

The Design of the Application Technical Talents Training for Civil Aviation in Local Colleges

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Abstract: The civil aviation industry has a request for the aircraft maintenance personnel of the machine, The Ministry of education also has a standard requirement for the teaching and practical teaching of the theory course of transportation (Civil Aviation Engineering). The schematic design of docking industry standards and training technical talents is a new topic for local colleges to train the applied technical talents in the civil aviation industry.

Keywords: Application Technology, Civil Aviation Engineering, Project Design

1. INTRODUCTION

Applied technical talents education in Local Higher Education is the education that local colleges culture scientific and technological talents and management personnel of transforming science and technology into practical productive forces [1]. With the rapid development of china's civil aviation industry, the aviation industry demand for maintenance engineering application technology talents is more and more intense, the scale of training can not meet the demand of domestic aviation industry only a few aviation professional colleges, so more and more local colleges join the ranks of. However, for local colleges , it has become a new urgent task that how to reform the training mode of talents and construct the program of applied technical talents to better meet the needs of the development of civil aviation.

2. THE PRESENT SITUATION OF THE TRAINING OF APPLIED TECHNICAL TALENTS FOR CIVIL AVIATION IN LOCAL COLLEGES

2.1 The design for talent training is short of overall planning

The program design for the training of civil aviation engineering professionals in local colleges is short of overall planning, its teaching content is relatively backward, curriculum is not connected with civil aviation industry norms, teaching system is not perfect, training mode lacks top-level design and so on. These problems have become the bottleneck of the training of the civil aviation engineering personnel, which seriously affects the training quality of the professional personnel of civil aviation engineering.

2.2 The current talent training is out of line with the demand for high-end engineering talents in the airline industry

Airlines require the training of engineering talents, especially the undergraduate students from the ordinary higher schools, besides having a complete bachelor's degree education, undergraduates should also be trained in vocational skills, preferably having some licenses required by airline employees. In accordance with the requirements of the civil aviation regulations of China, after two years' work, or 2020 hours training through accreditation training institutions, the graduates can participate in the examination of the basic maintenance license, with a long training cycle and high cost. At present, the graduates majoring in mechanical engineering in Colleges in China are far from the requirements of the civil aviation industry, which cannot meet the requirements of seamless job placement, diploma education and post skills.

2.3 The laboratory construction of local colleges pays more attention to the application of subject rather than applicability, and it is not systematic

In the field of laboratory construction, local universities pay a one-sided emphasis on the integrity of a single laboratory, ignoring the internal relationship between laboratories, and have not been approved by relevant departments such as CCAR-66 of CCAR-147 department of CAAC, the students' practice teaching is not a system during the period of school, at the time of graduation, they can not obtain the professional qualifications required by the Civil Aviation Administration to engage in the related work of civil aviation engineering.

3. PROJECT DESIGN OF APPLIED TECHNICAL TALENTS TRAINING

The civil aviation industry has its own industry requirements for aircraft maintenance management, and the Ministry of education also has a standard requirement for the teaching and practice teaching of transportation major (Civil aviation engineering), how to connect with the industry standard and establish a perfect training plan for skilled personnel is not only related to the training quality of aircraft maintenance management, but also to the orientation and development of the school, and more importantly to the safety of air transportation.

3.1 The overall architecture of the scheme design

At present, the requirements of our civil aviation industry for aircraft maintenance management are mainly reflected in CCAR - 147, AC - 147 - 02, CCAR - 145, AC - 145 - 13, CCAR - 66, CCAR - 121 and other related documents. And the ministry of education of our country also has a standard requirement for the construction of transportation major undergraduate specialty. Therefore, the design of talent training program in universities should

first meet the industry standard of aviation industry, improve teaching system, update teaching contents and improve teachers' professional level, especially to the construction of practice teaching system in accordance with the requirements of the civil aviation industry, to ensure that the training of personnel to meet the requirements of the civil aviation maintenance enterprises, we should do well not only the education of academic qualifications but also the examination of professional qualification certificate, the industry standards will be integrated into the standard of professional construction, the seamless docking of academic education and post skills is achieved, and a complete training program for talents is constructed.

3.2 The course system for building a combination of general standards and industry standards

In the course of the course system construction, in addition to meeting the requirements of the Ministry of education, it is necessary to meet the requirements of the civil aviation industry training program AC - 147 - 02, AC - 145 - 13 and so on, we must make undergraduate education curriculum (including practical courses) and vocational skills training courses (including practical operations) synchronous, class hours, credits mutual recognition, academic education and post skills education seamless connection.

"Platform + module" is one of the best ways to mix common standards and industry standards. According to the Ministry of education's professional construction standard, the construction of curriculum system is the three teaching platform, including "theoretical teaching platform", "practical teaching platform" and "quality development platform", on the basis of the three teaching platform, to the civil aviation industry training program combines in, in order to achieve a degree course and industry skills training course mix, three teaching platform set up a total of six modules, including "compulsory module" "public elective module" "professional compulsory module" "professional elective module" curriculum module "and" Practical Courses ", it is divided into six modules have sub modules.

(1) Theoretical teaching platform

Public compulsory module: the course setting of this module is not different from that of other undergraduate courses, mainly in accordance with the relevant requirements of the country to set up the ideological and political theory, College English, public computer, public sports, college student occupation career planning and employment guidance, College Chinese Humanities courses.

Public elective module: it mainly includes art sports and natural science, humanities and other courses.

Professional required module: in the design of the program, the basic training of the civil aircraft maintenance training is mainly set up in this module. Eleven of the seventeen modules that are mainly based on the basic training-- the "basic maintenance skills practice (M7)" module is set up in the practical teaching platform; Because the design of this program mainly discusses the training of aircraft maintenance personnel by civil aviation companies, so the

learning of "helicopter flight principle and structure and system (M12) " module is no longer arranged during the design. The eleven modules stipulated by the China Civil Aviation Administration of Civil Aviation Advisory Bulletin (AC-147-02) are: "Mathematics(M1), Physics(M2)" and "electrician basis(M3)", "Simulation Electronic Technology Foundation (M4)", "Digital Electronic Technology Foundation (M5)", "maintenance theory (M6), "Aerodynamics and flight principle (M8)", "human factors (M9)", "aviation regulations and maintenance publications (M10)", "propeller (M16)", "mechanical drawing (M17)". Among the eleven modules, the three modules of Mathematics (M1), physics (M2) and electrician Foundation (M3) are set up in the first semester, covering the basic theory training of machinery (ME) and aeronautical electronics (AV) [2].

Professional elective module: In the design scheme, the basic theory of civil aircraft maintenance personnel is trained in four modules (M11/M14/M13/M15) of the seventeen modules into two directions-- turbine engine aircraft structure and system (M11), gas turbine engine (M14) and the structure and system of the piston engine aircraft (M13), the piston engine (M15).

(2) Practical teaching platform

The experimental course module includes the experimental part that is tied to the theory course and the independent experiment course. Based on the basic training of civil aircraft maintenance and the training of skills, the training of applied talents should be taken as the starting point ,we should integrate experimental courses and experimental projects to ensure the duration of experimental courses.

Setting up a practical course module independently: Practice Course is divided into three sub modules: including basic practice courses, professional practice courses and comprehensive practice courses.

1) Basic practice course

The practice course including military and political training , entrance education, cognitive practice, metalworking practice and other links.

2) Professional practice course

The practice course includes (ME)t raining and aero Electronics (AV) training. In the design of the scheme, ME and AV for basic skills training for civil aircraft maintenance personnel is set in two directions for students to choose. Among them, the ME training is divided into twelve projects-- aircraft manuals and maintenance documents, using common tools, the use of common measuring tool, the use of grease, sealant, fastener insurance, disassembly, component disassembly, hard / hose line construction standards, disassembly machine inspection of transmission system, the production of basic circuit ,construction of electronic and electrical standards, fitter. They have a total of two hundred hours. The AV training contains seven projects: aircraft manuals and maintenance documents, using common tools, the use of basic auxiliary materials, protection knowledge of electrostatic sensitive components / components , aircraft electronic equipment(components)understanding and disassembly,

electronic circuit production, standard line construction. They need One hundred and thirty-three hours in all.

3) Comprehensive practice course

Practical courses include professional practice, curriculum design, graduation practice and graduation design (thesis). The professional practice link is completed by the maintenance unit approved by the Civil Aviation Administration, and the time requirement for basic training of civil aircraft maintenance is completed, at the same time, the graduation practice and graduation project (thesis) shall be arranged as a whole.

(3) Development platform for quality

The quality development platform is set up to encourage students to actively participate in Discipline competition, publication of papers, examination of certificates and participation in community activities, expand their quality, encourage innovation and develop in an all-round way.

It needs to be pointed out that the teaching of the six modules of the three platforms is not isolated, but interpenetrating and integrating. Theoretical teaching is always accompanied by practice teaching, and quality development is carried out throughout the whole university for four years.

4. ESTABLISHING PROFESSIONAL LABORATORIES WITH PROFESSIONAL QUALIFICATIONS AND TRAINING QUALIFICATIONS

Aircraft maintenance is a special specialty. The National Civil Aviation Administration issued the CCAR-66 department and CCAR-147 department directly related to the training and management of aircraft maintenance in the form of departmental regulations. The construction of civil aviation engineering laboratory in Colleges must be strictly implemented according to the norms and guidance of CCAR-66 and CCAR-147 departments, and the qualification of CAAC has been recognized by the civil aviation industry, only in this way can we really connect the general standards with the industry standards, and achieve the "double certificate integration" of diploma and post skills certificate, so that we can complement each other with the advantages of aviation enterprises, and jointly train applied technical talents with strong theoretical foundation and strong hands-on ability.

The program design of personnel training for civil aviation engineering is based on the foundation of local colleges, the training of civil aviation industry license can only be done at the same time as academic education. Due to limited time hours, less investment and weak professional teachers, the design of the program does not involve training of civil aircraft maintenance parts and training of aircraft types.

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