|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **AC/DC POWER SUPPLY TRAINER - TRAINING OBJECTIVES TO BE MET** | | | | | | | | | | |
| **School of Army Aeronautical Engineering** | | | | | | | | | | |
| **TO Number** | **Training Objectives (Performance)** | | **Enabling Objective** | | **Key Learning points Description** | | | **Standards** | **Notes** | |
|  |
|  |  | |  | |  | | |  |  | |
| Tav 4 |  | | 04.06 - Explain techniques for testing and measuring of electrical circuits | | 04.06.01 - Explain electrical meters | | |  |  | |
|  | | 04.06.02 - Measure voltage | | |  |  | |
|  | | 04.06.03 - Measure resistance | | |  |  | |
|  | | 04.06.04 - Measure current | | |  |  | |
|  | | 04.06.05 - Testing for continuity | | |  |  | |
|  | | 04.07 - Demonstrate basic electrical principles | | 04.07.01 - Investigate Ohms law | | |  |  | |
|  | | 04.07.02 - Measure resistance practical | | |  |  | |
|  | | 04.07.03 - Measure resistance in series practical | | |  |  | |
|  | | 04.07.04 - Measure resistance in parallel practical | | |  |  | |
|  | | 04.07.05 - Measure series/parallel resistance practical | | |  |  | |
|  | | 04.07.06 - Wheatstone practical | | |  |  | |
|  |  | |  | |  | | |  |  | |
| TAv 13 | TAv 28.1 Maintain electrical cables and looms [3/2] | | 13.61 - Carry out fault finding techniques | | 13.61.01 - Carry out five different types of electrical fault finding techniques practically | | | The student shall be able to comprehend and apply: | TO Reference: [EMAR 66 Module 7] | |
| TAv 28.3 Carry out cable inspection [C1] | | 13.62 - Carry out fault finding techniques | | 13.62.01 - Carry out all five different types of electrical fault finding on five different aircraft systems | | | 1. Safety Precautions - Aircraft and Workshop. |
|  | |  | | The new AC DC PST must be adapted for fault finding techniques for the following five different fault types: | | | 2. Workshop Practices. |
| 1. Open circuit | | | 3. Tools. |
| 2. High resistance | | | 4. Aviation General Test Equipment. |
| 3. Short circuit to earth | | | 5. Engineering Drawings, Diagrams and Standards. |
| 4. Line to line short circuit | | | 6. Electrical Wiring Interconnection Systems (EWIS). |
| 5. Cross connection | | | 7. Electrical Cables and Connectors 8. Soldering |
|  |  | |  | |  | | |  |  | |
| TAv 26 | Explain the principles of Electrical Power Systems | | 26.01 - Explain the principles of electrical power systems | | 26.01.11 - Demonstrate understanding of the principles of AC and DC Power supply systems | | | 1. NVQ Level 3. | TO Reference: [EMAR 66 Module 13] | |
| TAv 22.1 Maintain AC power generation systems [C3/2] | | 26.01 - Explain the principles of electrical power systems | | 26.01.02 & 04 - DC PST is used to consolidate what is taught in the TNN/Module (CHAPTER 3 TTN) | | | 2. EMAR 66 Module 13 Section 13.5. | Voltage Regulation should be covered to a depth sufficient to gain a general understanding of the principles involved. | |
| TAv 22.2 Maintain AC power distribution systems[C3/2] | | 26.01.05 - Describe AC Power supply systems | |  | | | The student shall have knowledge of the following systems: |
| TAv 22.3 Maintain DC power generation systems [C3/2] | | 26.01.07 - Describe power distribution systems | | 1. Voltage regulation. |
| TAv 22.4 Maintain DC power distribution systems [C3/2] | | 26.01.08 - Describe inverters, transformers and rectifiers | | The student should be able to comprehend and apply the principles of: |
| TAv 22.5 Maintain ground power supplies (airframe) [C3/2] | |  | | 2. Batteries Installation and Operation. |
|  | | 3. DC power generation. |
| 4. AC power generation. |
| 5. Emergency power generation. |
| 6. Voltage regulation. |
| 7. Power distribution. |
| 8. Inverters, transformers, rectifiers. |
| 9. Circuit protection. |
| 10. External/Ground power. |
|  |  | |  | |  | | |  |  | |
| TAv 57 | Apply aircraft system knowledge in a practical exercise on a suitable training aid. | | Apply aircraft system knowledge in a practical exercise on a suitable training aid. | | The ACDC PST is used to satisfy fault diagnosis on AC and DC electrical power systems | | | 1. NVQ Level 3. | TO Reference: [EMAR 66] | |
| TAv 22.1 Maintain AC power generation systems [C3/2] | | 2. EMAR 66 | The student should be able to demonstrate fault finding methodology. | |
| TAv 22.2 Maintain AC power distribution systems[C3/2] | | 3. Training aid publication. |
| TAv 22.3 Maintain DC power generation systems [C3/2] | | and apply the knowledge gained during the course to conduct at least 1 of the following tasks on a minimum of 50% of the systems listed. By the end of training each task must be completed once. |
| TAv 22.4 Maintain DC power distribution systems [C3/2] | | **Tasks** |
| TAv 22.5 Maintain ground power supplies (airframe) [C3/2] | | 1. Procedural Fault Diagnosis and rectification (Corrective maintenance). |
|  | | 2. Functional / Operational Tests. |
|  |
| **System** |
| Electrical Power. |
| **AC/DC POWER SUPPLY TRAINER - TRAINING OBJECTIVES TO BE MET** | | | | | | | | | | |
| **Royal Navy Aeronautical & Sea Survival School** | | | | | | | | | | |
| **TO Number** | | **Training Objectives (Performance)** | | **Enabling Objective** | | **Key Learning points Description** | **Standards** | | | **Notes** |
|  | | |
|  | |  | |  | |  |  | | |  |
| TO AV002 | | Explain the construction, function, operation and maintenance of a generic aircraft Electrical power System | | AV002.1 Explain the principles of a generic aircraft electrical power system. | |  |  | | | LAETQC - Course 6705 |
| AV002.2 Recall the functions of the major components in a generic aircraft  power supply and distribution system. | |  |  | | | LAETQC - Course 6705 |
| AV002.3 Explain the basic construction and operation of a generic aircraft power supply and distribution system. | |  |  | | | LAETQC - Course 6705 |
| TO ?? | | Analyse the methods and techniques used to aid fault diagnosis on aircraft systems | | .01 Investigate the discrete systems employed as stand-alone fault diagnosis trainers | |  |  | | | POAETQC Av - Course 8820 |
| .02 Investigate common approaches to logical/systematic fault diagnosis processes | |  |  | | | POAETQC Av - Course 8820 |
| .03 Apply logical/systematic fault diagnosis processes and provide solutions to aircraft engineering problems using the fault diagnosis equipment | |  |  | | | POAETQC Av - Course 8820 |
| .04 Communicate and explain logical/systematic fault diagnosis methodology employed in the solution of aircraft engineering problems using the fault diagnosis equipment | |  |  | | | POAETQC Av - Course 8820 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **AC/DC POWER SUPPLY TRAINER - TRAINING OBJECTIVES TO BE MET** | | | | | | |
| **DSAE Cosford** | | | | | | |
| **TO Number** | **Training Objectives (Performance) Sub TOs included** | | **Enabling Objectives (EOs)** | **Key Learning Point (KLP) Description** | **Standards** | **Notes** |
| 36.1 | Maintain the DC Power | |  |  | S1 MAA MRP  S4 AP100B-10 RAF Engineering Policy  S5 AP100C-10 Manual of QA and CI  S7 Army Equipment Support Publications  S10 JSP 375 MOD H&S Handbook  S13 JSP418 Sustainable Development and Environment Manual  S16 JSP 515 Hazardous Stores Information System  S18 JSP 815 Defence and Environment Safety Management  S21 COSHH Regulations  S22 Hazardous Waste Regulations  S24 Manual Handling Operations  S25 Noise at Work Regulations  S31 AP101B/101C Series Aircraft Document Set |  |
| 36.1.1 | Identify DC Power supply system | **ME.01** Describe Aircraft Electrical Power Supplies and Distribution Systems | **ME.01.06** Describe DC power supply systems. |  |
| 36.1.2 | Operate the DC power supply system | CF-02 Demonstrate the ability to diagnose, rectify and test avionic systems. | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.1.3 | Diagnose faults on the DC power supply system | CF.02.08 Diagnose faults on the Aircraft Electrical power supply system. | Examine system, fault find to identify, locate and diagnose LRU. |
| 36.1.4 | Rectify faults and/or replace LRU(s) within the DC power supply system | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.1.5 | Carry out functional check on the DC power supply system | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.2 | Maintain the AC power supply system to LRU level. | |  |  | S1 MAA MRP  S4 AP100B-10 RAF Engineering Policy  S5 AP100C-10 Manual of QA and CI  S7 Army Equipment Support Publications  S10 JSP 375 MOD H&S Handbook  S13 JSP418 Sustainable Development and Environment Manual  S16 JSP 515 Hazardous Stores Information System  S18 JSP 815 Defence and Environment Safety Management  S21 COSHH Regulations  S22 Hazardous Waste Regulations  S24 Manual Handling Operations  S25 Noise at Work Regulations  S31 AP101B/101C Series Aircraft Document Set |  |
| 36.2.1 | Identify AC power supply system | ME.01 Describe Aircraft Electrical Power Supplies and Distribution Systems. | ME.01.05 Describe the DC power supply system. |  |
| 36.2.2 | Operate the AC power supply system | CF-02 Demonstrate the ability to diagnose, rectify and test avionic systems. | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.2.3 | Diagnose faults on the AC power supply system | CF.02.08 Diagnose faults on the Aircraft Electrical power supply system. |  |
| 36.2.4 | Rectify faults and/or replace LRU(s) within the AC power supply system | CF.02.09 Rectify faults and or / replace LRU(s) within the aircraft electrical power supply system. |  |
| 36.2.5 | Carry out functional check on the AC power supply system | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.3 | Maintain the power | |  |  | S1 MAA MRP  S4 AP100B-10 RAF Engineering Policy  S5 AP100C-10 Manual of QA and CI  S7 Army Equipment Support Publications  S10 JSP 375 MOD H&S Handbook  S13 JSP418 Sustainable Development and Environment Manual  S16 JSP 515 Hazardous Stores Information System  S18 JSP 815 Defence and Environment Safety Management  S21 COSHH Regulations  S22 Hazardous Waste Regulations  S24 Manual Handling Operations  S25 Noise at Work Regulations  S31 AP101B/101C Series Aircraft Document Set |  |
| 36.3.1 | Identify power distribution system | ME.01 Describe Aircraft Electrical Power Supplies and Distribution Systems. | ME.01.08 Describe the power distribution system |  |
| 36.3.2 | Operate the power distribution system | CF-02 Demonstrate the ability to diagnose, rectify and test avionic systems. | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.3.3 | Diagnose faults on the power distribution system | CF.02.08 Diagnose faults on the Aircraft Electrical power supply system. | Examine system, fault find to identify, locate and diagnose LRU. |
| 36.3.4 | Rectify faults and/or replace LRU(s) within the power distribution system | CF.02.09 Rectify faults and or / replace LRU(s) within the aircraft electrical power supply system. |  |
| 36.3.5 | Carry out functional check on the power distribution system | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.4 | Maintain the normal battery power system to LRU level. | |  |  | S1 MAA MRP  S4 AP100B-10 RAF Engineering Policy  S5 AP100C-10 Manual of QA and CI  S7 Army Equipment Support Publications  S10 JSP 375 MOD H&S Handbook  S13 JSP418 Sustainable Development and Environment Manual  S16 JSP 515 Hazardous Stores Information System  S18 JSP 815 Defence and Environment Safety Management  S21 COSHH Regulations  S22 Hazardous Waste Regulations  S24 Manual Handling Operations  S25 Noise at Work Regulations  S31 AP101B/101C Series Aircraft Document Set |  |
| 36.4.1 | Identify normal power distribution system | ME.01 Describe Aircraft Electrical Power Supplies and Distribution Systems. | ME.01.02 Describe an aircraft battery power supply system |  |
| 36.4.2 | Operate the normal power distribution system | CF-02 Demonstrate the ability to diagnose, rectify and test avionic systems. | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.4.3 | Diagnose faults on the normal power distribution system | CF.02.08 Diagnose faults on the Aircraft Electrical power supply system. | Examine system, fault find to identify, locate and diagnose LRU. |
| 36.4.4 | Rectify faults and/or replace LRU(s) within the normal power distribution system | CF.02.09 Rectify faults and or / replace LRU(s) within the aircraft electrical power supply system. |  |
| 36.4.5 | Carry out functional check on the normal power distribution system | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.5 | Maintain the emergency battery power system to LRU level. | |  |  | S1 MAA MRP  S4 AP100B-10 RAF Engineering Policy  S5 AP100C-10 Manual of QA and CI  S7 Army Equipment Support Publications  S10 JSP 375 MOD H&S Handbook  S13 JSP418 Sustainable Development and Environment Manual  S16 JSP 515 Hazardous Stores Information System  S18 JSP 815 Defence and Environment Safety Management  S21 COSHH Regulations  S22 Hazardous Waste Regulations  S24 Manual Handling Operations  S25 Noise at Work Regulations  S31 AP101B/101C Series Aircraft Document Set |  |
| 36.5.1 | Identify emergency battery power system | ME.01 Describe Aircraft Electrical Power Supplies and Distribution Systems. | ME.01.03 Describe an aircraft battery power supply system |  |
| 36.5.2 | Operate the emergency battery power system | CF-02 Demonstrate the ability to diagnose, rectify and test avionic systems. | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.5.3 | Diagnose faults on the emergency battery power system | CF.02.08 Diagnose faults on the Aircraft Electrical power supply system. | Examine system, fault find to identify, locate and diagnose LRU. |
| 36.5.4 | Rectify faults and/or replace LRU(s) within the emergency battery power system | CF.02.09 Rectify faults and or / replace LRU(s) within the aircraft electrical power supply system. |  |
| 36.5.5 | Carry out functional check on the emergency battery power system | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.6 | Maintain the auxilliary power supply system to LRU level. | |  |  | S1 MAA MRP  S4 AP100B-10 RAF Engineering Policy  S5 AP100C-10 Manual of QA and CI  S7 Army Equipment Support Publications  S10 JSP 375 MOD H&S Handbook  S13 JSP418 Sustainable Development and Environment Manual  S16 JSP 515 Hazardous Stores Information System  S18 JSP 815 Defence and Environment Safety Management  S21 COSHH Regulations  S22 Hazardous Waste Regulations  S24 Manual Handling Operations  S25 Noise at Work Regulations  S31 AP101B/101C Series Aircraft Document Set |  |
| 36.6.1 | Identify auxiliary power supply system | ME.01 Describe Aircraft Electrical Power Supplies and Distribution Systems. | ME.01.07 Describe an aircraft battery power supply system |  |
| 36.6.2 | Operate the auxiliary power supply system | CF-02 Demonstrate the ability to diagnose, rectify and test avionic systems. | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |
| 36.6.3 | Diagnose faults on the auxiliary power supply system | CF.02.08 Diagnose faults on the Aircraft Electrical power supply system. | Examine system, fault find to identify, locate and diagnose LRU. |
| 36.6.4 | Rectify faults and/or replace LRU(s) within the auxiliary power supply system | CF.02.09 Rectify faults and or / replace LRU(s) within the aircraft electrical power supply system. |  |
| 36.6.5 | Carry out functional check on the auxiliary power supply system | CF.02.10 Carry out functional check of the aircraft electrical power supply system. |  |