

6

Mobility pass



Education and Culture DG

Lifelong Learning Programme

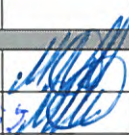
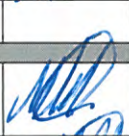
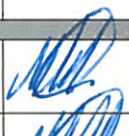

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| <i>Joining of structural components and aircraft airframes</i> | | | | | |
|--|--|--|--|--|--|

Unit 11:

Independent quality inspections

Remarks

| Mobility unit | Assessment | | | | Place | Date | Signature |
|---|------------|-------------------|---------------------|----------------|----------|-----------|---|
| | sup-ported | under instruction | under surveil-lance | independ-ently | | | |
| Choosing and preparing of test control units and test control cir-cuits to measure the function of assemblies, sub-assemblies and devices | | | | | | | |
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| Measuring the function of as-semblies, sub-assemblies and devices | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Documenting and interpreting the results of the measurement | | | X | | Flowline | 7.5-10.5 |  |
| | | | X | | | 21.5-25.5 |  |
| | | | | | | | |
| Orienting and calibrating as-semblies or struc-tural components by reference points, lines or levels | | | X | | Flowline | 7.5-10.5 |  |
| | | | X | | | 21.5-25.5 |  |
| | | | | | | | |
| Performing quality assurance mea-surements on assemblies, sub-assemblies and devices with re-spect to the ma-nual | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Knowledge about the relevant chapters of the quality control manual | | | | | | | |
| Choosing the right control units | | | | | | | |
| Respecting the health hazards when working with high-voltage current | | | | | | | |
| Communicating and cooperating with the colleagues from the safety department | | | | | | | |
| Working conforming to standards | | | | | | | |
| Documentation of measurements and results | | | | | | | |

Possible units of a mobility pass

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|---|--|--|--|--|--|--|--|
| Performing visual and non-destructive material testing of new and repaired components | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Performing and recording of the final quality control | | | | | | | |
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| <i>Performing independent quality inspections</i> | | | | | | | |

4. Joining and dissolving of structure components and aircraft airframes

Complex structure components and structure assemblies (e.g. Landing flap commands, shell elements or bearing area structures) and whole aircraft-airframes are produced out of single components. For this purpose the single parts or components have to be selected out of most varying materials on the basis of technical information. The operational funds needed for joining must be selected likewise. During the process of adaptation and joining the given gap and profile sizes have to be kept. For joining major components, the major components must be transported, lifted and positioned as well. A main topic of the joining processes in the aircraft construction is the manual and mechanical setting of rivets. Depending upon material, combination of materials (e.g. mixed construction of metal and composite) and stress different rivets are used (e.g. hi-lok, lock bolt or hi-shear). For the preparation of a rivet joint holes and lowerings are produced and sealants are applied on the joining areas. Apart from riveting with rivet hammer or rivet press there are also automated production systems used for riveting at standardized components manufacturing plants. As further joining processes there are used screwed connections, safety elements according to aviation standards and splicing tapes as well as most varying welding methods (e.g. laser-welding and friction agitating welding) in order to connect assemblies. Also the liaison methods and processing at these procedures depend on material, material combination and stress of the component. Some further processing steps must be accomplished at the finished assemblies (e.g.: Stems of tons, position and measure from grounds). The connections that are established in the context of this task of work are subject to a permanent inspection. If defective connections are determined, then an immediate exchange occurs. In addition the actual connection is first solved and then replaced afterwards by a new connection. In the maintenance and repair the solving is accomplished with the disassembly of structure components. Due to adjustment and optimization work this part of the task of work is important in addition, for the first assembly. Since the solving of structure components in most of the cases doesn't occur without deconstruction it requires much experience of the skilled worker that no unnecessary damage occurs at the components. The documentation of the orders, the gap and profile sizes and possible construction deviations ranks likewise among this Typical Professional Task. After conclusion of the joining processes the surface of the components must be protected. This work procedure is accomplished depending upon Labour Organization independently as next Typical Professional Task or directly after conclusion of the joining work.

11 Independent quality inspections

As a result of the high requirement to the operation reliability of aircrafts, a foreign inspection of the product and the process quality is indispensable apart from the self-checking. While the self-checking is a component of each accomplished work task of an aircraft mechanic, the independent inspection is a self-contained task of the component and assembly acceptance by craftsmen who are not involved in the production and the reconditioning procedure. Here, varying non-destructive inspection methods are used like e.g. visual inspection and cracking inspections by means of eddy current or ultrasonic inspections. The documentation of the accomplished work is an integrative element of this Typical Professional Task.