

WebCorr Corrosion Consulting Services Presents

Corrosion Control and Prevention for Rotary and Fixed Wing Aircraft Structures and Components

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Course Overview

Corrosion in rotary and fixed wing aircrafts can take many different forms during storage and operation. The corrosion resistance of aircraft materials can be drastically reduced with only a small environmental change such as an increase in chloride concentration at ppm level. Prompt detection and removal of corrosion before permanent damage occurs can significantly enhance the operational safety and extend the service life of an aircraft. This 3-day training course covers the different types of corrosion commonly encountered in both rotary wing and fixed wing aircraft structures and components. Practical methods, materials, and strategies for corrosion control and prevention are discussed in depth. Real-life case studies are presented throughout the course. Advanced computer software tools for modeling and prediction of corrosion in aircraft structures and components are also presented. An Atlas of Corrosion Damages in Aircraft Structures & Components is included in the course note.

This corrosion course is available for in-house training, on-site training, online and distance learning worldwide. It can also be customized to meet the specific needs of your organization.

Who Should Attend

Aircraft owners and operators, managers and engineers in aircraft maintenance, repair and overhaul business. NDT/NDE technologists and those who wish to become involved in aircraft corrosion control and prevention.

Course Outline

1. Introduction to Corrosion in Rotary and Fixed Wing Aircraft Structures and Components
2. Different Types of Corrosion in Aircraft
 - 2.1 General Surface Corrosion
 - 2.2 Galvanic Corrosion



- 2.3 Pitting Corrosion
- 2.4 Crevice Corrosion
- 2.5 Filiform Corrosion
- 2.6 Intergranular Corrosion/Exfoliation
- 2.7 Stress Corrosion Cracking
- 2.8 Liquid Metal Embrittlement
- 2.9 Hydrogen Damage
- 2.10 Corrosion Fatigue
- 2.11 Fretting Corrosion
- 2.12 High Temperature Corrosion
- 2.13 Microbiologically Influenced Corrosion (MIC)
- 2.14 Effects of Corrosion on Metals in Aircraft
3. Corrosion Prone Areas And Preventative Maintenance
 - 3.1 General
 - 3.2 Exhaust Trail Areas
 - 3.3 Battery Compartments And Battery Vent Openings
 - 3.4 Lavatories, Buffets, And Galleys
 - 3.5 Bilge Areas
 - 3.6 Wheel Wells And Landing Gear
 - 3.7 External Skin Areas
 - 3.8 Water Entrapment Areas
 - 3.9 Engine Frontal Areas And Cooling Air Vents
 - 3.10 Electronic Package Compartments
 - 3.11 Miscellaneous Trouble Areas
 - 3.12 Factors In Corrosion Control
 - 3.13 Preventative Maintenance
4. Inspection Requirements
 - 4.1 General
 - 4.2 Frequency of Inspection
 - 4.3 Recommended Depth of Inspection
 - 4.4 Primary Approach
 - 4.5 Non-destructive Inspection
5. Corrosion Removal Techniques
 - 5.1 General
 - 5.2 Standard Methods
 - 5.3 Preparations For Rework

Course Outline

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| <ul style="list-style-type: none"> 5.4 Paint Removal 5.5 Special Techniques 5.6 Fairing Or Blending Reworked Areas 5.7 Chemical Testing 5.8 Chemical Spot Analysis of Magnetic Metals 5.9 Chemical Spot Analysis Of Nonmagnetic Metals 5.10 Surface Treatment Testing 5.11 Post Identification Cleaning And Refinishing 5.12 Mechanical Corrosion Removal By Blasting 6. Corrosion Damage And Rework Limits <ul style="list-style-type: none"> 6.1 Determining Degree of Corrosion Damage 6.2 Determining Rework Limits 6.3 Determining Material Thickness Reduction After Corrosion Cleanup 7. Aluminum And Aluminum Alloys <ul style="list-style-type: none"> 7.1 Processing Of Aluminum Surfaces 7.2 Repair Of Aluminum Alloy Sheet Metal 7.3 Corrosion Removal Around Countersunk Fasteners In Aluminum Alloy 7.4 Examples of Removing Corrosion From Aluminum And Aluminum Alloys 8. Magnesium Alloys <ul style="list-style-type: none"> 8.1 Treatment of Wrought Magnesium Sheets And Forgings 8.2 Repair of Magnesium Sheet Metal After Extensive Corrosion Removal | <ul style="list-style-type: none"> 8.3 In-Place Treatment of Magnesium Castings 8.4 Example of Removing Corrosion From Magnesium 9. Ferrous Metals <ul style="list-style-type: none"> 9.1 General 9.2 Mechanical Removal of Iron Rust 9.3 Chemical Surface Treatment of Steel Surfaces 9.4 Removal of Corrosive Products From High-Stressed Steel Parts 9.5 Special Treatment of Stainless Steel Alloys 9.6 Example of Process For Removal of Corrosion From Steel Parts 10. Plated Parts <ul style="list-style-type: none"> 10.1 Chromium And Nickel Plated Parts 10.2 Cadmium And Zinc Plated Parts 11. Other Metals And Alloys <ul style="list-style-type: none"> 11.1 Noble Metal Coatings - Cleanup And Restoration 11.2 Copper And Copper Alloys 11.3 Titanium Alloys 12. Special Problems <ul style="list-style-type: none"> 12.1 Mercury Spills/Corrosion Damage 13. Software Tools for Corrosion Modeling and Prediction in Aircraft Structures and Components 14. Atlas of Corrosion Damages in Aircraft 15. End-of-Course Exam |
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Course Registration

Please register online at www.corrosionclinic.com

WebCorr has NACE certified Corrosion Specialist (#5047) providing customized in-house/on-site, on WebEx, on-demand, online and distance corrosion courses, corrosion seminars and workshops on corrosion, materials, metallurgy, paints and metallic coatings. Our corrosion courses are developed and taught by NACE certified Corrosion Specialist with over 40 years of practical experience in the field. Our success is measured by your learning outcome.



Course Fee and Discount

Standard: \$4,950 **Discount:** \$4,455

The fee includes a hardcopy of course note, certificate, light lunch, coffee breaks each day during the course.

Discount applies to a group of 3 or more persons from the same organization registering at the same time, or early-bird making payment at least 8 weeks before the course commencing date.

Cancellation and Refunds

Cancellation or replacement should be conveyed to WebCorr in writing (email or fax). An administration charge of 50% of the course fee will be levied if the cancellation notice is received from 14 to 7 days before the course commencing date. No refund will be made for cancellation notice received 6 days and less. No refunds will be given for no-shows. Should WebCorr find it necessary to cancel a course, paid registrants will receive full refund. Refund of fees is the full extent of WebCorr's liability in these circumstances.