

COMPUTERS BUILD BETTER ADS

By Mike Antoine

The Aviation Machinist's Mate (AD) "A" school at the Naval Air Technical Training Center (NATTC) has been turning out the world's best engine repair and maintenance personnel for a long time—first at NAS Millington, Tenn., and since January 1997 at the command's new location aboard NAS Pensacola, Fla. But make no mistake, this isn't the same school it was 30 or 40 years ago.

Today's AD school is housed in a state-of-the-art educational complex in what's known as the "Mega Building." This is a fitting setting for advanced learning, as aircraft are more sophisticated these days. So, incidentally, is the new crop of ADs.

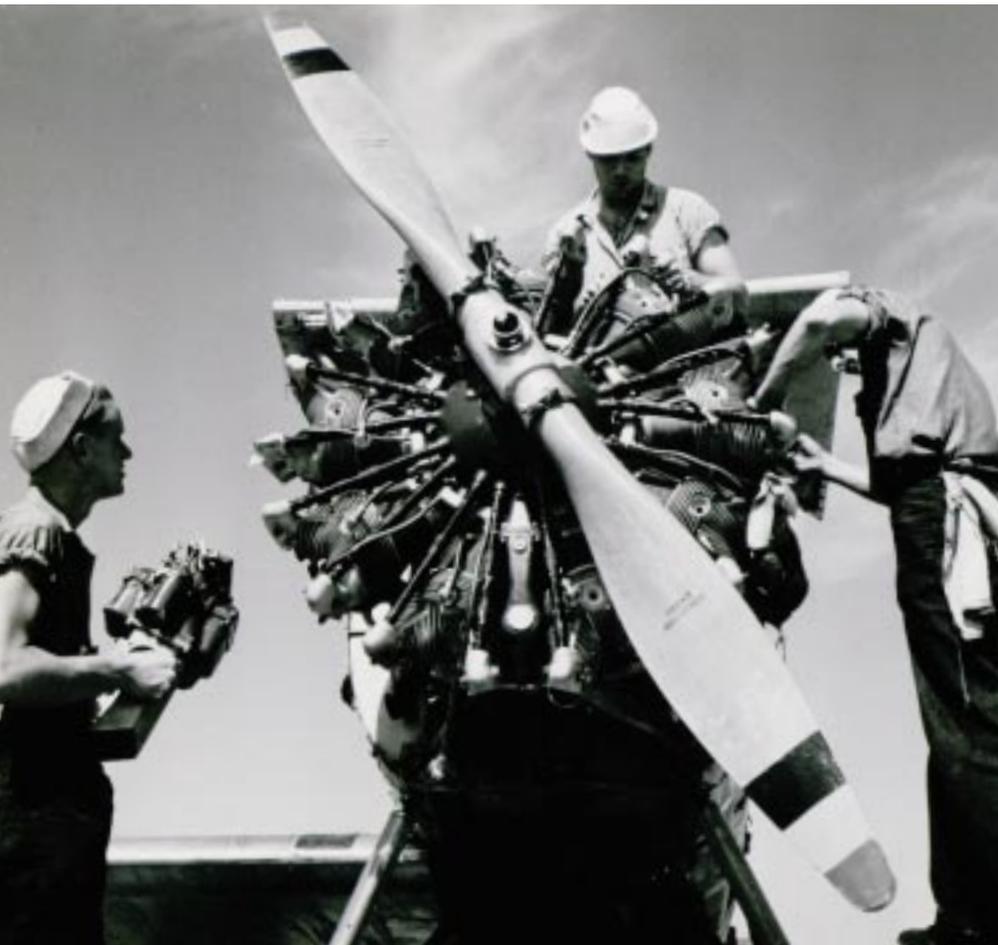
The rating was established in 1921 for chiefs

Then and Now

Below, three ADs work on an O3U *Corsair* engine in 1942. Right, modern-day mechanics ADAN Chappy Miller and AD1 Rory Malotte conduct maintenance on the main rotor head of an SH-60 *Seahawk* while on board *George Washington* (CVN 73).



PHAN Joe Hendricks



and first and second class petty officers; in 1926 it was opened to third class petty officers. Then, an airplane engine could be repaired with sometimes little more than a hammer, wrench, screwdriver and a half decent set of pliers. Now, you would be laughed off the flight line with such tools. ADs still turn wrenches and get dirty, but nowadays as one AD rating manual exam writer put it, "There's more headwork than musclework involved."

Just compare the scope of the rating statement in 1957, when the course length was about six months, to the present. Dwight D. Eisenhower was president when this was written: "men of the rating maintain, service, inspect, test, adjust, remove, replace, preserve and depreserve aircraft power plants and accessories." Here's the current scope: "ADs maintain aircraft engines and their related systems, including the induction, cooling, fuel, oil, compression, combustion, turbine, gas turbine compressor,



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Above, AD1 Matthew Urbancik answers students' questions in a jet engines lab. Right, Sailors and Marines take an electronic test in an AD school classroom. The students use response boxes to answer quiz questions displayed on an overhead screen.



Joy White

exhaust and propeller systems; pre-flight aircraft; field test and adjust engine components including fuel controls, pumps, valves and regulators; remove, repair and replace compressor and turbine blades and combustion chamber liners; and preserve and depreserve engines, engine accessories and components."

Aviation mechanics now use computers costing as much as some aircraft once did to troubleshoot and isolate problems. A downsized pool of instructors has resulted in a shorter and more intense course, but computer-assisted learning fills the gap and makes the accelerated training effective. It has to be. Today's AD school graduates will be responsible for aircraft and related equipment worth millions of dollars.

During "A" school, students learn about aviation physics/theory; hydro-mechanical and propulsion theory; gas turbine engine types and designations; basic electricity; aircraft and engine electrical and fuel systems; engine lubrication systems; aviation tools and hardware; corrosion control; and the Naval Aviation maintenance program.

That's all crammed into six weeks, including two weeks of specialized training in helicopter/turboshaft, turboprop or turbojet systems.

AD1 John Turner, who went through the school in 1980 and now teaches the turbojet and turboprop portions of the course, enjoys interacting with the young Sailors: "Today's students, when they put their heads to it, are a lot smarter than students in my generation." He calls his students members of the Nintendo generation. "Five minutes of orientation and they're off and running," he joked.

The comprehensive AD curriculum would send almost anyone's head into orbit, but the electronic classroom puts their feet back on the ground. The school's leading chief petty officer, ADCS(AW) Antonio Gibbs, who went through the school in 1978, said that he and his peers in the school had nothing as helpful as the electronic classroom in Millington. "These kids

grew up with computers. You can put information on paper or on a blackboard, and that might be OK. But put it on a computer screen and it all clicks in—they get it right away.

"All we had were some computers to take tests on—all text, no graphics," he continued. "And when I first joined the Navy, I was working on F-8s—these kids are going to be working on F/A-18s." That's a big jump.

Gibbs explained how computers are an invaluable teaching tool: "The students understand the material better with computers. Instructors can show students the internal workings of components in full color with computer graphics without actually having to take a component, cut it in half and show it to the class. It gives us a big teaching advantage."

The electronic classroom also helps instructors accurately measure material comprehension on an individualized basis.

During the course, students are given a review test with multiple choice questions flashed on the screen at the front of the class. Using a remote at their desks, the students choose the answer they think is correct, and the computer grades it immediately.

The instructor can tell on the spot what percentage of the class is getting the information and what percentage is not.

It seems a lot of students are "getting it." Statistics show that AD students are learning more—and better. "We've had a 10-percent improvement in the course average since the onset of the computerized core training last year. The grade average now is around 89. I think that's pretty significant," Gibbs said.

The school's success is evident in its attrition rate—a meager one percent. That sounds even more impressive when you consider the staff of Navy, Marine Corps and civilian personnel graduated 1,767 ADs last year.

"The Navy is constantly changing," Senior Chief Gibbs added. "At NATTC, we're always finding new ways to do it better." 

Mr. Antoine is a staff writer for *The Gosport*, NAS Pensacola's base newspaper.