

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON

COURSE OUTLINE

COURSE TITLE: PLASTICS AND SEALANTS

CODE NO: ASR109

SEMESTER: II

PROGRAM: AIRCRAFT STRUCTURAL REPAIR TECHNICIAN

AUTHOR: STEVE LACHOWSKY

DATE: FEBRUARY 1994

PREVIOUS OUTLINE DATED: MAY 1993

APPROVED: *S. P. O'Connell*
Dean, School of Engineering Tech.

94-02-10
Date

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TOTAL CREDIT HOURS: _____

PREREQUISITE(S):

I. PHILOSOPHY/GOALS:

Students will research and study the various types of plastics used in aircraft and *wind* screen installation. Basic plexiglass repairs will be discussed and repairs completed. Aircraft structural sealants will be researched and in-class presentations on application of sealants and personal safety emphasized.

II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course the student will:

Describe the various types of plastics.

Describe how to repair plastics.

Discuss rubber sealants associated with aircraft sealing.

Discuss personal safety precautions associated with aircraft sealant application.

III. TOPICS TO BE COVERED:

Plastics
Sealants

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IV. LEARNING ACTIVITIES

1.0 Plastics

Upon successful completion of this unit the student will be able to:

- 1.1 Identify and describe the common groups of plastics.
- 1.2 Discuss general handling and storage procedures for plastics.
- 1.3 Describe approved cleaning and maintenance procedures dealing with plastics.
- 1.4 Discuss the various methods of forming plastics.
- 1.5 Describe single and compound curve forming of plastic sheets.
- 1.6 Discuss drilling and sawing practices when maintaining or fabricating plastic items.
- 1.7 Identify the various methods of cementing plastics.
- 1.8 Describe how to perform both permanent and temporary repair of plastics.
- 1.9 Discuss the types of transparent plastics found on aircraft.
- 1.10 Explain the difference between thermo plastics and thermo setting plastics.
- 1.11 Discuss the advantages and disadvantages of plexiglass vs. glass wind screens.
- 1.12 Identify transparent plastics and laminated plastics.
- 1.13 Discuss safety precautions associated with mixing glues and repair chemicals used to repair plastics.

REQUIRED RESOURCES

Textbook: A/C 65-15A
Chapter V, pg. 213 to 221

Textbook: EA-NMR
Aircraft Bonded Structures
Chapter VI, pg. 29 to 37

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LEARNING ACTIVITIES

2.0 **Sealants**

Upon successful completion of this unit the student will be able to:

- 2.1 Describe the term structural sealing and how it applies to various sections of an aircraft structure.
- 2.2 Identify the various sealants required for a repair by referring to charts.
- 2.3 Discuss sealant removal and application.
- 2.4 Describe how to perform various types of sealant repairs.
- 2.5 Discuss various terms associated with sealants.
- 2.6 Discuss "pressure sealing" of aircraft structures.
- 2.7 Describe the equipment used to apply sealants to aircraft structures.
- 2.8 Identify one part sealants and two part sealants.
- 2.9 Describe when sealants should be replaced.
- 2.10 Discuss personal safety precautions when mixing or applying aircraft sealants.

REQUIRED RESOURCES

Textbook: A/C 65-9A
Chapter V, pg. 169 to 170

Teacher handouts

Textbook: A/C 65-15A
Chapter V, pg. 198 to 200

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V. EVALUATION METHODS: (INCLUDES ASSIGNMENTS, ATTENDANCE REQUIREMENTS ETC.)

Two written tests:

Plastics - 50%
Sealants - 50%
TOTAL - 100%

Grading is as follows:

A = 90%-100%
B = 80%-89%
C = 70%-79%
I = Incomplete

VI. REQUIRED STUDENT RESOURCES

A & P General Handbook - A/C 65-9A
A & P Airfare Handbook - A/C 65-15A

VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY:

Book Section (title, publisher, edition, date, library call number if applicable - see attached example)

Periodical Section (Magazines, Articles)

Audiovisual Section (Films, Filmstrips, Transparencies)

Transparencies - Plastics - as per A/C 65-15A
Transparencies - Sealants - as per A/C 65-9A

VIII. SPECIAL NOTES

Students with special needs (eg. physical limitation, visual impairments, hearing impairments, learning disabilities) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of the students.