

NEW OVATION LINE OF ACOUSTICAL GUITARS is shown by Charles McDonagh, Kaman graphic arts manager and James Gurley, program mgr. for the Ovation line. The top is of selected spruce

while the radically designed double parabolic bell is of Lyra-cord, a patented material developed by Kaman. Line is now in production.

HELICOPTER PIONEER TO MAKE GUITARS

Kaman Aircraft Corp. unveils radical Ovation line of acoustical guitars.

A revolutionary approach to guitar design employing aero-space technology was unveiled last month with the official debut of Ovation guitars. Long rumored in the industry, the new line was developed by Kaman Aircraft Corp. with headquarters in Bloomfield, Conn. Although best known for the outstanding performance of its helicopters in service with the Armed Forces of the United States and foreign governments around the world, Kaman with sales in excess of \$50 million annually since 1960 is a widely diversified firm.

Charles H. Kaman, president and founder of the firm in 1945 has long been recognized as a creative pioneer in the field of helicopters. His initial patent for the servo-flap on helicopter rotor blades was the foundation of his firm and a radical innovation in aerodynamic history.

Less well known until the present has been Kaman's deep interest in music and the guitar, going back to his boyhood, decades before the present boom in frets. For years Kaman was fascinated by guitar design and making which has remained relatively unchanged for centuries.

One of Kaman's major fields of research has been in the area of vibration, a prime source of human and structural failure in helicopters. Thousands of engineering hours

to minimize source of vibration are a major if unseen cost in helicopter design.

From time to time while playing the guitar, Kaman wondered what could be done for the instrument through the application of 20th century engineering and space technology. As an instrument for the creation of vibration, could the guitar possibly benefit from Kaman's studies in locat-

ing and suppressing vibrations in helicopters?

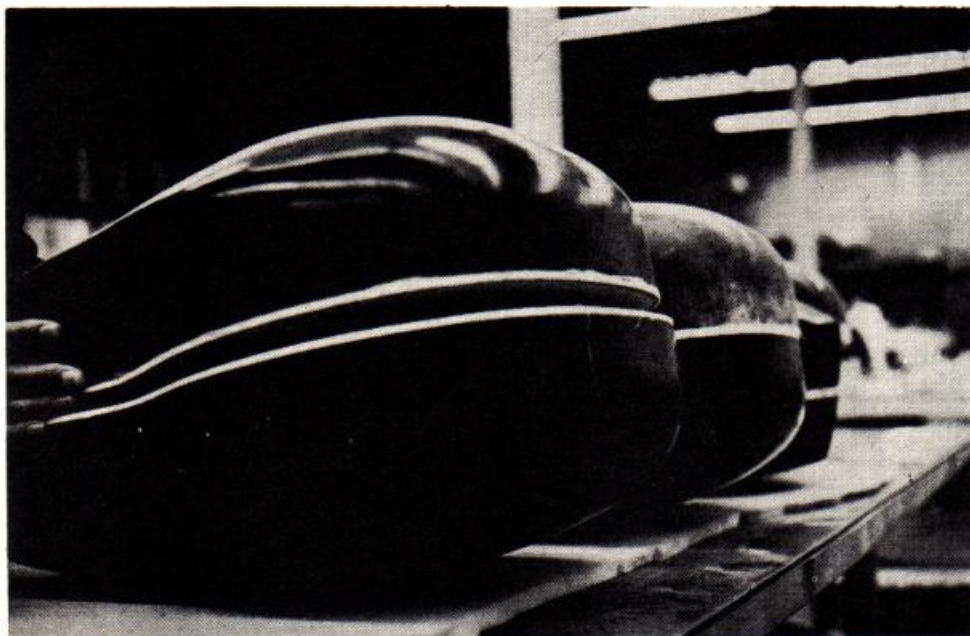
Using the oscillograph, Kaman made "audio-signatures" of a wide variety of guitars to locate and analyze the most favorable tonal ranges of each. Two years then followed in experimenting with hundreds of design shapes in search of a form that would create desirable tones over the broadest range.

Earlier this year, the present double parabolic form was perfected after extensive consultations with professional guitarists including the pioneering guitar folk singer, Josh White. White's early career was built in the thirties' with torch singer Libby Holman, long before the guitar enjoyed the slightest public recognition.

Ovation Instruments unveiled their new line of acoustical guitars at a reception and dinner held last month at the Hotel America, Hartford, Conn. In a program which featured demonstrations by Josh White, one of America's best-known folk singers, and the Balladeers, a new, young, singing group; and remarks by Charles Kaman, president of Kaman Aircraft Corporation, parent company of Ovation Instruments, and Jim D. Gurley, program manager of Ovation Instruments, the features of the Ovation guitar models were presented to 300 repre-



CHARLES H. KAMAN, company president who founded firm in 1945 has been a lifelong guitar enthusiast.



A WHALE OF A GUITAR punned noted guitarist Josh White when he visited the Kaman guitar plant. He also noted that the body of the guitar with its soft flowing lines almost had the organic form of a living creature.

PRESENT MANUFACTURING FACILITIES will be augmented early in 1967 with the occupation of a 40,000 sq. ft. facility. Present operation above despite sizeable output has been conducted thusfar as a pilot project.



KAMAN GUITARS, cont'd

sentatives of the press and the music industry.

Charles Kaman pointed out that his company had entered the music business because it believed it represented a major growth and diversification opportunity in the years ahead, saying: "Today's teenagers spend \$18 billion a year, much of it for music and recreation. The projected growth of personal home entertainment, continuing emphasis of our culture on youth, and the fact that Kaman could bring technology to bear on the development of a better guitar, were fundamental to our company management's decision to enter the music field."

Mr. Kaman emphasized the differences which he said make the new Ovation guitars radically different in style and superior in musical quality to the traditional acoustic guitar. The most distinctive feature of Ovation guitars is their parabolic bowl (body) made of "Lyrachord" for structural strength, tonal amplification and balance. Included in the demonstration was the use of an oscillograph (an instrument which turns sound waves into visible patterns.)

In describing the impact of modern technology and such instruments as the oscillograph, Mr. Kaman pointed out that the oscillograph makes an "audio-signature" of any particular guitar and that it is then possible to make a scientific calibration of the differences in tonal quality of one instrument compared to any other. He added that the demonstration wasn't significant so much as a sales tool as it was to show how science has contributed to the development of a uniquely superior guitar. Using instruments like the oscillograph, Kaman technicians were able to accomplish what would equal a generation of "cut and dry"

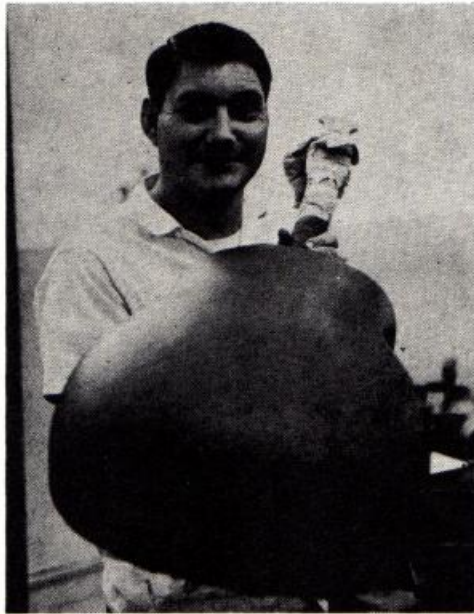
evolutionary development based on artistic judgment and experience, in a matter of just a year, he said.

Josh White, playing Ovation's "Josh White" model—declared to be the first guitar which the famous folk singer has ever endorsed—held the crowd spellbound. His thirty-minute performance brought forth every nuance of the instrument's unique capability to render clear treble and deep resonant bass notes. Closing the show with a family ensemble with his two daughters, Mr. White brought down the house. It was one of the rare occasions when he and his children, though all professionals, have played as a group.

Also featured were the Balladeers, a bright, young singing group from the Connecticut Valley, destined for growing popularity. Playing Ovation guitars named the "Balladeer" and designed especially for their style of musicianship, they showed the versatility of the Ovation guitars for group playing. Later the Balladeers will tour the country, demonstrating Ovation guitars at a series of meetings to be held in important marketing areas.

In welcoming the attendees to the demonstration, Jim Gurley, program manager, said that Ovation was fortunate to be able to draw on Kaman's unique capabilities and advantages stemming from 20 years' experience in the fabrication of wood, metal, and resin composites for its helicopter rotor blades, and the application of these skills to manufacturing guitars. He introduced the first four guitars in Ovation's line and outlined plans for expansion of Ovation Instruments into a complete line of electric guitars, amplifiers, and other musical instruments.

For more information write to Ovation Instruments Division, Kaman Aircraft Corporation, Bloomfield, Conn. 06002. Tel. 203-242-4461.



PATENTED LYRACHORD BELL is first sprayed and then handrubbed to a lustrous finish. It will be available in a wide variety of colors.



WOOD TOP IS BONDED to Lyracord body in the same way that Kaman helicopter blade employing wood, Lyracord and metal is made.

VACUUM PROCESS FOR GLUEING is an example of Kaman's application of the latest in manufacturing to making guitars. Here ribs being glued to tops are covered with plastic sheets. All air is sucked out, resulting in tremendous pressure.





This is the debut of the newest, most exciting line of acoustic guitars ever offered.

Ovation instruments have been scientifically conceived and designed for spectacular tonal amplification and balance. The moment of truth for musician and audience alike comes with the playing. The balance between high harmonic brilliance and mellow rich depth is immediately evident. Everyone responds to it. Try it—it's an experience you owe yourself.

Dedicated to today's discerning youth, Ovation's acoustic guitars are unmatched in the music hall or marketplace.

The logo for Ovation Instruments, featuring a stylized white outline of a guitar body above the word "Ovation" in a serif font, followed by "Instruments" in a smaller, simpler font.

Ovation Instruments

A DIVISION OF KAMAN AIRCRAFT CORPORATION
BLOOMFIELD, CONN.