Training Catalogue 2017

Specialized in Structure Training

Advanced Training for Tomorrow’s Technicians

• Composite Inspection and Repair
• Sheetmetal Working
• Inspection NDT Courses
• E-learning

Dedicated Training

Training on Real Aircraft

customized courses and training based on your needs

WWW.ACRATS-TRAINING.COM
We are proud to introduce ACRATS Training Services to you.

Offering a complete range of composites and sheet metal technical training. The focal point of ACRATS: provide training to turn technicians into skilled structural repair specialists with hands-on experience using the latest techniques developed at the aviation industry. We provide training that meets the needs of (future) specialist. Small classes ensure individual attention for each trainee.

40 years Experience
Our instructors are skilled trainers and aviation professionals. We have more than 40 years of experience that we pass on to our students every day.

Creating Competence
Competence is a key success factor in the aviation industry today. And we are passionate about creating competence, skills and craftsmanship.

Flexible Company
ACRATS is a multi-culturally based operation. This gives us a unique position with an open-minded and flexible company culture. This enables us, as solution providers, to build effective customer relations.

Please take time to browse through our catalogue. Be inspired by the range of educational and training opportunities.

In case you have any questions, please feel free to contact us directly.

Rick van Opdorp
A day at the training center

08:00
Getting Badges

08:15 to 10:00
Classroom

10:00 to 10:15
Coffee break

10:15 to 12:15
Practical in Workshop

12:15 to 12:45
Restaurant

12:45 to 14:45
Practical in Workshop

14:45 to 15:00
Coffee break

14:45 to 16:30
Practical in Hangar

16:30
Certification
WHY ACRATS

- Dedicated and Unique Composite Repair, Inspection & Training Environment
- New Modules To Train Technicians in Structural Inspection and Repair
- Set up in conjunction with EASA Part-147 Certified Aircraft Maintenance & Training School
- Focus on Local or in Country Development
- Located inside an Aircraft Maintenance Training Hangar
- Real Aircraft are used for Inspection and Advanced Repairs
- Virtual Inspection and Repair Training Modules
OUR FOCUS
When it comes to Training

Fixed Wing
INSPECTION & REPAIR

Helicopter
INSPECTION & REPAIR

UAV
INSPECTION & REPAIR

Military
SPECIALIZED TRAINING

NDT
TESTING FAILURE METHODS

Composites
PROCESSING, INSPECTION & REPAIR

Sheetmetal
FABRICATION, INSPECTION & REPAIR

SRM
STRUCTURAL REPAIR MANUAL
LEARNING DEVELOPMENT
Best learning methods

**Classroom**
Interactive Training

**Practical**
Hands-on Training

**Skills Development**
Virtual Maintenance Training

**Online Training**
Advanced E-Training

**Virtual Modules**
Virtual Maintenance Training

**Virtual Classroom**
Skills Development
LEARNING BY DOING
The ACRATS teaching style is interactive and student-centred. Studying at ACRATS means developing your knowledge and skills. You will develop valuable skills such as analysing, solving practical problems and creative thinking.

Our expertise on your tablet

COMBINATION DEALS
Budgets are tight and that as tuition prices continue to rise at all educational institutions, it is harder to acquire the technical training that you really need to keep current with emerging technology. As a result, we are offering a “package deal” for those of you wishing to combine courses!

Combine training courses and save money

SHORT COURSE PROGRAM
We developed short course modules, so you can easily remove or add training modules to the exciting modules.

Perfect to learn all about a specific subject in only 8 or 16 hours.

Tailored to your needs
The SRM course are specially designed to allow technicians and engineers to confidently work with the Structural Repair Manual.

The course will give the participants the basic skills how to use the SRM to perform damage assessment, to select repair procedure and to understand the repair methods.

Training Courses:

- Airbus Practical SRM Training
- ATR Practical SRM Training
- Boeing Practical SRM Training
- Dornier Practical SRM Training
- EMBRAER Practical SRM Training
- Fokker Practical SRM Training
- Technical Drawings
- Quality Control, Principles & Practices

Tip:
Combine SRM Courses
Purpose and Scope
After completion of this SRM course the technician is able to understand the Structural Repair Manual and perform inspections and repairs on the structure and components of the Airbus family aircrafts.

Objectives
Theoretical (4 hours):
- Introduction to SRM and Airbusworld
- Short introduction to Goodrich V2500 SRM
- Most common damages
- Identification of different kind of damages on sheet metal and composites structures
- Corrosion types and typical corrosion locations on Airbus Family aircraft
- Typical Inspections
- Overview of critical areas

Practical Demonstration in Classroom (4 Hours):
- Damage mapping and inspection methods
- Corrosion on Aircraft/ Component
- Damages on sheet metal
- Damages on Composites

Practical cases (16 hours):
- Identification, Inspection, Assessment and repair.

Duration
3 days

Course ID
SRM001

Program

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This course complies with the guidelines of:
- Airbusworld
- Technical Documentation

Course Location
ACRATS Training Services- Customers’s site

What
Perform inspection and repairs on real aircraft-components and structures.

Who
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

Why
During this training you will develop knowledge and have a good understanding of the SRM, materials, inspection techniques and repair methods.
PURPOSE AND SCOPE
After completion of this SRM course the technician is able to understand the Structural Repair Manual and perform inspections and repairs on the structure and components of the ATR aircrafts.

OBJECTIVES

Theoretical (4 hours):
- Introduction to SRM and ATRDOC
- Most common damages
- Identification of different kind of damages on sheet metal and composites structures
- Corrosion types and typical corrosion locations on ATR aircraft
- ATR Inspections Methods
- Overview of critical areas

Practical Demonstration in Classroom (4 Hours):
- Damage mapping and inspection methods
- Corrosion on Aircraft/ Component
- Damages on Sheet metal
- Damages on Composites

Practical cases (16 hours):
- Identification, Inspection, Assessment and repair.

DURATION
3 days

COURSE ID
SRM002

WHAT
Perform inspection and repairs on real aircraft- components and structures.

WHO
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY
During this training you will develop knowledge and have a good understanding of the SRM, materials, inspection techniques and repair methods.

WHY
During this training you will develop knowledge and have a good understanding of the SRM, materials, inspection techniques and repair methods.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- ATRDOC
- Technical Documentation

COURSE LOCATION
ACRATS Training Services- Customers’s site

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Boeing Practical SRM Training

Develop the skills and knowledge needed in daily practice

PURPOSE AND SCOPE

This course prepares the student to use the Structural Repair Manual (SRM) to find inspection and repair data. It includes repair processes, structural identification, allowable damage limits, and repairable damage limits.

DURATION

3 days

COURSE ID

SRM003

OBJECTIVES

**Theoretical (4 hours):**
- Introduction SRM and Myboeingfleet
- Definitions and applications
- Human factors
- Health, safety and environment
- Damage of Fibre Reinforced Plastics
- Design requirements
- Use of repair documentations (SRM, AMM)
- Find allowable damage limits in the SRM.
- Identify the repair processes.

**Practical Demonstration in Classroom (4 Hours):**
- Damage mapping and inspection methods
- Corrosion on Aircraft/ Component
- Damages on Sheet metal
- Damages on Composites

**Practical cases (16 hours):**
- Identification, Inspection, Assessment and repair.

**WHAT**

Perform inspection and repairs on real aircraft-components and structures.

**WHO**

- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

**WHY**

During this training you will develop knowledge and have a good understanding of the SRM, materials, inspection techniques and repair methods.

**THIS COURSE COMPLIES WITH THE GUIDELINES OF:**

- My Boeing Fleet
- Technical Documentation

**COURSE LOCATION**

ACRATS Training Services- Customers’s site

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Dornier Practical SRM Training

Develop the skills and knowledge needed in daily practice

PURPOSE AND SCOPE

This course prepares the student to use the Structural Repair Manual (SRM) to find inspection and repair data. It includes repair processes, structural identification, allowable damage limits, and repairable damage limits.

DURATION

3 days

COURSE ID

SRM004

OBJECTIVES

Theoretical (4 hours):
- Introduction composites
- Definitions and applications
- Human factors
- Health, safety and environment
- Damage of Fibre Reinforced Plastics
- Design requirements
- Use of repair documentations (SRM, AMM)
- Find allowable damage limits in the SRM.
- Identify the repair processes.

Practical Demonstration in Classroom (4 Hours):
- Damage mapping and inspection methods
- Corrosion on Aircraft/ Component
- Damages on Sheet metal
- Damages on Composites

Practical cases (16 hours):
- Identification, Inspection, Assessment and repair.

WHAT

Perform inspection and repairs on real aircraft-components and structures.

WHO

- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY

During this training you will develop knowledge and have a good understanding of the SRM, materials, inspection techniques and repair methods.

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THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- Dornier Technical Manuals

COURSE LOCATION

ACRATS Training Services- Customers’s site

This content is ACRATS proprietary
Embraer Practical SRM Training

Develop the skills and knowledge needed in daily practice

PURPOSE AND SCOPE

This course prepares the student to use the Structural Repair Manual (SRM) to find inspection and repair data. It includes repair processes, structural identification, allowable damage limits, and repairable damage limits.

DURATION

3 days

COURSE ID

SRM005

OBJECTIVES

**Theoretical (4 hours):**
- Introduction composites
- Definitions and applications
- Human factors
- Health, safety and environment
- Damage of Fibre Reinforced Plastics
- Design requirements
- Use of repair documentations (SRM, AMM)
- Find allowable damage limits in the SRM.
- Identify the repair processes.

**Practical Demonstration in Classroom (4 Hours):**
- Damage mapping and inspection methods
- Corrosion on Aircraft/ Component
- Damages on Sheet metal
- Damages on Composites

**Practical cases (16 hours):**
- Identification, Inspection, Assessment and repair.

WHAT

Perform inspection and repairs on real aircraft-components and structures.

WHO

- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY

During this training you will develop knowledge and have a good understanding of the SRM, materials, inspection techniques and repair methods.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:

- Embraer Technical Documentation

COURSE LOCATION

ACRATS Training Services- Customers’s site

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This content is ACRATS proprietary
Fokker Practical SRM Training

Develop the skills and knowledge needed in daily practice

PURPOSE AND SCOPE

This course prepares the student to use the Structural Repair Manual (SRM) to find inspection and repair data. It includes repair processes, structural identification, allowable damage limits, and repairable damage limits.

DURATION

3 days

COURSE ID

SRM006

OBJECTIVES

Theoretical (4 hours):
- Construction of the Fokker 50 & 100 aircraft
- Working with technical manuals; How to use the SRM
- Introduction MyFokkerFleet.com
- Materials and processes
- Damage Detection
- Damage Limits
- Repairs not in SRM

Practical Demonstration in Classroom (4 Hours):
- Damage mapping and inspection methods
- Corrosion on Aircraft/ Component
- Damages on Sheet metal
- Damages on Composites

Practical cases (16 hours):
- Identification, Inspection, Assessment and repair.

WHAT

Perform inspection and repairs on real aircraft-components and structures.

WHO

- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY

During this training you will develop knowledge and have a good understanding of the SRM, materials, inspection techniques and repair methods.

WHY

During this training you will develop knowledge and have a good understanding of the SRM, materials, inspection techniques and repair methods.

THESE COURSES COMPLIES WITH THE GUIDELINES OF:

- My Fokker Fleet
- Technical Documentation

COURSE LOCATION

ACRATS Training Services- Customers’s site

PROGRAM

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This content is ACRATS proprietary
**Technical Drawings**

**Reading and Understanding technical drawings and projections**

**PURPOSE AND SCOPE**
After completion of this course the student is able to understand technical drawings, projection methods, engineering notes and diagrams and tables.

**DURATION**
3 days

**COURSE ID**
TD001

**OBJECTIVES**

**Theoretical (20 hours):**
- Reading Technical drawings
- Projection methods
- Title block
- Part list
- Assembly block and revision block
- Revision of drawings
- Engineering notes
- Image sheet
- Tolerances
- Measuring lines and measuring surfaces

**Practical (4 Hours):**
- Reading technical drawings
- Practical exercises

**WHAT**
Perform inspection and repairs on real aircraft-components and structures.

**WHO**
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

**WHY**
During this training you will develop knowledge and have a good understanding of the SRM, materials, inspection techniques and repair methods.

**THIS COURSE COMPLIES WITH THE GUIDELINES OF:**
- Technical Documentation

**COURSE LOCATION**
ACRATS Training Services- Customers’s site

**PROGRAM**

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Quality Control, Principles & Practices

Relationship between 'quality' and 'safety'

PURPOSE AND SCOPE

After attending this course participants should have the confidence to promote and facilitate the development of a quality management system and associated audit program that will act in support of the business and in response to regulatory requirements.

DURATION

7 days

COURSE ID

QC001

OBJECTIVES

Theoretical and Practical in Classroom
- Introduction
- Basic principles
- Quality processes
- Quality requirements
- Company internal processes
- Company requirements
- EASA and FAA regulations
- Aviation documentation
- Traceability
- Audits
- Human Factors
- Safety and Environment
- Fundamental principles of auditing
- Development of audit programs
- Audit reports & records
- Auditor competency and development issues
- Effective corrective action audit

WHAT

Learn all about Quality Control, regulations about processes and requirement, and the importance of traceability in aviation.

WHO

This course is designed for technicians, engineers, inspector and all other personal involved in the world of aviation.

WHY

Key to a good quality program is proper trained personal. It is important to know understand the reason behind the regulations.

COURSE LOCATION

ACRATS Training Services- Customers’s site

PROGRAM

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The utilization of fibre reinforced plastics (composites) products is increasing very rapidly. More than 50% of the weight of the Boeing 787 and Airbus A350 consist of composite materials. Everyone who comes in contact with composites and/or composites components should understand what composites are and be aware of the risks involved.

Training Courses:
- Composite Awareness
- Advanced Composite Processing, Inspection and Repair Level 1
- Advanced Composite Processing, Inspection and Repair Level 2
- Advanced Composite Processing, Inspection and Repair Level 3
- Composite and Bonded Structure Engineers
- Hot Bonder Training
- Resin Infusion Techniques
- Metal to Metal Bonding
- Radome Inspection and Repair
PURPOSE AND SCOPE

The utilization of fibre reinforced plastics (composites) products is increasing very rapidly. More than 50% of the weight of the Boeing 787 and Airbus A350 consist of composite materials. Everyone who comes in contact with composites and/or composites components should understand what composites are and be aware of the risks involved.

OBJECTIVES

**Theoretical (16 hours):**
- Understanding roles and responsibilities of key teammates
- Identify and describe information contained in documentation
- Understand basic materials technology and terms
- Understand composite laminate fabrication and bonded repair methods
- The importance of teamwork between inspector, engineer and technician
- Use of documentation

**Practical (8 Hours):**
- Inspection and damage characterization
- Inspection techniques
- Recognize composite damage types and sources
- Perform & inspect a simple repair
- Introduction to bonded composite repairs

DURATION

3 days

COURSE ID

CT001

WHAT

This course provides an introduction to composites and awareness of safety issues related to handling, maintenance and repair of composite materials.

WHO

This course is designed for all personnel involved in the handling, maintenance and repair of components.

WHY

Learn about safety procedures, storage methods and processes about composites.

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THIS COURSE COMPLIES WITH THE GUIDELINES OF:

- SAE AIR 5719

COURSE LOCATION

ACRATS Training Services- Customers’s site
Advanced Composites  
Processing, Inspection and Repair Level 1  
Develop valuable skills in the field of composite repair

PURPOSE AND SCOPE
Do you want to learn all about the basic principles and concept of composites? With this training, the (future) composite repair technician will have a solid base to manufacture composite and perform inspections and repairs.

DURATION
5 days

COURSE ID
CT010

OBJECTIVES

Theoretical (14 hours):
- Introduction composites
- Definitions and applications
- Human factors
- Health, safety and environment
- Damage of Fibre Reinforced Plastics
- Design requirements
- Use of repair documentations (SRM, AMM)
- Safety issues

Practical (26 Hours):
- Introduction repairs
- Fabricate monolithic fiberglass panel (wet lay-up)
- Fabricate carbon fibre and honeycomb sandwich panel
- Apply vacuum bag
- Vacuum debulking: identifying problems
- Perform scarfed repair

WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
This course is designed for technicians, engineers, inspector and all other personal involved in the manufacture, maintenance and repair of composite structures.

WHY
During this training you will develop knowledge and understanding of composite materials, manufacturing and repair. You will develop basic skills in the area of manufacturing and repair processes.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- SAE AIR4938A
- SAE AIR 5719
- 14 CFR Part 65
- FAA AC 65-33 (Aircraft Composites Repairs)

COURSE LOCATION
ACRATS Training Services- Customers’s site

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This content is ACRATS proprietary
Purpose and Scope

Do you want to learn what it takes to manufacture a component from composite materials? This course teaches you practical knowledge in the field of component manufacture, inspection and repair.

Duration

5 days

Course ID

CT011

Objectives

Theoretical (6 hours):
- Safety and environment storage, out-time and recertification
- SRM/CMM repair methods and component identification
- Damage classification
- Mould making
- Paint removal
- General fastening methods

Practical (34 Hours):
- Read technical drawings
- Stepped repair
- Fabricating composite repair tooling
- Identifying unknown fibre and fibre orientation
- Repair of interior parts
- Remove moisture from composite structure
- Build up vacuum bag on complex shapes
- Using the hot bonder (basics)
- Repair of advanced aircraft components
- Remove and installing inserts

Why

Perform inspection and repairs on real aircraft-components and structures.

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Course Location

ACRATS Training Services- Customers’s site

This content is ACRATS proprietary
Advanced Composites
Processing, Inspection and Repair Level 3
In-depth training

PURPOSE AND SCOPE
Do you want to work independently on aircraft or aircraft components? After attending the level 1 and level 2 training you are ready to participate the level 3 structural repair training course.

DURATION
5 days

COURSE ID
CT012

OBJECTIVES

**Theoretical (4 hours):**
- Repair material and processing options
- Fastener removal tools and replacement tools
- Failure modes
- Structural repair techniques

**Practical (36 Hours):**
- Requirements of complex structure repairs
- Reading technical drawings
- Perform inspections on aircraft
- Use and application of Non Destructive Testing (NDT)
- Prepare damages for repair
- Perform double sided stepped repair
- Vacuum techniques on the aircraft (on-site)

WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
This course is designed for technicians, engineers, inspector and all other personal involved in the manufacture, maintenance and repair of composite structures.

WHY
You will learn to conduct in depend operations on critical parts of the airplane (on-aircraft in our training hanger) You will learn how to perform inspections, report damage and repair structural parts.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- SAE AIR5279A
- SAE AIR 5719
- ATA 104 Level IV objectives Par. 4
- 14 CFR Part 65
- AC 65-33 (aircraft composite repair)

COURSE LOCATION
ACRATS Training Services- Customers’s site

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This content is ACRATS proprietary
Composites and Bonded Structure Engineers

PURPOSE AND SCOPE
To achieve safe and reliable structural systems, the composites designer/analyst needs to have a sound knowledge and firm grasp of the underlying principles of the structural response of composite materials.

DURATION
5 days

COURSE ID
CT020

OBJECTIVES

Theoretical (24 hours):
- Fabrication methods and manufacturing
- Stiffness and Compliance relationships
- Temperature and moisture residual stresses
- Lamination theory for prediction of stiffness, strength and failure
- Axial, bending, shear and torsional loading
- Modes of failure in composite laminates
- Hands-on computer software analysis of laminate failure
- Finite Element exercise on a composite material component

Practical (16 Hours):
- Program curing schedules
- Vacuum techniques
- Basics of good design practice in composites
- Implementation of advanced hot-bond repairs
- Removing moisture from composite

WHAT
This five day course includes lectures and hands on lab based sessions to support the design and optimization of different composite structures.

WHO
This course is aimed at those who are interested in the application of composite materials for the development of efficient lightweight structural designs.

WHY
This course aims to provide the basic knowledge and understanding of the mechanics of composite materials utilized in the advanced engineering structures, in order to permit their efficient use in design applications.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- SAE AIR5279A
- ATA 104 Level IV objectives Par. 4
- AC 65-33 (aircraft composite repair)

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ACRATS Training Services- Customers's site

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Hot Bonder Training

Ensure quality and turn around times

PURPOSE AND SCOPE
Do you want learn how to repair composites in a responsible and efficient way? In this training course you will learn how to program and use the hot-bonder in a proper way to ensure the quality of a repair process.

OBJECTIVES

**Theoretical (2 hours):**
- Introduction of the hot-bonder
- Damage preparation
- Hot-bonding and program curing schedules
- Vacuum methods
- Use of repair documentation

**Practical (22 Hours):**
- Program curing schedules
- Vacuum techniques
- Implementation of advanced hot-bond repairs
- Removing moisture from composite structure using a heat lamp or heat blanket

DURATION
3 days

COURSE ID
CT020

WHAT
Perform repairs on real aircraft-components and structures using the hot bonder in combination with heat blankets and/or heat lamps

WHO
This course is designed for technicians, engineers, inspector and all other personal involved in repair of composite structure or components

WHY
To be able to perform composite repairs with hot-bond equipment. Get high quality repairs with high temperature cure cycles.

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THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- Heatcon Systems
- Aeroform
- Whichitech
- Anita
- Brisk Heat
- Applied Heat
- Novatech
Resin Infusion Techniques

Be faster and improve your production

PURPOSE AND SCOPE

Vacuum injection is a technique that improves production of large structure greatly compared to the hand and spray lamination. After putting the dry fiber package into the mould, it is covered with an air-proof foil. Resin is sucked into the vacuum foil. The resin spreads out through the fiber laminate, impregnating the fibers.

DURATION

5 days

COURSE ID

CT100

OBJECTIVES

Theoretical (6 hours):
- Introduction, trends, resin and materials
- Health, safety and environment
- Vacuum injection techniques
- Calculate resin/fiber ratio
- Gel coat applications
- Tools and equipment
- Jigs and tooling design

Practical (34 Hours):
- Vacuum infusion practical exercises
- Application of gel coating
- Unplug cured fiber mould
- Troubleshooting vacuum leaks
- Troubleshooting resin-free areas
- Curing processes

COURSE LOCATION

ACRATS Training Services- Customers’s site

WHAT

You will learn to infusion method.

You will learn how to build up the layers and the bag.

WHO

This course is designed for technicians, engineers, inspector and all other personal involved in the maintenance and manufacturing of composite parts.

WHY

Develop the skills necessary performing resin infusion techniques.

This content is ACRATS proprietary
Metal to Metal Bonding
Develop the skills and knowledge to repair metallic structures

PURPOSE AND SCOPE
The emphasis of the course is on developing the practical skills necessary to carry out metal-to-metal bonded repairs on metallic structures in accordance with published manufacturers' structural repair manuals.

OBJECTIVES

Theoretical (12 hours):
- Introduction Sheetmetal (Materials, Alloys etc.)
- Fundamentals and Definitions of Bonding Techniques
- Health, safety and environment
- Foam, film adhesives and Positioning cloth
- Heat and hot bonding systems for curing
- Use of repair documentations (SRM, AMM etc.)
- Risk and Risk Mitigation
- Safety issues

Practical (20 Hours):
- Various Inspection techniques (NDT) metal sandwich structures
- Cutting and Removing old skin (different techniques)
- Water Ingression
- Working with Dry-ice
- Surface Preparation and Treatments (PACS, PANTA, PASA and Sol-gel (Boegel)
- Repair Techniques on metal structures

DURATION
4 days

COURSE ID
MTM01

WHO
This course is designed for technicians, engineers, inspector and all other personal involved in the manufacture, maintenance and repair of metal sandwich structures.

WHAT
Perform inspection and repairs on real aircraft-components and structures according the technical documentation.

WHY
During this training you will develop knowledge and understanding of metal materials, manufacturing and repair. You will develop basic skills in the area of removal and repair processes.

PROGRAM

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THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- SAE AIR 4938A
- SAE AIR 4844C
- 14 CFR Part 65

COURSE LOCATION
ACRATS Training Services - Customers's site
Radome Inspection and Repair

The radome of aircraft is a critical component

PURPOSE AND SCOPE

Today, radome inspection and repair are becoming increasingly critical. It’s essential to repair the radome exactly as described in order to keep the functionality of the radome. This is what you learn during this course.

DURATION

5 days

COURSE ID

CT060

OBJECTIVES

Theoretical (8 hours):
- Introduction
- Radome structure
- Permeability influences
- Vacuum techniques

Practical (32 Hours):
- Mould making
- Visual inspection
- Tap-testing
- Inspection for moisture
- Test diverter strip guide
- Repair skin damage
- Repair sandwich material
- Replace erosion boot
- Use hot-bond techniques

WHAT

Inspection and repair courses focused on radomes.

WHO

This course is designed for technicians, engineers, inspector and all other personnel involved in the maintenance and repair of radomes.

WHY

A inspection and repair on a radome are very critical. to

THIS COURSE COMPLIES WITH THE GUIDELINES OF:

- 14 CFR Part 65
- FAA AC 65-33 (Aircraft Composites Repairs)

COURSE LOCATION

ACRATS Training Services- Customers’s site

This content is ACRATS proprietary
Enormous Forces
The sheet metal aircraft is exposed to enormous forces during take-off, flight and landing, and will get damaged. As an aircraft sheet metal worker you must repair all kinds of damages.

Training Courses:
- Fabrication, Inspection and Repair Level 1
- Fabrication, Inspection and Repair Level 2
- Fabrication, Inspection and Repair Level 3
- Dent and Buckle
- GLARE Repair
Sheet Metal
Fabrication, Inspection and Repair Level 1
Develop the skills and knowledge needed in daily practice

PURPOSE AND SCOPE
The sheet metal aircraft is exposed to enormous forces during take-off, flight and landing, and will get damaged. As an aircraft sheet metal worker you must repair all kinds of damages.

OBJECTIVES
Theoretical (30 hours):
- Introduction sheet metal
- Definitions and applications
- Marking applications
- Aluminum and aluminum alloys
- Human factors and Foreign object damage (FOD)
- Riveting and Quality solid rivets
- Damages
- Hand and measuring tools
- Safety issues
- Calculate the overhang

Practical (50 Hours):
- Marking of lightweight metals & Scratch prevention
- Drilling and countersinking
- Milling sheet metal alloys
- Bending of sheet metal
- Riveting with a hammer bench & Rivet

DURATION
10 days

COURSE ID
SMT010

WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
This course is designed for technicians, engineers, inspector and all other personal involved in the manufacture, maintenance and repair of composite structures.

WHY
During this training you will develop knowledge and understanding of materials, manufacture and repairs. You will develop knowledge and skills in the area of manufacturing and repair processes.

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THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- Structural Repair Manual
- ATA 104 Level IV objectives Par. 4

COURSE LOCATION
ACRATS Training Services- Customers’s site

This content is ACRATS proprietary
**PURPOSE AND SCOPE**

Do you want to learn what it takes to manufacture components from lightweight sheet metal alloys? In this training you will develop practical knowledge in component manufacture, inspection and repair.

**OBJECTIVES**

**Theoretical (30 hours):**
- Health, safety and environment
- Storage and recertification
- Codification
- Component identification
- Damage classification
- Mould making
- Forming aluminum
- Removing paint
- General fasteners

**Practical (50 Hours):**
- Read technical drawings
- Dimple and countersinking methods
- Joggle and Squeezing
- Patch repair
- NACA riveting
- Countersinking
- Surface treatment aluminum
- Annealing rivets

**DURATION**

10 days

**COURSE ID**

SMT011

**WHAT**

Perform inspection and repairs on real aircraft-components and structures.

**WHO**

This course is designed for technicians, engineers, inspector and all other personal involved in the manufacture, maintenance and repair of metal structures.

**WHY**

This training is the follow up of the level 1 sheet metal training. This practical oriented education will give you fundamental knowledge of component manufacture, inspection and repair.

**THIS COURSE COMPLIES WITH THE GUIDELINES OF:**

- Structural Repair Manual
- ATA 104 Level IV objectives Par. 4

**COURSE LOCATION**

ACRATS Training Services- Customer’s site

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This content is ACRATS proprietary.
Sheet Metal Fabrication, Inspection and Repair Level 3
Focus on modification and repairs

PURPOSE AND SCOPE
Aircrafts requires maintenance on its structure. It is important that structural repairs are performed by well trained sheet metal workers according the best available techniques. Improper repair techniques can pose an immediate or potential danger.

DURATION
10 days

COURSE ID
SMT012

OBJECTIVES

Theoretical (10 hours):
- Repair techniques
- Remove and apply fasteners
- Heat treatment of aluminum
- use of structural fasteners

Practical (70 Hours):
- Read technical drawings
- perform inspections on aircraft
- removal of damaged area
- Structural repair techniques:
  - flush repair and external doubler repair
  - in accordance with the structural repair manual

WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
This course is designed for technicians, engineers, inspector and all other personal involved in the manufacture, maintenance and repair of metal structures.

WHY
This training is the follow up of the level 1 & 2 sheet metal training. This practical oriented education will give you fundamental knowledge of component manufacture, inspection and repair

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- Structural Repair Manual
- ATA 104 Level IV objectives Par. 4

COURSE LOCATION
ACRATS Training Services- Customers’s site

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This content is ACRATS proprietary
Dent and Buckle

Perform Dent and Buckle inspection and report

PURPOSE AND SCOPE

Production of a comprehensive report of all structural repairs done throughout aircraft operation, assuring they are permanent and properly documented to meet return conditions, avoiding excessive costs of rectifying or re-doing non-conforming repairs.

DURATION

3 days

COURSE ID

GT021

OBJECTIVES

Theoretical (4 hours):
- Introduction dent and buckle
- Working with documentation and manuals
- Different ways to measure dents
- How to make a clear report

Practical (20 Hours):
- Working with Technical Manuals
- Various Inspection Techniques
- Various Measuring Techniques
- Damage Mapping
- Document all findings in a report
- Evaluation of reports

WHAT

This course teaches the principles related a dent and buckle inspection, inspection methods and ways to document

WHO

This course is designed for technicians, engineers, inspector who need to perform dent and buckle inspections.

WHY

After this training the student will be able to perform a dent and buckle inspection, and be able to make a clear report of findings

THIS COURSE COMPLIES WITH THE GUIDELINES OF:

- Structural Repair Manual
- Aircraft Maintenance Manual

COURSE LOCATION

ACRATS Training Services- Customers's site

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GLARE Repair:

GLARE repair, a different approach is needed

PURPOSE AND SCOPE

When repairing GLARE, various factors play a role. This course teaches you how to repair GLARE. Become a specialist and learn to make the right decisions.

OBJECTIVES

Theoretical (4 hours):
- Introduction to GLARE
- GLARE repair techniques
- Safety issues
- General fastening methods

Practical (20 Hours):
- Working with GLARE
- Repair methods
- Installing fasteners
- Use of technical documents

DURATION

3 days

COURSE ID

CT030

WHAT

This course serves as an instruction and provides awareness of safety issues related to maintenance and repair of GLARE.

WHO

This course is designed for technicians, engineers, inspector and all other personal involved in the maintenance of GLARE constructions.

WHY

After this course the student will be able to perform inspections and repairs on GLARE.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:

- Structural Repair Manual

ACRATS Training Services- Customers’s site

COURSE LOCATION

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This content is ACRATS proprietary
Did you know... that the reason that Flight 123 of Japan Airlines crashed was a wrongly installed sheet metal patch repair?

Two separated splice plates (patch) where installed, one with two rows of rivets, and one with only one row of rivets. The procedure describe to install one continuous slice plate, with 3 rows of rivets. The force of pressurization was one one row of rivets only and this led to metal fatigue. When the bulkhead gave way, the resulting explosive decompression ruptured the lines of all four hydraulic systems and ejected the vertical stabilizer. With the aircraft's flight controls disabled, the aircraft became uncontrollable.

Q: What can we learn of this accident?

A: The need of Proper Practical Training
- Sheet metal Inspection, Fabrication and Repair
- Understanding
- Procedures of the SRM
Mission Ready

Defence forces around the world flying and maintaining more complex weapon systems, evolving operational doctrines, and shifting priorities. These issues sometimes result in less-than-ideal training capabilities for aircrew and aircraft maintenance technicians. A growing trend is for defence forces to leverage the expertise and service delivery capability of industry to provide a range of training and professional services.

In addition, we offer comprehensive professional engineering and repair services to provide the design, delivery and in-service support required by defence and security forces.

Training Courses:

- Aircraft Battle damage Repair
- Fighter Jet: Blue Print Reading
- Fighter Jet: Structural Repair
- Radar Absorbent Material
- Unmanned Aerial Vehicle

For helicopter training see chapter: Helicopter Structure courses.
Aircraft Battle Damage Repair
Quick repair and back in the air

PURPOSE AND SCOPE
After completion of this course the participant is able to perform inspections and quick repairs to the structure of the aircraft c.q. helicopter.

OBJECTIVES
- **Theoretical (4 hours):**
  - Introduction Composites
  - Introduction Sheetmetal
  - Type of Damages
  - Inspection Techniques
  - Repair Methods
  - Fasteners
  - Rotor Blade Inspection- Repair
- **Practical (20 hours):**
  - Damage Mapping
  - Inspection Techniques
  - Quick Repair on composite
  - Quick Repair on sheetmetal

WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY
To gain more knowledge and practical skills about performing inspections and quick repairs in the field.

DURATION
3 days

COURSE ID
MST001

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- SAE AIR4938A
- ABDR Manual

COURSE LOCATION
ACRATS Training Services- Customers’s site

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This information is ACRATS proprietary
Purpose and Scope

After completion of this course the participant is able to understand and read drawings, diagrams and standards of the structure of Fighter Jet(s) conform technical documentation and technical drawings.

Duration

3 days

Course ID

MST002

Objectives

Theoretical (12 hours):
- Introduction Structure
- ATA Classification and Breakdown
- Engineering Drawings
- Purpose of drawings
- Diagrams and standards
- Sectional Views
- Solid Objects Pictorial Projections
- Orthographic Projections

Practical Cases (12 hours):
Several cases on the aircraft in the hangar, practical learning on real aircraft.

WHAT

Understand and read technical manuals and drawing, tables and figures of fighter jets.

WHO

- Sheetmetal worker
- Composite technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY

To gain more knowledge and practical skills about reading and understanding the structural repair manual, drawing, tables and figures.

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This information is ACRATS proprietary
Fighter Jet: Structural Repair
Inspection, Modification, Repair and Upgrade on the structure

PURPOSE AND SCOPE
After completion of this structure course the technician is able to perform inspections, modifications, repairs and upgrade to the aircraft structure and component(s).

WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY
To gain more knowledge and practical skills about composites creating a solid basis to manufacture composites parts and perform inspections and repairs.

OBJECTIVES

Theoretical (24 hours):
- Introduction Structure
- Composites
- NDT Techniques
- Repair Methods (composite and Sheetmetal)
- Using the Structural Repair Manual
- Fasteners

Practical (56 hours):
- Damage Mapping
- Inspection NDT Techniques
- Repairs on Sheetmetal
- Repairs on composite structures with Hot-bond Techniques
- Corrosion inspection and removal
- Diverterstrip replacement

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- SAE AIR4938A
- 14 CFR Part 65
- FAA AC 65-33 (Aircraft Composites Repairs)

COURSE LOCATION
ACRATS Training Services- Customers’s site

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This information is ACRATS proprietary
Purpose and Scope

RAM, is a material which has been specially designed and shaped to absorb incident RF radiation, as effectively as possible. The more effective the RAM, the lower the resulting level of reflected RF radiation. A good inspection and repair is needed!

Duration

3 days

Course ID

MST004

Objectives

Theoretical (6 hours):
- Introduction
- Safety precautions
- Description and use of spray RAM, including repair procedures
- Description and use of spreadable repair compound
- Curing RAM spray with spreadable repair compound
- How to make a vacuum bag

Practical (18 hours):
- Damage Mapping
- Remove RAM sheet
- Mixing Sealants and Adhesive and applying Sealants
- Making a vacuum bag and repair techniques
- Permanent repair of sheet RAM on exterior surfaces
- Repair on spray RAM

This course complies with the guidelines of:
- SAE AIR4938A
- 14 CFR Part 65
- FAA AC 65-33 (Aircraft Composites Repairs)

Program

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This information is ACRATS proprietary
Unmanned Aerial Vehicle
Inspection and Repair of the UAV structure

PURPOSE AND SCOPE
After completion of this structure course the participant is able to perform inspections and repairs to the structure of the UAV.

OBJECTIVES

**Theoretical (16 hours):**
- Introduction
- Structure of the UAV
- Inserts; Installing and Removal
- Inspection Techniques
- Repair Methods
- Using Structural Repair Manual

**Practical (24 hours):**
- Damage Mapping
- NDT Techniques
- Repair (Bonded & Bolted with Hot-bond Techniques)
- Repair on composite structure

DURATION
5 days

COURSE ID
MST005

WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
- Sheetmetal worker
- Composite Technician
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY
To gain more knowledge and practical skills about composites creating a solid basis to manufacture composites parts and perform inspections and repairs.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- SAE AIR4938A
- 14 CFR Part 65
- FAA AC 65-33 (Aircraft Composites Repairs)

COURSE LOCATION
ACRATS Training Services- Customers’s site

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This information is ACRATS proprietary
Focussed Structural repair courses, covering:
- Sheetmetal
- Composites
- Working with technical manuals
- Inspection techniques
- Corrosion inspection and removal
- Sealant Compound

Training Courses:
- ATR Structural Repair
- Airbus Structural Repair
- Boeing Structural Repair
- Fokker Structural Repair
- Structural Repair: Line Maintenance

Tip:
Combine Structural Courses
### ATR: Structural Repair

Inspection and Repair focussed on the ATR family

#### PURPOSE AND SCOPE

After completion of this structure course the technician is able to understand the structural repair manual and perform inspections and perform inspections and repairs on the structure and components of the ATR aircrafts.

#### DURATION

10 days

#### COURSE ID

FW001

#### OBJECTIVES

**Theoretical (32 hours):**
- Introduction ATRDOC
- Introduction Structure ATR
- Basic Composite
- Basic Sheetmetal
- Basic Inspection Techniques
- ATR Repair Methods
- Using technical documentation - ATR
- Propellor: Blade Inspection- Repair

**Practical (48 hours):**
- Damage Mapping
- NDT Techniques
- Repair on Composites Components
- Repair on sheetmetal Components
- Removal of corrosion
- Spot Painting

#### WHAT

Perform inspection and repairs on real aircraft-components and structures.

#### WHO

- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

#### WHY

To gain more knowledge and practical skills about composites creating a solid basis to manufacture composites parts and perform inspections and repairs.

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THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- ATRDOC
- 14 CFR Part 65
- FAA AC 65-33 (Aircraft Composites Repairs)

#### COURSE LOCATION

ACRATS Training Services - Customers’s site

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This information is ACRATS proprietary
Airbus: Structural Repair
Inspection and repair focussed on the Airbus Family

PURPOSE AND SCOPE
After completion of this structure course the technician is able to understand the structural repair manual and perform inspections and repairs on the structure and components of the Airbus family aircrafts.

DURATION
10 days

COURSE ID
FW002

OBJECTIVES

Theoretical (32 hours):
- Introduction Airbusworld
- Introduction Structure Airbus
- Inspection Techniques
- Basic Composites
- Basic NDT Techniques
- Airbus Repair Methods
- Using Structural Repair Manual - Airbus

Practical (48 hours):
- Damage Mapping
- NDT Techniques
- Repair on Composites Components
- Repair on sheetmetal Components
- Removal of corrosion
- Spot Painting
- Sealant Compound

WHO
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY
To gain more knowledge and practical skills about composites creating a solid basis to manufacture composites parts and perform inspections and repairs.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- Airbusworld
- SAE AIR4938A
- 14 CFR Part 65
- FAA AC 65-33 (Aircraft Composites Repairs)

COURSE LOCATION
ACRATS Training Services- Customers’s site

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Theoretical Examination

This information is ACRATS proprietary
Boeing Structural Repair
Inspection and repair focused on the Boeing Family

PURPOSE AND SCOPE
After completion of this structure course the technician is able to understand the structural repair manual and perform inspections and repairs on the structure and components of the Boeing family aircrafts.

DURATION
10 days

COURSE ID
FW003

WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY
To gain more knowledge and practical skills about composites creating a solid basis to manufacture composites parts and perform inspections and repairs.

THEORETICAL (32 hours):
- Introduction Myboeingfleet
- Structure Boeing Family
- Basic Composites
- Basic sheetmetal
- Basic NDT Techniques
- Repair Methods on composites and sheetmetal
- Using technical documentation - Boeing

PRACTICAL (48 hours):
- Damage Mapping
- NDT Techniques
- Repair on Composites Components
- Repair on sheetmetal Components
- Removal of corrosion
- Spot Painting
- Sealant Compound

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- Myboeingfleet
- SAE AIR4938A
- 14 CFR Part 65
- FAA AC 65-33 (Aircraft Composites Repairs)

COURSE LOCATION
ACRATS Training Services- Customers’s site

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Theoretical Examination
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This information is ACRATS proprietary
Fokker Structural Repair
Inspection and repair focussed on the Fokker Family

PURPOSE AND SCOPE
The course gives the opportunity to become familiar with the construction of the Fokker aircraft and repair procedures for metal and composite structures and components as included in the Structural Repair Manual (SRM).

DURATION
5 days

COURSE ID
FW004

OBJECTIVES

Theoretical (32 hours):
- Introduction myfokkerfleet
- Structure Fokker Family
- Basic Composites
- Basic NDT Techniques
- Repair Methods on composites and sheetmetal
- Using Structural Repair Manual - Fokker
- Propellor: Blade Inspection- Repair (F27-F50)

Practical (48 hours):
- Damage Mapping
- NDT Techniques
- Repair on Composites Components
- Repair on sheetmetal Components
- Removal of corrosion
- Spot Painting
- Sealant Compound

WHO
- Sheetmetal worker
- Composite Technician
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY
To gain more knowledge and practical skills about composites creating a solid basis to manufacture composites parts and perform inspections and repairs.

WHAT
Perform inspection and repairs on real aircraft-components and structures.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- Myfokkerfleet
- SAE AIR4938A
- 14 CFR Part 65
- FAA AC 65-33 (Aircraft Composites Repairs)

COURSE LOCATION
ACRATS Training Services- Customers’s site

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Theoretical Examination

This information is ACRATS proprietary
Structural Repair: Line Maintenance

Inspection and small repairs during line maintenance

PURPOSE AND SCOPE
After completion of this structure course the participant is able to perform inspections and repairs to the structures and components of the aircraft.

OBJECTIVES

**Theoretical (16 hours):**
- Introduction General Structures
- Basic Composites
- Basic Sheetmetal
- Basic NDT Techniques
- Repair Methods
- General: Using Structural Repair Manual
- Propellor: Blade Inspection

**Practical (24 hours):**
- Damage Mapping
- Inspection Techniques
- Repair on Composites Components
- Repair on sheetmetal Components
- Removal of corrosion
- Spot Painting
- Sealant Compounds

DURATION
5 days

COURSE ID
FW005

WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY
To gain more knowledge and practical skills about composites creating a solid basis to manufacture composites parts and perform inspections and repairs.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- SAE AIR4938A
- 14 CFR Part 65
- FAA AC 65-33 (Aircraft Composites Repairs)

COURSE LOCATION
ACRATS Training Services- Customers’s site

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This information is ACRATS proprietary
Thrust reverser & engine parts

Inspection and repairs on engine inlets and thrust reversers

PURPOSE AND SCOPE
This course provides the skills for technicians to be able to perform a wide range of sheetmetal and composite repairs on thrust reversers and cowls, also applicable for engine cowls.

DURATION
5 days

COURSE ID
FW006

OBJECTIVES

Theoretical (5 hours):
- Introduction thrust reversers
- Sheetmetal inspection
- Composites inspection
- Sheetmetal repairs
- Composites repairs
- Typical damages
- Use of repair documentations (SRM, AMM)
- Safety

Practical (26 Hours):
- Introduction repairs
- Fabricate monolithic fiberglass panel (wet lay-up)
- Fabricate carbon fibre and honeycomb sandwich panel
- Perform scarfed repair
- Sheetmetal repairs
- Inspection techniques

WHY

During this training you will develop knowledge and understanding of the build up of the thrust reverser. You will develop basic skills to perform inspections and repairs on this components.

WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- Structural Repair Manual
- 14 CFR Part 65
- FAA AC 65-33 (Aircraft Composites Repairs)

COURSE LOCATION
ACRATS Training Services- Customers's site

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WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY
During this training you will develop knowledge and understanding of the build up of the thrust reverser. You will develop basic skills to perform inspections and repairs on this components.

WHAT
Perform inspection and repairs on real aircraft-components and structures.

WHO
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY
During this training you will develop knowledge and understanding of the build up of the thrust reverser. You will develop basic skills to perform inspections and repairs on this components.
Maintain your helicopter fleet
Inspections, daily maintenance, perform modifications, overhauls and repairs on sheetmetal and composites on the helicopter or components.

Training:
- Helicopter Structure Repair
- Helicopter Rotor Blade Repair
Helicopter Structure Repair
Maintaining your helicopter fleet; Inspection, Modification & Repair

PURPOSE AND SCOPE
Are you working in helicopter maintenance and you want to develop your knowledge in the field of composites and sheet metal? With this training you will develop knowledge and skills needed in everyday practice.

DURATION
10 days

COURSE ID
CT040

WHAT
Perform inspection and repairs on real Helicopter-components and structures.

WHO
This course is designed for technicians, engineers, inspector and all other personal involved in the maintenance and repair of helicopter structures.

WHY
This course serves as a basis for helicopter maintenance personnel.

OBJECTIVES

**Theoretical** (20 hours):
- Introduction of advanced composite materials and structures
- Reading of technical drawings
- Use of repair documents
- Fibre reinforced plastics
- Fasteners
- Inspection methods and techniques
- Making a repair plan
- Curing methods

**Practical** (60 Hours):
- Inspection and damage characterization
- Inspection for corrosion
- Recognize damages
- Repair a skin crack (sheet metal and composite)
- Production of sheet metal parts
- Repair of honeycomb structures
- Inspection and repair of composite bolted joints

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- SAE 4938A
- SAE 5279A

![Helicopter Structure Repair Diagram](Image)

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Helicopter Rotor Blade Repair

Inspection and repair of helicopter main and tail rotor blades

PURPOSE AND SCOPE
Helicopter rotor blades are flight critical components. In this course you will develop a theoretical base and practical knowledge of rotor blade maintenance, inspection and repair.

DURATION
10 days

COURSE ID
CT050

OBJECTIVES

**Theoretical (16 hours):**
- Introduction of advanced composite materials and structures
- Reading of technical drawings
- Use of repair documents
- Inspection methods and techniques
- Design of main and tail rotor blades
- Balancing principles main and tail rotor blades

**Practical (64 Hours):**
- Inspection and damage characterization
- Repair Type A: Circular or slab patch repair
- Repair Type B: Circular or slab patch repair and plug repair
- Repair Type C: two sided circular or slab type patch and plug repair
- Repair Type D: Trailing edge patch repair
- Repair Type E: Trailing edge insert and patch repair
- Hot bonder repair
- Vacuum bag techniques

WHO
This course is designed for technicians, engineers, inspector and all other personal involved in the maintenance and repair of helicopter rotor blades.

WHY
This course serves as a basis for helicopter maintenance personnel.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- CACRR report AIR 4938A
- CACRR report AIR 5279A

WHAT
Perform inspection and repairs on real Helicopter-rotor blades

PROGRAM

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Enemy number one of the Aircraft

Everyone is confronted with corrosion on a regular base. Consequences of corrosion are not limited to the appearance of the material. Corrosion affect the material properties. Corrosion can lead to dangerous situation and can eventually lead to serious accidents.

Training Courses:
- Corrosion Prevention and Control
- Sealant Compound Applications
Corrosion Prevention and Control

Corrosion is the worst enemy of the aircraft

PURPOSE AND SCOPE
This course provides airline engineers and maintenance technicians with the knowledge and skills necessary to implement a corrosion prevention and control program.

OBJECTIVES

**Theoretical (12 hours):**
- Basic principles of corrosion
- Types of corrosion
- Corrosion removal
- Corrosion inspection (before and after removal)
- Corrosion prevention
- Environment, health and safety aspects (EHS)

**Practical (12 Hours):**
- Inspection on aircraft for corrosion
- Removal of corrosion
- Measuring after removal of corrosion

DURATION
3 days

COURSE ID
GT020

WHAT
This course teaches the principles related to corrosion identification, treatment and control.

WHO
This course is designed for technicians, engineers, inspector and all other personal involved in corrosion control, planning and/or repairs

WHY
This course provides the technical knowledge and skills to understand corrosion principles, how to avoid corrosion and how to implement a corrosion inspection program.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:

- Structural Repair Manual
- Corrosion Handbook

COURSE LOCATION
ACRATS Training Services- Customers’s site
Sealant Compound Application

Save time and seal with quality

PURPOSE AND SCOPE
High demands are made on today's aircraft with respect to comfort, fuel consumption and noise, and above all; safety. Sealing seams and joints contributes greatly to this security. It is therefore important to train how to apply sealant compound properly.

OBJECTIVES

**Theoretical (4 hours):**
- Introduction of sealing compound
- Storage
- Shelf life and out time
- Recertification
- Materials and process specification
- Polymer sealants
- Corrosion Prevention
- Environment, health and safety aspects (EHS)
- Composites and sealant

**Practical (20 Hours):**
- Removal Techniques on sheetmetal and composites
- Masking
- Promoters and Pre-treatment methods
- Liquid- and gas tight sealing
- Isolating materials to prevent corrosion
- Applying Sealant Compound

DURATION
3 days

COURSE ID
GT030

WHAT
This course teaches the principles related to the quality and processing of sealing compound and learns how to apply sealant compound through various

WHO
This course is designed for technicians, engineers, inspector and all other personal involved in sealant application

WHY
Remove and apply sealant compound on the correct way. Protect the aircraft against corrosion using sealant compound.

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- Structural Repair Manual
- Corrosion Handbook

COURSE LOCATION
ACRATS Training Services- Customers’s site

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This content is ACRATS proprietary
PURPOSE AND SCOPE

One of the pivotal factors in aerospace maintenance is maintaining an efficient coating on assets. Incorrect application causes inferior protective features of the coating. This leads to adhesion problems and surface corrosion. Proper painting preparation and application reduces the amount of expensive repairs.

DURATION

5 days

COURSE ID

SPT010

OBJECTIVES

**Theoretical** (12 hours):
- Aerospace coating system
- Paint stripping
- Masking
- Surface preparation
- Surface treatment
- Protective coating application
- Protective coating maintenance
- Documentation and civil aviation regulation

**Practical** (28 Hours):
- Spray application
- Spray equipment setup
- Equipment usage and cleaning
- Spray techniques
- Coating defects and failures

WHAT

This course teaches the principles related to the quality and application of paint systems on aircraft structure and components.

WHO

This course is designed for technicians, engineers, inspector and all other personal involved in the aircraft paint system.

WHY

The technicians will be trained to practice strategies and techniques enabling fewer paint usage and improve finish quality.

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Did you know.. that the reason that Flight 243 of Aloha Airlines crashed was Corrosion?

During the construction of the aircraft, the application of epoxy resin between the sheet metal skins of the fuselage was not done properly, allowing water to enter in the area where no resin was present. This led to corrosion, which eventually led to cracking of the metal.

The airplane lost a big part of it fuselage, and unfortunately a cabin crew member lost her life during this accident.

Q: What can we learn of this accident?

A: The need of proper practical training
  • Inspection techniques to detect disbonded area’s.
  • Corrosion detection, prevention and removal.
  • Proper application of resin and curing processes.
They trust us...

Pakistan Navy

Brazilian Air force

Bangladesh Navy

Royal Netherlands Air Force

KLM

Place is reserved for your company’s logo

Singapore Airlines

Air Arabia

JSC Air Company Yakutia

Wideroe Norway

GKN/ FOKKER
Testimonial
Don’t just take our word for it, read what our customers have said

Who: Lieutenant Commander Navy
Company: Bangladesh Navy

Courses: Structure Courses, 4 weeks
- Sheetmetal Working,
- Composite Inspection and Repair,
- Main and Tail Rotor blade Repair,
- Corrosion Prevention and Control.

Experience:
You can find all structure related training in one company. Learn the basic in the structure workshop, and after the basic you can directly go to the aircraft. Here you can put the learning experience into reality on the aircraft.

Who: Joris van den Heuvel
Company: Flying Group

Courses: Composite Inspection and Repair, Level 1 and 2

Experience:
ACRATS Training courses are well-recognized. The course fees and cost of living are considerably lower than other training academy’s while the quality is very high!
Are you looking to improve a specific practical skill or do you want to learn more about certain processes?

ACRATS developed a series of short courses. Perfect to learn all about a specific subject in only 8 or 16 hours.

Are you planning to follow a course with a longer duration, and have one or two days to spare? Choose a short course that fits your specific needs.

**Modules of 8 Hours:**
- Drilling and Countersinking (sheet metal and composites)
- Assessment and Treatment of Scratches
- Safe Use of Chemicals (hazardous goods)
- Heat Treatment of Aluminum Alloys
- Dimpling
- Surface Treatment

**Modules of 16 Hours:**
- Foreign Objective Debris Prevention and Elimination
- Basic Measuring Techniques
- Knowledge of Materials
- Fasteners (sheet metal and composites)
- Aluminum and Aluminum Alloys
- Riveting of Solid Rivets

**NOTE**

ACRATS is constantly developing new courses to fit the needs of our customers. Is the desired training not in the list above? Let us know, together we can make a custom made training to exactly fit your needs and wishes.
Short Course Program (8 hrs)
Combine courses to your own needs

Drilling and Countersinking (Sheet Metal and Composites)
- Introduction
- Concept and requirements
- Standard practices
- Drilling and countersinking in composite
- Drilling and countersinking in aluminum alloys
- Removing fasteners (by drilling)

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Assessment and treatment of Scratches
- Survey
- Criteria
- Scratch level and depth
- Assessments using samples
- Check for scratch depth through the plating layer
- Sanding down scratches
- Grinding down scratches
- Finishing treatment
- Prevention

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Safe Use of Chemicals (hazardous goods)
- What are hazardous goods?
- Classification
- Hazards and properties of chemicals
- Adhesive, resins, paints and lubricants
- Cleaning agents
- Regulations
- Safety and environment

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Heat Treatment of Aluminum Alloys
- Material: metals and alloys
- Material and material condition encoding
- Heat treatments
- Devices for heat treatment
- Heat treatment on rivets
- Rules for using the refrigerator

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Short Course Program (8 hrs)

Combine courses to your own needs

**Dimpling**

- Dimpling in general
- Back pressure dimpling
- Back pressure dimpling in 3 phase
- Dimpling in radius
- Quality check for dimples

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**Surface treatment**

- Introduction
- Types of corrosion
- Degreasing
- Primers
- Chromate layers
- Safety and storage

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<td>Theoretical</td>
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**Foreign Object Debris (FOD) Training**

- What is FOD?
- Different types of FOD
- Main causes and effects of FOD
- Precautions
- Responsibilities
- FOD prevention guidelines

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<tr>
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<tr>
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**Basic Measuring Techniques**

- Measuring is comparing
- Tolerances
- Indicating measuring tools
- Angles
- Use and reading: Vernier Caliper
- Use and reading: Micrometer
- Use and reading: depth Gauge
- Use and reading: Protractor

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Short Course Program (16 hrs)

Combine short courses to your own needs

Knowledge of Materials (Aluminum and Composite)
- Determining kind of metals
- Structures of metal
- Heat treatment of aluminum alloys
- Most used lightweight aluminum alloys
- Material condition encoding
- Corrosion
- Surface treatment
- Corrosion resistant steel
- Fibre reinforced plastics
- Thermo hardener
- Elastomers

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Fasteners
- Permanent and non-permanent joints
- Separation layers between surface layers
- Quick release connections and clamps
- Bolts, screws, studs, washers and nuts
- Installing and removing permanent joints
- Installing and removing non-permanent joints
- Specification of different joints
- Tables and encodings
- Hand tools and application
- Special tooling
- Applied materials
- Thread
- Hand tools and application
- Special tooling
- Use of torque wrenches

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Aluminum and Aluminum Alloys
- Light weight alloys
- Preparation of aluminum
- Material test
- Drop reaction test
- Alloys and alloy elements
- Aluminum alloys
- Material and condition encoding
- Heat treatments
- Metal honeycomb
- Metal working
- Scratches and scratch prevention

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Riveting of Solid Rivets
- Solid rivets
- Calculating length
- Diameter
- Calculate edge and pitch distance
- Calculating crush length and diameter
- Hole patterns
- Oversize fasteners
- Applying and crushing
- Wet riveting

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This content is ACRATS proprietary
Advanced E-Training

A new way of learning, called advanced E-training

What online training courses do we offer?

Visit our Advanced E-training platform for more information.
Virtual Maintenance Training
Training in a virtual world
Everyone is confronted with corrosion on a regular base. Consequences of corrosion are not limited to the appearance of the material. Corrosion affect the material properties. Corrosion can lead to dangerous situation and can eventually lead to serious accidents.
Basic Inspection Course

Quality starts with a good inspection

PURPOSE AND SCOPE

After completion of this inspection course the technician is able to perform inspections on sheetmetal and composite structures, and is able to make damage reports.

DURATION

3 days

OBJECTIVES

Theoretical: (6 hours)
- Introduction
- Damages
- Inspection methods sheetmetal Structures
- Inspection methods Composite Structures
- Documentation
- Inspection reports
- How to document

Practical: (12 hours)
- Damage Mapping
- Various Inspection methods sheetmetal structure
- Various inspections composite structure
- Damage description
- Damage rapport

WHAT

Perform inspection on real aircraft-components and structures.

And learn what is the best way to describe damages and document findings

WHO

- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY

To gain more knowledge and practical skills to perform proper inspections and create a uniform inspection procedure within your company

THIS COURSE COMPLIES WITH THE GUIDELINES OF:

- Structural Repair Manual
- FAA AC 65-33 (Aircraft Composites Repairs)

COURSE LOCATION

ACRATS Training Services- Customers’s site

PROGRAM

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<thead>
<tr>
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<th>DAY 1</th>
<th>DAY 2</th>
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<td>Theoretical Examination</td>
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This information is ACRATS proprietary
Woodpecker Course
Automated Tap-Testing

PURPOSE AND SCOPE
After completion of this structure course the technician is able to perform inspections with the Woodpecker (automated tap tester)

DURATION
3 days

OBJECTIVES

Theoretical: (7 hours)
- Introduction
- Damages
- Inspection methods metal
- Inspection methods Composite
- Documentation
- Inspection reports
- How to document

Practical: (11 hours)
- Damage Mapping
- Inspections metal
- Inspections composite

WHAT
Perform inspection on real aircraft-components and structures.
And learn what is the best way to describe damages and document findings

WHO
- Sheetmetal worker
- Composite Technicians
- Engineers
- NDT Specialist
- MRO
- Military Crew

WHY
To gain more knowledge and practical skills to perform proper inspections with the Woodpecker

THIS COURSE COMPLIES WITH THE GUIDELINES OF:
- Structural Repair Manual

COURSE LOCATION
ACRATS Training Services - Customers's site

This information is ACRATS proprietary
NDT Training

Combine structural training with NDT training

Course overview:
- NDT General Course
- Refresher Course Math- and Physics
- Visual Testing
- Penetrant Testing
- Magnetic Particle Testing
- Eddy Current Testing
- Ultrasonic Testing
- Ultrasonic Thickness Measurement
- Ultrasonic Phased Array
- Digital Radiographic Testing
- Visual Inspection
- TOFD
- ACFM
- Thermographic Testing

Applicable courses are available up to Level 2, including examinations, in accordance with \textit{EN4179/NAS410} requirements and level 3 suitable for the \textit{EN4179/NAS410} certification program.

Interested in a course, contact ACRATS. we take care of your training needs

More information can be found at:

http://tiat.nl/en/training

Training@acrats.com
Facility

Dedicated facilities to train the technicians of tomorrow
Training in the Netherlands

Holland is open to the world and to surrounding countries

Connected by car, train and bus.

- 15 Minutes
  - Antwerp
- 1 Hour
  - Amsterdam
- 3 Hours
  - Paris
- 5 Hours
  - London
- 6 Hours
  - Berlin
Training in the Netherlands
We offer a wide range of training solutions

Courses at our location:
We have excellent and dedicated training facility in the Netherlands, Europe.
We also have agreements with local hotels for good prices for accommodation etc.

Sit-ins:
If you need a single seat (or seats) for a specific course, we can often accommodate you with our scheduled courses. If there is no course scheduled, we will check our resources and try to set up a course for you.

Lunch:
If you come for training, we take care of you! This the reason we included lunch on each training day.
Onsite Training

Anywhere in the world where our customers require us to be!

Our experience Onsite:
We can offer all our training courses at your facility!
We specialize in bringing our advanced training courses onsite!
We can provide you with “off-the-shelf” curriculum, or we can custom tailor the training to meet your specific needs! Whether you need training for a group of engineers or technicians, ACRATS can accommodate! We offer a number of courses in different disciplines, taught by skilled instructors that have an average of over 40 years of experience in their field.

Benefits:
• A cost effective option for six or more employees.
• Real environment learning opportunities in your own facilities.
• Training conform: Internationally recognized training standards
• Savings on trainee travel expenditures
• Training in your own environment, directly putting knowledge and skills into work, as result: increased productivity!

What do we need:
• Classroom facilities for the essential theory.
• Properly equipped workshop. (We can advise you on equipment that should be available for training).

Please contact us today to see how we might arrange an onsite course for you!
Customer Care
Customer Service is not a department it is an attitude

Our customer service office in the Netherlands takes care of all matters concerning your training in the Netherlands or the training at your location.

If you have decided to participate in one of our training programs, you still might have some questions:
• How do the participants get to the training?
• Where are hotel rooms available?
• Who can help me on-site?
• When do I get the certificate?
• Visum related issues.
• Request for letter of invitation
• Etc..

If you like we can also arrange interesting tours of the city and surroundings on weekends etc.

We are happy to help you at all times!
You can contact the Customer Service at:

Phone
+31617750605

E-mail
Training@acrats.com

Live Chat
www.acrats.nl

WhatsApp
+31617750605

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