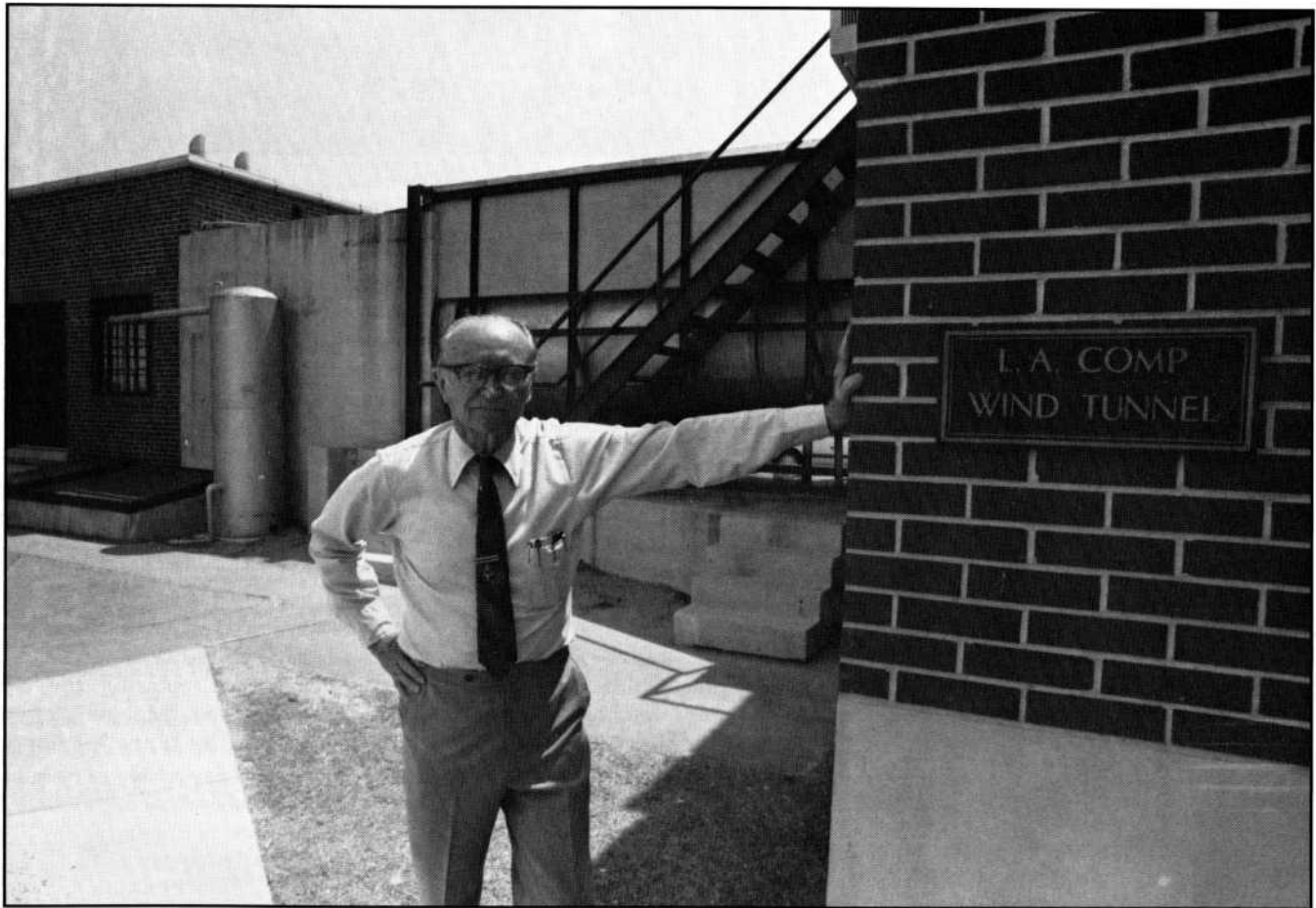


The Return of “Doc” Comp



L. A. Comp, designer and builder of OU aeronautical engineering's wind tunnel, retired from the classroom in 1974.

But when his services were needed, he cheerfully returned to both, proving once again that you are only as old as you feel.

By MICHAEL WATERS

In the week prior to the fall 1988 semester, an 83-year-old man could be noticed coming and going from an oddly-shaped two-story building just east of OU's nuclear engineering lab. He might have walked a bit more briskly than usual; he was busy.

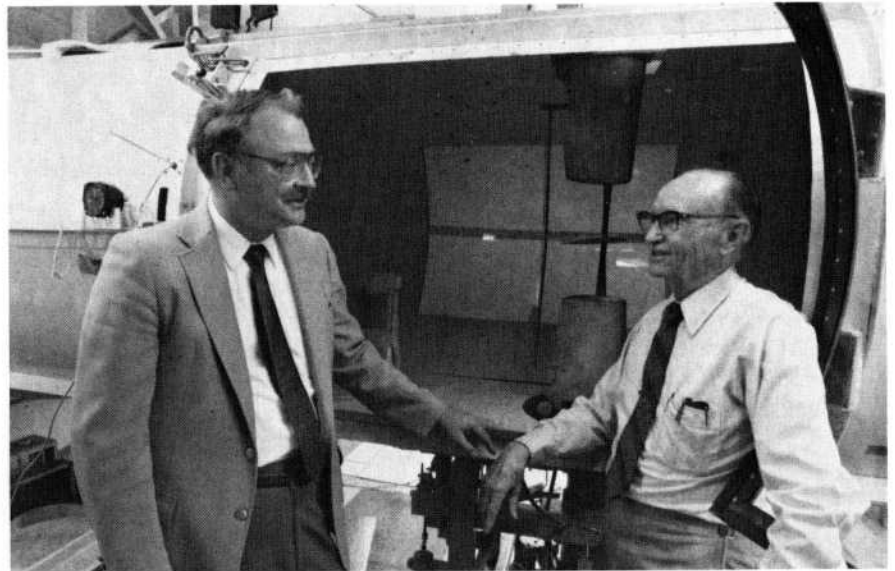
To a distant observer, the building itself, officially known as the L.A. Comp Wind Tunnel, looked like a meshing of an unmarked group of square blocks — some brick, some concrete. One of the blocks comprised a second floor. There, in a sparsely furnished office, the lively gentleman worked through those late August days brushing up on thermodynamic and heat transfer equations.

Monday afternoon, the first day of classes, he emerged from the office with textbook, note pad and folders under one arm. He strode the short distance to Felgar Hall to face a group of 13 waiting students.

L.A. "Doc" Comp — engineering professor, designer and builder of the wind tunnel that bears his name, an OU instructor beginning in 1927, a retiree since 1974 — had returned to teach one more class.

The road for Comp's temporary return to the classroom was paved back in 1981, soon after Davis Egle took the

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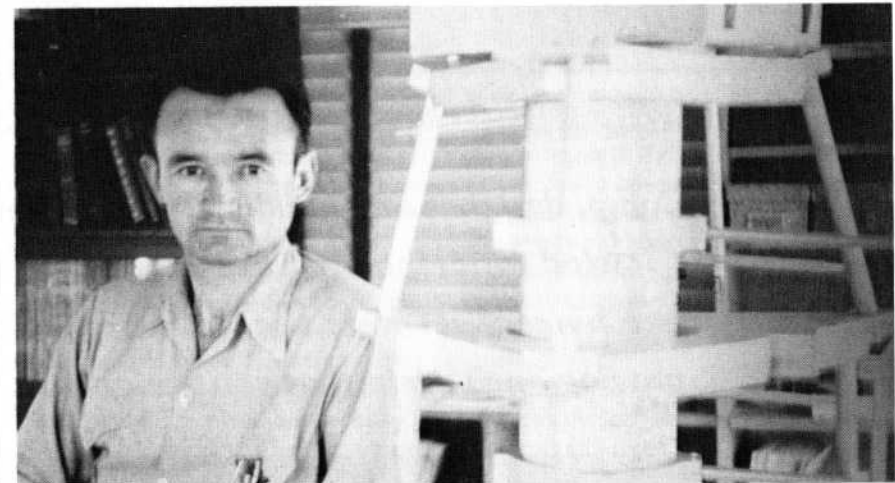
Aerospace and mechanical engineering's director, Davis Egle, chats with Comp in front of the open section of the wind tunnel containing the balance system.

reins as director of aerospace and mechanical engineering. About that time, the department made a commitment to refurbish the low-speed wind tunnel, which had operated for some 40 years using components master-minded by Comp. Budget constraints had prevented the tunnel's instrumentation from being maintained properly, and the facility began to sink into decay by the late 1960s. That trend accelerated after Comp's 1974 retirement.

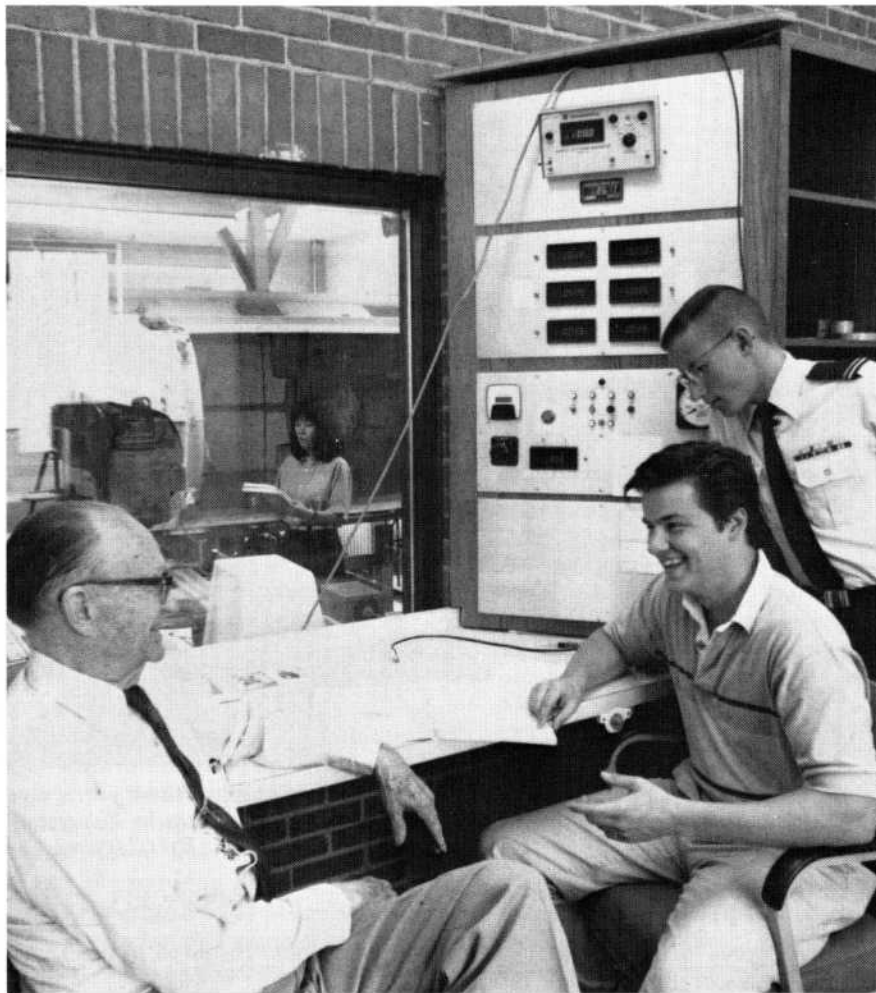
"I don't know for sure what did happen," Comp muses while taking a visitor on a guided tour of the tunnel. "There had been four or five people in

charge here, and none of them stayed long enough." Soon the tunnel was in such disrepair that it was of questionable use in research.

Using \$50,000 from a Kerr Foundation grant, the department set to work in the mid-1980s with plans to refurbish and renovate the tunnel. Equipment to measure forces and "moments" needed to be updated. Several components required machining to provide improved accuracy. Stepping motors were to be added to change automatically the position of any model being measured, replacing the old hand-crank method. Some renovation was needed on the tunnel's balance



Shortly after W.W.II, Doc poses with a mockup of the wind tunnel balance system.



Sooner engineering students Gary Christy, center, and Bryce Timberlake share a story with veteran professor Doc Comp in the control room of the wind tunnel.

system, the part which holds the aeronautical model to be tested and measures the forces of the tunnel's air currents on the model. The original balance system had been designed by Comp and constructed under his direction.

"In the course of the refurbishing," Egle recalls, "Doc Comp started working with the technician who was assigned to the project. He did much of the work associated with rebuilding, resetting and recalibrating. He did it on his own time, over the last year to year-and-a-half."

Doc Comp loves his tunnel and is clearly energized by a chance to explain its workings. To a visitor, he provides an enthusiastic account of how the newly renovated structure works.

"This particular balance system is known as a pyramidal balance system.

"He's got more energy at 83 than a lot of people have at 53. Just watch him climb around the tunnel."

The angle of attack can be changed by this arm in the back," he says matter-of-factly as he points to a component located inside the baby-blue tunnel. ". . . and to make a complete test on a model, we have to have four runs for every test." He amplifies on the four runs, then bounds toward the adjoining control room. "Now to get the read-out . . ."

"It was obvious to us that Doc had a lot of energy and enthusiasm about

the tunnel," Egle explains. So, when Dr. Omer Savas, the faculty member currently associated with the tunnel, took sabbatical leave for the 1988-89 academic year, "we asked Comp to teach the wind tunnel testing course. I think he was tickled to be able to do that again."

The course, designated AME 4272, uses what is at first glance a bizarrely imposing piece of construction. Contrary to what the layperson might expect, the tunnel itself is small in some respects — only four feet in diameter. It has about enough crawl space inside for one person — if that person were interested in experiencing air currents of up to 250 miles per hour. This elliptical tube runs through the basement of the building that houses it and sneaks aboveground at the building's two vertical ends. One end contains the 400-volt motor, the other a filter. The part of the tunnel accessible to view from the control room comprises only 11 feet of its 66-foot length.

While giving his guided tour, Comp leans into the open mouth of the tunnel and points toward one side of the balance system. "Since we can control the pitch on the propeller, we can go from zero velocity to over 200 miles per hour. That's not a high speed but that's a fairly high speed for takeoff and landing . . ." He continues, relating data at a pretty decent speed himself.

"He's got more energy at 83 than a lot of people have at 53," Egle marvels. "Just to watch him climb around the tunnel at that age, to get in it, under it and to operate it . . . it's fascinating. He's an inspiration to younger people. I think we dread getting old because of infirmities, but it certainly must be possible to keep your health and vigor for a long time."

Comp's energy and devotion to the work of teaching have impressed students since Coolidge was president. From a cabinet in the second-story wind tunnel office, he proudly produces a thick book of congratulatory letters sent in response to his 1974 re-

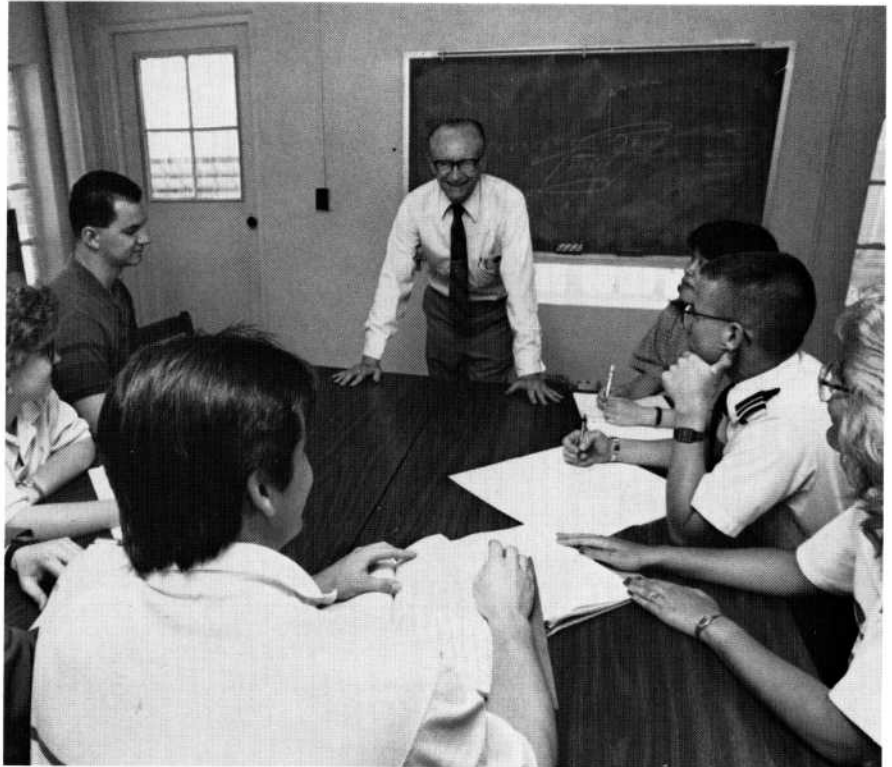
tirement. Tucked neatly into plastic flaps are notes bearing kudos from former students who have gone on to make a mark in their field at prestigious places — NASA, the U.S. Department of Transportation, McDonnell-Douglas. One letter lauded Comp with the words, “You may hold up your head among giants.”

Another of the tributes came from a former student who worked as the project engineer for the B-47 bomber. He later formed his own company, CloseBend, located in Tulsa, which manufactures fittings for the oil and petrochemical industries. In March of this year the former student, Jim Close, offered a different type of tribute to Comp, one which was worth a million dollars. Literally.

Close, who first met Doc Comp soon after enrolling at OU in 1937, announced a pledge of \$1 million to endow a chair in aerospace engineering to be named after Comp. “Outside of my own father,” Close says, “Doc Comp had more impact on my life than any other individual that I know because of our good friendship and the fact he was my advisor for so many years. . . . Comp was a knowledgeable person and had the love of being an educator.”

To Egle, such endowments are among the fruits of top-quality classroom instruction. “Doc was not — and I don’t say this in a negative way — a research-intensive person. He *taught*. His influence was that of a person with a sincere interest in students, who advised and related to them very well. . . . And here, 13 or 14 years after he’s retired, and probably 30 to 40 years after the event, a graduate comes back and gives a million dollars to the University because of Doc Comp’s influence. Something like that takes a long time to build and develop, but that’s where a lot of our strength lies.”

Others who have known Comp well echo Egle’s comments and say that Comp’s practical and direct concern for his students was a hallmark of his 44-year teaching career at OU.



Demonstrating that he is still master of the classroom after all these years, Doc Comp (standing) meets with a new generation: (clockwise) Yumiko Yokoyama, Bryce Timberlake, JoElla Reese, Gary Christy, Tricia Burkey and Bret Centracco.

In the words of a long-time colleague, Professor Emeritus of Engineering Tom Love, “Comp always took an interest in his students — not so much from the rah-rah Engineering Club type of activities, but more from the standpoint of helping them learn.”

“I always did try,” Comp says. “I helped a lot of students who were not really cut out to be engineers but still wanted to be. I’d help students at nights, at my home, and not necessarily my own students, but any of my friends who needed help.”

“He never would turn anybody down, in or out of the classroom,” Close says.

A particular talent Comp displayed — and displays — in teaching situations is a visual acuity for using models or illustrative objects. Egle, whose office was located across the hall from Comp during his teaching days, recalls, “Almost invariably, when he’d be going to class, he’d carry a notebook in one hand and a model in the other hand. It’d be maybe an airplane, so he could show components, or a stick model, showing forces and vectors of

various kinds. He loved to use those visual aids.”

In addition, Comp muses, “One advantage I think I had is I worked in industry, and I worked with people who actually knew what was going on every day in the aircraft industry in the way of structural analysis and materials. So that helped me a lot in the courses.”

That nuts-and-bolts approach to instruction grew out of a nuts-and-bolts way of life. He recalls with a chuckle being hired by OU as a mechanics instructor in 1927, when pay for beginning faculty was \$1,500 for nine months. Routinely, he would pay his bills at the 10th of the month, then try to scrape by on \$15 for the next three weeks. Like many others in his field, Comp would go a-hunting among companies for summer work as the end of the spring semester neared. By the late 1930s, the aircraft industry, starting with Douglas, took in engineering professors part-time for various purposes. Comp performed various tasks for Douglas, working for them full time during part of World War II. In

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the two decades following, he also served as a consultant to Martin-Marietta and McDonnell-Douglas Astronautics, among others.

Students still respond to the plain and practical approach, if Comp's course last fall is any indicator. Lee Moore, the last of the 13 to enroll in the wind tunnel lab, says he sought entry to the course after learning Comp was in charge of it. “I thought there was no one better to teach the class than someone who was in on the original design.”

Moore, who will pursue graduate studies at OU next fall on a grant from NASA, also was impressed by Comp's utilization of his professional experiences in the classroom. “One thing that marked him over a lot of the professors is that he was able to relate what we were doing to real life with his work examples. He was constantly referring to the AeroCommander work he had done . . . He was as spry and active and aggressive as any professor I've ever had.”

Conversely, how does Comp see his students of last fall, in relation to those he taught in decades past? The question sends his mind back on a spurt of recollection — back to the times when war or economic necessity forced young hands to master the mechanical know-how useful in engineering studies.

Comp recalls that the sharpest undergraduate minds he ever encountered in the classroom belonged to the students coming to college after World War II, who studied engineering and aeronautics with the benefit of military experience. “They knew the difference between an aircraft fitting of

one kind and another,” he says.

“Also, before World War II,” he adds, “most of our students had come from farms or at least had worked on a farm, so they knew machinery. But then there came a time, say maybe 10 years after World War II, that our students were coming from cities and towns. No opportunity to get any mechanical education. A lot of them didn't know a bolt from a nut, much less a fitting from a tubing and what-not. . . . I once sent one of my helpers out to the north campus to make me some parts out of aluminum sheet, and he came back with them made out of galvanized sheet metal.”

And the students of the 1980s?

“They're back on top now,” he says. “This group I had last semester was excellent.” Comp cites the final grades — 10 As and three Bs, and expresses pride in their work to the point of showing off their written experiments. “I spent quite a bit of time with them,” he adds. “Not just office time, but over the telephone, whenever they wanted to call up and ask questions.”

However, technology required Comp to make a few alterations in his standard procedure for keeping a class occupied. “What I liked originally about working with a class in the wind tunnel,” he remembers, “was that I could put students at six different read-out points, and I could have one student checking pressures, one student down in the motor room . . . in all about eight or nine, and I could have them each doing something.”

“Well,” he sighs with a tiny note of chagrin, “what are you gonna do when all this stuff is coming out on a computer? You've got 13 in a class, and you darn sure don't want 13 students down here with nothing to do, getting in the way. So you have to divide it up into six and seven, and you have one group come one week and another come the next.”

The 16 weeks of class completed, Doc Comp returned in January to his official retirement. However, he is still a familiar sight in the vicinity of Felgar

Hall. The College of Engineering allows him use of the small office on the second story of the wind tunnel building. There, on a spring afternoon, he goes through a sheaf of papers representing proud moments: a certificate citing him as first national president of the Sigma Gamma Tau engineering honor society; a copy of the 1974 resolution naming him a George Lynn Cross emeritus professor; a photograph of the 1978 naming ceremony for the wind tunnel; a newspaper article from March 1989 in which his longtime friend Jim Close is quoted as saying, “He was just one of those special professors.”

“We let him use the upstairs room for an office or a classroom, whatever he needs at the time,” Davis Egle says. “He's had pretty much free rein in operating the tunnel — which he still does now. He's still doing some little things associated with it, although most of the work is finished, in terms of the renovation. From time to time, he's helped graduate students with tests over there.”

Despite his enjoyment of working one-on-one with students, Comp turns bashful when he describes his temporary return to the classroom. “Oh, I just took it as a job,” he says with a hearty laugh. With 47 years of teaching and consulting under his belt, and another 14 of retirement, Comp says he is content nowadays with traveling and working around the house. “I spent most of my life at two jobs. So I said to myself, ‘When I retire, that's gonna be it. Flat-out it.’”

But in this one aspect, Doc Comp's actions speak a slightly different message than his words. After becoming one of the few faculty who has taught classes in seven different decades, his career is over — in a formal sense. Yet when you witness the “retiree” Comp on a spring afternoon heading toward the L.A. Comp Wind Tunnel speaking animatedly to an undergraduate, the air full of terminology such as “angles of attack” and “propeller pitch,” the truth hits you like a cool gust:

Doc Comp is still teaching. 