

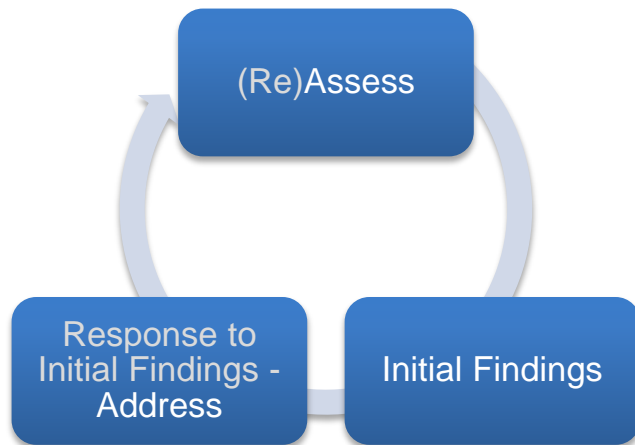
Subject Area Committee Name: **Aviation Maintenance Technology (AMT)**

Focal Outcome Being Reassessed: **Develop and implement a plan for aircraft maintenance action based on research and understanding of appropriate maintenance and inspection data.**

Contact Person:

<i>Name</i>	<i>e-mail</i>
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Use this form if your assessment project is a follow-up reassessment of a previously completed initial assessment. The basic model we use for core outcome assessment at PCC is an “assess – address – reassess” model.



The primary purpose for yearly assessment is to improve student learning. We do this by seeking out areas of concern, making changes, reassessing to see if the changes helped.

- Refer to the help document for guidance in filling out this report. If this document does not address your question/concern, contact [Nora Stevens](#) to arrange for coaching assistance.

- Please attach all rubrics/assignments/etc. to your report submissions.
- **Subject Line of Email:** Reassessment Report Form (or RRF) for <your SAC name> (Example: RRF for NRS)
- **File name:** SACInitials_RRF_2018 (Example: NRS_RRF_2018)
- SACs are encouraged to share this report with their LAC coach for feedback before submitting.
- Make all submissions to learningassessment@pcc.edu.

Due Dates:

- **Planning Sections of LAC Assessment or Reassessment Reports: November 27th, 2017**
- **Completed LAC Assessment or Reassessment Reports: June 16th, 2018**

Please Verify This Before Beginning this Report:

This project is in the second stage of the assess/reassess process (if this is an initial assessment, use the LAC Assessment Report Form CTE. Available [here](#).)

Initial Assessment Project Summary (previously completed assessment project)

*Briefly summarize the main findings of your **initial** assessment. Include either 1) the frequencies (counts) of students who attained your benchmarks and those who did not, or 2) the percentage of students who attained your benchmark(s) and the size of the sample you measured:*

Focusing on the two terms in the 2016-2017 Academic year (Summer 2016, Fall 2016, there were 16 and 18 students, respectively. The LAC Assessment Project focused on four projects/assignments embedded in the course (#10, #11, #12, & #13). The standard benchmark for passing is a minimum grade of 70%.

- Course Project #10: All students met the benchmark in both terms.
- Course Project #11: One student did not meet the benchmark in the Summer term; all students met the benchmark in the Fall term.
- Course Project #12: 3 students (19%) did not meet the benchmark in the Summer term; 4 students (22%) did not meet the benchmark in the Fall term.
- Course Project #13: 4 students (25%) did not meet the benchmark in the Summer term; 7 students (39%) did not meet the benchmark in the Fall term.

Briefly summarize the changes to instruction, assignments, texts, lectures, etc. that you have made to address your initial findings:

As a result of the instructional changes made to this class, the instructor found it necessary to add more detailed information to the course project sheet(s) on correctly following the tooling process(es). It is also necessary for the student to self-assess their preparation, their process(es), and their results, with an emphasis on professional competence. Additionally, the instructor has refined the instruction given in preparation for these course projects to be more definitive and clear.

If you initially assessed students in courses, which courses did you assess:

AMT 212 - Sheet Metal

If you made changes to your assessment tools or processes for this reassessment, briefly describe those changes here:

Following multiple AMT SAC discussions on the findings of the initial assessment project, the instructor has made some changes to the course project sheets. Most notably, the instructor has changed from taking more of a holistic approach to grading these course projects, which was inherently more subjective in nature, to a very clearly-defined rubric that specifically details how points are added or subtracted from the course project; this has made grading these course projects significantly more objective in nature.

The SAC believes these steps will aid in reducing any student confusion and/or frustration with grading; in addition, the SAC believes this will encourage better student participation and hopes we will find greater levels of student success.

1. Outcome Chosen for Focal Analysis

1A. How does your field interpret the outcome you are reassessing?

This is based on 14 CFR 43.13, a regulation that governs how aviation maintenance technicians perform their work, which states (in part), that the performer of any work must understand and use current, applicable data, use appropriate tools, and perform the work to a quality (airworthiness) standard to be acceptable.

1B. If the assessment project relates to any of the following, check all that apply:

- Degree/Certificate Outcome – if yes, include here:* See "Focal Outcome," page 1.
- PCC Core Outcome – if yes, which one:* Professional Competence
- Course Outcome – if yes, which one:* Identify and apply acceptable methods, techniques and practices during the assembly and repair of aircraft sheetmetal structures.

2. Project Description

2A. Assessment Context

Check all the applicable items:

Course-based assessment.

Course names and number(s): AMT 212 – Sheet Metal

Type of assessment (e.g., essay, exam, speech, project, etc.): Project

Are there course outcomes that align with this aspect of the core outcome being investigated? Yes No

If yes, include the course outcome(s) from the relevant CCOG(s): Identify and apply acceptable methods, techniques and practices during the assembly and repair of aircraft sheetmetal structures.

Common/embedded assignment in all relevant course sections. An embedded assignment is one that is already included as an element in the course as usually taught. Please attach the activity in an appendix. If the activity cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.):

Common – but not embedded - assignment used in all relevant course sections. Please attach the activity in an appendix. If the activity cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.):

Practicum/Clinical work. Please attach the activity/checklist/etc. in an appendix. If this cannot be shared, indicate the type of assessment (e.g., supervisor checklist, interview, essay, exam, speech, project, etc.):

External certification exam. Please attach sample questions for the relevant portions of the exam in an appendix (provided that publically revealing this information will not compromise test security). Also, briefly describe how the results of this exam are broken down in a way that leads to nuanced information about the aspect of the core outcome that is being investigated.

SAC-created, non-course assessment. Please attach the assessment in an appendix. If the assessment cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.):

Portfolio. Please attach sample instructions/activities/etc. for the relevant portions of the portfolio submission in an appendix. Briefly describe how the results of this assessment are broken down in a way that leads to nuanced information about the aspect of the core outcome that is being investigated:

TSA. Please attach the relevant portions of the assessment in an appendix. If the assessment cannot be shared, indicate the type of assignment (e.g., essay, exam, speech, project, etc.):

- Survey**
- Interview**
- Other.** Please attach the activity/assessment in an appendix. If the activity cannot be shared, please briefly describe:

In the event publicly sharing your assessment documents will compromise future assessments or uses of the assignment, do not attach the actual assignment/document. Instead, please give as much detail about the activity as possible in an appendix.

2B. How will you score/measure/quantify student performance?

- Rubric** (used when student performance is on a continuum - if available, attach as an appendix – if in development, attach to the completed report that is submitted in June)
- Checklist** (used when presence/absence rather than quality is being evaluated - if available, attach as an appendix – if in development, attach to the completed report that is submitted in June)
- Trend Analysis** (often used to understand the ways in which students are, and are not, meeting expectations; trend analysis can complement rubrics and checklist)
- Objective Scoring** (e.g., Scantron-scored examinations)
- Other** – briefly describe:

2C. Type of assessment (select one per column)

- | | |
|--|---|
| <input type="checkbox"/> Quantitative | <input type="checkbox"/> Direct Assessment |
| <input checked="" type="checkbox"/> Qualitative | <input type="checkbox"/> Indirect Assessment |

If you selected 'Indirect Assessment', please share your rationale:

Qualitative Measures: projects that analyze in-depth, non-numerical data via observer impression rather than via quantitative analysis. Generally, qualitative measures are used in exploratory, pilot projects rather than in true assessments of student attainment. Note that the **use of a numerical rubric is considered quantitative analysis**, even if the artifacts under consideration are not based on quantitative evaluations (e.g. an essay scored by a rubric counts as quantitative in the context of assessment).

Indirect assessments (e.g., surveys, focus groups, etc.) do not use measures of direct student work output. These types of assessments are also not able to truly document student attainment.

2D. Check any of the following that were used by your SAC to create or select the assessment/scoring criteria/instruments used in this project:

- Committee or subcommittee of the SAC collaborated in its creation
- Standardized assessment
- Collaboration with external stakeholders (e.g., advisory board, transfer institution/program)
- Theoretical model (e.g., Bloom's Taxonomy)
- Aligned the assessment with standards from a professional body (for example, The American Psychological Association Undergraduate Guidelines, etc.)
- Aligned the benchmark with the Associate's Degree-level expectations of the Degree Qualifications Profile
- Aligned the benchmark to within-discipline post-requisite course(s)
- Aligned the benchmark to out-of-discipline post-requisite course(s)
- Other (briefly explain:)

2E. In which quarter will student artifacts (samples of student work) be collected? If student artifacts will be collected in more than one term, check all that apply.

- Fall** **Winter** **Spring** **Other** (e.g., if work is collected between terms)
(Summer...)

2F. What student group do you want to generalize the results of your assessment to? For example, if you are assessing performance in a course, the student group you want to generalize to is 'all students taking this course.'

All students taking the course.

2G. There is no single, recommended assessment strategy. Each SAC is tasked with choosing appropriate methods for their purposes. Which best describes the purpose of this project?

- To measure established outcomes and/or drive programmatic change**
- To participate in the Multi-State Collaborative for Learning Outcomes Assessment**
- Preliminary/Exploratory Investigation**

If you selected 'Preliminary/Exploratory', briefly describe your rationale for selecting your sampling method:

2H. Which will you measure?

- the population** (all relevant students – e.g., all students enrolled in all currently-offered sections of the course)
 a sample (a subset of students)

If you are using a sample, select all of the following that describe your sample/sampling strategy (refer to the Help Guide for assistance):

- Random Sample** (student work selected completely randomly from all relevant students)
 Systematic Sample (student work selected through an arbitrary pattern, e.g., 'start at student 7 on the roster and then select every 5th student following'; repeating this in all relevant course sections)
 Stratified Sample (more complex, consult with an LAC coach if you need assistance)
 Cluster Sample (students are selected randomly from meaningful, naturally-occurring groupings (e.g., SES, placement exam scores, etc.)
 Voluntary Response Sample (students submit their work/responses through voluntary submission – e.g., via a survey)
 Opportunity/Convenience Sample (only some of the relevant instructors are participating)

The last three options in bolded red have a high risk of introducing bias. If your SAC is using one or more of these sample/sampling strategies, please share your rationale:

2J. Briefly describe the procedure you will use to select your sample (including a description of the procedures used to ensure student and instructor anonymity).

N/A (All students in course.)

2K. Follow this link to determine how many artifacts (samples of student work) you should include in your assessment: <http://www.raosoft.com/samplesize.html> (see screen shot below).

Start with the number of students you estimate will be enrolled in the course(s) from which you will draw the sample – that is your “population.” Enter the other numbers as indicated in the screenshot. The sample size calculator will tell you how many artifacts you need to collect. Enter that number below:

N/A - All students in course.

3. Project Mechanics

3A. Does your project utilize a rubric for scoring? Yes No

If 'No', proceed to section B. If 'Yes', complete the following:

Which method of ensuring consistent scoring (inter-rater reliability) will your SAC use for this project?

Agreement – the percentage of raters giving each artifact the same/similar score in a norming session; ideally, that will be 75% agreement or greater.

If you are using agreement, describe your plan for plan for conducting the “norming” or “calibrating” session:

Only one instructor teaches the course and grades the projects.

Consensus - all raters score all artifacts and reach agreement on each score

Consistency* – raters' scores are correlated: this captures relative standing of the performance ratings - but not precise agreement. Briefly describe your plan:

Notes: the agreement method is the most frequently used for assessment, but the **calculation of inter-rater reliability is also among the more challenging issues** within assessment as a whole. If your SAC is unfamiliar with norming procedures, contact your assessment coach, or if you don't know who your coach is, contact LAC Vice Chair [Chris Brooks](#) to arrange for coaching help for your SAC's norming session.

The consistency method is not generally recommended; see the help guide for details.

3B. Have performance benchmarks been specified?

The fundamental measure in educational assessment is the number of students who complete the work at the expected/required level. We are calling this SAC-determined performance expectation the 'benchmark.'

- Yes**
 No

If yes, briefly describe your performance benchmarks, being as specific as possible (if needed, attach as an appendix):

70% grade on the project

If no, what is the purpose of this assessment? (For example, this assessment will provide information that will lead to developing benchmarks in the future; or, this assessment will lead to areas for more detailed study, etc.)

Additionally, to provide information which will lead to identifying benchmarks of adequate understanding of fasteners, proper selection of tools, and proper installation technique.

*3C. The purpose of this assessment is to have SAC-wide evaluation of student work, not to evaluate a particular instructor or student. Before evaluation, remove student-identifying information (and, when possible remove instructor-identifying information). If the SAC wishes to return instructor-specific results, see the Help Guide for suggestions on how to code and collate. **Please share your process for ensuring that all identifying information has been removed.***

The instructor will supply evaluation grade sheets with names removed.

3D. Will you be coding your data/artifacts in order to compare student sub-groups? **Yes** **No**

If yes, select one of the boxes below:

- student's total earned hours** **previous coursework completed** **ethnicity** **other**

Briefly describe your coding plan and rationale (and if you selected 'other', identify the sub-groups you will be coding for):

*3E. Ideally, student work is **evaluated** by both full-time and adjunct faculty, even if students being assessed are taught by only full-time and/or adjunct faculty. Further, more than one rater is needed to ensure inter-rater reliability. If you feel only one rater is feasible for your SAC, please explain why:* Only one instructor teaches the course and is the most current subject matter expert for this particular specific area.

Who will be assessing student work for this project? Check all that apply.

- PCC Adjunct Faculty within the program/discipline
- PCC FT Faculty within the program/discipline
- PCC Faculty outside the program/discipline
- Program Advisory Board Members
- Non-PCC Faculty
- External Supervisors
- Other:

End of Planning Section – Complete the remainder of this report after your assessment project is complete.

Beginning of End-of-Year Reporting Section – complete the following sections after your reassessment project is complete.

4. Changes to the Assessment Plan

Have there been changes to your project since you submitted the planning section of this report?

Yes **No**

If so, summarize those changes below:

5. Narrative

Broadly, what did your SAC learn this year from the assessment of the selected core outcome?

By adding more definition to the process of checking off each item of all four class projects in order for each step, and adding more definition to the grading criteria/rubric has improved individual performance of each project. By adding more definition to the correct installation dimension to class project 12, there was improved success in an area that had previously seen poor [student] performance.

6. Results of the Analysis of Assessment Project Data

6A. Quantitative Summary of Sample/Population

How many students were enrolled in all sections of the course(s) you assessed this year? 15

If you did not assess in a course, report the number of students that are in the group you intend to generalize your results to.

How many students did you actually assess in this project? 15

Did you use a recommended sample size (see the Sample Size Calculator linked to in section 2J)?

Yes No

If you did not use a recommended sample size in your assessment, briefly explain why:

All students in course evaluated.

6B. Did your project utilize a rubric for scoring? Yes No

If 'No', proceed to section C. If 'Yes', complete the following:

How was inter-rater reliability assured? (Contact your SAC's LAC Coach if you would like help with this.)

- Agreement** – the percentage of raters giving each artifact the same/similar score in a norming session
- Consensus** - all raters score all artifacts and reach agreement on each score
- Consistency** – raters' scores are correlated: this captures relative standing of the performance ratings - but not precise agreement
- Inter-rater reliability was not assured.**

If you utilized agreement or consistency measures of inter-rater reliability, report the level here:

Comment: N/A - only one instructor teaches the course and due to limited instructor availability, it is not feasible to have another instructor to rate student work.

6C. Brief Summary of Benchmark Achievement (frequencies and/or averages)

In most cases, report the numbers of students who attain your benchmark level and the numbers who do not. **Do not average these numbers or combine dissimilar categories (e.g., do not combine ratings for communication and critical thinking together).** If your project measures how many students attain the overall benchmark level of performance, report the summary numbers below (choose one):

1. *If you used frequencies of benchmark achievement, report those here. For example, “46 students attained or exceeded the benchmark level in written communication and 15 did not.” If necessary, provide detailed results in an appendix.*

All students passed the course projects as revised.

2. *If you used percentages of the total to identify the degree of benchmark attainment in this project, report those here. For example, “75% of 61 students attained or exceeded the benchmark level over-all in written communication.”*

All students passed the course projects successfully on the first attempt and with a significantly higher quality output.

3. *Compare your students’ attainment of your expectations/benchmarks in this reassessment with their attainment in the initial assessment. Briefly summarize your conclusions.*

The SAC noted that by adding additional clarifying details in both instructional content as well as evaluation criteria, students were able to better focus on learning the skill and were subsequently able to perform to an acceptable standard when being evaluated on the in-class project(s).

6D. *If possible, attach a more detailed description or analysis of your results (e.g., rubric scores, trend analyses, etc.) as an appendix to this document. Appendix attached? Yes No*

6E. *Do the results of this project suggest that additional academic / training changes might be beneficial to your students (changes in curriculum, content, materials, instruction, pedagogy etc.)?*

Yes No

If you answered ‘Yes,’ briefly describe the changes to improve student learning below. If you answered ‘No’, detail why no changes are called for.

The successful project definition has been achieved at this point, although this does not preclude potential revisions in the future.

If you are planning changes, when will these changes be fully implemented?

N/A

6F. Has all identifying information been removed from your documents? (Information includes student/instructor/supervisor names/identification numbers, names of external placement sites, etc.)

Yes No

7. SAC Response to the Assessment Project Results

7A. Assessment Tools & Processes: Indicate how well each of the following worked for your assessment:

Tools (rubrics, test items, questionnaires, etc.):

very well some small problems/limitations to fix notable problems/limitations to fix completely inadequate/failure

Please comment briefly on any changes to assessment tools that would lead to more meaningful results if this assessment were to be repeated (or adapted to another outcome).

Provided a good model for evaluation and improvement to other projects.

Processes (faculty involvement, sampling, norming, inter-rater reliability, etc.):

very well some small problems/limitations to fix notable problems/limitations to fix tools completely inadequate/failure

Please comment briefly on any changes to assessment process that would lead to more meaningful results if this assessment were to be repeated (or adapted to another outcome).

Very well - provided structure for transferability. However, it is also important to note that in our department, as mentioned earlier, with only one instructor who teaches the course and the limited availability, it was not possible for some aspects of this to even be addressed (sampling, norming, inter-rated reliability...)

8. Follow-Up Plan

8A. How will the changes detailed in this report be shared with all FT/PT faculty in your SAC? (select all that apply)

- | | | |
|--|--|-----------------------------------|
| <input type="checkbox"/> email | <input type="checkbox"/> phone call | <input type="checkbox"/> workshop |
| <input type="checkbox"/> campus mail | <input checked="" type="checkbox"/> face-to-face meeting | <input type="checkbox"/> other |
| <input type="checkbox"/> no changes to share | | |

If 'other,' please describe briefly below.

8B. Is further collaboration/training required to properly implement the identified changes?

- Yes No

If 'Yes,' briefly detail your plan/schedule below.

8C. Sometimes reassessment projects call for additional reassessments. These can be formal or informal. How will you assess the effectiveness of the changes you plan to make?

- | | |
|---|--|
| <input type="checkbox"/> follow-up project in next year's annual report | <input checked="" type="checkbox"/> on-going informal assessment |
| <input type="checkbox"/> in a future assessment project | <input type="checkbox"/> other |

If 'other,' please describe briefly below.

8D. SACs are learning how to create and manage meaningful assessments in their courses. This development may require SAC discussion to support the assessment process (e.g., awareness, buy-in, communication, etc.). Please briefly describe any successful developments within your SAC that support the quality assessment of student learning. If challenges remain, these can also be shared.

See previous notes – but in short summation, the SAC is actively learning (and looking at ways) to better define and evaluate in-class projects. This is an ongoing process, especially as within the past 4 years there are three new or returning full-time faculty, and within the next year or two it is anticipated there will be additional faculty turnover. But, by going through the initial assessment process and then the re-evaluation, both the instructor involved and the department/SAC as a whole have been engaged with looking at other in-class projects with a critical eye.

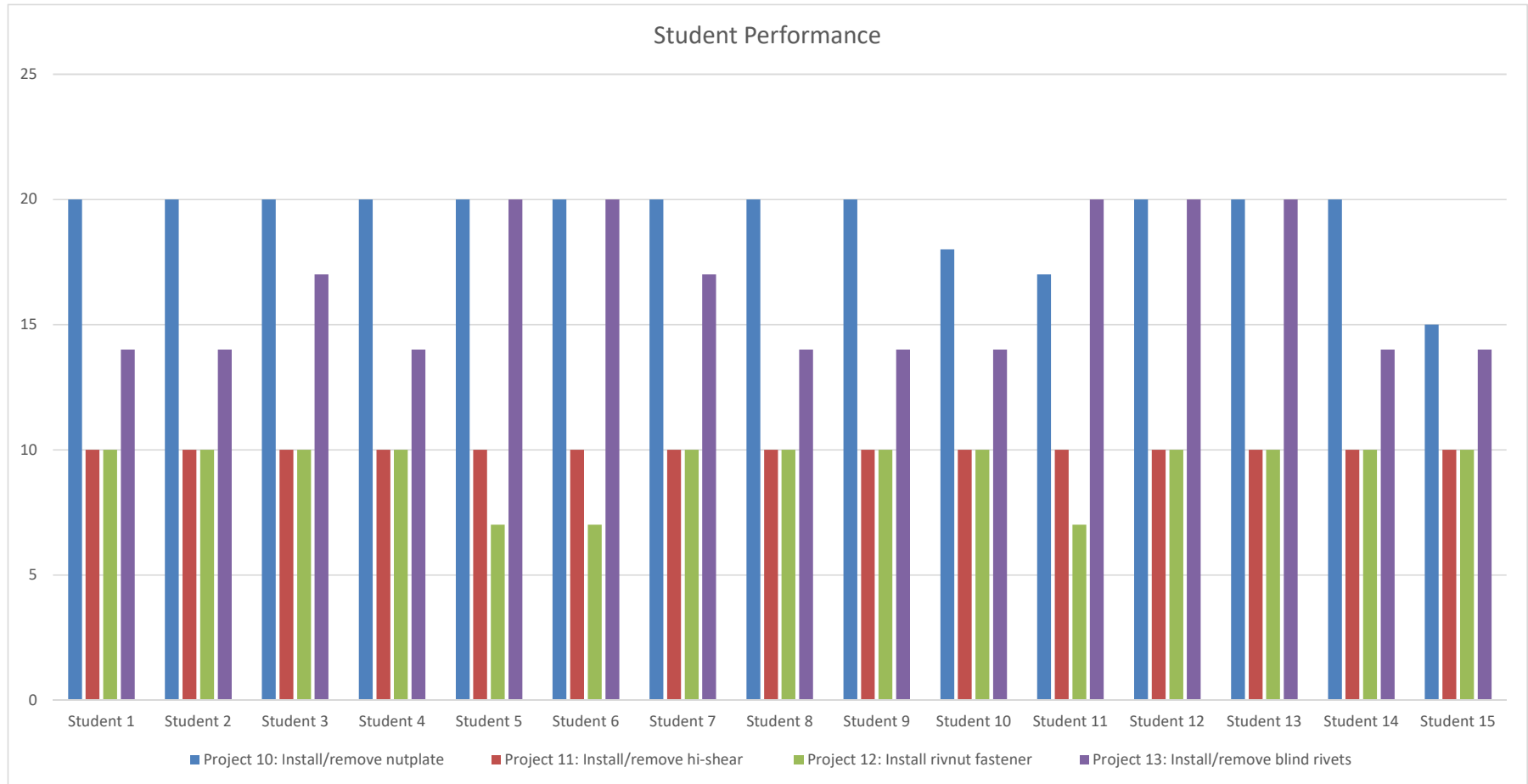
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APPENDIX 1:

Graph of Student Performance

PROJECT:	Student 1	Student 2	Student 3	Student 4	Student 5	Student 6	Student 7	Student 8	Student 9	Student 10	Student 11	Student 12	Student 13	Student 14	Student 15
Project 10: Install/remove nutplate	20	20	20	20	20	20	20	20	20	18	17	20	20	20	15
Project 11: Install/remove hi-shear	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Project 12: Install rivnut fastener	10	10	10	10	7	7	10	10	10	10	7	10	10	10	10
Project 13: Install/remove blind rivets	14	14	17	14	20	20	17	14	14	14	20	20	20	14	14

MINIMUM PASSING: Projects 10, 13: 14 points; Projects 11, 12: 7 Points (all 70%)



APPENDIX 2:

Revised
Class Project Sheets

Name:

Project 10, Nutplate

Course Outcome: Identify and apply acceptable methods, techniques and practices during the assembly and repair of aircraft sheetmetal structures.

- Check off these steps in order.
- View the nutplate documents on D2L under Unit 4, Special Fasteners.
- Also refer to the Genuine Aircraft Hardware catalog pages on nutplates and CCR rivets.
- Using the MS21059L3 nutplate provided (for a 10-32 screw), install it onto a corner of your project #8 using the flush CCR rivets provided. (2pts)
- Using one of the specified nutplate jigs, drill the jig pilot hole for the pilot of the jig tool that you have selected. (2pts)
- Now drill one rivet hole using #41 or #40 drill. Flip over the tool to locate the second rivet hole. The 3 holes will be in alignment (4pts)
- Hand countersink the rivet holes for approximate flushness the CCR rivets. (4pts)
- Before riveting the nutplate, enlarge the pilot hole to a larger clearance hole for the screw that threads into the “floating” nutplate. ¼ inch is adequate. (5pts)
- Install the nutplate correctly using “blind” CCR264SS3-02 rivets. Rivets should be nearly flush when installed. (3pts)
- Turn it in for grading along with this sheet.

Grading criteria:

___ 20 points for following procedures. 2 points per step
(70% minimum required for passing project)

Name:

Project 11, Hi-Loks

Course Outcome: The student will be able to identify and apply acceptable methods, techniques and practices during the assembly and repair of aircraft sheetmetal structures.

- Check off the following steps in order.
- View the Hi-Lok Hi-Tigue fastening systems installation instructions document on D2L under Unit 4 "Special Fasteners". Special attention should be given to pages on hole preparation and the installation steps.
- Refer to the Genuine Aircraft Hardware catalog pages on Hi-Lok pins and collars for information on available gauges and pin/collar selection and identification.
- Drill a #13 hole in your project #8 for the HL18-6-3 Hi-Lok pin. This would be through the doubler and skin (or plug) for a thickness of 0.126. Refer to hole preparation instructions.
- Ream to 3/16 with the available reamer. Do not use a sloppy hole for this project. Drill another hole if necessary.
- Deburr the hole according to instructions.
- Install the HL70-6 collar onto your pin using your 5/16 six-point box-end wrench and a 5/64 Allen-wrench tool provided until it is fully installed. Refer to the non-interference fastener installation instructions.
- What is the "minimum grip allowed" for the HL18-6-3 pin? _____
- What is the "maximum grip allowed" for the HL18-6-3 pin? _____
- Turn in your project for grading with this project sheet.

Grading criteria:

_____ 10 points total for following assembly procedures. 1 point per step
(70% minimum required for passing project)

Name:

Project 12, Rivnut

Course Outcome: Identify and apply acceptable methods, techniques and practices during the assembly and repair of aircraft sheetmetal structures.

- Check off these steps in order.
- View the Rivnut documents on D2L under Unit 4, Special Fasteners.
- Also refer to the Genuine Aircraft Hardware catalog pages on “Blind Rivet Nuts” or Rivnuts.
- Using the Rivnut supplied, install it onto your project #7 in a place where the material thickness is at least 0.075 but not more than 0.120. (2pts)
- Drill the hole specified in the process manual. The installation drill size is determined from the process manual by the thread size of the Rivnut. The A8K120 Rivnut is for 8-32 threaded fasteners. (1pts)
- Notch the anti-rotation keyway with the key-seater from the tooling available in the tool room or on a reference table in the shop. You must know the Rivnut thread size in order to select the correct tooling. (2pts)
- Install the Rivnut with the puller correctly. Install the Rivnut making sure that the anti-rotation nib is aligned with the key-seater nib. (2pts)
- Be sure that you do not pull on the tool too much. Pull it to the reference L_2 dimension specified in the process manual (i.e. 0.315 for the 8-32 with 0.120 max grip length). If you pull too much, the threads will be stripped out from the inside of the Rivnut. 3 points for no defects or damage to the Rivnut threads, 0 points if threads are stripped. You will not receive another Rivnut if you strip the threads.
- Turn in your project with this sheet for grading.

Grading criteria:

___ 10 points total (70% minimum required for passing project)

Name:

Project 13, Cherry Max rivets

Course Outcome: Identify and apply acceptable methods, techniques and practices during the assembly and repair of aircraft sheetmetal structures.

Check off these steps in order.

- Go to cherryaerospace.com to review:
 - The CherryMax animation and
 - CherryMax (CherryLock) grip gage tutorial.
 - These will help you understand this project.

- Use the procedures outlined in the current process manual and refer to other documents on D2L under Unit 4 for Special Fasteners.

- Install only two universal head, nominal diameter, CherryMax rivets into your project 7 at the patch corners.

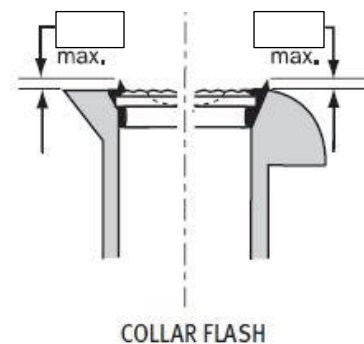
- You need to know how to use your grip gage and the process manual to determine the correct rivet length.
 - Check here to indicate that you know how to use the grip gage to determine the correct rivet length. View the tutorial.
 - Check here to indicate that you know how to use the process manual to determine the correct rivet length.

- Installation tools are hand-operated hydraulic pullers available from the tool room, from a drawer in the red tool box or they may be on a demonstration table. Follow the operating instructions in the box for the tooling. CAUTION: you can jam up the tooling by not following the "Rivet Pintail Removal" on page 7 of the HK-150 operating instructions.

CAUTION: Hold onto the nose of the tool so it will not scrape across your project when the rivet shank "pops" or breaks when the installation is complete.

Collar Flash:

A slight collar "flash" caused by the pressures necessary to drive the collar is acceptable within the limit shown.



Name:

Project 13, Cherry Max rivets

- Present your installed rivets to the instructor and explain how they actually conform to the all of the aspects of the inspection criteria outlined in the process manual. Study it carefully and thoroughly. You will need the criteria with you as you explain it.

Instructor inspection _____

- Now remove only one of the rivets using procedures outlined in the process manual. View the tutorial on "removal procedure for Cherry blind rivets."

NOTE: To remove most mechanical lock rivets, you may first file a flat spot on the rivet's center stem. Then center punches and drills are used to remove the lock ring, and punches are used to remove the stem. With the lock ring removed, you can easily tap out the remaining stem. Then drill to the depth of the manufactured head, and tap out the remaining rivet shank. All brands of "mechanical lock" blind rivets are removed using this same basic technique.

NOTE: Instead of using a small center drill per the process manual or tutorial (which we do not have), you should use a 1/8 split-point drill to drill the steel shank to release the collar. Do not damage the skin during removal.

If you damage skin on your first removal, you may remove your second fastener.

Grading criteria:

___ 14 points for following installation procedures. 2 points per step

___ 6 points for no damage to the skin, 3 points if the second fastener is removed without damage.

___ 20 points total (70% minimum required for passing project)