SERVICE NOTICE

SUBJECT: Corrosion Prevention and Control Program for the KODIAK® 100

EFFECTIVITY: All KODIAK® 100 series aircraft.

BACKGROUND

Corrosion prevention was considered throughout the design and development of the KODIAK® 100. Various measures were taken—from the avoidance of dissimilar metal contact and the creation of water-pooling pockets, to the selection of surface treatments and organic coatings. Periodic inspections for corrosion are included in the KODIAK® 100 Airplane Maintenance Manual, chapter 5; these inspection checklists encourage the detection of early onset corrosion and the implementation of more cost effective corrective action. The primary tasks involved in maintaining the structural and systems performance throughout a KODIAK® 100's life cycle are cleaning, lubricating, restoring protective finishes, and removing minor corrosion. This Service Notice has been prepared to communicate additional preventative measures and recommend products especially for those users operating in a Severe corrosion environment but may be used by any KODIAK® 100 operator.

Quest Aircraft is committed to working with KODIAK® 100 operators to define preventative maintenance schedules that will provide the maximum utility and the optimum life cycle for the cost benefit.

DISCUSSION

1. Corrosion Prevention and Control - General

Corrosion Prevention and Control (CPC) is defined as the rigorous application of engineering, design and analysis, quality assurance, nondestructive inspection, manufacturing, operations, and support technologies to:

a. Prevent the start of corrosion

b. Minimize functional impairment from corrosion

c. Define processes for the tracking and repair of corrosion problems. (ref. MIL-STD-1568)

Corrosion is defined as a loss of a part's desirable properties by electrochemical reaction with its environment. Corrosion damage can quickly deteriorate the strength of a structural member and can lead to either fatigue cracks or structural failure. *Advisory Circulars* (ACs) *43-4A* and *43.13-1B*, chapter 6 contain excellent information regarding corrosion theory, effects, inspection techniques, and preventative maintenance. Table 1-1 is a list of useful and informative reference documents regarding corrosion theory, descriptions, removal, and treatment methods.

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TABLE 1-1 REFERENCES

DOC. NO.	TITLE
AM901.0	*KODIAK® 100 Pilot's Operating Handbook and FAA Approved Airplane Flight Manual (POH/AFM)*
AM902.0	*KODIAK® 100 Airplane Maintenance Manual (AMM)*
AM907.0	*KODIAK® 100 Airplane Structural Repair Manual (SRM)*
AC 43-4	*Corrosion Control for Aircraft*
AC 43-206	*Inspection, Prevention, Control and Repair of Corrosion on Avionics Equipment*
MIL-STD-1568	*Materials And Processes For Corrosion Prevention And Control In Aerospace Weapons Systems*
AC 43.13-1B	*Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair*
3021242	*Engine Maintenance Manual–PT6A-34 (PWC EMM)*

Beginning with initial manufacture, all metals will corrode to some extent in a natural environment. The process starts at the surface and penetrates down into the substrate. Corrosion is accelerated by higher temperature environments, which accelerate chemical reactions and allows for greater moisture content relative to air saturation. Four conditions must exist before metal corrosion can occur:

1. A metal that has a tendency to corrode must be present (the corroding metal is called the anode);
2. A dissimilar conductive material (the cathode), which has less tendency to corrode than the anode, must be present (a dissimilar metal may be: a different metal, a protected part of the same metal, or a conductive plastic);
3. A conductive liquid (electrolyte) must connect the anode and the cathode (so that ions can carry electric current between them); and
4. Electrical contact between the anode and the cathode (usually in the form of metal-to-metal contact) must exist so that electrons can move between the anode and the cathode.

NOTE: Removal of any of the four conditions will stop the corrosion process.

Mechanical factors that can influence a corrosive attack can cause the degeneration to accelerate at a rate greater than either the mechanical or chemical factors acting alone. Examples are stress-corrosion cracking, corrosion fatigue, and fretting corrosion.

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1.1 Types of Corrosion

The most common types of corrosion and where they typically occur are:

1. Uniform Etch: skins, unpainted surfaces, polished surfaces
2. Exfoliation and Intergranular: extrusions (e.g. bulbed stringers), machined parts, and skins
3. Filiform: Painted steel and aluminum with compromised coatings in high humidity (greater than 70%)
4. Pitting and Crevice: lap joints, anodized surfaces, under paint and sealant (usually after the coating has been damaged or compromised)
5. Galvanic Corrosion: dissimilar metal fastener joints, landing gear, engine installation, electrical and avionics connectors
6. Composite Degradation: galvanic effects at metal interfaces, moisture ingression

1.2 Environmental Factors and Classification

Corrosion potential and preventative measures depend on the types of operations within a defined geographical location and are classified into three levels: Mild, Moderate or Severe (**Ref *AC 43-4A***, chapter 4). Refer to the classification maps in *AC 43-4*, chapter 4 and modify depending on local environmental concerns such as atmospheric pollution or rainfall/humidity.

1. Environmental factors that influence the rate at which a corrosive attack proceeds include:
   a. Moisture and humidity near bodies of water
   b. Salt particles dissolved in water if operating in coastal areas
   c. Elevated temperatures common in tropical zones
   d. Industrial chemicals/atmospheric pollution near urban areas that can include chlorides, sulfates, and nitrates

NOTE: A 'Severe' operational environment would be characterized by high humidity, elevated temperature, and exposure to salt water. This environment demands the greatest effort to prevent and detect corrosion due to the accelerated rate of attack caused by these factors.

1.3 Corrosion Detection

Once the corrosion process has begun there are usually signs of chemical by-products that can include powdery residue, pitting, perforation, tarnish and other discoloration. Corrosion under paint films is determined by the paint film flaking or lifting often referred to as 'pillowing'. Effective corrosion control detects these indicators, removes any effected material, and restores the corrosion preventative measures prior to the need for more extensive repair or replacement.

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Corrosion-prone areas are those susceptible to finish damage, moisture entrapment, or both. Inspect these corrosion prone areas for: dirt, water, and other foreign material in the subfloor bays, wings, and empennage; landing gear; lap joints; seat tracks; areas where the protective finish has deteriorated; and joints with dissimilar metals.

Integral fuel tanks in the wings can be affected by microbial induced corrosion. A variety of micro organisms can inhabit jet fuel, consuming plastics and sealants while secreting acids.

While not identical to corrosion in metals, composite parts are also subject to material degradation that eventually can cause a loss of adhesion between resin and fibers caused by water ingression, UV effects on resin, and exposure to incompatible chemicals.

1.4 Corrosion Treatment

Once corrosion has been detected, classified, and the extent of the damage determined, damage removal and repair is accomplished per the *AMM* or other maintenance data as appropriate. This can include cleaning and surface/finish restoration, replacement of the entire component, or structural repair.

2. CORROSION PREVENTION – DESIGN AND MANUFACTURE

Corrosion prevention began in the design stage of the KODIAK® 100 and was considered in the selection of materials, coating processes, finishes, and placement of drain holes. Pockets or blind areas were avoided that might trap liquids or corrosive gases as was dissimilar metal contact. However, dissimilar metal contact is never completely avoidable due to the high performance goals of the KODIAK® 100, so in those transition areas a variety of methods have been employed to prevent electrical or electrolyte contact. These methods include faying surface sealants, wet installed fasteners, and other barriers to moisture or contact.

2.1 Aluminum Components

Aluminum parts use a combination of cladding, conversion coating, anodizing, primers, topcoats, and corrosion preventative compounds to provide a barrier against a corrosive environment.

1. External Skins
   a. All exterior facing aluminum skins are clad aluminum followed by conversion coating, primer, and topcoat.
2. Internal Aluminum Parts
   a. Interior structural aluminum components are conversion coated followed by primer and then may be top coated for weather resistance or aesthetics. Some high strength alloy components are anodized only.

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2.2 Steel Components

1. Landing Gear
   a. The cross tubes and gear legs are made from 300M steel and heat treated to 270-300 ksi. Interiors of bores and exteriors are normally cadmium plated to prevent corrosion. Plating may be repaired or supplemented by the application of a corrosion resistant primer paint. See the ***AMM*, chapter 32** for more information.
2. Engine Mount
   a. The engine mount is a steel welded frame structure of 4130 normalized tube, 4130 normalized plate and sheet, and 4130 normalized bar. It supports the engine, nose landing gear, and accessories. It attaches to the forward fuselage through four attach locations and is supported behind the firewall by four machined bathtub fittings. After heat treating and before painting, a corrosion preventative compound (linseed oil conforming to TT-L-190) is injected into the interior and the injection hole welded closed.
3. Control Cables
   a. The control cables installed in the KODIAK® 100 may be dipped in, or have applied by brush or rag, a MIL-DTL-16173 corrosion preventative compound to ensure uniform coverage and form a surface barrier to moisture. Currently, the rudder and the elevator control system's cables, installed during airplane production, for the under floor and aft fuselage locations, are pre-dipped in MIL-DTL-16173.
4. Fasteners
   a. Steel fasteners must be cadmium plated and in some locations are wet-installed with MIL-DTL-16173 corrosion preventative compound or sealant to prevent moisture ingress to the point of dissimilar contact.
   b. It is acceptable to change a non-structural screw from a cadmium-plated steel screw to a CRES screw.
5. Systems
   a. System components have been shown to meet or exceed the appropriate category of environmental qualification (for humidity, temperature variation, salt spray, fluid susceptibility, and more) in accordance with the requirements listed within RTCA *DO-160 Environmental Conditions and Test Procedures for Airborne Equipment*. Maintaining adequate lubrication per the *AMM* is necessary to retain the corrosion prevention properties. Avionics and wiring components may be maintained using procedures and products referenced in *AC 43-206 Inspection, Prevention, Control and Repair of Corrosion on Avionics Equipment*.

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3. CORROSION PREVENTION AND CONTROL - OPERATIONS

Basic corrosion prevention philosophy ensures that the protective finishes remain intact and that all drain holes and pathways remain open to avoid concentration of liquid electrolytes. Small corrective maintenance actions like preventing chafing, touching up compromised paint finishes and coatings, and replacing rusty fasteners don't require a large investment in time or material but can break the chain of events that can lead to much more serious or expensive failures. When repairs or alterations are completed, special care needs to be taken to retain proper drainage and material finish.

3.1 Personnel Training

1. Maintenance personnel must be trained and familiar with:
   a. Recognition of the conditions necessary for corrosion attack
   b. Corrosion detection, identification, and classification
   c. Corrosion removal, treatment, and repair of affected structure
   d. Lubrication and preservation of structure and components

3.2 Cleaning, Lubrication, Preservation, and Inspection

Refer to the AMM, chapters 5 and 6, for periodic corrosion inspection locations, intervals, and routine maintenance of corrosion protection coatings for Mild to Moderate corrosion regions. Appendix A contains recommendations for additional daily and weekly preventative actions if operating in a Severe environment. Appendix B contains additional Severe environment corrosion inspections to be integrated with the Annual/100 hour or other approved inspection programs. Corrosion Preventive Compounds (CPCs) are described in Appendix C.

3.3 Corrosion Removal and Repair

Refer to the *AMM* and/or the *SRM* for damage limitations and repair or replacement data.

1. Damage Classifications

There are three general classifications of damage:

a. Negligible Damage

1) Damage that does not adversely affect the strength or airworthiness of the structure and does not adversely affect the fit or function of the damaged or mating parts. Examples of this type of damage are: superficial corrosion, scratches, and abrasions on skins and formed sheet metal frames.

2) Damage may be classified as superficial if the removed material, after blending, is less than 0.002 inches or the damage is confined to the pure aluminum clad layer for Alclad sheet. Nominal cladding thickness is 5% on gauges under 0.062 in. (1.57 mm); 2.5% on gauges over 0.062 in. (1.57 mm).

3) The term "negligible" does not imply that little or nothing should be done. The corroded surface should be cleaned, treated, and painted as appropriate. Negligible damage, generally, is corrosion that has scarred or eaten away the surface protective coats and begun to etch the base metal. Corrosion damage extending to the classification of "repairable" should be repaired in accordance with approved structural repairs. When corrosion damage exceeds the damage limits to the extent that repair is not possible, the component or structure should be replaced.

b. Repairable Damage

1) Damage that exceeds the requirements of negligible damage must be either repaired or replaced to restore the performance to a level that meets type design requirements.

c. Replaceable Damage

1) Damaged components that exceed the criteria for negligible damage and that are not repairable by approved procedures must be replaced. Replacement may also be preferable, as an alternative to repair, for economy of effort or aesthetics.

2. Remove corrosion products and restore protective treatments as described in *AC 43-4* and the *AMM*, chapter 6.

3.4 Corrosion Reporting

1. Report any moderate to severe occurrences of corrosion to Quest Customer Service to receive assistance for return to service. All corrosion reports received will be reviewed to determine if any design and/or inspection program changes need to be made.
2. At a minimum, collect and report the following items, adding other details and photos as necessary to fully locate and describe the damage:
   a. Owner/operator information and contact method (i.e. phone, email)
   b. Aircraft Serial and Registration Numbers
   c. Total Time in Service (TIS), Landings/Cycles
   d. Current Location and Basing History to determine Corrosion Environment per ***AC 43-4*** (e.g. coastal, tropical rainforest, desert, landplane vs. floatplane, saltwater)
   e. Classification of corrosion type if possible
   f. Description of damage, including affected part numbers, measurements, detailed location in the aircraft by FS/WL/BL, photos if possible
   g. Source of the electrolyte if it can be determined, e.g. blocked drain hole, entrapped/non-drainable liquid, chemical spill, humidity/condensation, wet insulation, etc.
   h. Other helpful details

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4. INSTRUCTIONS

Operators are encouraged to incorporate additional maintenance tasks as defined in the Appendices A through C if flying in a severe corrosion environment, as defined by FAA *AC 43-4*. Report any instances of moderate to severe corrosion to Quest Customer Service for both assistance and to continue product improvements for enhanced protection.

Optional parts and kits are available and more are in development to upgrade the corrosion prevention capacity of the KODIAK® 100 aircraft. This Service Notice is to make customers aware of available approved factory upgrades and improvements. The upgrades and improvements listed below are available through the purchase of Field Service Instructions (FSI) or direct parts replacement, as appropriate. Contact Quest Customer Service for details on installation and pricing.

4.1 Enhanced Corrosion Protection External Cargo Compartment clips:

These clips have been redesigned and finished with a moisture resistant anodized coating to protect against chipping and the onset of corrosion.

Table 4.1: Optical Enhanced Corrosion Resistance ECC Clips

Part No.	Qty. per Aircraft	Title
100-250-2130	7	Tension Clip, Bulkhead, External Cargo Compartment
100-250-2132	7	Tension Clip, 4 Degree, Bulkhead, External Cargo Compartment

APPENDIX A

Recommended Corrosion Preventive Measures for Severe Corrosion Operational Environments

A ‘Severe’ operational environment would be those characterized by high humidity, elevated temperature, and long duration exposure to salt water.

The following steps are recommended and should be adopted by operators in their standard procedures while operating in designated Severe corrosion environments. Operator experience may indicate additional items or more frequent intervals for some tasks.

a. Minimize the exposure of the aircraft to adverse environments, as much as possible, by hangaring away from salt spray or avoiding overnight stays on salt water if float equipped.

b. Keep drain holes and passages open and functional, inspecting at preflight and post flight intervals.

c. Promptly replace any cadmium plated fasteners that show rust/red oxide deposits; this indicates a failure of the sacrificial coating and the corrosion will continue through the steel.

d. Promptly restore any compromised paint finishes, including scratches and chafing. Eliminate the cause by relocating components that are chafing or installing additional chafe protection. Temporary protection of scratched or damaged paint coatings may be accomplished by a spray application of Corrosion Preventive Compounds (CPCs) that form a waxy film, which will protect the exposed metal until paint touch up can be accomplished. Refer to **Appendix C** for more information.

e. Apply a thin film of water-displacing CPCs, conforming to MIL-C-81309 (e.g. CorrosionX®, ACF-50®), by spray application to ensure complete coverage of the interiors of the fuselage, empennage, and wings. These interior treatments are normally re-applied on a two year cycle. Touch up small exposed or disturbed areas with pump spray or aerosol can dispensers as required. Refer to **Appendix C** for more information.

The following tables are recommended in addition to scheduled inspections in the *AMM* and daily tasks described in the *AFM*.

DAILY CORROSION PREVENTION TABLE (AFTER LAST FLIGHT OF THE DAY)			INITIALS	
CODE	**ZONE**	**DESCRIPTION**	**MECH**	**INSP**
N/A	ALL	Thoroughly wash the complete aircraft with fresh water after the last flight of the day per the *AMM*, chapter 06.		
N/A	ALL	Clean exhaust deposits off fuselage, struts, belly, horizontal stabilizer, and elevator with cleaning, polishing wax.		
5300	ALL	Clean aircraft interior, ensuring no standing water, sand, or salt residues remain on the flooring or the seat tracks.		
5300	200, 300, 400	Inspect all drain holes for blockage, clear if necessary.		
6100	100	Wash propeller blades with a noncorrosive soap solution. Touch up chipped paint as required. Refer to the *Hartzell Propeller Owner's Manual and Logbook* (Manual No. 149) for further instructions.		
7230	100	Perform a desalination (compressor and CT) and external wash. Refer to the *AMM*, chapter 72 and the PWC *EMM* for detailed procedures.		
7200	100	Perform drying engine run at 80% power for one minute or more per the PWC *EMM*.		
7603	100	Engine Control Rod Ends: Lubricate the rod ends with LPS®-1 or turbine engine oil. *Engine Control Rod Ends must all be lubricated following each external engine wash.		
3220	700	Nose Gear: Inspect fork, shock strut, and wheel for chipped paint and corrosion. Inspect strut barrel for pitting and corrosion. Wipe the nose strut's exposed chrome tube with a cloth lightly damp with MIL-H-5606 hydraulic fluid.		
3240	700	Main Landing Gear Wheels and Brakes: Inspect for chipped paint and corrosion.		

Perform the following weekly tasks in addition to the **DAILY CORROSION PREVENTION TABLE:**

WEEKLY CORROSION PREVENTION TABLE			INITIALS	
CODE	**ZONE**	**DESCRIPTION**	**MECH**	**INSP**
6100	100	Propeller Spinner and Hub: Remove spinner; inspect for corrosion and wash. Refer to *Hartzell Propeller Owner's Manual and Logbook* (Manual No. 149) for further instructions. Corrosion of any type on the hub, or heavy corrosion on other parts that results in severe pitting, must be referred to an authorized propeller repair station.		
N/A	200, 300	Clean windshields and windows with a cleaning, polishing wax per the *AMM*, chapter 06.		
2700	200, 300, 400, 500, 600	Spray lubricate the flight control bearings, rod ends, and flap tracks with a water displacement lubricant such as LPS-2, CorrosionX, or ACF-50.		
2711	600	Spray lubricate the exposed areas of the aileron trim actuator pushrods with a water displacement lubricant such as LPS-2, CorrosionX, or ACF-50.		
2731	400	Spray lubricate the exposed areas of the elevator trim actuator pushrods with a water displacement lubricant such as LPS-2, CorrosionX, or ACF-50.		
2731	400	Spray lubricate the elevator trim roller drive chains with a water displacement lubricant such as LPS-2, CorrosionX, or ACF-50.		
2750	500, 600	Clean and lubricate the flap actuator jackscrews per the *AMM*, chapter 2750.		
5210	800	Crew Door Hinges: Lubricate the crew door hinge points with LPS-1.		
5210	800	Cargo Door Hinges: Lubricate the cargo door piano hinges with LPS-1.		
5347	200	Clean and lubricate the crew seat rails with a greaseless spray lubricant such as LPS-1.		

Perform the following tasks as recommended by the product manufacturers or as necessary to retain adequate confidence in the level of protection:

OTHER CORROSION PREVENTION TASKS			INITIALS	
CODE	**ZONE**	**DESCRIPTION**	**MECH**	**INSP**
N/A	ALL	Apply a protective wax to the complete aircraft exterior per the *AFM*, section 8 and the *AMM*, chapter 06.		
N/A	ALL	Apply a thin film of a water-displacing corrosion preventive compound, conforming to MIL-C-81309 (e.g. CorrosionX, ACF-50), by spray application; ensuring complete coverage of the interiors of the fuselage, empennage, and wings.		
2800	100, 200, 300, 500, 600	Test for the presence of microbial or bacterial growth in the fuel system.		

APPENDIX B

Additional Inspections for Severe Corrosion Operational Environments

A ‘Severe’ operational environment would be characterized by high humidity, elevated temperature, and exposure to salt water.

Operators are encouraged to implement these additional inspections if they feel their basing or flight locations expose the aircraft to a Severe corrosion environment.

These inspections are based on known areas of dissimilar metals within the airplane structure or harsh environments that can promote corrosion; additional areas of inspection may be called for in the future as corrosion prone situations are discovered in service.

ADDITIONAL ANNUAL/100 HR INSPECTIONS FOR SEVERE CORROSION ENVIRONMENTS			INITIALS	
CODE	**ZONE**	**DESCRIPTION**	**MECH**	**INSP**
2430	100	Battery Cables: Inspect for corrosion.		
2430	100	Battery Boxes and battery hold down mechanism: inspect for corrosion.		
7120	100, 200	Tubular Engine Mounts: Inspect tubing, attaching bolts, and bathtub fittings for signs of corrosion, both forward and aft of the firewall.		
7603	100	Engine Control Rod Ends: Inspect for corrosion, freedom of movement, and radial play. Lubricate the rod ends with LPS-1. *Engine Control Rod Ends must also be lubricated following each external engine wash.		
2700	200	Elevator Crossover Tube: Inspect interior bore for corrosion.		
2710	200	Aileron Control Cables (Fuselage and Control Column Section): Inspect the cables for corrosion. Inspect pulleys and cable guards for corrosion.		
2720	200	Rudder Pedals and Rudder Pedal Linkage: Inspect interior of tubes and fasteners for corrosion.		
2720 2730 2731	200, 300, 400	Inspect underfloor and aft fuselage rudder, elevator, and elevator trim tab cables for corrosion. Spot touch-up as necessary with MIL-PRF-16173. Spray lubricate all pulley bearings with water displacement lubricants such as LPS-2, CorrosionX, or ACF-50,		
2360	400, 500, 600	Static Discharge Wicks and Control Surface Bonding Straps: Inspect for corrosion.		
5740	300, 500, 600	Wing Spar Attach Fittings: Inspect bolts for corrosion.		
5740	300, 500, 600	Wing Strut Fittings: Inspect attach bolts and pins for corrosion.		
3210	700	Main Landing Gear: Inspect cross tubes, trunnions, gear legs, axle (exterior and inner bores), attaching bolts, nuts, and cotter pins for corrosion. Spot touch-up as necessary with MIL-PRF-16173.		
3220	700	Nose Gear: Inspect fork, axle, shock strut, and wheel for chipped paint and corrosion. Inspect strut barrel for pitting and corrosion. Wipe the nose strut's exposed chrome tube with a cloth lightly damp with MIL-H-5606 hydraulic fluid.		
3240	100, 200, 300, 700	Brake Assemblies, Lines, and Plumbing: Inspect all lines for corrosion. Inspect brake assembly housings and disks for corrosion.		
3250	700	Nose Gear Steering: Inspect bellcrank, steering stop mechanism, shimmy damper, and threaded rod end for corrosion. Lubricate the shimmy damper pivot points and threaded rod end with LPS-1.		

APPENDIX C

Application of Corrosion Preventive Products

The following Corrosion Preventive Compound (CPC) products are recommended for use on the KODIAK® 100 in the areas specified using brush, spray, or dipping methods. Do not apply or allow the products to contact prohibited areas.

TABLE C-1 RECOMMENDED CPC PRODUCTS

Product Name	Description	Part Number/ Spec.	Manufacturer	Application
Cor-Ban® 35	Dry, thin waxy film, moisture displacing, corrosion inhibiting, high penetration	MIL-PRF-85054	Zip-Chem Products Morgan Hill, CA	Non-moving metal parts, fasteners, unpainted metal
LPS®-1 Greaseless Lubricant	Dry, thin lubricating film, moisture displacing	MIL-C-23411A	LPS Laboratories, Tucker, GA	Moving parts, areas where dust adhesion is a concern (e.g. hinges, seat tracks)
LPS®-2 Heavy Duty Lubricant	Non drying wet film, moisture displacing, corrosion inhibiting	MIL-PRF-16173E Grade 3, MIL-C-81309D Type III	LPS Laboratories, Tucker, GA	Moving parts, interior areas needing lubrication, electrical connectors
LPS®-3 Heavy Duty Inhibitor	Self-healing, antisling lubricant, waxy film	MIL-PRF-16173D Grade 2	LPS Laboratories, Tucker, GA	Non-moving metal parts, fasteners, unpainted metal
Ardrox® AV8 (formerly Dinitrol)	High penetration, corrosion inhibiting, moisture displacing, hard durable waxy film	MIL-PRF-16173 Grade 4	Chemetell Aerospace Technologies, La Mirada, CA	Non-moving metal parts, fasteners, unpainted metal
Ardrox® AV30 (formerly Dinitrol)	Penetration, corrosion inhibiting, waxy film	MIL-PRF-16173 Grade 4	Chemetell Aerospace Technologies, La Mirada, CA	Non-moving metal parts, high moisture areas (e.g. bilge areas)
Ardrox® 3204	Ultra thin film penetrant, water displacing, corrosion inhibitor	MIL-PRF-81309 Types 2	Chemetell Aerospace Technologies, La Mirada, CA	Interior bays of fuselage, wings, stabilizers, control surfaces, exposed metal parts, fasteners
ACF-50®	Ultra thin film penetrant, water displacing, corrosion inhibitor	MIL-PRF-81309 Types 1, 2	Lear Chemical Research Corp, Mississauga, ON	Interior bays of fuselage, wings, stabilizers, control surfaces, exposed metal parts, fasteners
CorrosionX®	Ultra thin film penetrant, water displacing, corrosion inhibitor	MIL-PRF-81309F Types 2	Corrosion Technologies Corp, Dallas,TX	Interior bays of fuselage, wings, stabilizers, control surfaces, exposed metal parts, fasteners
Black Bear Par-Al-Ketone	High Viscosity, flexible, self healing, corrosion inhibitor, oily film	MIL-C-16173E, MIL-C-6708, TYPE I	Black Bear Co, Inc., Long Island City, NY	Steel control cables, some wet installed fasteners

NOTE: Follow the manufacturers' instructions for application and removal/cleanup.

NOTE: The choice between products that dry to a non-tacky film or those that remain oily needs to consider the operating environment. Consideration should be given to the likelihood of a tacky film retaining sand and dust particles that may be abrasive versus a more water repelling and lubricating coating. For example, a landplane operating in a sandy coastal region may choose a dry film product while a floatplane on saltwater may choose one that remains oily.

RESTRICTED ITEMS/PROHIBITED AREAS FOR CPC APPLICATION

CPC products contain petroleum distillates or other chemicals that are not desirable in contact with certain airplane systems. Utilize masking tape/paper, spray guards, or other means to ensure that the CPC products do not come into contact with the following items:

- Engine and propeller

  * See applicable manufacturer's maintenance manual for details
- Oxygen system components including lines
- Brake pads/discs
- Rubber tires
- Autopilot servo clutches
- VCS compressor clutch
- Acrylic windows or windshield
- Tips of static discharger wicks

Overspray or inadvertent contact must be promptly cleaned using methods described in the applicable *AMM* chapters and the CPC manufacturer's instructions.

TABLE 2 CPC APPLICATION AREAS

AIRCRAFT ZONE (REF. AMM, CH 0640)	FOCUS AREAS/ PARTS	RECOMMENDED PRODUCTS	APPLICATION TYPE	NOTES
100: Firewall Forward (FS 0.00 and Forward)	Engine/Propeller			Ref PWC and Hartzell MMs for engine and propeller
	Attaching Hardware, Cowl Hinges	Dry film lubricants (LPS-1)	Spray*, Brush	
200: Forward Fuselage (FS 0.00 to FS 59.8)	Interior surfaces	Ultra-thin film (CorrosionX, ACF-50, Ardrox 3204)	Spray*, Brush	
	Control cables	Flexible oily film (Par-Al-Ketone)	Dipping	
	Control chains/ sprockets	Non drying wet film (LPS-2)	Spray*, Brush	If required for Severe environment
	High moisture areas (e.g. drain/bilge areas)	Waxy film (LPS-3, Cor-Ban 35, Ardrox 8 or 30)	Spray*, Brush	If required for Severe environment
300: Main Fuselage (FS 59.8 to FS 180.5)	Interior surfaces	Ultra-thin film (CorrosionX, ACF-50, Ardrox 3204)	Spray*, Brush	
	Control cables	Flexible oily film (Par-Al-Ketone)	Dipping	
	Seat tracks	Dry film lubricants (LPS-1)	Spray*	
	High moisture areas (e.g. drain/bilge areas)	Waxy film (LPS-3, Cor-Ban 35, Ardrox 8 or 30)	Spray*, Brush	If required for Severe environment
400: Aft Fuselage and Empennage (FS 180.5 to FS 300.8)	Interior surfaces	Ultra-thin film (CorrosionX, ACF-50, Ardrox 3204)	Spray*, Brush	
	Control cables	Flexible oily film (Par-Al-Ketone)	Dipping	
	Control chains/ sprockets	Non drying wet film (LPS-2)	Spray*, Brush	If required for Severe environment
	High moisture areas (e.g. drain/bilge areas)	Waxy film (LPS-3, Cor-Ban 35, Ardrox 8 or 30)	Spray*, Brush	If required for Severe environment
500, 600: Left & Right Wings	Interior surfaces	Ultra-thin film (CorrosionX, ACF-50, Ardrox 3204)	Spray*, Brush	
	Control cables	Flexible oily film (Par-Al-Ketone)	Dipping	

AIRCRAFT ZONE (REF. AMM, CH 0640)	FOCUS AREAS/ PARTS	RECOMMENDED PRODUCTS	APPLICATION TYPE	NOTES
700: Landing Gear	Steel Cross Tubes, Gear Legs, Drag Link, Axles, Strut Barrel, Attaching Bolts	Waxy film (LPS-3, Cor-Ban 35, Ardrox 8 or 30)	Spray*, Brush	Interior bores and temporary protection of damaged paint
800: Cabin and Cargo Doors	Hinges, Latches	Dry film lubricants (LPS-1)	Spray*, Brush	
900: External Cargo Compartment	Hinges, Latches	Dry film lubricants (LPS-1)	Spray*, Brush	
	Aluminum Fittings	Waxy film (LPS-3, Cor-Ban 35, Ardrox 8 or 30)	Spray*, Brush	If required for Severe environment

** "Spray" application can refer to 'fogging' with special equipment, pneumatic, aerosol or pump sprayers*