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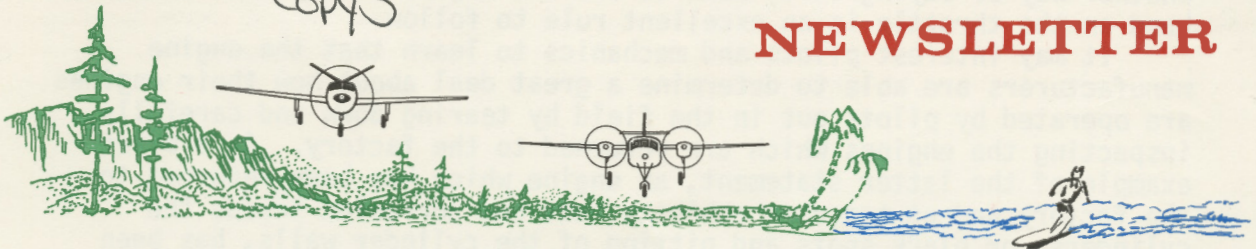
STATE DOCUMENTS

AVIATION

NEWSLETTER



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G. C. MERCHANT, JR., DIRECTOR

J. F. BARRY, ASSISTANT DIRECTOR

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EXPERIMENTAL AIRCRAFT ASSOCIATION FLY-IN

The Greater Columbia Chapter 242 of the Experimental Aircraft Association will hold the Second Annual Southeastern Regional Fly-In at the Wings & Wheels Museum at Santee. The date of the Second Annual Meeting is June 4, 5, and 6, 1971. National President Paul Poberezny, Jack Cox, and other members of the National staff will be at Santee for the entire meeting. President Poberezny will be guest speaker at the awards banquet Saturday evening at the Holiday Inn. A total of 12 trophies will be awarded at the banquet. These trophies will be awarded for all home built categories and also antique, classic, warbird, and rotor wing categories.

Also included in the program will be an acrobatic show on Sunday afternoon and the first showing of the 1970 EAA Oshkosh Fly-In film. Motel accommodations for the meet should be made directly with the Holiday Inn, Clarks Quality Court Motel, or the Gamecock Motel at Santee.

For additional information contact Frank F. Thweatt, Fly-In Director, P.O. Box 6655, Columbia, South Carolina 29206.

Wings and Wheels Museum is the largest privately owned collection of antique aircraft and automobiles. The Museum is located on U.S. Highway 301 near the intersection of I95 and has a 3000 ft. landing strip. Unicom frequency is 122.8 MHz. The strip is 1.5 miles from the Vance VOR on the 290° radial. In addition to motel accommodations, a camping ground is located at the museum.

GOOD POWER MANAGEMENT

Pilots with sound experience tend to believe in proper power management in the operation of the specific airplane being flown. This is another way of saying it is best to use the engine wisely, and a smooth hand on the throttle is an excellent rule to follow.

It may interest pilots and mechanics to learn that the engine manufacturers are able to determine a great deal about how their engines are operated by pilots out in the field by tearing down and carefully inspecting the engines which are returned to the factory. As a brief example of the latter statement, an engine which has been returned to the factory and at teardown exhibits rust and corrosion inside the cylinders, or black spots and pitting of the cylinder walls, has been flown infrequently. Without frequent flights, water and acids collect in an engine which are normally cooked out during frequent flights. Another engine returned to the factory had numerous oil leaks. Inspection revealed that the rubber seals throughout the engine were baked and brittle and the ignition harness was in the same condition. This was caused by excessive heat which baked and destroyed the rubber items in the engine. It can be brought on by prolonged running on the ground, or leaking cowling or deteriorated baffles.

Cracks in the cylinder heads around the spark plugs or valve ports tell us a story too. Where this is observed in several cylinders in an engine, it frequently indicates an abrupt change in temperature. In the operation of any type of piston engine, cracked cylinders indicate that the pilot has been operating the engine at a fairly high temperature and then abruptly reducing the power or closing the throttle and thereby suddenly cooling the cylinder head down. In order to prevent this condition, the pilot must operate his power-plant so that his engine does not undergo sudden changes of temperature. Cylinders with cracks are costly to replace.

Good power management by the pilot also considers the difference in performance in his engine in warm weather vs. cold weather. He should be cognizant of the old rule of thumb reference, that the engine manufacturer establishes and calibrates engine horsepower at 59⁰ F standard at sea level, and for every increase of 10⁰ F over 59⁰ F standard, the engine loses 1% of its horsepower. With this basic information, but without previous experience in taking off from a high elevation airport on a warm day, the pilot will be alert to the reduced performance of his aircraft and engine and utilize sound power management.

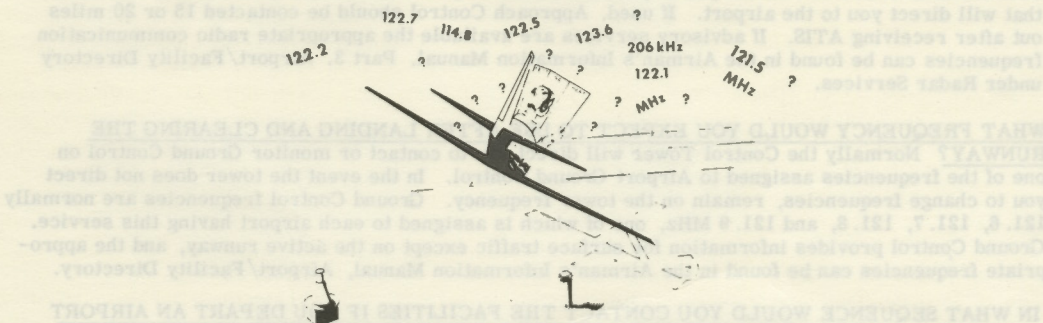
When we stress good power management, it should not confuse the pilot so that he "babys" his powerplant. The modern direct drive

(Continued on page 7)

Department of Transportation
FEDERAL AVIATION ADMINISTRATION
VFR PILOT EXAM-O-GRAM* NO. 50

3

INTERPRETING SECTIONAL CHARTS (SERIES 2)



This Exam-O-Gram discusses radio communications and how radio data appearing on back-to-back Sectional Aeronautical Charts can be used to assist the pilot in the expeditious and safe operation of his aircraft on the ground and in the air.

Lack of knowledge often causes pilots to avoid the use of appropriate radio communications. This is especially true of those pilots who are not knowledgeable in the use of aeronautical charts and other publications that list this data.

Pilots are encouraged to use all of the radio communication services available, even where it is not mandatory, to enhance safe flight. Pilots who do not use the benefits of radio communication actually create a hazard to themselves as well as other aircraft.

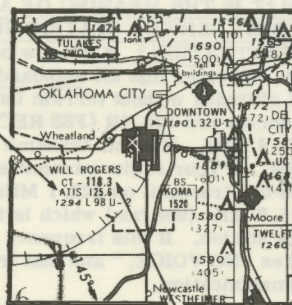
Radio communications will vary at different airports depending upon the type of flight and facilities available. Examples of airports used in this Exam-O-Gram exemplify the important aspects of radio communication during VFR flight using a variety of facilities.

HOW IS RADIO COMMUNICATION FIRST USED IN PREPARING FOR A LANDING AT AIRPORTS SERVED BY ATIS (Automatic Terminal Information Service)?

When 15 to 20 miles from these airports, tune your receiver to the ATIS frequency. You will hear repeated broadcasts of information that will help you plan your approach for a landing. ATIS frequencies are printed on the chart in the airport information data, and listed in the bottom margin of the chart, as shown in the illustration. These frequencies can also be found in the Airman's Information Manual (AIM), Airport/Facility Directory. Controllers expect pilots to obtain ATIS and advise, during the initial call, that they have received this information. Refer to Exam-O-Gram No. 43 for more details about ATIS.

WHAT ADDITIONAL COMMUNICATIONS ARE REQUIRED AT AIRPORTS THAT ARE SERVED BY A CONTROL TOWER?

The Control Tower (CT) must provide an orderly flow of air traffic in the vicinity of the airport, by sequencing aircraft in terms of safety and efficient utilization of airspace. Therefore, you are required to contact the control tower at least 5 miles from the airport. The primary transmitting and receiving (SIMPLEX) frequency is printed on the chart as shown, for example 118.3 MHz at Will Rogers Airport. If you can receive, but cannot transmit on a primary tower frequency, there are other transmitting frequencies available. Each tower has one of three additional frequencies (122.4, 122.5, or 122.7 MHz) available to receive pilots with limited transmitting capability. These frequencies are listed on the bottom margin of the chart as shown in the illustration, and followed by a letter R. (R means tower receive only.) They can also be found in the Airman's Information Manual.



WILL ROGERS ATIS 125.6 118.3 257.8 122.7 RLS

* Exam-O-Grams are non-directive in nature and are issued solely as an information service to individuals interested in Airman Written Examinations.

IS IT MANDATORY THAT YOU COMMUNICATE WITH APPROACH CONTROL PRIOR TO LANDING?

No. Under a VFR flight it is not mandatory, but Radar Advisory Services are available to pilots on VFR flights at many of the busy airports. Although not mandatory, the service should be used because controllers can advise you of possible conflicting traffic and also give heading information that will direct you to the airport. If used, Approach Control should be contacted 15 or 20 miles out after receiving ATIS. If advisory services are available the appropriate radio communication frequencies can be found in the Airman's Information Manual, Part 3, Airport/Facility Directory under Radar Services.

WHAT FREQUENCY WOULD YOU EXPECT TO USE AFTER LANDING AND CLEARING THE

RUNWAY? Normally the Control Tower will direct you to contact or monitor Ground Control on one of the frequencies assigned to Airport Ground Control. In the event the tower does not direct you to change frequencies, remain on the tower frequency. Ground Control frequencies are normally 121.6, 121.7, 121.8, and 121.9 MHz, one of which is assigned to each airport having this service. Ground Control provides information for surface traffic except on the active runway, and the appropriate frequencies can be found in the Airman's Information Manual, Airport/Facility Directory.

IN WHAT SEQUENCE WOULD YOU CONTACT THE FACILITIES IF YOU DEPART AN AIRPORT SERVED BY ATIS, GROUND CONTROL, AND A CONTROL TOWER? You would use the following order:

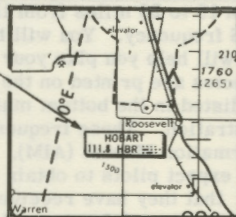
1. ATIS.
2. Ground Control.
3. Control Tower.

WHY ARE SOME AIRPORT SYMBOLS AND AIRPORT INFORMATION PRINTED ON THE CHART IN A BLUE COLOR WHILE OTHERS ARE COLORED MAGENTA (PURPLISH RED)?

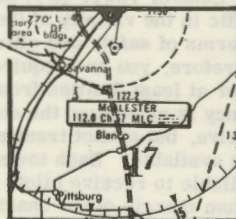
Airport symbols and airport information colored in blue indicate that either a Control Tower or Flight Service Station with Airport Advisory Service is located at that airport. If a Control Tower is located at the airport, this fact can be noted in the airport information data by a CT with a frequency listed. If this does not appear the airport is served by an Airport Advisory Service. The frequency 123.6 MHz has been designated for use at airports with Airport Advisory Service. Pilot requests for AAS on other station frequencies will be answered, but the FSS will then simultaneously transmit on the requested frequency and also 123.6 MHz. This will keep other traffic aware of the requester's position. Airports colored in magenta do not have these facilities.

WHAT IS THE MEANING OF A SHADOW BOX DISPLAYED AT A FLIGHT SERVICE STATION SUCH AS THE ONE SHOWN IN THE

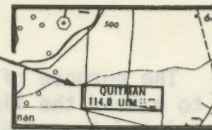
ILLUSTRATION? A shadow box surrounding the radio station data indicates that all standard FSS frequencies are available at all altitudes without terrain interference. The standard frequencies are 122.1R (FSS RECEIVE ONLY), 122.6, 123.6, and 255.4 MHz. You can transmit and receive on 122.6 and 123.6 MHz. If your radio transmitter does not include these frequencies you can transmit on 122.1 MHz and receive on 122.6, 123.6, or 111.8 MHz (see box) which is the VOR navigation frequency for this station. If this frequency is underlined in the box, it indicates "NO VOICE," and that frequency cannot be used for communication.

**WHY IS A FREQUENCY PRINTED ON TOP OF A SHADOW BOX SUCH AS 122.2 MHz SHOWN IN THE ILLUSTRATION?**

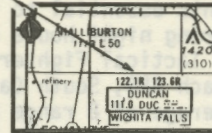
This means that 122.2 MHz is available in addition to the standard FSS frequencies. Do not confuse the purpose of the frequency listed on top of a shadow box with frequencies listed on top of a plain box. The plain box will be described later.



WHAT IS THE MEANING OF A PLAIN BOX DISPLAYED AT A STATION SUCH AS THE ONE SHOWN IN THE ILLUSTRATION? A plain box without frequencies on top indicates that there are no standard FSS frequencies available. Voice could be heard on 114.0 MHz.



WHY ARE FREQUENCIES PRINTED ON TOP OF A PLAIN BOX SUCH AS SHOWN IN THE ILLUSTRATION? The plain box with frequencies on top indicates less than all standard FSS frequencies available. It is the best frequency to use in the immediate vicinity of the site, and will assure reception at low altitudes without terrain interference. Other frequencies are available from the controlling FSS named (Wichita Falls in this example), however, altitude may determine reception. As shown the frequencies available are 122.1 or 123.6 MHz for pilots to transmit, and 111.0 MHz for pilots to receive. The "R" indicates that the station can receive only on that frequency. The name in the bracket below the box indicates the controlling Flight Service Station for the area in which the station is located.

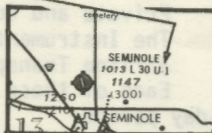


WHY WOULD A FREQUENCY BE CROSSED OUT SUCH AS THE ONE SHOWN ON TOP OF THE PLAIN BOX IN THE ILLUSTRATION? All standard FSS frequencies except the crossed out 123.6 MHz are available at this location. As shown, 122.3 MHz is an additional nonstandard FSS frequency available at this location. (Both 122.2 and 122.3 MHz are additional nonstandard FSS frequencies available, when indicated, at selected locations.) All Very High Frequencies are colored blue on the sectional chart. The frequency used for reception of Low Frequency radio facilities appears on the chart in red.



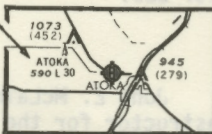
WHAT FREQUENCY IS USED IN AN EMERGENCY? Frequency 121.5 MHz is available at all CONTROL TOWERS, APPROACH CONTROL AND RADAR FACILITIES unless remarks in the Airman's Information Manual, Part 3, Airport/ Facility Directory indicate this frequency is not available.

WHAT FREQUENCY IS USED WHEN OPERATING AN AIRCRAFT AT AIRPORTS SERVED ONLY BY AN AERONAUTICAL ADVISORY STATION (UNICOM)? The airport information, as shown in the illustration, indicates that only UNICOM is available for communication at this airport. The U-1 symbolizes that 122.8 MHz is the assigned frequency. The frequency assigned to Aeronautical Advisory Stations depends upon the type of facilities available at an airport. See the Airman's Information Manual, Part 1, and Exam-O-Gram No. 35 for full details on the use of UNICOM. Pilots are encouraged to use this service when operating at airports served only by UNICOM.



WHAT FREQUENCY WOULD YOU USE WHEN OPERATING AT AN AIRPORT THAT HAS NO FACILITIES FOR RADIO COMMUNICATIONS?

As shown in the illustration, there is no facility for radio communication at this airport. At airports that have no communications facilities, you should transmit on 122.9 MHz, which is the frequency assigned to Aeronautical Multicom Service. **DO NOT EXPECT A REPLY.** About 15 miles from the airport, tune to 122.9 MHz and listen for other traffic transmission, at 5 miles transmit your position, altitude, and intentions. Follow-up an announcement of your position on downwind, base, and final approach. When departing this airport, tune to 122.9 MHz and listen before you taxi. Then broadcast your position on the airport and intention. Follow this up with an announcement before you taxi onto the runway for takeoff.



POINSETT RANGE

The purpose of this amendment to Part 73 of the Federal Aviation Regulations is to extend the time of designation of the Poinsett-Sumter, South Carolina, Restricted Area R-6002 from "Sunrise to Sunset" to "Sunrise to 2400 hours, local time."

The Department of the Air Force has stated that increased training requirements essential to support of Southeast Asia operations necessitate use of R-6002 during night hours up to midnight local time. Night ground attack training by Tactical Fighter Wings from Seymour Johnson AFB, North Carolina, and Myrtle Beach AFB, South Carolina, requires an average of 20 nights per month using an average of 8 range periods of 30 minutes duration each night.

Since the Air Force has stated that an urgent military need exists to accomplish the additional training, the Administrator finds that notice and public procedure hereon are impracticable and the amendment may be made effective in less than 30 days.

In consideration of the foregoing, Part 73 of the Federal Aviation Regulations is amended, effective 0001 DST, May 17, 1971, as hereinafter set forth.

In 73.60 (36F. R. 2358) the Poinsett-Sumter, South Carolina, Restricted Area R-6002 is amended by deleting "Time of designation. Sunrise to sunset." and substituting therefor "Time of designation. Sunrise to 2400 hours local time."

This amendment is made under the authority of Secs. 306 and 307 of the Federal Aviation Act of 1958 (49 U. S. C. 1347 and 1348) and Sec. 6(c) of the Department of Transportation Act (49 U. S. C. 1655(c)).

AOPA SPECIAL COURSES

Three special AOPA Written Courses will be conducted at Charleston on July 16, 17, and 18. These courses are designed to prepare the student for the FAA Written Exam. The exam will be given on the morning following course completion. The courses will be conducted at the Sheraton Fort Sumter Hotel in Charleston and will include the following:

Private and Commercial	\$110	
The Instrument and Instrument Flight Instructor		\$135
Airline Transport Rating	\$150	

Each of these courses consists of 28 hours ground instruction given during the 3-day period.

For further information and registration contact: James E. Stargel, AOPA Air Safety Foundation, P.O. Box 5800, Washington, D.C. 20014. Phone (301) 654-0500, ext. 229.

AVIATION ACADEMY OF NORTH CAROLINA

John E. McLain has recently been appointed Chief Flight Instructor and Ground Instructor for the Aviation Academy of North Carolina, a division of Raleigh Durham Aviation, Inc. John comes to Raleigh from the New England Area where he served as Flight Instructor and Charter Pilot for the past 10 years. He is the Treasurer of the National Association of Flight Instructors and recently represented the Association on the Industry Board which was considering revisions to Part 61 and Part 141.

The Aviation Academy of North Carolina is an approved FAA and VA School for Private, Commercial, Instrument, Flight Instructor, Instrument Instructor, Multi-Engine Land, and Air Transport Rating Courses. They conduct scheduled Ground Schools for all the courses on a regular class and accelerated class basis.

engine was designed to operate during cruise generally at 75% power, and the geared more complex powerplants approximately at 65% power. The typical direct drive engine must run at a high RPM in order to get the necessary horsepower. We have observed single engine pilots cruising at a low RPM and mushing along in a nose up attitude because they were afraid to operate at 75% power, thinking it was not good for the engine. The same type of pilot rarely uses full power on takeoff with his normally aspirated engine for fear of "hurting" the engine. The engine manufacturer has stipulated the limitations of his engine, and most of the lower horsepower four and six cylinder powerplants not only recommend full power for takeoff, but permit it for an indefinite time period as long as engine temperatures are not excessive.Lycoming Flyer

SHOW AND TELL

Pilots, aircraft owners and mechanics are reminded to report any malfunction or defect of an aircraft to the FAA. Voluntary reports enable FAA to identify safety problems quickly and bring them to the attention of the manufacturer. Pertinent material is included in the General Aviation Inspection Aids, or in Airworthiness Directives (AD's). Any mechanical difficulties should be reported to FAA on form 8330-2 commonly called an M or D report. Self-mailing forms are available at many airports, repair stations and FAA General Aviation District Offices.
FAA Aviation News

M. BERLEY KITTRELL

It is with sincere regret that we announce the death of M. Berley Kittrell. Berley died of a heart attack on Friday, May 7. He was well known and highly respected in both aviation and real estate circles.

Berley began his aviation career in the early 1930's. During World War II, he served as group commander at the Army Air Corp Primary Training School at Orangeburg. After the war, he owned and operated Dixie Aviation at Owens Field and later at the Columbia Metropolitan Airport. He sold out Dixie Aviation in the '50's in order to devote his full time to real estate and was highly successful in the Commercial and Industrial real estate field. He continued to be an active pilot throughout his career.

Surviving are his wife and two daughters, Rosemary Kittrell of Atlanta, Georgia, and Mrs. Charles Chitty of Columbia, South Carolina.

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BREAKFAST CLUB NEWS

Because of inclement weather on May 9, the meeting at Camden was attended by a rather small group. President Earle Kirkwood was on a trip to Europe and did not have the opportunity to award the Bouncing Ball to the "outstanding" pilot.

The May 23 meeting at Hartsville was well attended and approximately 75 people were on hand for the meeting. Breakfast was served in the hangar by the Hartsville Civil Air Patrol Squadron. The Hartsville Squadron has a very active program and is doing an outstanding job with the young people. J. E. Lineberry of Spartanburg was awarded the Bouncing Ball and we understand that if he receives this award many more times he will get to keep it permanently. President Kirkwood gave an interesting talk on his recent trip to Italy.

On June 6, the meeting is scheduled for Spartanburg Downtown Memorial Airport and the June 20 meeting will be held at Goat Island. On July 4 the Breakfast Club will meet at Thermal Belt Aviation at the Greenville Downtown Airport where Warren Guinn has a suitable Fourth of July meeting planned. On July 18, the meeting is scheduled for Florence and on August 1, we meet at Ridgeland.

Times for all meetings are land at 0900, breakfast at 1000 and depart at 1100.

The summer months provide good flying weather, particularly in the morning and we are looking forward to good attendance at these meetings.