November 30, 1973

SE73-38

SUBJECT: CORROSION PREVENTION

AIRCRAFT AFFECTED: All Single Engine Aircraft and Skymasters
(See remarks for exceptions)

REASON FOR LETTER:

Aircraft which are operated in a corrosive atmosphere, such as in coastal areas or around heavily contaminated industrial areas, will require careful periodic inspection for corrosion.

Likewise, the corrosive effects of the atmosphere may be further accelerated by the presence of exhaust gases leaking from mufflers or stacks in certain critical areas, such as trailing edge skins and flap wells, etc.

The information contained in this Service Letter is divided into two areas as shown below and is being provided in the interest of keeping owners, operators, and service personnel up to date with the latest techniques in corrosion protection, prevention, and removal.

I. PRODUCTION IMPROVEMENTS

In an effort to provide protection against the effects of corrosion, Cessna maintains a continuous program of improvement to aircraft finishes, both interior and exterior. Corrosion protection on production aircraft is basically divided into two categories ---- 1) Preventive measures incorporated in all aircraft as standard equipment and --- 2) Special corrosion proofing which is added as optional equipment.

Listed below are some of the steps that have recently been taken to improve the corrosion protection on current production aircraft.

1. Standard (without optional corrosion proofing)
   a. All skins are clad aluminum.
   b. All aluminum tubing is a corrosion resistant alloy.
   c. Improved rust inhibitive primers (zinc chromate and molydate applications) are being applied to all steel parts except those which are zinc phosphated or cadmium plated.

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d. Exterior surfaces undergo wash or etch primer prior to paint to insure adequate adhesion and protection.

e. Care is exercised in preparing all surfaces prior to finish application.

f. Aluminum that is not clad (forgings, castings, and extrusions) are chemical filmed.

2. Optional Corrosion Proofing

In addition to the examples shown above for standard applications, the following items are part of the special corrosion proofing option.

a. All aluminum parts are zinc chromate primed in detail unless other organic finish is applied.

b. Tubing is zinc chromate primed.

The special corrosion proofing option is listed on all of the Airplane Accessory Price Lists and is recommended for aircraft being operated in the corrosive atmosphere of coastal areas or heavily contaminated industrial areas.

II. CORROSION PROTECTION AND REMOVAL TECHNIQUES

Despite preventative efforts, corrosion may still develop; therefore, the control of corrosion through periodic inspection and maintenance is very important. The attached Corrosion Protection and Removal procedures have been developed as an additional aid to service personnel in combating corrosion on in-service aircraft.

FAA Advisory Circular AC43-4 dated May 15, 1973, provides additional information on corrosion control for aircraft.

ACTION REQUIRED:

It is recommended that all owners, operators, and service personnel utilize the attached information in controlling corrosion on in-service aircraft.

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REMARKS:

The paint and corrosion protection processes of this letter do not apply to the 188 Series Agricultural aircraft. The 188 Series aircraft receive the following:

1. All aluminum parts are chemical filmed and primed with a corrosive resistant epoxy primer prior to assembly.

2. Epoxy paint is standard on the AGwagon and AGpickup.

3. Polyurethane paint is standard on the AGtruck, optional on the AGwagon and AGpickup.

4. Steel parts are either stainless, cadmium plated, phosphated, or zinc chromate and epoxy primed.

(Owner Notification System - No. 1)

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THE CESSNA AIRCRAFT COMPANY
CORROSION PROTECTION AND REMOVAL

Exterior Protection

Since the finish applied by Cessna Aircraft Company provides a high level of corrosion prevention, the key to maximum corrosion resistance is proper care and maintenance of the finish itself.

The following precautions are recommended to extend the life of the aircraft finish as well as provide maximum protection of the underlying surfaces.

(1) Keep your aircraft clean by washing and waxing it often. Use only approved cleaning agents and non-abrasive waxes or polishes (reference aircraft Service Manual).

(2) Areas of paint such as wing and stabilizer leading edges which are subject to frequent contact from external objects should be monitored closely and damaged areas touched-up (repainted) promptly.

(3) Overlapping and mating surfaces such as access panels and covers should be kept secure to prevent movement which may destroy protective finishes. These areas should also be cleaned and touched-up as necessary.

(4) Perform periodic detailed inspections to detect and correct corrosion and failure to paint with emphasis on skin laps, fasteners, and rivets.

Interior Protection

Since the wing, stabilizer, and fuselage internal structures are exposed to much of the same environmental conditions as the exterior, the following recommendations should be observed.

(1) Frequently inspect drainage and ventilation holes for obstruction to insure adequate drainage of moisture. (Due to humidity and temperature changes, moisture may form from condensation.)

(2) Remove fuel and oil residue if accumulation occurs.

(3) Since dirt and contaminants are not only hazardous to flight control movement but also may entrap moisture or cause abrasion, it is recommended to clean the internal bays of the wings and fuselage as part of each periodic inspection.

(4) Perform periodic detailed inspections to detect and correct corrosion with emphasis on skin laps, fasteners, rivets and control systems.
Removal of Corrosion

Should evidence of corrosion be detected, the following corrective action is recommended and should be accomplished immediately.

(1) Strip the affected area with a stripper, such as Turco Paint Gon, Turco Products, Inc. or Strypeeze, Savogran Co., following the instructions supplied.

(2) Remove the corrosion with a NON-METALLIC abrasive pad, such as Scotchbrite, 3M Company or with chemical brighteners, such as Quickbrite, Penn Walt Chemical Corp. or Metal Glo #3 or #4, Turco Products, Inc. following the manufacturer's instructions. DO NOT use steel wool, emery cloth or wire brush to remove corrosion.

CAUTION

Care should be taken not to remove or otherwise damage the Alclad coating in adjacent areas when using abrasive to remove corrosion.

DO NOT APPLY CHEMICAL BRIGHTENERS TO INACCESSIBLE AREAS WHERE THE BRIGHTENER CANNOT BE COMPLETELY FLUSHED OR REMOVED.

(3) Apply a brush-on conversion coating to the cleaned area, such as a solution of Alodine 1200S, Amchem Products Inc., according to the instructions included with the product.

(4) Apply appropriate primer and paint for finish.

Treatment of fayed surfaces or very detailed structures will normally require disassembly. Also, where severe corrosion has occurred, material thickness may have to be reduced beyond acceptable limits in order to completely remove corrosion. In such cases, only qualified personnel should determine the appropriate action to be taken.

Therefore, owners are urged to contact their Cessna Dealer regarding corrosion treatment and aircraft finishing.
November 30, 1973

Attachment to
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Page 2 of the attached information, Corrosion Protection and
Removal, urges owners to contact their Cessna Dealer regarding
corrosion treatment.

Because of varied types of corrosion and areas on the aircraft
where it can occur, it is sometimes difficult to determine what
action is required.

In the event assistance is needed in evaluating structural damage
and the corrective action required, Dealers are advised to contact
the Customer Services Department in Wichita through their Zone
Service Manager. Details, descriptions, photos, and samples (if
possible) should be supplied when contacting the Customer Services
Department.