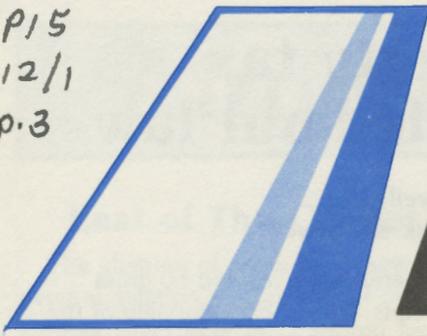


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Palmetto AVIATION

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STATE DOCUMENTS

VOLUME 12, NUMBER 1

South Carolina Aeronautics Commission

JANUARY, 1984



Tight Squeeze

This Cessna 210 had just departed Owens Field when its engine quit after an apparently normal takeoff. The pilot, after unsuccessfully trying to restart the engine, put the airplane in the first open space he saw, which turned out to be Memorial Stadium, a nearby high school football field. The aircraft came to rest on the asphalt track which runs around the field.

(Aeronautics Commission Photo).

FAA designates two test examiners in Chester

The FAA has designated Fred McFawn and Wayne Hatcher of the Bermuda High Soaring School, Chester, S.C., to administer certain FAA written tests.

McFawn and Hatcher will be available Tuesdays through Sundays year round to administer the tests by appointment. They are authorized to administer private, commercial and flight instructor glider tests; and private, commercial, flight instructor, instrument rating and fundamentals of instruction tests for powered airplane ratings.

The cost for a single applicant is \$20 per test. The cost for two or more applicants is \$15 per applicant per test.

To make an appointment for a written test, call 803/385-6061 or 377-4540. →

Pilot lands, engine out, in stadium

When the engine of his Cessna 210 quit cold on takeoff from Owens Field, Charles Landis didn't have time to analyze his situation.

"My total concentration was on getting the power back on," he recalled recently from his hospital bed.

When he realized the power wasn't coming back on, "I put the airplane in the only place I could put it with the least amount of bodily injury and property damage," he said.

That spot was Memorial Stadium, a high school football and track arena near the airport. The aircraft touched down gear up on the asphalt track and slid a short distance. The airplane's left wing hit and knocked down several feet of chain link fence in front of the stands before coming to a stop.

Landis suffered two crushed vertebrae in his lower back, a cracked vertebra in his neck, a concussion and lacerations to his forehead. He is recovering in Richland Memorial Hospital.

Landis said details of the Dec. 4 accident have gotten "vaguer and vaguer" as time has gone by.

"The only thing I know for an absolute fact was that after what seemed to be a completely successful departure — at approximately 200 feet off the ground — I lost power."

Landis was departing from the new runway 31 at Owens. Witnesses on the ground said it appeared as if Landis turned in an attempt to put the airplane down on the old runway 07 after the engine quit, but a stiff crosswind from the west quickly blew him past that runway.

(Continued, p. 4)



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 S.C. General Assembly to foster and promote air commerce within the state.

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State property tax preempted by federal law

by Henry M. Burwell, Esq.
Barringer, Allen, Pinnix & Burwell

The United States Supreme Court decided on November 1, 1983 that a state statute which imposed a property tax on an airline that is measured by the annual gross income of the carrier was an "indirect" gross receipts tax prohibited by federal law [*Aloha Airlines, Inc. v. Director of Taxation of Hawaii, Hawaiian Airlines, Inc. v. Director of Taxation of Hawaii*, 18 Avi 17,267 (1983)].

The court acknowledged that its interpretation of Title 49 U.S. Code Section 1513 (Airport Development Acceleration Act of 1973, Section 7) may result in the disruption of state systems of taxation. However, the court noted that the Hawaii statute challenged by the air carriers is a state tax on gross receipts of the sale of air transportation and carriage of persons in air commerce. Such a tax is expressly prohibited by federal law and is not saved by characterization as a

property tax measured by gross receipts. The constitutionality of the Hawaii statute was not an issue on appeal.

The court went on to comment that the prohibition against a tax on the gross receipts of airlines did not prohibit a state from the levy and collection of property taxes, net income taxes, franchise taxes and sales and use taxes provided such taxes were not on persons traveling in air commerce; on the sale of air transportation or on the gross receipts derived therefrom.

The opinion was consistent with recent decisions of the state supreme courts of New York and Alaska and lower state courts of appeal in Arizona and Pennsylvania which have rejected various state taxes preempted by the Airport Development Acceleration Act of 1973. ➔

Legislative Update

by Henry M. Burwell, Esq.
Barringer, Allen, Pinnix & Burwell

Federal Legislative:

- S. 1146 amendment to FA Act 1958 to revoke airman certificates for transportation of controlled substances passed by U.S. Senate.

Regulations:

- New flammability requirements for transport category aircraft seat cushions 48 F.R. 46250. Comments due 8 Feb. 84.
- Use of Mode S transponders 48 F.R. 48364. Comments due 17 Jan. 84.
- Floor proximity emergency escape path markings 48 F.R. 46218. Comments due 8 Feb. 84.
- FAA rules for new class of Commuter aircraft of less than 20 seats and 19,000 lbs. MTO weight for certification, airworthiness, and operation 48 F.R. 52010. Comments due 14 Feb. 84.

Rulings:

- IRS Rev. Rul. 83-165 exempts certain air transportation system users from excise taxes.

Airport Update

East of The Cooper

The clearing of a site for a new general aviation airport east of the Cooper River near Mt. Pleasant (see map) is nearly complete. Construction is expected to begin soon on a new runway.

The \$217,244 clearing and grubbing project was funded by a 90 percent grant (\$195,519) from the FAA and five percent each (\$10,863) from the state and local governments. The project contractor is Harve Cody and the consultants are Lott-Parrish and Associates.

Greenville-Spartanburg Jetport

A half million dollar project to construct a general aviation apron beside the Stevens Beechcraft hangars and to construct a stub taxiway and overlay the partial parallel taxiway to accommodate 60,000 pound aircraft is nearly complete at the Jetport at Greer. The project is 90 percent federally funded plus five percent each from the state and local governments. Construction Co. Talbert-Cox and Associates are consultants.

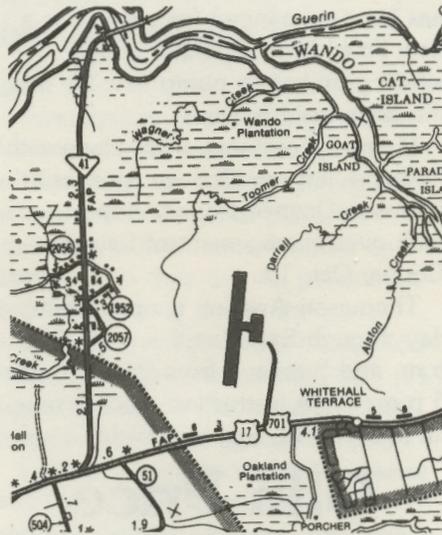
Pickens County Airport

A \$65,965 project to rehabilitate the medium intensity runway and taxiway lights and two-box VASI at Pickens County Airport is 90 percent complete. The project is 90 percent federally funded (\$59,368.50) with the remainder coming from the state and local governments (\$3,298.25 each).

The contractor is Walker and Whiteside, Inc. Talbert-Cox and Associates are the project consultants.

Spartanburg Downtown

A \$352,000 project to rehabilitate and/or overlay taxiways at Spartanburg Downtown to accommodate 60,000 pound aircraft is complete. As part of the same project, runway lights along runway 4/22 have been



rehabilitated and are now operable by radio remote control; also reflecting taxiway edgemarkings were installed.

The contractor was Sloan Construction Co. and the project consultants were Talbert-Cox and Associates. Funding was 90 percent federal and 10 percent state and local.

Woodward Field

A \$421,873 project at Camden's Woodward Field to strengthen runway 5/23, and the parking apron and taxiway is nearly complete. A seal coating around the fuel tanks is all that remains to be put down.

A federal grant of \$379,686.24 along with state and local grants of \$21,093.68 each will fund the project. The contractor is Blythe Industries, Inc. The project consultants are Mayes, Sudderth, Etheredge, Inc.

Owens Field

The Owens Field Airport terminal building has been completed and is awaiting the installation of water and sewer utilities.

The terminal building project was 50-50 state and locally funded project with the S.C. Aeronautics Commission and Richland County each contributing \$103,419.

The terminal contractor was Martin Engineering. The architect was Geiger, McElveen and Kennedy.

Breakfast Club

Clear weather and seasonal temperatures greeted Breakfast Club members Sunday, Dec. 18 at Sumter. President Gerald Ballard reported that 35 aircraft and 84 people attended that meeting.

The Breakfast Club schedule is nearly booked up through the first half of the year, with all open dates filled through June 3. There is one change from last month. No meeting will be held on Easter Sunday.

Meeting Schedule

- Jan. 15** Newberry Municipal, Newberry
- Jan. 29** Corporate Airport, Pelion
- Feb. 2** Trip to California
- Feb. 12** Clarendon County, Manning
- Feb. 26** Grand Strand, North Myrtle Beach
- Mar. 11** Berkeley County, Moncks Corner
- Mar. 25** Anderson County, Anderson
- Apr. 8** Huggins Airport, Timmonsville
- Apr. 22** EASTER SUNDAY
no meeting
- May 6** Darlington County, Darlington
- May 20** Daniel Field
Augusta, GA
- * June 3** House Movers Field,
Batesburg

*** (not on current chart,
see sectional)**

FAA approved rotating beacons

Does your airport need a new rotating beacon?

FAA approved rotating beacons are available from the following manufacturers:

Manufacturer	Type	Model
National Airport Equipment Company 5910 Wayzata Blvd. Minneapolis, MN (612) 545-4157	L-801-A	N-1000 A (10"-2 Head)
	L-801 A	N-1000 A4 (10"-4 Head)
ADB-ALNACO 977 Gahanna Parkway Box 30829 Columbus, OH 43230 (614) 861-1304	L-801 A	RB-2 (10"-2 Head)
	L-801 A	RB-4 (10"-4 Head)
	L-801 A	RB-6 - 750 Watts (24" - can also use a 500 W bulb)
	L-801-A	RB-6 - 1000 Watt (24")

If a non standard beacon is installed, the State Aeronautics Commission will not assume responsibility for maintenance.

Shaw O2s using Camden

Pilots who transition through the Camden area or use the airport a lot should be aware that O-2As (push-pull Cessna Skymasters) from Shaw AFB use the airport regularly for training.

The 21 Tactical Air Support Squadron (TASS) said that because of the location and length of the runways at Woodward Field, the O2s use the airport for shortfield landings, simulated forced landings, local area orientation and transition landing practice.

Shaw reports that O-2 operations at Woodward by the 21st TASS and 507 Tactical Air Reconnaissance Wing (TAIRCW) average about 240 movements per month. ➔

Thomason Aviation new FBO at Laurens County Airport

The Laurens County Airport, which has been unmanned for years, has a new Fixed Base Operator (FBO) which promises to pump new life into the underused facility.

Marnie Thomason, who, along with husband Jim run Oconee Airways at Clemson-Oconee County Airport, took over management of Laurens County Oct. 19.

Thomason Aviation is open Monday through Saturday 8 a.m. to 5 p.m. and Sunday's from 9:30 a.m. to 5 p.m. Flight Instruction, aircraft rental and 100 LL fuel is available.

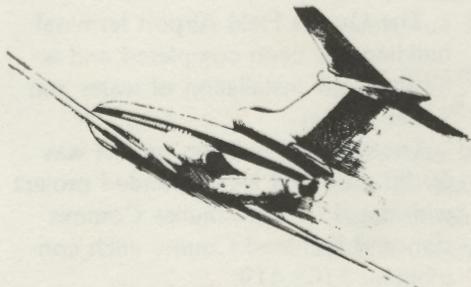
Olin Price new FBO at Cheraw

The Cheraw Airport has a new Fixed Base Operator (FBO) as of Jan. 1, 1984.

Henry Olin Price — Olin as he is known to his friends — is a flight instructor with multi-engine and instrument ratings and, we have it on good authority, an excellent fellow.

Under Price's management, charter service, aircraft rentals and student pilot training will be available. According to airport authorities, every effort will be made to have Exxon fuel available once again with credit cards accepted.

If you happen to be in the area, drop in and say hello. He'll be glad to see you. ➔



In the short time the airport has been manned, the difference is already evident.

"When we got here, there were two airplanes on the field," Mrs. Thomason said. "We've got five now and nine students.

"We got the grass off the runway, we're getting the trees cut down and we're contracting to have some T-hangars and a maintenance hangar built." she added.

Since Marnie keeps up with the books at both Laurens and Clemson, she and her husband have hired Jerry Nance to watch the airport when she is not around.

So remember, if you are going into Laurens County, the airport is manned and fuel is available. If you have any special requests, call Marnie or Jerry at 682-9673. ➔

Corporate has VOR approach

The airport at Pelion, Corporate Airport, now has a published VOR approach, off the Columbia VORTAC. Radar or DME is required for the approach and the procedure is not authorized at night.

Joe Rubin, one the prime movers behind Corporate Airport, reports that the 1,000 square foot administration building is 99 percent complete. "The only thing lacking is the floor," Joe says.

He also says the town council is working on getting a 12,000 gallon fuel tank installed at the airport. ➔

In Stadium

(Continued from p. 1)

"I had a considerable crosswind," Landis said. "After I realized it (the engine) wasn't going to get going again, it was too late to get it on the runway."

The cause of the engine stoppage is still under investigation by the National Transportation Safety Board. ➔

Study shows complex aircraft involved in weather accidents

Special Study; Loss of Control in Adverse Weather Accidents

The data obtained from the Accident/Incident Data System (AIDS) indicate the number of loss of control accidents in adverse weather has increased from 67 in 1977 to a peak of 90 in 1979, decreased to 72 in 1980, and then increased to 77 in 1981. The number of fatalities resulting from these accidents has increased from 108 in 1977 to a peak of 187 in 1979, then decreased to 157 in 1980, and increased to 164 in 1981. The number of estimated hours flown, which was obtained from the General Aviation Activity and Avionics Survey, dated 1981, was 35.8 million in 1977, increased to 43.3 million in 1979, then decreased to 41.0 million in 1980, and further decreased to 40.7 million in 1981.

The total number of loss of control accidents in adverse weather during the 5-year study period was 387 and the total number of fatalities was 796, resulting in a fatality rate of 2.05, which ranks number 1 in fatalities per accident. Of the total number of accidents, 342 (88 percent) were fatal and 291 (75 percent) were in instrument meteorological conditions. Only 136 (35 percent) of the pilots involved in these accidents were instrument

rated.

Investigation of the data in the Enforcement Information System revealed that there were 355 enforcement actions initiated against pilots for operating in instrument weather conditions when they did not possess an instrument rating during the period from 1978 through 1981. Of the 355 enforcement actions initiated, 253 (71 percent) were concluded with a final enforcement action against the pilot.

Loss of control accidents in adverse weather have a direct relation to seasonal weather changes. The high accident periods are in April and November.

This study reveals that complex high performance aircraft are more likely to be involved in this type of accident. A table of the most involved aircraft and accident rates based on aircraft population is included. Of the first four aircraft with the highest accident ratio, three are complex, high performance aircraft. This table is included to show the type of aircraft most involved in these accidents are faster, longer range aircraft, and not to imply that one aircraft is any safer than another.

Ultralight group recently formed

Want to fly at minimal cost? A local group of enthusiasts recently formed UFO (Ultralight Flyers Organization) for that very purpose. By-laws have been adopted, officers elected and the group ordered its first aircraft at a meeting last month at Eagle East, Columbia Metropolitan Airport. Additional aircraft will be acquired as new members join.

The emphasis is on safety with ground and flight training provided to each member. UFO has a safety officer responsible for this training along with proper maintenance of the aircraft.

A two-place Ultralight FAA certified instructor is available for training. The safety officer, who works for FAA, is an experienced Ultralight flyer with a private license and over 1,000 hours of flight time.

Each aircraft will be equipped with a ballistic parachute system.

For further information contact Glenn Byess at 758-3845 (W) or 781-4152 (H) or Larry Yon at 794-8555. ➔



Keep aircraft drain holes open

Numerous reports, received annually, identify structural corrosion problems and other types of hazardous conditions that have developed because drain holes in the aircraft were partially restricted or completely closed. Many of these reported problems required an appreciable period of time to reach the state of deterioration found.

Regardless of materials used to cover an aircraft, drain holes are necessary to prevent the accumulation of liquids and to serve as air vents. Failure to keep them open creates a suitable environment for future costly problems.

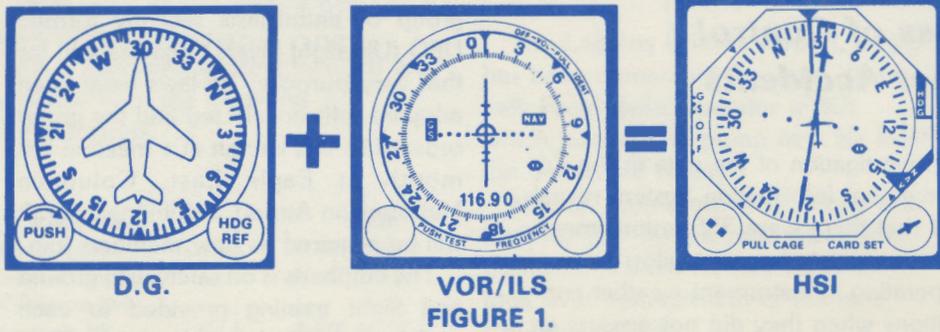
Once opened, drain holes require no maintenance other than a periodic check to determine that they have not become clogged. The skill and time involved in doing this would indeed be a small price to pay. ➔

AIRCRAFT MOST INVOLVED IN THIS TYPE ACCIDENT

RANK	MAKE	AIRCRAFT GROUP	NO. ACCIDENTS	NO. AIRCRAFT	ACCIDENT RATE
1	Beech	36	10	1869	.006
2	Cessna	210	29	6576	.004
3	Gulfstream	AA1, AA5	12	2986	.004
4	Beech	35	26	7117	.003
5	Piper	PA28	61	23094	.002
6	Mooney	M20	12	5990	.002
7	Cessna	172	35	25899	.001
8	Cessna	182	17	14254	.001
9	Cessna	150	22	20682	.001

Information obtained from General Aviation Activity and Avionics Survey (1981), and Census of U.S. Civil Aircraft (1981).

How to fly your HSI



What's an HSI?

An HSI, or *Horizontal Situation Indicator*, is a combination of two familiar cockpit instruments: the directional gyro with a heading bug and a VOR/ILS indicator. (See figure 1.)

What does an HSI do for the pilot?

Combining the directional gyro and the NAV indicator into one instrument reduces pilot workload by providing heading, course reference, course deviation and glide slope information — all in one visual aid. In addition, an HSI:

- Makes it easier to visualize the aircraft position with reference to the selected course or holding patterns. The “split needle” presentation made up of the course and reciprocal pointers and the VOR/LOC deviation indicators, clearly shows both selected course and course deviation.
- Gives standard sensing and course deviation indication on back course ILS approaches *provided* the front course heading is set under the head of the course pointer and you fly *toward* the course deviation indicator.
- Provides convenient 45° tic marks to help visualize procedure turns and reciprocals so that pilots need not memorize outbound/inbound headings or add/subtract 45° for intercepts or offsets.
- Provides a heading bug for autopilot coupling or as a heading reminder in aircraft not equipped with autopilots.

Working parts of an HSI

Reference Aircraft

Representing the actual aircraft, this symbol is fixed and is located “in line” with the lubber line.

Lubber Line

This orange line, located at the top of the display, indicates the aircraft's magnetic heading on the compass card. The lubber line is “in line” with the reference symbol to reinforce the association.

Compass Card

This card, located beneath the lubber line, indicates this aircraft's current heading. The card is mechanically coupled to the compass card set knob and, at the start of each flight, must be set by the pilot to agree with the magnetic compass heading. As the flight progresses and headings change, the directional gyro rotates the card to indicate the current heading. As with any standard unslaved DG, some gyro precession will occur. Therefore, it is necessary to check and reset the compass card at periodic intervals.

Heading Bug

The selected heading is marked by an orange heading bug which can be moved to any point about the perimeter of the compass card. As the aircraft's heading changes, the bug rotates with the compass card, thus alerting the pilot to the *difference* between the selected heading (located under the bug) and the *actual* aircraft heading. The heading bug may also be coupled to an autopilot or flight director system. When coupled, “off

heading” signals will be generated causing the autopilot to fly the aircraft so as to maintain the selected heading.

Heading Select Knob

Rotating this knob sets the heading bug and will also align a heading transformer for coupled autopilot use, to the selected heading. Pulling this knob out will cage the gyro.

Heading Flag

This red warning flag indicates loss of electrical power to the gyro. Heading information is then unusable but all course information (comparable to a standard VOR/ILS) remains valid.

Course Select Knob

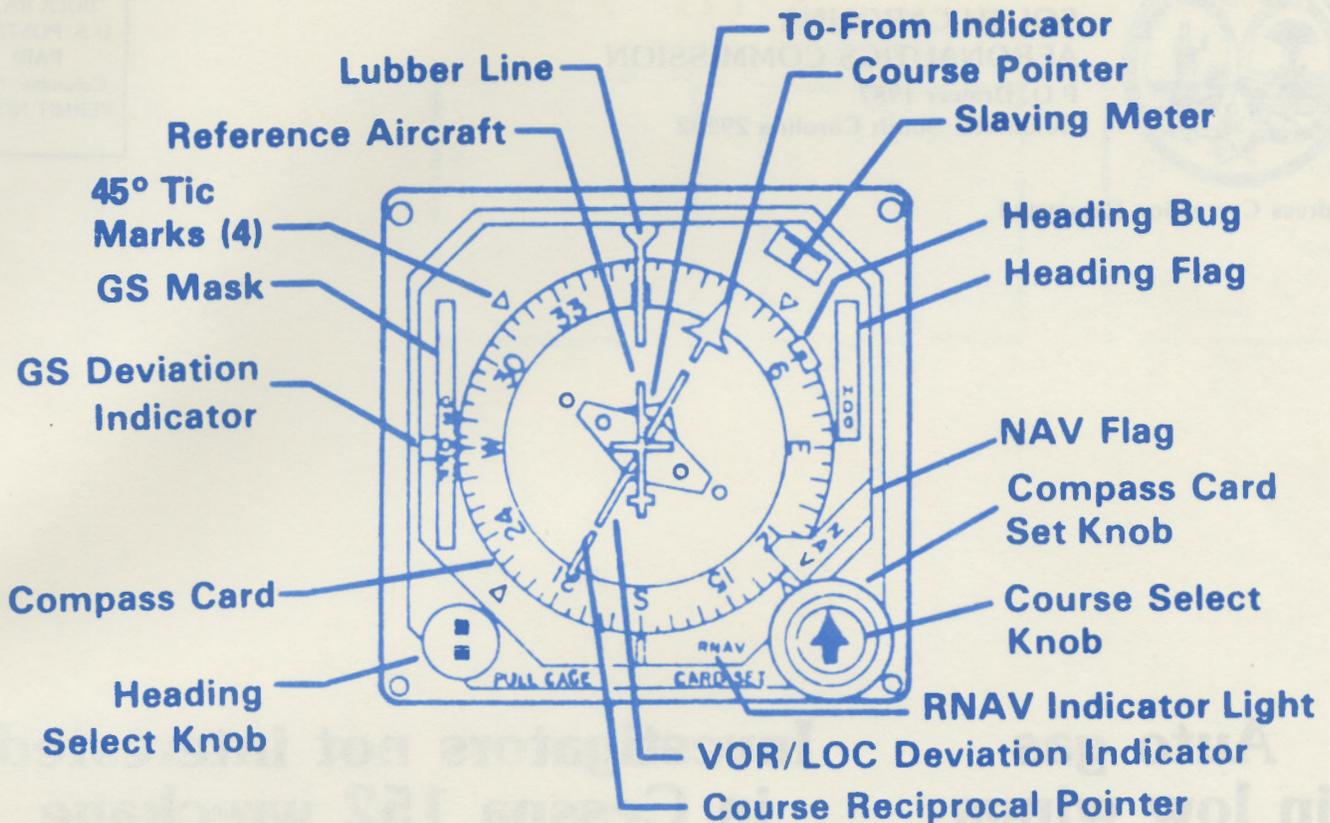
Rotating this knob sets the course pointer to a selected course, and if so equipped, a course transformer for coupled autopilot use.

Course Pointer

This pointer indicates the selected course. Turning the course select knob will rotate the course pointer, VOR/LOC deviation indicator, and course reciprocal around the compass card. As the aircraft's heading changes, the course pointer will rotate with the compass card to indicate the *difference* between the course, under the course pointer, and the *actual* aircraft heading, under the lubber line. The course selector may also be coupled to an autopilot or flight director. When coupled, “off course” signals will be generated which direct the autopilot to maintain or acquire the selected course.

VOR/LOC Deviation Indicator

The center portion of the course pointer needle moves to indicate deviation from selected course. A series of “dots” provides a linear indication of how far the aircraft is “off course.” In VOR use, each dot represents 5 degrees; when being used to fly the localizer, it shows 1¼ degrees per dot; for RNAV “APPR” mode, .625 nm per dot; and for RNAV “Enroute” mode, it indicates 1.25 nm per dot. An “on course” condition is indicated when the course pointer, the course deviation bar, and the course reciprocal are all “in line.”



To-From Indicator

This indicator is a white triangle and appears underneath the VOR/ILS deviation indicator. It shows whether the selected course will take the aircraft either TO or FROM the VOR station.

NAV Flag

This red warning flag indicates inadequate VOR or LOC signal, or loss of power to meter circuits. Under these conditions course information is unusable, however, all heading information remains valid.

Glide Slope Deviation Indicator

This yellow wedge relates the vertical glide path centerline to the aircraft's position. The aircraft is "on glide slope" when the wedge covers the horizontal index. Each dot on this vertical scale represents approximately four-tenths degrees vertical deviation from the centerline.

Glide Slope Mask

This mask will cover the glide-slope deviation indicator in the absence of a

usable signal or when a VOR frequency is selected.

RNAV

The legend "RNAV" will appear in the lower right corner of the instrument face when the HSI is part of an area navigation system and that mode is engaged.

Slaving Meter

A slaving meter is located in the upper right hand corner of the instrument face on slaved models. If equipped with a slaving feature, an HSI will automatically "update" its compass card with the magnetic compass to correct for precession. The meter needle will oscillate slowly when the compass card is properly aligned with the magnetic compass.

REMEMBER:

- To function properly, an HSI's compass card *must* be properly set, and selected course and heading information applied.

- Because the HSI is a gyroscopic device, it *must* be set to the magnetic heading and checked periodically. Even in a slaved system, the action of the slaving meter and compass card correspondence with the magnetic compass should be checked periodically.
- For back course approaches, set in the ILS front course heading and then fly "the picture" using *normal* response to needle movements (i.e., needle left, correct left; needle right, correct right).
- Don't confuse a radial (which radiates *outward* from a VOR) with an inbound course (i.e., the reciprocal).
- HSI's are equipped with "TO — FROM" NAV function, heading and glide slope warning flags. Improper performance of each function is indicated by its respective warning flag.



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Auto gas in low wings questioned

Can low-wing aircraft safely use automotive gasoline? "Not without restrictions," the British Civil Aviation Authority seems to be saying in the aftermath of recent vapor-lock incidents involving two Piper Warriors operating on avgas.

In one incident, a PA-28-161 Warrior, operating with an airworthiness dispensation to fly to 10,000 feet with avgas (at a temperature of 25C) in one fuel tank, got as far as 6,500 feet before the engine stopped cold, "without any warning and without any sign of fluctuating fuel pressure or carburettor ice warning light," according to the CAA. The pilot of the aircraft regained power after switching tanks (the other wing tank contained avgas) and hitting the electric boost pump. The OAT (outside air temperature) at the time of the engine stoppage was 10C, or 50F.

Later flights in the same aircraft using avgas at temperatures of more than 25C (77F) proved uneventful, thus tending to rule out mechanical problems — and confirming the initial diagnosis of vapor lock. ➔

Investigators not interested in Cessna 152 wreckage

The wreckage of a Cessna 152 recovered by a shrimper on Thanksgiving from Port Royal Sound will apparently not be probed by federal investigators in an attempt to learn the crash cause.

John Cureton, chief of the Columbia Flight Standards District Office, said the aircraft engine came off as the fishermen were trying to get the airplane aboard the boat. Because of that, he said, the FAA and the NTSB could learn little about the apparent crash cause and are not interested in inspecting the wreckage.

The aircraft sank into the sound after its engine apparently quit while on a night flight from Beaufort to Hilton Head on Thanksgiving, 1981.

The plane was piloted by then 22-year-old Kathy Maready, a Hilton Head Flight Instructor. Ms. Maready survived the ditching and swam and floated for seven hours in 60 degree

water before washing ashore on Pinnacle Island.

Besides oyster shell cuts on her feet, a few bruises and the effects of exposure, she was not seriously injured and left the hospital two days later.

The plane, intact except for one wing, was caught by Bruce Saxon of Ridgeland. The plane was in 50 to 60 feet of water when the boat's trawling nets pulled it from the bottom. Saxon said the plane did considerable damage to his nets and winches and he didn't know what he would do with it.

"I thought somebody would be interested in it, but it is pretty rusty," he said.

A representative of Ginn Air Service — the plane's owner — said insurance claims had already been settled. ➔

This publication is printed and distributed by the South Carolina Aeronautics Commission in the interest of aviation safety and to foster the growth of responsible aviation in the state.