JUNE 1987

EAA CHAPTER–690
NAV-COM

MEETINGS 2ND FRIDAY EACH MONTH AT STONE MOUNTAIN AIRPORT - 8:00PM

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TO:

AIR FAIR 1987 WAS A GREAT SUCCESS!!

by Harold Stalcup

The weather was great, the airport facilities were fine, most of the food was sold, lots of airplanes came, there were no accidents, and the static displays were crowded most of the day.

We sold 275 breakfasts, 400 Hot Dogs, 550 cold drinks and added approxmiately $500.00 to our treasury.

A special pat on the back to those who worked so hard to make it happen.

Donna and Mac ----Hot Dogs and drinks. Thanks to Mike Jennifer North, Harriet, and all the other willing helpers who kept the dogs and drinks moving. Janet Warner--thanks for the ketchup! Ed McGowin arranged for the Coke coolers.

Ed Booth ----Pancake Breakfast. Thanks also to "Chefs" Sharp and Henderson along with the "go-fors", "help", "staff", and "flunkys". Dick Strand--money bags--kept track of the pancake sales and counted the money.

Earl Evans----Ground control. Earl and his merry men spent all day in the hot sun guiding and controlling aircraft. Well done!!

Duane Huff----obtained our tables, hard to eat pancakes standing up!

Tom Ferraro and Henry Warner----our advertising executives.

Frank Flessel----King video! Hope we can have a mini Theater again next year.

Thanks to those who brought their project for display ----

Reinhart Kuntz----Der Kricket, lots of people all day!

John and Angie Goodman----A beautiful Moni display.

John Popps----partial Skybolt next to Tom Ferraro's finished bird. Great combo!

Kevin Molloy----A well built Gyroplane on display. Hope it flys as good as it looks.

Gordon Washburn----The Aeronca is about ready for wings. Nice work.

Frank Wilcox----Composite workshop next to Phil Chestnut's fine Q2. Saw crowds there all day.

Harry Goetting----Prop carving display.

Harold Stalcup----Escort/Javlin engine display. need to get busy and finish that Zenith Stalcup.

Bob Garner----a "shrunken" Eagle. For the very young.

Linda Kuntz----EAA display stand. Most of the literature taken by interested people.

Kristi Sego----Spent most of the day in the "satellite" drink stand made by the Frick and Frack construction co.

Forrest Wilson and Sylvia Catenella----That Defiant display was super. It was a real chore to get that size bird to the Air Fair. Hope you can fly it in next year.

Jim Crunkelton----Great signs for the drink stands.

THANKS to all the others who helped make this 1987 Air Fair a success. We are looking forward to a bigger and better 88' Fair.

COMMENTS ON CORROSION
by ED BOOTH

The purpose of this article is to provide information which may help chapter members in their restoration project and also inspection of used parts obtained for a homebuilt to identify, prevent, treat and control, various types of corrosion.

Corrosion can be defined as the deterioration of metal by reaction to it's environment'. The corrosion occurs because of the tendency for most metals to return to their natural state. All alloys (combined metals) are susceptible. Pure metals (gold, silver, aluminum, etc.) are not affected.

There are three major categories of corrosion and four basic types. The three classes are 1.) ELECTROCHEMICAL, 2.) STRESS, 3.) FATIGUE. The four basic types are A) Etching, B) Pitting, C) Intergranular and D) Galvanic.

1.) ELECTROCHEMICAL CORROSION

This is the most common and troublesome class for light aircraft. Four conditions must exist before electrochemical attach can occur. 1. There must be something to corrode (metal/anode). 2. There must be a cause (exposure/cathode). 3. There must be a continuous liquid path (moisture /electrolyte). 4. There must be a conductor (metal/contact) to carry the flow of electrons produced by the galvanic cells thus created. The elimination of any one of the four conditions will stop the attack.

2.) STRESS CORROSION

This condition is caused by the simultaneous effects of tensile stress and corrosion. Stress may be internal or applied. Internal stresses are produced by nonuniform deformation during cold working of the metal, unequal cooling or other internal structural rearrangement. Stresses induced when a piece is formed (press and shrink fits, bends, etc.) are concealed and are most difficult to recognize before they have overcome the design factor. The magnitude of the stress varies from point to point within the metal. Stresses equalling the yield strength are generally necessary to promote stress corrosion cracking; however, isolated failures have occurred at lower stresses.

3.) FATIGUE CORROSION

Fatigue corrosion is a special case of stress corrosion caused by the combined effects of cyclic stress and erosion of metal. No metal is immune from some reduction of it's resistance to cyclic stressing if the metal is in a corrosive environment. Fatigue corrosion occurs in two stages. In the first stage, the combined action of corrosion and cyclic stresses damages the metal by pitting, faying or crack formation. The second stage is essentially a furtherance of fatigue in which the failure proceeds by propagation of the crack. Reduction of cyclic stress by lubrication or addition of protective insulation or padding strips is the normal means of combatting fatigue corrosion.

Corrosion Control

The first step of

effective corrosion control is the initial prevention during manufacture, and the responsibility rests with the manufacturer in his selections of materials and means of fabrication. The principal means of corrosion prevention relied on today in the production of light aircraft is the use of aluminum alloy sheet coated with commercially pure aluminum (alclad) and for those metals which are nonclad, such practices as anodizing, plating, or organic coating (paint) are applied. When the protective envelope thus established is penetrated by unusual circumstances (scratches, contamination, exposure, etc.), additional treatment must be implemented.

Identify Corrosion Types

Once the manufacturer's protective envelope has been penetrated and corrosion is suspected, it is necessary to properly identify the type of corrosion and source or cause to be able to properly treat and control it.

A) Etching

This form of corrosion is caused by direct contact with acids, caustics and other related chemicals. It appears on the metal surface as a bleach or a stain and should be neutralized with water and cleaning agents as soon as possible. If undetected or left unattended, it could cause structural damage depending upon location. Severe attacks may need a protective coating (paint) applied after neutralization. Zinc chromate primer is used for all aluminum alloys as the reaction of zinc to aluminum creates an inhibitor film which combats penetration of moisture.

B) Pitting

Pitting is the most common type of corrosion and is first noticeable as a white or grey powdery deposit which blotches the surface. When the deposits are cleaned away with a phosphoric acid (less than 2%) cleaning solution, tiny pits or holes can be seen in the surface. Surface treatment or cleaning by this method should not be accomplished more often than perhaps twice a year as there will be some etching of prime metal surface. Attempts to treat this form of corrosion should be restricted to exterior surfaces or other areas easily accessible. Prolonged exposure and heavy buildup of corrosion must be polished or buffed off using an abrasive of some sort. The initial rate of corrosion growth or attack is usually much greater at first, then it slows down or becomes dormant because the oxide film which forms tends to protect the metal underneath.

Pitting corrosion presents very little impact on the integrity or strength of the metal affected. It is more of an eyesore than anything else. Attempts to treat corrosion that has already formed on interiors of wings, flaps, redder, stabilizers, etc., will do more harm than good. A light seal coating of hot wax or light oil will contribute as much control as needed.

C) Intergranular Corrosion

This is by far the most serious and damaging type. It is an attack on the grain boundaries of the metal which causes separation and loss of cohesive strength. Metal components formed or extruded (wing spars, bulkheads, etc.)

are the most susceptible. Corrosion occurs as a result of the penetration of the applied protective finishes by corrosive elements. Visually it is seen or detected as small bubbles or blisters of the metal. Treatment is accomplished by the removal of all deteriorated metal. Repairs must be accomplished by a qualified person.

D) Galvanic Corrosion

Galvanic Corrosion occurs when Dissimilar metals come into contact with each other and an external circuit to foster corrosion electro-chemically is present. Residue formed by such contamination is the same as on your battery posts. Treatment is to remove the source of cell construction (water, dirt, foreign metal) and insulate the parts as required.

A Complex Problem

The corrosion problem is very complex and highly varied because of climatic or geographical conditions.

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PERMANENT AIR FAIR COMMITTEE

The air fair committee suggests we establish a permanent "Air Fair Committee". This committee would be "chaired" by a chairman and a vice chairman. A new chairman would be selected each year and the outgoing chairman would serve as vice-chairman. This would give the committee a continuity and take advantage of valuable experience. Lets discuss at the June meeting.

NEIGHBOR DAY AT PDK !!

Saturday June 6th was the annual open house at Peachtree-Dekalb airport and Chapter 690 was there in force thanks to the efforts of Tom Ferraro. Tom organized the display area and convinced eight of our members to bring in their planes for the crowds to see.

The display area was just outside the open hanger of displays and when I finally made it to the field it was hard to find Chapter 690 because of the crowds of people that were looking over the handiwork of the airplanes. There were a few tense moments when Clyde Schnars and Tom Ferraro were trying to keep people from poking holes in the wings. Seems no one can believe how strong that fabric can be.

John Goodman was there with his Moni. Tom brought the Skybolt, Clyde Schnars with his Sonari IIL, Ed Booth with his beauty the 170, and Phil Chestnut trailered in the Q2. Forgive me but I can't remember who else was there, but there were eight planes and many more than that of the Chapter membership there talking EAA to the visitors.

PROGRAM PRESENTATION

JUNE: Video of the Fly-in Last month at Lawrenceville airport.

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EVENTS // FLY-INS

JUNE 14 FLYOUT To Chilhowee, Tn. More details later from Bob Barton. You should have received a letter from Bob last week.

SEPT. Labor Day -- Ole South Fly-in, Rome, Georgia

SEPT. 12, FLYOUT To Tullahoma, Tn., Staggerwing Museum. Details later from Bob Barton

October 10, FLYOUT To Dahonega Ga. Smith House.

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AIRCRAFT AWARDS AIR FAIR 87'

by Tom Ferraro

With as many quality show planes as we had fly into our Air Fair, the job of awarding "Outstanding Aircraft" awards is becoming more difficult each year. The judges, Gordon Washburn, Duane Huff, and Tom Ferraro awarded plaques to three of the top showplanes that flew into the Air Fair (Chapter 690 members are not eligible for awards since our chapter sponsors the event). Judging was completed by all planes that were registered and parked in the showplane area by 11:00 A.M. The awards were presented to the recipients at 11:30 A.M. We appreciate and thank those pilots and aircraft owners who displayed their aircraft during our event. Your participation and cooperation is appreciated ! The following are the winners:

BRITISH SE5A REPLICA
BOB TALLINI
DECATUR, GA.

PIPER J-3
BILL TINSLEY
FAYETTEVILLE, GA.

STEARMAN
JIM HUDSON
ATHENS, GA.

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CHAPTER TOOLS AND SUPPLIES

All tools and VHS tapes listed below are for use (FREE) by chapter members and are available from Frank Wilcox.

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(1) Nicopress/cable cutter
(2) Tensiometer 1/8 & 3/32"cable.
(3) Magneto timing light
(4) Cylinder base wrenches
(5) Tubing flaring tool
(6) Tubing bending tool
(7) Spring type tube bender
(8) Compression tester
(9) Ring compression set
(10) Spark plug cleaner set
(11) High tension cable tester

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EAA Educational Tapes (VHS)
(1) Welding
(2) Woodworking
(3) Composite construction
(4) Prescott Pusher Demo
(5) Prescott Pusher Elevator & Trim construction
(6) Flying over water, Wake turbulence, Winter flying, T.O. & Landing, Basic radio procedure; and Start Up.

** The index to Sport Aviation articles is in and available to the members.