Attachment #3

Annual activity report: SD Aeronautics Commission
Cessna 172 N5133A
January 16, 2020

Submitted by Greg Klein, Department Supervisor, Lake Area Technical Institute

LAKE AREA TECH
It's your world.
Aviation Department
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Timeline

8-28-2019
Aircraft relocated (Martin, SD) to KATY on a ferry permit. Thanks to donor, Donna Nelsen, Martin, SD

9-26-2019
Lake Area Tech takes ownership upon signature and submission of FAA AC Form 8050-2 Bill of Sale
FAA Registration Form AC 8050-1 signed and submitted

10-1-2019
Annual Inspection completed by Lake Area Tech

10-2-2019
$30,000 Grant check received from SD Aeronautics Commission

10-28-2019
1.0 Hour local private pilot training flight. Old, outdated com radio failed during the flight and the decision was made to ground the aircraft to allow dismantling of the cockpit to prepare for the major avionics and electrical system upgrades

11-1-2019
Donated leather received from Bank of America Leasing Corporate Aviation Dept for recovering of seats thanks to Eric Olson, Director of Maintenance. He is a key player in our annual Corporate Aviation Day event, promoter of maintenance scholarships, and avid supporter of our program.

12-19-2019
50% down payment made on avionics- Avionics equipment ordered by Legacy Aviation

- Garmin G5 EADI
- Garmin G5 EHSI
- Garmin GTR 225 Com Radio
- Garmin GTX 345 Transponder

1-15-2020
Freshly recovered leather seats received from upholstery shop - ready for installation

Benefits

The aircraft was used for one training flight before it was gutted for the avionics upgrade. The maintenance is being performed exclusively by the A&P students and is proving to be a valuable real-world restoration experience. Thanks to the generous funding from the SD Aeronautics Commission, the students will witness the transformation of this old aircraft with its outdated equipment into a valuable flight trainer in two semesters. The following is a list of A&P courses that have involved the students.

First year courses (23 students)

AVM 103 Applied Math/Weight and Balance for weight and balance calculations (23 1st year students)
AVM 115 Materials and Processes for determination of elevator and cowling repair materials
AVM 121 Basic Electricity for wiring harness replacement and equipment upgrades
AVM 136 Nonmetallic/Composite structures for composite nose cowl installation
AVM 139 Metallic Structures for elevator reskinning and Right wing leading edge repair
AVM 148 Airframe Electrical for wire harness replacement, and switch and circuit breaker replacement.
AVM 157 Com/Nav for avionics bus, antenna, GNC 530W and Audio Control Panel installation.
AVM 103 Airframe Inspections for student-aided annual inspections.

Second year courses (11 students)

AVM 230 Ignition and Starting Systems for removal, disassembly, 500 hour inspection and reinstallation.
AVM 245 Powerplant Instrument Systems for installation of JPI 930 Engine Analyzer System.
AVM 248 Powerplant Inspections for student-aided annual inspections

Worthy of Noting

The avionics upgrade contract was awarded to Legacy Aviation, a South Dakota shop located at the Tea Airport. Nathan Effling is the technician we are working with. He grew up in Sioux Falls and graduated from Lake Area Technical Institute's A&P program in 2011.

The instrument panel is being designed and constructed by a 1st year A&P student. He is a process, design, and prototyping technician for Dakota Bodies, a manufacturing firm in Watertown. His design work has employed AUTOCAD, laser cutting, and the latest in metal bending technology. He has experimented with 3 prototypes (see picture) and is ready to produce the final configuration.

Expenditures to Date

Vendor	Description	Cost
Knots-to-You	Composite nose cowl	$ 1,532
Airtex	Seat recovery foam padding	$ 197
Legacy Aviation	Avionics down payment (50%)	$ 7,944
Aircraft Spruce	JPI Engine analyzer/switches/circuit breakers/wire	$ 4,037
Doug's Upholstery	Seat recover labor	$ 1,725
	Total	$ 15,435

Status - On time and on budget for May 2020 completion and employment as a flight trainer

First year A&P student Ian Radasch, designer and builder of instrument panel with prototype #3

The old panel

Old wiring being removed. Awaiting panel final fabrication and installation of new switches, circuit breakers, and wiring

Firewall forward awaiting TLC and engine analyzer probe harness installation

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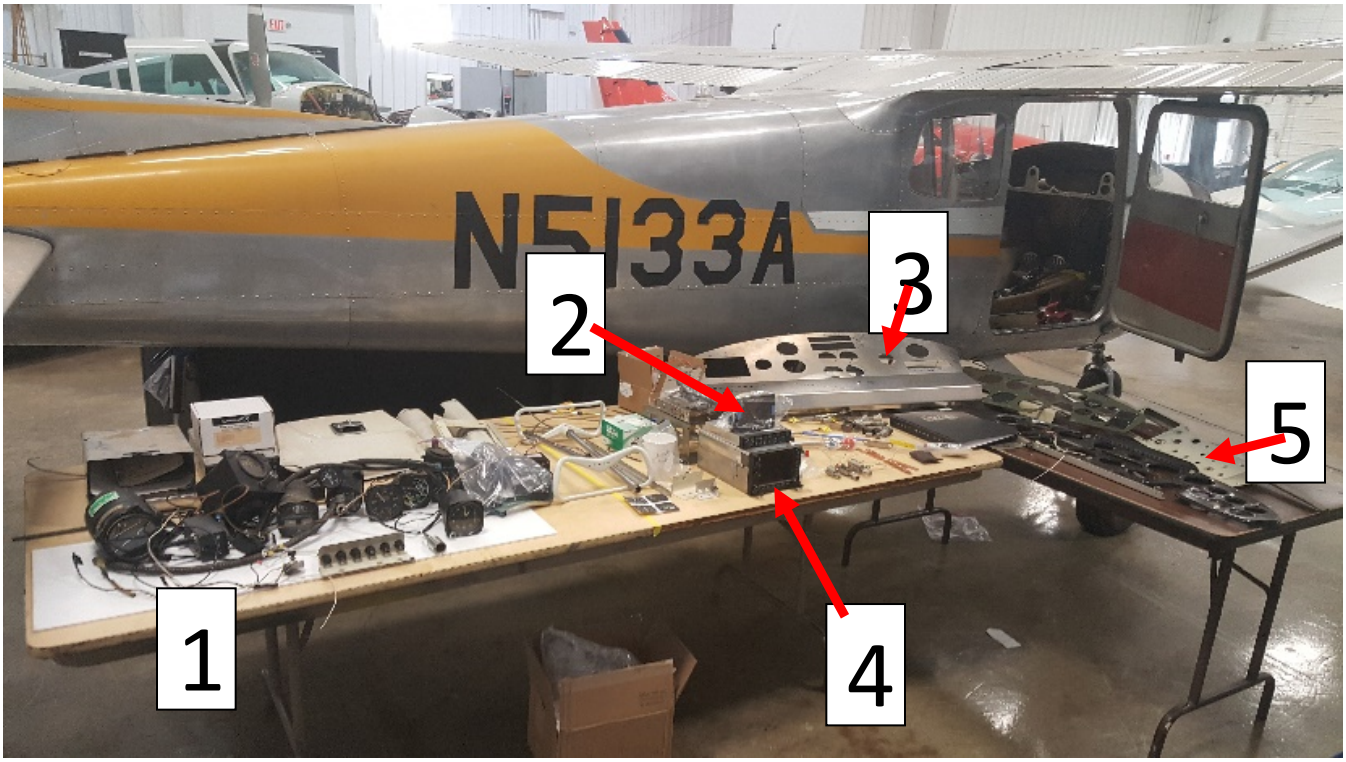

1. Old instruments and fuses
2. New JPI Engine Analyzer
3. Instrument panel prototype #2. We decided to produce prototype #3 with two pieces (upper and lower) and changed from four 2 ¼ inch stand-by steam gauges to three
4. Garmin 530W and Garmin Audio Control Panel awaiting new instrument panel. Thanks Travis Lantis!
5. Old instrument panel