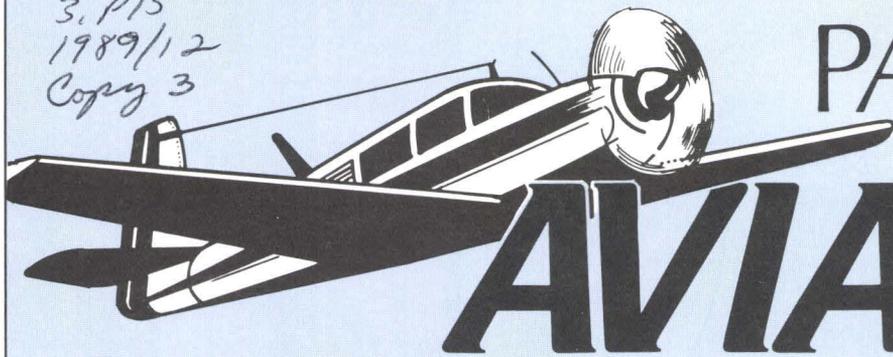


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PALMETTO

AVIATION

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Volume 41, Number 12

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December, 1989

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Air Transportation:

South Carolina's Biggest Problem

If you ask an average South Carolinian what is the biggest problem in our state, he'll probably answer education, but according to Wayne Sterling of the S.C. Development Board the average citizen is way off the mark.

"Some people say that education is our biggest problem — it's not," said Sterling, executive director of the State Development Board at the 12th Annual Airports Conference. "Air transportation is the most important project with the most immediate gains to the economic development in South Carolina."

Sterling addressed nearly 200 participants interested in aviation at the conference in mid-Novem-

ber.

Sterling's hard-hitting talk urged the aviation enthusiasts to take action, "We must have an airline hub in South Carolina. No longer can we say we'd love to have one here without doing something about it. Air transportation is essential and we cannot afford to be left behind."

Critics of Sterling have stated that an actual hub is not feasible for our state due to its proximity to Charlotte and Atlanta, but Sterling rebuts those claims, "Potential industries want 45-minute access to a major service airport at an affordable cost. They don't want to connect through Atlanta, Charlotte or Raleigh-Durham and have to wait."

Sterling praised the legislature for its efforts to get an incentive package passed in the general assembly which would essentially carry some of the cost to develop the physical facilities for an airline hub.

He also said our state needs to have a comprehensive aviation plan so we have the best possible aeronautics system.

"Right now we have to tell potential industries that they must pass through a hub to travel, but we need to be able to at least tell them we have a plan for a hub in our state," added Sterling.

The Development Board executive director outlined some of *See Air Transportation, Page 2*

Maintain Your Airport With Slurry Sealing

by H. Fred Waller

The use of an emulsified asphalt slurry seal can be an excellent maintenance tool if properly used for its intended purpose. It is effective in both preventive and corrective maintenance of asphalt surfaces. Its timely application will prevent surface distress caused by oxidation of asphalt, loss of matrix and embrittlement of pavement mixture. Applied to surfaces of older pavements showing distress, it will seal minor surface impermeable to air and water and with proper aggre-

See Slurry Sealing,, Page 6



Pat Rhudy, Orangeburg Aviation, and Carroll Looney, Newberry Airport Commission, confer during the S.C. Airports Conference in Myrtle Beach.



PALMETTO AVIATION is an official publication of the South Carolina Aeronautics Commission. It is designed to inform members of the aviation community, and others interested in aviation, of local developments in aviation and aviation facilities, and to keep readers abreast of national and international trends in aviation.

The Aeronautics Commission is a state agency created in 1935 by the South Carolina General Assembly to foster and promote air commerce in the state.

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Air Transportation: A Problem For S.C.

Continued from Page 1

the problems which need to be overcome for better air transportation: "Air traffic control needs to be improved in our state. And we really need more nav aids and IFR's...We need to increase runway lengths and we need major parallel runways for a hub...We also have a need for land acquisition so that these can become a reality."

"But also the competition between Columbia, Charleston and Greenville has got to stop. I don't believe we all can't get along," added Sterling who cited an airport in Texas which is co-owned by two feuding cities.

Another contributing factor in acquiring a hub is the availability of federal dollars and matching grants. "We must constantly commit ourselves to a hub and it will become a reality," he said. "The funds are there if there's a coordinated effort to apply the proper federal pressure."

Sterling then committed his agency to working on a hub, "The state Development Board would like to be a part of the team to solve air traffic problems in South Caro-



Sterling

lina."

"General aviation cannot wait until the population grows to the size of Atlanta to build a hub," Sterling said by

then it will be too late to catch up.

"There are major benefits for all state airports no matter where the hub is built," He said state airports should stop competing with each other because, "There are major benefits for all state airports no matter where the hub is built."

In the matter of pure economics Sterling played hardball saying, "Local airports must be committed to putting \$50 million up front in bond money that will be matched by state funds."

Sterling urged everyone to "get support from airport communities and then we can win the battle for a hub...We need to win."

Wayne Sterling is Executive Director of the South Carolina Development Board and an outspoken proponent of state hub.

Breakfast Club Elects 1990 Officers

Breakfast Club elected officers at one of their recent meetings in Orangeburg.

The officers elected were: Gerald Ballard will serve again as president, vice president lower state—Rudy Branham; vice president mid-state—Todd Clamp; vice president upper state—Fred Powell; Anne Hawkins secretary; Coy Derrick, historian; Bill Hawkins assistant historian.

The Breakfast Club is an association which promotes aviation by holding Sunday morning fly-ins around the state. Aviators are encouraged to join in the fellowship and fun.

South Carolina Aeronautics Commission Offices are at Columbia Metropolitan Airport. **Mailing Address:** Post Office Drawer 280068, Columbia, South Carolina, 29228. **Phone:** (803) 739-5400.

Have you hugged your impulse coupling lately?

A part of most engines commonly overlooked, yet vital to the efficiency of an engine is the impulse coupling.

Often, the impulse coupling is ignored while leads, mag points, valve and magneto timing are checked and the oil and filters are changed. Yet, the impulse coupling drives the magneto while the engine is running, prevents "kick-back" during cranking and "props" the mag at low cranking speeds to prevent hot sparks.

The impulse coupling can go for many hours without showing problems, however, preventative maintenance can extend the life of the coupling. When the magneto is pulled for any reason (but not to exceed 500 hours), some simple checks on it can prolong engine life.

First, check the flyweight to stop pin clearance, there should be a clearance of .0017 inch between the stop pin and the heel of the flyweight. Check the axial wear in the flyweights and scrubbing of the flyweights. If any stop pins are

bent, replace immediately.

Remember if you do your own overhaul, make sure you have the proper tools. The use of incorrect tools in the repair and replacement of parts in the impulse coupling can seriously damage it. When working on the impulse coupling wear gloves. They'll keep your hands from getting injured when the spring comes flying out. Once the spring is out, discard and replace it. NEVER re-use old springs. Inspect the parts as you disassemble the impulse coupling. If the majority of the parts are showing wear, replace the whole impulse coupler. The impulse coupling/magneto can be tested before use, on the magneto test stand, in accordance with the magneto instruction manual.

This information was taken from a Teledyne Continental Motors publication, I am your impulse coupling—Nobody pays any attention to me. Contact Teledyne Continental Motors at P.O. Box 90, Mobile, Alabama 36601 or by call them at 1-205-438-3411.

EAA Chapter 242 Holds Annual Banquet, Honors Frances Miller and Sylvia Roth

The EAA Chapter 242 Fall Banquet was held at Seawells in Columbia where they elected officers.

During the banquet, Graham Shaw presented awards to Frances Miller and Sylvia Roth in appreciation for all their outstanding service. Roth was the first woman to be designated an airline transport pilot examiner and Miller has taught flying for over forty years. Miller and Roth jointly operated a flight school in 1964 at the Columbia Metropolitan Airport.

The officers elected at the meeting are Earl Yerrick, president; vice presidents-Buzz Purcell and John

Gardner; secretary-Paul and Pat Carter; treasurer-Walter Carson; and editor-Jean Edwards.

Roy LoPresti, the president of LoPresti Piper Aircraft Engineering, was the keynote speaker.

LoPresti joked, "Pilots are different, unusual, interesting, achievers, fun, look better and live longer." He stressed at that all pilots needed a good mate and a great airplane.

To become a member, call Jean Edwards at (803) 734-7607. Meetings, some social and some technical, are held monthly to keep up with general aviation.



Aviation Calendar

December 10

Breakfast Club
Clarendon County
Airport

December 15

EAA Christmas Party
Mack's Restaruant
1809 Laurel St.
Columbia, SC
7:30 p.m.

December 24

Breakfast Club
Woodward Field
Camden

January 7

Breakfast Club
Open Date
Call B. Hawkins
432-9595

January 20

EAA Chapter 242
Tentative meeting
Owens Field Hangar
Columbia, SC

January 21

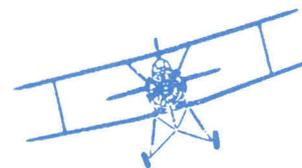
Breakfast Club
T. McWhirter Field
Lancaster, SC

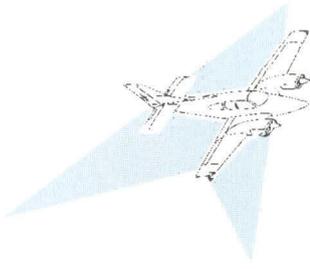
February 4

Breakfast Club
Greenville Downtown

February 18

Breakfast Club
Alan Smoak's Airport
EAA Chap. 242 to serve
12 NM S. of CAE VOR
158 radial





'89 Airports Conference -- A Flying Success

Reaching for New Heights

The Twelfth Annual S.C. Airports Conference was a success by anyone's standard. 1989 conference attendees were educated, informed and entertained at one of the state's most accommodating hotels at Myrtle Beach.

Conference registrants attended sessions on topics ranging from the very technical, 'Airport Security: Part 107 & Part 109', to the very practical, 'Consultant Selection Procedures.' The record number of 230 attendees contributed greatly to the success of the conference.

Conference-goers listened intently as Wayne Sterling, Executive Director of the state Development Board, spoke about a South Carolina hub. His hard-hitting talk urged everyone to participate in the formation of a state hub no matter where it would be located.

Sterling stated, "Air transportation is essential and we cannot afford to be left behind."

Another well-received speaker was Lawrence Burian, president of the National Air Transportation Association, who spoke on general aviation's future during Wednesday's luncheon.

"General Aviation is the best kept secret in America...," Burian

said. "Money is not necessary to fix the problem; what is needed is public support."

In addition, Burian told members he blamed the FAA's increasing bureaucracy on the woes aviation is facing.

Other well-attended sessions included 'Insurance Reserve Funds — What is the Airport's Liability?', 'Airport Managers, Commissioners and FBO's' and 'Noise and Land Use Controls.'

A fixture during the Airports Conference has been the FAA/State Listening Session, in which questions are asked and, hopefully answered completely. Great FAA participation is another reason our conference was successful.

But the three-day conference was not all work; there was plenty of fun, too.

A golf tournament provided fun for all the avid duffers, a harbor cruise for those who wanted to sight-see the intracoastal waterway and, of course, there were all those shopping malls and outlets.

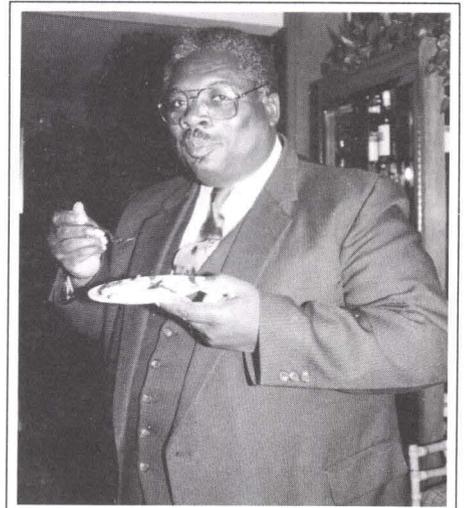
Each morning there were large crowds for the breakfast buffets each sponsored by Greenville-Spartanburg Jetport, Columbia Metro and the Charleston Aviation Authority.

In the evening there were receptions to go to and exhibits to see, but the highlight of the conference was the Thursday night seafood bash, featuring lots of crustaceans and mollusks.

Door prizes from sponsors rounded out the conference activities, with Bill Lynam, Sumter County Airport Commission winning two American Airlines tickets.



Rodney Epting (above), Newberry County, takes notes during an informative session. Below, Rev. W.J. Baxter of Orangeburg County enjoys hors d'oeuvres at the seafood bash.



Carl Gross (l) reacts to Larry Lewis's sales pitch for Velcon filters. Sponsors play an integral part in every Airport Conference.





The Pickens County Airport Commission (above) has attended S.C. Airport Conferences for nine years, while the Beaufort County Airport Commission (r) sent a full delegation this year.

A head-to-head discussion ensued between SCAC Chairman Jim Hamilton (l) and FAA's Cas Castleberry.



Arlean Graves (r), wife of SCAC Commissioner Curtis Graves, listens to some intense conversation at the seafood bash.

Airport Commissioners & FBO's Session Deals With Problems, Concerns

A new aviation association may be created

During the Conference, a session dealt with FBO's, airport managers and commissioners which brought up the question of forming a statewide aviation association.

At the meeting people interested in forming a group signed a list to be notified of future progress.

Ron Wade, manager of Union County-Troy Shelton Field, said the matter just happened to surface. "We were discussing problems and it just came to me that we ought to form a statewide group which deals with these types of problems.

Then, we could have seminars and workshops that would benefit everyone involved."

The Union County manager added, "Airports are a network; one is just a dead-end," he continued, "We're all competitors but we all need each other to survive."

Another panelist who added to the discussion was Joe Frasher, executive director of the Greenville Downtown Airport.

He also agreed an association could work in the state by providing needed lobbying services and a

cohesive voice to both state and federal governments.

"I think that an association should work in conjunction with the Aeronautics Commission towards the improvement of airports and aviation in South Carolina," Frasher said. "Whether the issue is on the RAD Act or some other topic, as long as we speak in a unified manner we will be heard."

To gauge public support for a statewide aviation association, we are asking that you fill out the following questionnaire and return to Ron Wade, Union County-Troy Shelton Field, Rt. 2, Box 280, Airport Road, Union, SC 29379. Or call with your answers (803) 429-1680 and put them on his answer machine.

-Who do you think should belong to this association?

-What should the goals and purpose of the association be?

- A trade/education association with FBO's, airport managers and airport commissioners
- A statewide association to take care of lobbying activities on behalf of aviation, open to anyone interested in aviation.
- Or some other purpose????

-Should dues or membership fees be charged? If so how much?

Slurry Sealing: An Important Process for Preserving Pavement

Continued from Page 1

gate, improve skid resistance.

Slurry seal is a mixture of well grade fine aggregate, mineral filler (if needed), emulsified asphalt and water applied to a pavement as a surface treatment. It produces a smooth attractive black surface that provides excellent contrast with traffic paint. The slurry is produced in a type of travel mixing plant, truck mounted with a towed spreader box attached.

It should be realized that a slurry seal does not improve the structural integrity of the pavement; accordingly, it should never be used as a substitute for a hot mix overlay. Although it does provide a protective cover over an existing pavement as well as improving the aesthetics, the relatively thin application of the slurry does not enhance the structural capacity of the pavement.

The use of a slurry seal has a number of advantages which include:

1. Rapid application;
2. No loose cover aggregate;
3. Excellent surface texture for painting;
4. Ability to correct minor surface irregularities;
5. Minimum loss of curb height;
6. No need for manhole and other structural adjustments;
7. Improvement of skid resistance;
8. Improvement of aesthetics.

There are three basic types of slurry mixtures. They are usually identified as Type I, Type II and Type III.

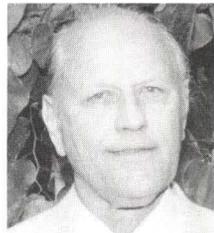
The Type I Slurry is a very fine grain material and is used when a light seal is desired. This type material can also serve to fill fine hair-line cracks. It is usually applied at a rate of about 6 to 10 pounds per

square yard. The Type II Slurry is perhaps the most widely used as its purpose is to provide a general seal coat as well as a minimum amount of crack sealing.

The Type II provides rougher surface texture than the Type I, i.e. better improvement of skid resistance. It is usually applied at a rate of 10 to 15 pounds per square yard.

The Type III slurry is a coarse grain material and has a higher rate of application than either of the other two types — 15 to 20 pounds per square yard which may result in a build-up of about 1/4-inch thickness.

The Type III Slurry should not be used on airport pavements where jet operations are involved as there may be loose aggregate particles on the surface that could become ingested in the jet engine. It is often a common practice to use double slurry applications, i.e.



Waller

a Type I as a first course followed by a Type II or Type III.

A slurry machine is a type of travel mixing plant, truck mounted, with a towed - spreader box attached. The unit has separate storage tanks for both the emulsified asphalt and water along with aggregate storage bins. A volumetric metering system is employed for combining the proportionate part of each material.

It is essential a laboratory mix formulations be developed prior to beginning the slurry operations. A determination must be made of the specific quantities and compatibility of all materials employed in the production process. The aggre-

gates, emulsified asphalt and water should form a creamy textured slurry that, when spread, will flow in a wave ahead of the strike of squeegee. ASTM standard procedures have been developed to assist in the mix design.

The pavement on which the slurry is to be spread should be cleaned by power brooming immediately prior to application of the slurry. In most cases, a very light spray of water or emulsified asphalt to the existing pavement surface will enhance the adhesion and spreading of the slurry mixture.

Traffic should be kept off the slurry until it is properly cured — usually about four hours on a hot sunny day. A slurry should not be applied unless the pavement or air temperature is at least 50 degrees F. and rising nor should it be applied when rain is threatening.

Slurry placed at a lower temperature usually will not cure properly and may be subject to tracking and rapid erosion.

When the limitations and benefits of a slurry seal are understood, this material can also be used to prolong the useful service life of a pavement structure before a hot mix overlay becomes necessary.

It should never be used; however, in lieu of an overlay when structural deficiencies are present. The relatively thin application does improve the appearance thin applications does improve the appearance of a pavement but it does not increase its structural integrity.

H. Fred Waller is a senior district engineer with The Asphalt Institute, which specializes in laboratory testing of asphalt and related materials.

FYI From the FAA

Inflight Electrical Failure

How to cope with the unexpected

The following excerpt is taken from the FAA's Aviation News magazine.

How would you feel if you suddenly lost all electrical power as you were preparing to land at a small airport in the pitch darkness of midnight? You can't see the panel instruments, you can't communicate and you can't lower the gear manually because you can't find the crank gear in the dark. You don't have a flashlight or even a match. What will you do?

A situation of this kind was experienced by the pilot/owner of a twin Commanche in central Missouri. Accompanied by a passenger, the 500 hour pilot, a local physician, had taken off from Popular Bluff at 9:10 p.m. on a short flight to Rolla, MO. The June night was very dark, with ceiling 4,000' scattered, 12,000' broken. The flight conducted was VFR, apparently routine, except that as he settled into his cruise altitude he noticed his wingtip lights and his panel lights seemed to be "less bright than usual." Everything else seemed in order.

Descending toward Rolla, the pilot reduced speed and flipped the switch to lower the landing

In the darkness, he couldn't find the wobble pump handle for lowering the gear

gear. He was greeted by a sudden and complete blackout of the entire lighting system, as well as radio failure. Holding his course visually toward the lighted airport, the pilot groped for a flashlight but found none. He suspected his landing gear was not fully down or locked, but had no way of checking.

In the darkness, he couldn't find the wobble pump handle for lowering the gear by hand. He established what appeared to be a normal glide angle for the landing approach, reduced his speed as much as he dared and hoped for the best. On touchdown, his gear collapsed, the plane skidded to a stop at the edge of the runway with only moderate damage, and no injuries to the pilot or the passenger.

Investigators who inspected the cockpit immediately after the accident found the master switch on, but the generator switch in the 'off' position.

The pilot recalled that after noticing the dimness of the lights he

checked the master switch and the magnetos, but not the generator. He was in the habit of leaving the switch on at all times, and therefore had no reason to think it might be otherwise.

However, he also recalled several hours before departing, he instructed a mechanic to replace the rotating beacon light on the airplane, and it was possible the mechanic left the switch off.

The pilot said he was aware of the ammeter instrument in the panel, but he was not sure he always observed it in his panel scan. The pilot learned his lesson and now reads the ammeter aloud as part of his instrument scan; and double checks the position of both switches.

This pilot and his passenger were lucky. Electrical failures, especially at night, often have serious or tragic circumstances. Over a 27 month period, mid-February 1986 through April 1988, there were 41 accidents which electrical failure was a principal factor, according to the NTSB. Six of the accidents were fatal, with 9 fatalities; 18 persons were injured. There were three in-flight fires and two cases of fire erupting on the ground.

Most of these accidents could have been prevented if the pilots had a better understanding of aviation electrical systems.

Modern flying has become very dependent upon the so-called auxiliary electrical system (which includes electrically powered accessories). An in flight failure often precipitates an emergency situation, especially at night, in IFR conditions, or VFR over unfamiliar terrain.

Emergency Procedures for Loss of Two-Way Radio Communication:

- If failure occurs under VFR conditions, land as soon as practicable.
- If minimal power remains, transmit a may-day over the radio, then turn off the radio and everything except the transponder. Tune the transponder to code 7600 for 15 minutes to indicate two-way communication failure. The transponder uses less power than the transceiver, and this procedure enables special attention to be given your problem by air traffic control, provided of course, you are under radar coverage. If not, use your radio sparingly.



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This Month...

Inside Palmetto Aviation

- A S.C. Hub -- A Sterling View
- Is Your Magneto Suffering?
- Slurry Sealing Seals the Cracks

... and much, much more!

'89 Airports Conference Entertains and Informs



Enjoying the outdoor activities, like the harbor cruise, was just part of the fun at the Airports Conference. Left, newly appointed SCAC Commissioner Crack Anderson and his wife, Betty, talk with Carroll Looney, Newberry Airport Commission. Right, Mike Opalak of Greenwood County Airport enjoys the scenery. More inside!

This publication is printed and distributed by the South Carolina Aeronautics Commission in the interest of aviation safety and to foster growth of responsible aviation in the state. The viewpoints expressed in articles credited to specific sources are presented as the viewpoints of those writers and do not necessarily reflect the opinion of the South Carolina Aeronautics Commission.