The ORIGINAL ‘A’ & ‘M’

Texas A&M Was Built On A Foundation Of Agriculture And Mechanical Engineering
They couldn’t have known what was to come.

One by one, day by day, the first of the incoming class of the A.M.C. of Texas arrived in a rural College Station. The cadets came with a fresh dream and little formal schooling. They woke each morning to the tune of reveille, and returned to quarters each night to the howl of hungry wolves.

These men wore cadet gray uniforms with one row of College buttons, gray pants, and a flat-topped forage cap that covered a head of short-shorn, neatly styled hair. The cap’s duck-bill visor shaded a mandatory clean-shaven face. The cadets marched; they marched to breakfast, class, and as a discipline, whenever they were told.

They had four choices: study agriculture, mechanics and engineering, language and literature, or military tactics. They had few other choices: Upon arrival, their hand was shaken by College President Gathright, and filled with a 28-page catalogue of Rules and Regulations of the Agricultural and Mechanical College of Texas. Written inside was the birth of the code that Aggies do not lie, cheat or steal.

Looking back now, our University’s foundation seems simple. The directive that the A.M.C. of Texas received from the 11th Legislature when it accepted the terms of the Morrill Land-Grant College Act in 1866 makes sense to Aggies of 2011. The order to create an institution where students would be taught agriculture and mechanic arts, in addition to other scientific and classic studies, and military tactics, seems straightforward.

Yet, the letters, reports and history left behind tell a different story. If hindsight is 20/20, then the foresight required in this new venture took decades’ worth of second looks. Money woes, differing opinions, political arguments, success, failure, war and peace all took place as the A.M.C. of Texas grew from a tiny school on an empty prairie lot to a respected institution with a global presence and reputation for excellence.

This is a story about a school, and how it turned into a place where solutions are found. This is the first part of a series where Texas Aggie will feature the University’s nine colleges.

If you go the University Archives looking for information dating back to Texas A&M’s historic entry into higher education, you’ll be directed to two worn maroon hardbacks. Though unimpressive on the shelf, the words of Henry C. Dethloff’s A Centennial History of Texas A&M University are transformed to moving pictures where the author starts at the beginning.

So, that’s where Texas Aggie starts its tale, too. For the A.M.C. of Texas was introduced to the world as a place for agriculture and the mechanic arts. This is where the story begins.

Agriculture

It was the first day of Texas’ first institute of higher learning, and almost no one showed up.

Granted, Oct. 4, 1876, is remembered for being more ceremonial than an actual class day, still “great expectations must have been thoroughly dampened when only six students appeared for registration during the first few days of enrollment,” Dethloff wrote.

Much had gone into the building of this college. Ten years had passed since Texas accepted the terms of the
Morrill Land-Grant College Act. The school had been organized into seven courses, teachers had been named and hired, buildings had been constructed, leaders had successfully maneuvered the precarious post-Civil War political atmosphere—and now the governor of Texas was giving an inaugural speech to six students.

“Grave responsibilities rest upon you. ... The excellence of the college will be determined by your progress. ... Let honor be your guiding star,” he’s recorded as saying. (You can read the full speech at tx.ag/speech.)

Good luck to you all.

Texas A&M’s agriculture program needed it. At this time in U.S. history, an education in agriculture was not something taught in a classroom, but rather with the durable lessons of sweat and hard labor. Getting the dirt stains out of your work clothes was extra credit.

Farmers were skeptical of school-taught knowledge, Dethloff wrote. Plus, students went to school to get away from the farm, he wrote, not get back on it. Even the A.M.C.’s leadership didn’t wave the banner of agriculture as a scientific pursuit. In the early years with Gathright at the helm of college, “little more than lip service” was given to agriculture,” Dethloff wrote.

If they thought no one would notice that the A. M. C. had stuck to the reliable standard that a classical education offered, they were wrong. By the fall of 1877, Dethloff wrote that the public was sharing their discontent. This roadblock was not short lived for a couple reasons. One, money—the cost of experimental farming and machine shops was substantially higher that what it cost to teach students through classic classroom instruction. Two, money—students were not interested in a career in agriculture because its degree didn’t offer high-paying jobs.

Even as late as the 1880-81 school year, Dethloff wrote, a mere 18 percent of students were studying agriculture. An annual report dated 1884 diagnosed both the student body and the public with a prejudice against agricultural education.

That was soon to change. Enter the Hatch Act in 1887, the Smith-Lever Act of 1914, and the Smith-Hughes Act of 1917. If money was the problem, then money was also the solution. The Hatch Act provided funds to establish agricultural experiment stations under the direction of the land-grant college. The Smith-Lever Act established the cooperative extension service connected to the land-grant college, and the Smith-Hughes Act provided funds to promote vocational agriculture and its training.

Suddenly, there was a job market

“When it is found that by attending the school it would be learned how to produce two ears of wheat and corn and two bales of cotton by the same labor and capital that have been heretofore producing but one, then it will be understood that there is a new field of learning the most extensive and most beneficial to our race that has engaged the educators of any previous age. It can and will yet be done.”

—Texas Gov. Oran M. Roberts to College President Thomas S. Gathright in May of 1879

For a timeline of major developments from the history of A&M’s agriculture and engineering colleges, go to tx.ag/timeline.
for agriculturalists. Suddenly there was money. Since the purpose of the experiment station and extension service was to provide information and help solve the public’s agricultural problems, suddenly seasoned farmers were being sold on the idea of scientific farming, Dethloff wrote. Suddenly, there was the hope of research and changing the field of agriculture forever. For, if a professor could teach at A&M and be employed by the experiment station at the same time, yet get his entire salary from the experiment station, that freed all sorts of funds. Money for research became available. There was even money for student workers, Dethloff wrote.

In 1890, for the first time, the A.M.C. of Texas graduated as many agricultural students as engineers. For the first time, starting in the early 1900s, A&M picked up the nickname, “the Farmers.” That changed into the “Aggies.” The rest is history.

Time moves fast. While agriculture has been part of Texas A&M from its beginning, this year marks the College of Agriculture and Life Sciences’ centennial anniversary. The college has plans to celebrate from January to December.

There’s much to celebrate. The college ranks nationally as the largest of its kind, based on the number of degrees awarded. The college has faculty members who are Nobel laureates, and experts in fields as diverse as water and food security, biofuels and the elimination of diseases. In the fall of 2011, the college was 6,834 students strong.

If the past means anything—and the timeline says it does—the College of Agriculture and Life Sciences at Texas A&M will continue to be an impact on the world we live in.

Engineering

On Oct. 4, 1876, the Agricultural and Mechanical College of Texas officially opened its doors.

Behind those doors was a well-liked young professor by the name of Robert P. W. Morris. At the age of 22, Morris was chosen as the head of the Department of Applied Mathematics. He had a history in military—he left the Texas Military Institute in Austin to join the A&M faculty—so he was also put in charge of organizing the students “along military lines and for the administration of military discipline,” wrote Dethloff.

In description, Applied Mathematics was the instruction of mechanics, surveying, descriptive geometry, railroad surveying, strength of materials, arches, framing, free-hand drawing, and other sorts of hands-on engineering.

For the first couple of days, enrollment was sparse. The school opened with the slow, grazing gait of a longhorn—a sight common to early cadets as the wild prairie was home to several untamed cattle left over from the days of cattle drives. But, by the end of the first year, 106 students could call themselves the cadets of the A. M. C.

Like many of the other land-grant colleges across the nation, the A. M. C. of Texas struggled with curriculum the first couple of years. Teaching the classics remained a hard habit to quit, Dethloff wrote.

Given the choice of four courses—agriculture, mechanics and engineering, languages and literature, or military tactics—mechanics and engineering found itself the belle of the ball.

Students flocked to the study. A spirit of industrial and scientific revolution was blossoming in America, Dethloff wrote, and the skill and finesse of a career in engineering was overpoweringly attractive. Jobs that paid cash were open to graduates.

During the 1880-81 school year, 82 percent of students studied...
engineering. From 1880 to 1883, the focus of an education at the A. M. C. was one more of woodworking, blacksmithing and practicality, but the basic core of engineering studies remained part of the curriculum, Dethloff wrote.

Course catalogues dug up by Dethloff show that trigonometry, geometry, calculus, drawing and surveying were part of the degree program.

Yet, not all was stable, because funds were found to be finite. It was a problem of Fs. Engineering as a discipline at A&M was struggling, and without funds, it could have failed.

Engineering had some good things going for it, but unlike agriculture’s triumvirate of the Hatch, Smith-Lever and Smith-Hughes Acts, it had no such federal assistance.

Dethloff found that these federal acts to help America’s agriculture helped establish endowments that kept other college programs alive, but it didn’t directly help engineering in the same way it helped agriculture.

As engineering at A&M continued its march across time, it became somewhat of a showstopper. In 1906 there were more jobs than the A. M. C. graduates could fill, Dethloff’s research found. A&M graduates were also given greater recognition in their engineering job markets, Dethloff wrote. The market was so good, he mentioned that fewer engineers were staying for postgraduate work. At the time, a good-paying job sounded much better to students than continuing their studies.

A professor of engineering, Roger Haddock Whitlock is credited as the father of engineering at A&M, Dethloff wrote, for where there were no engineering courses, he developed two. Mechanical and civil engineering were born under his watch. Whitlock came to A&M in 1883, and served twice as the acting College president.

Frederick Ernst Giesecke came along as the school of engineering’s second professor in 1886.

The A.M.C. of Texas could boast of several things, but something it didn’t experience very often in its early years was retention. Dethloff wrote that Whitlock and Giesecke “came on the scene early, and stayed late.” Their steadfastness helped write the very history of engineering at A&M, he wrote.

Several other disciplines followed those core studies. Electrical engineering, petroleum engineering, chemical engineering, and the list continues. C.W. Crawford, in his book One Hundred Years of Engineering At Texas A&M, wrote that the first aerospace engineering class was introduced as early as 1928. The course was called ME 428 Aerodynamics.

Now, there are 12 departments within the Dwight Look College of Engineering. It’s the largest college on the Texas A&M campus and has a trophy case full of distinction. The college is ranked No. 12 overall and No. 6 among public institutions in the category of Best Graduate Schools 2010. U.S. News & World Report ranks the petroleum engineering graduate program as No. 2 in the nation. Nuclear engineering ranks third in the nation among public universities. The sheer number of rankings the engineering department receives means that no matter what, this list can’t be completed here.

However, if the past means anything—and the timeline says it does—The Dwight Look College of Engineering at Texas A&M will continue to be an impact on the world we live in.

There’s much more to the story and adventure that is agriculture and engineering at Texas A&M. While not complete, readers can learn more about the subjects at Atx.ag/cornerstones.