTC at USC.

South Carolina was one of the first states to provide workshops for teachers. This year over 165 similar workshops were held throughout the United States. We appreciate the excellent cooperation that we get from all segments of aviation. Without their help our program would not be possible.

Certificates of completion were presented by Mr. Joe Wilder, Chairman of the South Carolina Aeronautics Commission, at a luncheon at the Columbia Metropolitan Airport sponsored by the Richland-Lexington Airport Commission.

The following public school teachers completed the course: Suzanne Amick, Columbia; Carl Berry, Batesburg; Beth Bouknight, Leesville; Phylis O. Bouknight, Leesville; Thomas Bouknight, Leesville; Mary Bowman, Columbia; Sandra Cauthen, Mullins; Earline Clark, West Columbia; Richard Clark, Leesville; Jistine Coaxum, Columbia; Joan Dennis, Cayce; Wanda Derrick, Leesville; Susan Donelson, Columbia; Patricia DuBars, West Columbia; Leslie Gilbert, Columbia; Sarah Hall, Batesburg; Jeral Hancock, Columbia; Barbara Harman, Lexington; Mary Hawkins, Columbia; Kathryn Hendrix, Lexington; Linda Hodge, West Columbia; Stephen Hooper, Columbia; Harvey Hoots, Irmo; Lake Jackson, Batesburg; Marie Jones, Graniteville; Drucilla Long, Leesville; Earl Lovelace, Columbia; Frances Posey, Columbia; Mary Shealy, Gilbert; Donald Singletary, Seneca; Mildred Stanton, Orangeburg; Dianne Steelman, Columbia; Vicki Stockman, Irmo; Martha Stroup, Columbia; Phyllis Tuck, Columbia; Mary Willingham, Columbia; Belinda Woods, West Columbia; Janet Young, Batesburg.

### BREAKFAST CLUB NEWS

On July 3rd the South Carolina Breakfast Club met at the Georgetown County Airport. Attendance at this meeting was very good and an excellent breakfast was served.

On July 17th the Breakfast Club visited the Summerville Airport. This was the first meeting at Summerville in several years and the members were impressed with John Sheltons operation and the progress that has been made on the airport. On July 31 the club met at Greenwood.

A special meeting is scheduled for August 14. The Grumman American Air Center has invited the group to meet at Travis Field in Savannah for Breakfast and tour of their aircraft manufacturing plant. Breakfast will be served at the Airport Quality Inn at 10:00 a.m. and the tour will begin at 11:30 a.m. This is an excellent opportunity for South Carolina pilots to see aircraft production.

No meeting has been scheduled for August 28 and on September 11 the meeting will be at the Greenville-Downtown Airport for the Boys Home of the Southern Fly-In.

### CLEAR FOR TAKEOFF

Some pilots who take great pains to plan carefully for the en route and landing phases of their flight make almost no preparation regarding take-off. As a result, according to a National Transportation Safety Board report, in a five-year period (1970-74) about one out of every five accidents occurred on take-off, and 16 percent of the fatalities and serious injuries resulted from take-off accidents. Factors in the departure accidents included such things as weight and balance; density altitude; winds; runway conditions; cold weather.

## FAA NOTES

### MAINTENANCE NOTES

BENDIX MAGNETOS: Several distributor gear failures have been reported with the models S-20, S-200, and S-1200 series magnetos. The failures are attributed to distributor block bushing wear or binding between the distributor gear shaft and bushing. Bendix Service Bullentins 551A and 566 pertain to modifications to these magnetos to alleviate the problems.

There have been cases reported of engine failures caused by worn magneto impulse couplings. Worn couplings can cause the fly weights to jam and stop pins to break. The resulting seizure of the magneto rotor strips teeth from the crankshaft drive gears. Bendix Service Bulletin 585 deals with inspection of impulse couplings.

CESSNA MODEL 310 AND 320 SERIES AIRCRAFT -- NOSE GEAR DOORS: Numerous reports of interference, between the nose gear strut assembly and other components within the nose wheel well, have been received during the last two years. In the majority of these incidents, the cause was traced to a procedure used by maintenance personnel to provide better accessibility and ease of maintenance. On these aircraft, the nose gear doors are usually disconnected prior to beginning any repair or servicing function inside the nose wheel well. In far too many cases, the repairman neglects to reconnect the actuating rods to the doors before returning the airplane to service. It is then almost inevitable that the loose doors and/or rods will contact and bind the nose gear during the next retraction/extension cycle causing overloads and failures of other retract system components. This, in most cases, results in a landing

with the nose gear in a partially retracted position with subsequent extensive damage.

### AIRCRAFT PERFORMANCE IN HOT WEATHER

Most pilots have enough problems without experiencing a "surprise" in a substantial decrease in aircraft performance brought about by a high density altitude.

Pressure Altitude is a altitude read on the altimeter with 29.92 inches of mercury set in the barometric scale window. This indicated pressure altitude may not be the actual height above sea level due to variations in temperature, lapse rate, and atmospheric pressure.

Density Altitude is the altitude as determined by pressure altitude and existing ambient temperature. In standard atmosphere, density and pressure altitude are equal. For a given pressure altitude, the higher the temperature, the higher the density altitude. Temperature-altitude effects are at least partially responsible for many aircraft accidents.

We all know that the density of our atmosphere decreases with altitude. A given volume of air of a particular temperature and humidity at sea level will support more weight than the same volume at higher altitude. This reduced density of the atmosphere in which an aircraft operates will result in less lift being created by the wings for the same true airspeed and less thrust being created by the engine and propeller. Accordingly the aircraft's takeoff run will be increased proportionately. Because of the lower pressure and lower oxygen content of the air at higher altitudes, engine efficiency is also reduced. Higher temperature and higher humidity have similar effects on aircraft and engine performance.

The performance figures listed in the manufacturer's manual for length of takeoff run, horsepower, rate of climb, etc., are generally based on standard atmosphere (59 degrees F, 29.92" Hg.) at sea level. However, since standard atmosphere is the exception rather than the rule inexperienced pilots as well as experienced pilots may run into trouble when they encounter an altogether different set of conditions. This is particularly true in hot weather. When the temperature becomes higher than standard for a certain locality, the density of the air for that locality is reduced. This in turn aerodynamically effects the aircraft's performance. The horsepower output is decreased and the propeller loses some of its efficiency from the loss of power and because the blades, being airfoils, do not obtain as much thrust from a bite of the less dense air. Since the propeller may not pull or obtain the necessary forward speed to produce the required lift for takeoff. Thus, the takeoff distance will be increased. The loss of horsepower and propeller efficiency will also result in a decrease of the climb performance.

It is possible to fly from a field at sea level, and have the temperature high enough to give the airplane operational performance that could be expected at 3,000 feet above sea level. Under similar conditions, airplane performance on an airport at 2,000 feet elevation could be reduced to the performance expected at 5,000 feet elevation. An average small airplane requiring 1,000 feet for takeoff at sea level under standard atmospheric conditions will require a takeoff run of approximately 2,000 feet at an operational altitude of 5,000 feet. (Information extracted from FAA Advisory Circular 90-14A, copies available from CAE GADO)

### FLIGHT IN RESTRICTED AREAS

The pilot of a PA-30 recently flew through R6002 near Shaw AFB without authorization while R6002 was very active. The alertness of the military pilots in spotting the Commanche prevented the civilair aircraft from being shot down. This should serve as a reminder to all of us the seriousness of knowing the airspace in which we are flying.

Potential danger areas, in addition to restricted areas and warning areas are the M.O.A. (Military Operations Areas) as well as our high density airport traffic areas. Aircraft continue to penetrate the Myrtle Beach AFB Airport Traffic Area while flying up and down the beach and the A.T.A. at Shaw AFB, McEntire ANG Base, Beaufort MCAS, and others. The possibility of a mid-air collision presents a constant hazard to operations unless the pilot uses good judgement in knowing his area of operations and keep a constant vigilance for other aircraft any time he is flying.

### WRITTEN EXAMS

Written examinations for airmen applicants will be conducted in Greenville on August 10th and September 14, 1977, and in Charleston on August 17th and locations, contact you local FBO or FAA Facility who has a published itinerary schedule. Written exams may be taken at the General Aviation District Office in Columbia Mondays through Fridays, 8:00 a.m. to 4:30 p.m. holidays excepted.

### AMBIGUITY

FAA ought to clear up confusion over abbreviations that mean different things in different handbooks, according to the National Transportation Safety Board (NTSB).

The board recently found a series of abbreviations that were similar or identical, but meant widely different things.

NTSB was investigating an accident in Alaska that apparently had other causes, but found the pilot misinterpreted a Notice to Airman (Notam).

The Notam read, "AKN BAK-12 CNTR 11-29 OTS." This means the arresting system is out of service on runway 11-29 at King Salmon Airport.

However, the pilot entered "AKN BC 12 OTS" in the remarks section of his flight plan. This probably means he thought the back course localizer for runway 12 was out of service, the board said. (There is no runway 12 at King Salmon.)

After checking further, the board found "OTS" and similar variations in different airmen's publications, each with a new meaning.

In the Airman's Information Manual (AIM) and in the contractions handbook, "OTS" means "out of service." In the Air Traffic Control Handbook, it means "Organized Track System."

In another publication, the "O" and "S" separated by a slash mark means "out of service."

There is a listing for "OT" which means "other times, and a listing in another book where it means "on time," the board said.

All this could lead to confusion that might someday be the direct cause of an accident, the board said, although not in this case.

It pointed out that the Alaskan accident involved a light twin on an IFR flight plan that went off the

radar and was never found. But before the crash it had been 3,000 feet below the minimum enroute altitude, the board said.

NTSB urged FAA to standardize abbreviations in all publications the agency writes, as well as those it approves for aviation use. The recommendation was endorsed unanimously by the five-member board.

### PRODUCTION RECORDS

General aviation aircraft posted alltime highs in shipments and billings during the first half of 1977, according to the General Aviation Manufacturers Association.

GAMA said billings rose 21.8 per cent to \$729 million during the period, up from \$599 million the previous year. Shipments totaled 8,637 aircraft, up by 6.5 per cent from 8,108 the previous year.

GAMA president Edward Stimpson said, "The record half indicates the continued strength of the general aviation market and the acceptance of general aviation's role in our air transportation system."

Back by gains in the domestic market, the month of June carried on the trend, with 1,490 aircraft shipments worth \$123 million. These were increased of 15 per cent and 23.5 per cent, respectively, from the previous June, GAMA said.

But the organization noted a slippage in exports. The 1977 first-half figures show shipments of 1,913 units worth \$173 million, only slightly more than the 1,887 units and \$172 million a year before. And though June units on the export market rose by five airplanes to 319 total, the billings dropped nearly 14 per cent to \$24.6 million.

## S.C. WING CIVIL AIR PATROL

### CAP SOLO CADETS DISCUSS DAYS ACTIVITY



Six Civil Air Patrol Cadets in the South Carolina Wing recently attended a two week Solo-Encampment at Owens Field in Columbia, S.C.

After a selection process involving applicants from all over the state, cadet/Lt. Col. Charles C. Packard III, cadet Lt. Col. Bryan Hardy, cadet/Lt. Cob G. Richard Moore, cadet/1Lt. Thomas T. Bomar of the Greenville Composite Squadron, cadet/1Lt. Frank Gregory of the Aiken Airport Squadron were selected to attend.

During the morning hours the cadets received ground school instruction from Fred Begy, Chief Ground School Instructor of Midlands Aviation, and flight instruction in the afternoons from Civil Air Patrol FAA Certified Flight Instructors. The flying phase was done in the Wing's three Cessna 150's and one Cessna 172. The cadets were taught basic flight maneuvers, radio procedures, introduced to stalls, how to take-off and land the aircraft, ending with cadets "Soloing" (flying the aircraft alone). The total cost to the cadets was \$50.00 for their meals while C.A.P. provided the billiting in a local hotel.

At the conclusion of their training, the cadets took the FAA Private Pilots Written Examination

given by the FAA at Owens Field. Their training completed, their shirt tails clipped, and soaked with water, the cadets returned home proud of their accomplishments, and hopefully on to future flyings.

### NEW LIASION OFFICER

Lt. Col. Rocco DeFelice, USAF, recently assumed the position of Liasion Officer to the Civil Air Patrol for the state of South Carolina.

DeFelice, born in Philadelphia, Pennsylvania, entered the Air Force in 1955 upon his graduation from St. Josephs College in Philadelphia. He comes to Columbia from Randolph AFB, Texas. This was one of his many stateside assignments in addition to his service in the Philippines and Thailand. As an Air Force pilot, he has flown and instruced in such aircraft as the F-86, T-33, T-38, T-39, and A-1. Lt. Col. DeFelice brings with him from Texas, his wife Harriet and their four sons, Rocco, Nick, Steve, and Tony.

Lt. Col. DeFelice replaced retired Major Joseph R. Hail, Jr.



C/2nd Lt. Frank Gregory Dunked After Solo