Chapter 5: Program Initiatives to Improve Performance

Unit: **Aviation Maintenance Technician**
Initiative Title: **New Equipment – Turbo Charged Engine System** **Division Priority: 15**

Describe Initiative

Why do it?

The Aviation Maintenance Technician Program does not have an operating turbo charged engine system necessary to adequately instruct students in this technology. Our students need an operating system to fully understand how it works and how to maintain it. Without such system, they are falling behind in developing the necessary trouble shooting skills that they will use in the aviation industry.

What will the product of this initiative be?

Turbo Charged Engine System, $18,000

What is the need or intended use?

To adequately fulfill FAA Part 147 (Aviation Maintenance Schools) requirements for the Powerplant curriculum and to prepare students for employment in the aviation industry.

Is it feasible?

Yes, provided that funds are made available for the required equipment and publications

What would be the campus location of this request/project?

Building 10 Aviation Maintenance lab area, eventually the equipment will be located at the Airport in the Aviation Academy lab area.

How many students (per year) will benefit?

Students progressing through the Powerplant curriculum will benefit substantially from this equipment. This averages about 40 students per year.

How will students benefit?

By gaining understanding and experience in the operation of turbocharged engine systems, students will be better equipped to:

- **Study and maintain other turbine engine systems**
- **Trouble shoot and overhaul turbocharged engine systems and their controls**
- **Be prepared for employment in aviation repair facilities that maintain these systems**

Describe the resources needed:

1. **A modern aircraft engine equipped with a turbo charger and associated controls, induction, fuel metering and exhaust systems.**
2. **Instrumentation to monitor system operation and power output.**
3. **Test stands to mount the engine, fuel systems and instrumentation**
4. **Specialized tooling to maintain this system**
5. **Publications (service manuals, operation manuals) necessary to operate and maintain the system**
6. **A propeller to provide a load and cooling airflow to the engine.**

List the possible funding sources:
Can this project be partially funded?
Yes, however the main component of the system (the engine and turbocharger) must be funded to make the project feasible.

If so, what minimum cost?
$15,000

Provide ORG & PROG codes: **611400 112000**

How does this project articulate with the college's vision, mission & goals and contribute toward meeting the President's/Board's approved goals?
The AMT program at LCC has long been recognized in the industry as a leading professional/technical program for aviation maintenance. However, the updating of equipment and restructuring of curriculum has not taken place over the past few years due to budget constraints. If the program is to maintain its reputation, it must purchase modern technology and restructure the curriculum to meet the needs of the students and industry. Funds provided from this grant will go a long way to bring this program up to the standards expected of this profession.

If funding source could be TACT funds, complete the following:

Category of request:
Maintain existing technology
Increase student access to technology
New technology

How does this request fit in with other unit or college technology plans?
software, wiring, installation costs; timesheet staffing, licensing, other)

If funding source could be Carl Perkins Funds, complete the following:

What evidence do you have that shows special populations (disabled, economically disadvantaged, single parent, displace homemaker, academically disadvantaged and limited English proficiency) have access to your programs?
The aviation maintenance industry is now and will continue to offer new technicians, particularly special populations, a path to a rewarding career. Wages are far above average for the new technician and increase with time on the job and the ability to take on additional responsibilities. The aviation industry is very interested in diversifying its work force and attracting non-traditional populations.

How does this request fit in with at least two of the Carl Perkins related goals (listed separately)?
GOAL #I Improve Academic and Technical Skills
New equipment and supplies will be purchased to train AMT students on equipment that they will be using in the industry. Updating training equipment and curriculum is essential for preparing our students for on the job experiences and this will be accomplished with funds from this grant.

GOAL #V Professional Development Goal
Instruction for this program is highly regulated and monitored by the FAA. Funds from this grant will be used to establish and revise measurable student labs and evaluation procedures for the powerplant curriculum. This will aid the improvement of student performance and insure compliance with FAA regulations.

Describe how this project might show collaboration with Lane County high schools.
Under the Aviation Academy concept, the program will be designed under a "2+2+2" strategy. This means that aviation maintenance and other Academy programs will incorporate students from the last two years of high school, two years at LCC and two years of upper class studies. The result will be students who will obtain a 4 year degree and an Airframe and Powerplant Mechanics certificate and/or commercial pilot's certificate. This program believes that it can attract more students by involving Lane County High Schools in the process and offer a quicker path to a career for students who will not elect to go on a four year institution after attending LCC.