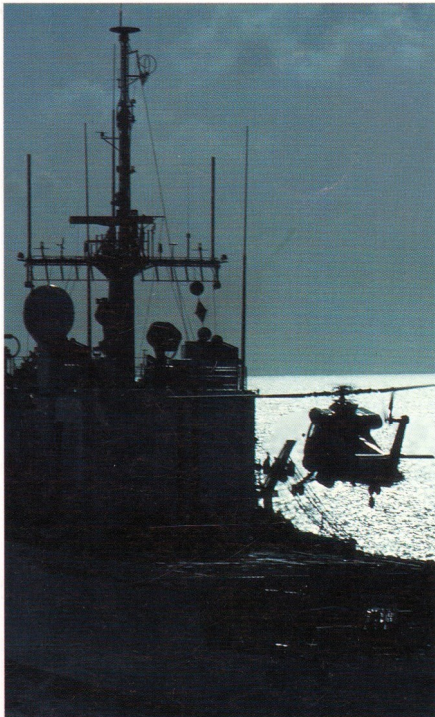


KAMAN TECHNOLOGY IN DESERT STORM

Kaman technology played an important role in Desert Storm. A wide array of Kaman products and services were used by the U.S. military from the SH-2F helicopter, to critical systems and components for the Patriot, Tomahawk, and many aircraft, ships and other vehicles. See the full story on page 4.



Kaman's SH-2F multi-mission helicopter saw front line duty in the Gulf.



The Ovation's design challenged the well-entrenched rules of traditional guitar making. Twenty-five years later, the Ovation is considered the best built guitar in the world.

Ovation Celebrates 25 Years of Music Making

Their customer list reads like a who's who of music greats. Ovation guitars can be seen in the hands of such diverse artists as rock star Jon Bon Jovi, country music legend Glen Campbell, one of the jazz world's master guitarists, Larry Coryell and many, many others. This year, Ovation Instruments celebrates 25 years of music making.

It started with a knack for playing the guitar and a keen interest in building an instrument like no other. It took the mind and talent of Charles Kaman to create the Ovation, which many consider the best built acoustic guitar in the world. But getting into the music business was no fluke for the company that was known, back in 1966 when Ovation was founded, for pioneering helicopter development.

"Diversification was the mandate from Kaman's board of directors," says Charles H. Kaman, founder and chief executive officer of Kaman Corp. "We were facing declining defense budgets and the directors felt the company should diversify into other markets including the leisure time field and consumer markets. Campers, fiberglass sailboats, camping gear and all types of athletic endeavors were looked at, but it wasn't until I visited a leading guitar manufacturer's facilities that the answer became apparent."

An Unforgettable Experience

A guitar in need of repair brought Kaman to the C.F. Martin Company. Fred Martin, president of the company, offered Kaman a tour through the factory. "It was an unforgettable experience," says Kaman. "We had built rotor blades in the early years for the HTK and HOK helicopters for the Navy and Marines from Sitka spruce which is one of the materials used in the guitars. My instant response was that Kaman would have a great deal to contribute to guitar manufacturing due to our precision tooling capabilities and advanced woodworking equipment. I offered to buy the company from Mr. Martin."

But Martin wasn't selling. Because the company was a family business, he refused the offer. Kaman made a second offer, but Martin again refused.

Redesigning the Guitar

Kaman knew, with the application of 20th century engineering and space technology, Kaman Corp. could build an improved instrument. Using the company's studies in locating and suppress-

(Continued on page 6)

PRESIDENT NAMED FOR KAMAN DIVERSIFIED TECHNOLOGIES



Richard E.W. Smith was appointed president of Kaman Diversified Technologies Corp. on October 25, 1990. Smith now oversees the operations of Kaman's defense related

technology businesses outside of helicopters and aerospace.

"Dick's appointment further strengthens our management team which is shaping the direction of the company for the '90s and beyond," said chairman and chief executive officer Charles H. Kaman, in making the announcement. "He has been instrumental in the company's success over the years, and in strategic planning to better position our defense businesses competing in global markets. We are also particularly proud to once again promote from within and

recognize leadership with the opportunity to further build the company."

Smith was appointed vice president of Kaman Corp. in November, 1989, assisting in the operations of the Diversified Technologies companies and the strategic planning for the corporation. He joined Kaman Sciences Corp. 30 years ago and became a vice president in 1973. In his last position at Kaman Sciences Corp., he was responsible for four divisions: defense technologies, space and communications systems, photonic systems and general programs.

Smith, 56, is a graduate of San Jose State University and also attended the University of Colorado with course work in Engineering and Economics. He recently served as chairman of the plans and budget committee of the State of Colorado Information Management Commission. Smith is a member and past Southern Colorado vice president of the American Defense Preparedness Association and a member of the Armed Forces Communications and Electronics Association. ■

OIL EXPLORATION TAKES TO THE SKIES

They travel to the most remote areas of the world in search of oil. American Helicopter Drilling, Inc. has equipment in Pakistan, the Middle East and Africa. Their innovative technology makes them a leader in the industry.

The folks at the Kaman Industrial Technologies Commerce City, Colo., branch work with the company, lending their expertise and supplying a wide range of products.

Used exclusively with the seismic industry, heliportable shot-hole drilling is used for oil exploration in areas where overland access is impossible. "Oil companies involve us in their search when the terrain gets rugged or the area is environmentally sensitive and the government doesn't want anyone driving on it," says Dave Ward, executive vice president for American Helicopter Drilling, Inc. "When we're on the job, all equipment and personnel are moved in with helicopters."

American Helicopter Drilling has worked with Kaman Industrial Technologies for about three years. "We use Kaman almost exclusively for all of our bearing applications," says Ward. "The company also supplies us with roller chain, couplings and seals, among other things. Service has been outstanding. Kaman staff puts their computer to work, and quickly tracks difficult to find parts. That amounts to considerable savings in downtime."

The search for oil starts with a geophysicist who determines which areas are potentially oil rich. A survey company then surveys those outlined areas. "Typically, surveyors place flags in the ground at distances of about 12 per mile and that's where we come in," says Ward. "We drill shallow test holes, usually less than 200 feet, and load the holes with explosives. On an average, we take six to eight drilling rigs at a time to work on one line and they're leapfrogged over one another."

Next a seismic contractor comes in, detonates the charges and takes seismic readings. The explosives are shot, thus the name 'shot-hole' drilling. Based on the explosions from the energy source, they can determine with a fair amount of accuracy if there is any oil prospect in the area.

"Our company has two facets," says Ward. "We actually do the drilling and we manufacture the drilling equipment. The equipment is either sold or leased to foreign governments and foreign interests."

(Continued on next page)

THE TAMING OF THE COPTER

"On a clear, crisp November day in 1948, at Bradley Field outside of Hartford, Connecticut, Ann Griffin climbed into the open cockpit of a bizarre machine, a skeleton fabricated of pipes and perched upon three wheels. Dressed in dark slacks, a light-colored tunic, and leather gloves, with a small cocktail hat pinned to her neatly coifed hair, the young woman from Simsbury looked confident. But as the Kaman Aircraft K-125's engine came up to speed and its dual intermeshing rotors whipped through the air above her head, Griffin's expression betrayed her, revealing more than a touch of anxiety..."

"Griffin's fear was entirely understandable. After only two hours of ground instruction and a mere 36 minutes in the air with Kaman test pilot Bill Murray, this housewife, with no previous flying experience, was steeling herself for her first solo flight... But all went well as she lifted off, rose 50 feet into the air, hovered for 10 minutes, then landed — her hat safely in place."

So begins the history of Kaman helicopters as related in *Air & Space Smithsonian*, December 1990/January 1991. The article, written by Jay Stuller, describes in precise detail the problems encountered in the early years of rotary-wing flight and how through determination and perseverance, Charles H. Kaman, solved the problems and founded Kaman Corporation.

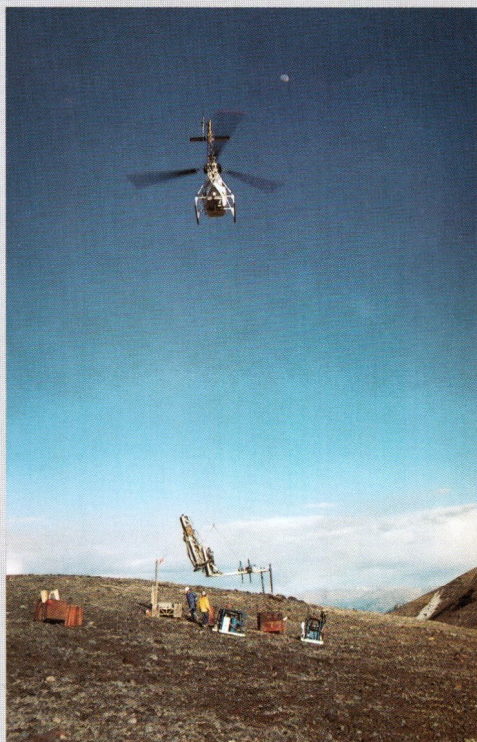
A copy of the article can be obtained by writing to Kaman News at P.O. Box 1, Bloomfield, CT 06002 or calling (203)243-6319. ■



The company has developed a helicopter track unit which is the only one of its kind in the world. "There are many helicopter drill rigs but ours can be flown into remote areas, assembled on site and then propel itself to drill a mile or two miles without helicopter support," says Ward. "From the arctic cold to the jungle heat, our equipment has proven effective in all environments."

Ward recently called on another Kaman company to solve an application challenge. "We're very interested in a coating developed by Kaman Sciences in Colorado Springs called K-Ramics," says Ward. "We are currently testing the application of the coating to some surfaces on an air-screw compressor. We have had very exciting results from this application and there's an excellent chance that we'll use the product on other applications." The K-Ramic coating reduces wear and protects bearing surfaces, according to Darvin Kaelberer, a Kaman Sciences applications engineer.

Drawing on Kaman expertise in a variety of disciplines, Ward says American Helicopter Drilling has benefited from the companies' interactions. "We couldn't be more pleased with the service and knowledge we've gained from Kaman."



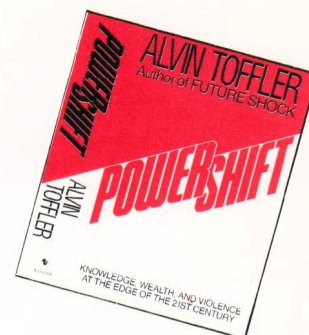
South of Cody, Wyo., at more than 13,500 feet above sea level, workers move a helicopter portable drill. Searching for oil takes American Helicopter Drilling to remote locations where overland access is impossible. Kaman Industrial Technologies has been providing American with product and application services for three years.

BOOK REVIEW:

by Russell H. Jones

"The corporate takeovers seen so far are 'only the first salvos' in larger business power struggles to come."

Alvin A. Toffler



Alvin Toffler is one of the century's noted futurists. In 1970, he published *Future Shock* in which he wrote of the accelerating pace of change: the future has already arrived. In 1980, he explained in *The Third Wave* that just as the industrial society replaced the agricultural, the information society (third wave) will replace the industrial. Late in 1990 the Toffler trilogy was completed with *POWERSHIFT: Knowledge, Wealth, and Violence at the Edge of the 21st Century*. Bantam Books, New York, 1990. 585 pages.

Powershift is about the power struggles that face us as the industrial civilization loses world dominance. "The dramatic death of state socialism in Eastern Europe and its bloody anguish from Bucharest to Baku to Beijing did not happen by accident. Socialism collided with the future. Eastern European Communist governments toppled domino-fashion as soon as Moscow sent the message that it would no longer use troops to protect them from their own people. The appearance of the computer and new communications media in the mid-20th century smashed Moscow's control of the mind in the countries it rules or held captive." Toffler contends far worse geopolitical power struggles lie ahead.

Power is exercised, Toffler explains, through force, wealth and knowledge. Knowledge has become the most potent form. "The main weakness of force is its sheer inflexibility. It can only be used to punish. Wealth, by contrast, is much more versatile. Instead of just threatening or delivering punishment, it can also offer finely graded rewards. Knowledge can be used to punish, reward, persuade, and even transform."

"By definition, both force and wealth are the property of the strong and the rich. It is the truly revolutionary characteristic of knowledge that it can be grasped by the weak and the poor as well. That is why every power-holder — from the patriarch of a family to the Prime Minister of a nation — wants to control the quantity, quality, and distribution of knowledge."

Here is a sampling of Toffler's interesting observations.

The corporate takeovers and restructuring seen so far are "only the first salvos" in larger business power battles to come.

"Nowadays the ability to make a deal happen very often depends more on knowledge than on the dollars you bring to the table. At a certain level it's easier to obtain money than the relevant know-how. Knowledge is the real power lever."

"The maldistribution of telecommunications in today's world is even more dramatic than the maldistribution of food. The lopsided distribution of computers, data bases, technical publications, and research expenditures tells us more about the future potential of nations than all the gross national product figures ground out by economists."

"Our mass-education systems are largely obsolete. A high-choice system will have to replace a low-choice system if schools are to prepare people for a decent life in the new Third Wave society, let alone for economically productive roles."

"It is no longer possible to specify in advance what everyone needs to know. Workplace democracy, like political democracy, does not thrive when the population is ignorant."

"High-speed change requires equally high-speed decisions — but power struggles make bureaucracies notoriously slow. Competition requires continual innovation — but bureaucratic power crushes creativity."

Toffler argues this is not the "end of the American Century" as some have argued. We are better positioned to compete than anyone. It is, however, the end for many old ways of looking at things and conducting business. Those who pay heed to the changes can do very well. Toffler's *Powershift* can give you a good "heads-up."

KAMAN TECHNOLOGY IN DESERT STORM

When air raid sirens erupted January 17, tension in Dhahran and Riyadh grew as Scud missiles were launched by Iraq on the second day of Desert Storm. No one knew exactly what would happen. But before they could reach their target, Patriot missiles launched by the U.S. Army intercepted the Scuds, destroying them in mid-air. In the first days of the war and throughout the conflict, the pinpoint accuracy of the Patriot was heralded. Military and political observers say that the force put forward by the U.S. and coalition countries with minimal loss of life by the allies was attributable, in large measure, to technology. In addition to the Patriot, western advanced smart weapons, cruise missiles, aircraft, ships and armored vehicles contributed to the overwhelming victory.

Kaman technology played an important role in Desert Storm, according to chairman and chief executive officer Charles H. Kaman. "Virtually all aircraft, missiles and ships, and many ground systems, incorporated Kaman products and services," said Kaman. "The reports we've received indicate that our advanced technology systems and components, in use with the various services, performed very well."

The SH-2F Seasprite, produced by

Kaman Aerospace, saw extensive duty in the Gulf during the more than seven months of operation after the August invasion of Kuwait by Iraq. SH-2Fs were a front line component for the Navy in targeting, reconnaissance, anti-ship, search and rescue and other missions.

Kaman technology also flew with other Navy, Air Force and Army aircraft. A wide variety of Kaman products are on the F-14, A-6, A-10, C-5 and other fixed wing planes used in the conflict. Airframe and engine structures produced by Kaman Aerospace — from more than 50 wing control surfaces and tail structures for the F-14 Tomcat to flaps, slats and spoilers and engine thrust reversers for the giant C-5 transport.

Critical mission data for the EA-6B electronic warfare aircraft and other aircraft were loaded onto mass memory systems produced by Raymond Engineering. These specialized memory systems are designed to store 40 megabytes of information, in some cases, and operate in harsh conditions of high g's, temperature and vibration.

Specialized cabling for data trans-



Air Force Space Command, for which Kaman maintains and supports the extensive software systems, tracked Scuds launched by the Iraqis and relayed information to the Desert Storm Command.

mission or signal delay (used to jam or confuse enemy radar) produced by Kaman Instrumentation were on virtually every fighter and attack aircraft — from the F-16s, heralded for their precision bombing, to the F-4Gs used extensively for electronic countermeasures, to the new advanced JSTARS aircraft which saw its first combat action. JSTARS provided pinpoint accuracy, radar surveillance and tracking of moving ground targets.

Helicopters also incorporated many Kaman products. Army AH-1 Cobra aircraft flew with all composite rotor blades made by Kaman Aerospace and unique KAflex no maintenance, no lubrication required drive shafts from Kamatics. Army



The highly praised Patriot incorporated advanced computer mass memory systems and radar delay lines made by Kaman.

KAMAN MUSIC SUPPORTS DESERT STORM WITH OPERATION TUNES IN THE DUNES!

Service men and women in Saudi Arabia received a special gift from Kaman Music during the Christmas holiday. A shipment of Ovation guitars, recorders, banjos, dulcimers, tambourines and Christmas tapes by Kaman endorser Steve Wariner were airlifted to Operation Desert Storm troops.

"We received letters from soldiers who missed their guitars," says David Bergstrom, director of advertising for Kaman Music. "We wanted to show our support of the men and women serving our country."





The "Cobra" helicopter, used by the Army to attack tanks and ground targets, flies with all composite rotors, KAflex couplings and other components made by Kaman.

UH-1 Huey utility helicopters, OH-58 Scout and AHIP aircraft, and Navy/Kaman SH-2Fs also used KAflex drive shafts and many Karon bearings. The AH-64 Apache, which racked up extensive tank kills during the 100 hour ground offensive, incorporates Kaman Instrumentation radio frequency (RF) transmission and delay lines.



The A-6 attack and EA-6B electronic warfare aircraft incorporate Kaman products, from air-frame components, to advanced technology memory systems and specialized cabling.

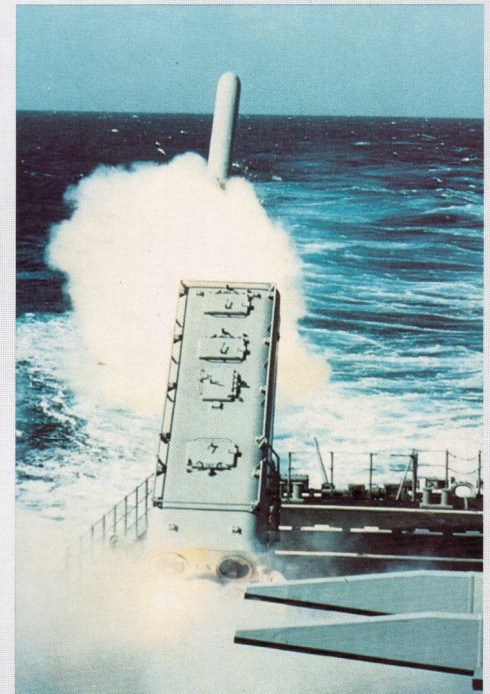
Kaman Instrumentation's specialized delay lines are also on the now highly touted Patriot missile system. These silica delay lines are critical for radar phasing. Also on the Patriot program is Raymond Engineering. Tape memory systems, capable of storing and retrieving megabytes of computer data, are used in the ground-based command and control function of the air defense system.

Kaman Sciences played a role in the defense against Scud missiles and other threats. As Scuds were launched, a special array of satellites flashed a warning to the Air Force Space Command (AFSCOM) in Cheyenne Mountain. At this space center, deep in the heart of the mountain, the sophisticated computer programs, supported and maintained by Kaman, tracked the Scuds and sent a warning to the Gulf command for Patriot missile defense.

In the days leading up to Desert Storm, and in the first few days of the operation, intelligence on electronic activity of Iraqi radar and systems was collected and processed by Locus, Inc., another Kaman subsidiary. The company specializes in electronic warfare, signal intelligence, and telecommunications. This information was critical for U.S. and coalition forces to know just what threats they would face. The air campaign was so effective, however, that by January 20, the Iraqi radar activity plunged nearly 90 percent.

Many of the key Iraqi radar and communication and control centers targeted were knocked out by cruise missiles, such as the Tomahawk, and TLAM-C and conventional air, ground or ship mis-

siles such as the Maverick and Standard. Raymond Engineering weapon safety systems are key components in these and many other smart weapons which destroyed targets with pinpoint accuracy. Safing devices made by Raymond make the missiles safe while carried aboard allied ships, planes and ground vehicles. Raymond arming and fuzing systems enable the missiles to function when they lock in and reach their target. A new generation of cruise missile, the SLAM, with Raymond safe, arm and fuze devices, saw its first successful use in combat

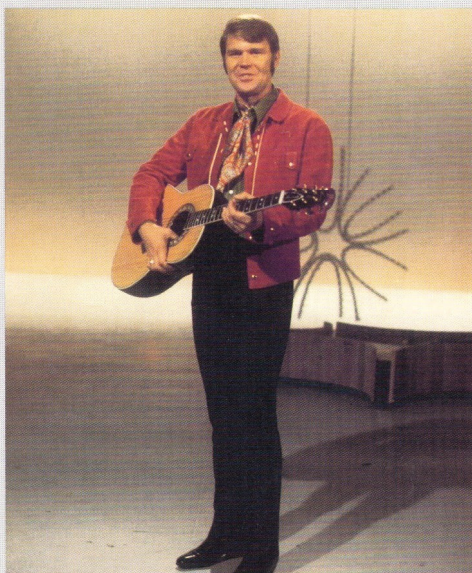


A Tomahawk cruise missile, containing Kaman produced safing, arming and fuzing devices, is launched against key targets deep inside Iraq.

when it destroyed a power generating station without damaging a nearby dam. The stand off capability and accuracy of SLAM allowed the missile to be fired by an A-6 many miles away, thus keeping the crew out of harm's way.

When the first Patriot was fired and knocked out the Scud, pride and cheers erupted at Raymond Engineering and Kaman Instrumentation. The pride and cheering grew throughout Kaman as employees saw success in virtually all defense systems using the company's technology.

"All our people were very proud that we played a role in providing high technology products that were so successful," said Harvey S. Levenson, president and chief operating officer of Kaman. "But even more, we are so thankful that technology was key in keeping our forces safe and ending this conflict with the lowest possible casualties."



Music Man of the Year in 1968, Glen Campbell became a household name while hosting his Goodtime Hour on CBS. Campbell has been an Ovation endorser since 1969.

Ovation Celebrates 25 Years of Music Making

(Continued from page 1)

ing vibrations in helicopters, he set out to apply the knowledge to re-design the guitar. With the aid of a materials laboratory, oscillographs, vibratory equipment and other pieces of technical equipment, Kaman and his team of engineers made a guitar with a rounded back and new top bracing that provided better sound. They called it the "Ovation." Others called it the most important development in almost 400 years of fretted instrument manufacturing.

"John Ringo, our blademaker from our early years, made the first Ovation," says Kaman. "His hobby was restoring old violins so he had a keen sense of how to build an instrument."

It was an unusual looking guitar, and at first, some were put off by its unique design. Times have changed public opinion according to Kaman ... or more likely, it was the sweet sound of the instrument. "What we had hoped is happening," he says. "The roundback has seriously challenged the standard for what players seek in an acoustic guitar. The artists want great sound. The roundback has grown to be what they are looking for."

The Ovation is known to handle the rigors of travel and rough handling which accompany the night after night schedule of touring musicians. "Its composite construction makes it hold up exceptionally well on the road," says Kaman.

A Little Tenacity Goes a Long Way

It was a tenacious move that introduced the Ovation to the professional ranks back in the '60s. Kaman took the very first Ovation to Charlie Byrd who was playing at the Showboat in Washington, D.C. "Although he traditionally played a nylon string guitar, when I caught him backstage, he played it for the entire intermission," Kaman recalls. "He asked me to stay with my steel string guitar, went out and performed another set, and came back to play the guitar again. He instantly picked out the features that would eventually make the Ovation famous. He had it cold turkey ... the sound, the ambiance. At that meeting Charlie Byrd told me it would go and go big."

Byrd also told Kaman to bring it to Josh White. "He's over at the Georgetown Inn right now," Byrd said. "Why don't you go over there and show it to him."

Byrd was later to become an endorsee when it came time to introduce the Ovation Classic version. "Byrd told me that without his Classic Ovation acoustic electric, he couldn't jazz with Barney Kessel, Herb Ellis, Chuck Redd and some of the others because they always drowned him out," says Kaman. "It was one of the first classics ever built with an electric pickup."

Kaman went to see Josh White at the Georgetown Inn and caught him in the lobby. "I told him Charlie Byrd sent me over," says Kaman. "He played the Ovation and exploded ... he just exploded. I asked him if he wanted one and he said, 'Hell yes!'"

Built to White's specifications, the Ovation Josh White model came out of that hotel meeting. It was the first guitar the famous folk singer ever endorsed. White brought his entire family to Hartford and gave the first Ovation concert. A 1966 review of the performance by *The Music Trades* reported, "White 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."

Ovation Today

Twenty-five years ago, there was no time to speculate on the magnitude of the instrument's future success. "We had no doubts about our product," says Kaman. "Like many of the Kaman subsidiaries, the Ovation was born out of a good idea. And when the product is uniquely positioned to meet the needs of the customer, it's bound to succeed."

The Ovation can be found in music shops across the U.S. and Canada and from the Far East to Europe. "We sell many expensive guitars in Japan and they love them," says Kaman. "Demand for our guitars abroad continues to grow and we see terrific potential for us in other countries."

A Legion of Fans

There have been many shining moments in Ovation's 25-year history, but Kaman Music president C. William Kaman II remembers an especially exciting event. "It was the first time Glen Campbell played the Ovation on national television," he recalls. "My father didn't sit down for the entire hour. He paced around the room saying 'Will you look at that?!' over and over. It was a scene I'll never forget."

Campbell learned of the guitar through Karen Behnke, an Ovation employee. Behnke arranged for Charlie Kaman to meet the country singer in a New Jersey hotel room. At the meeting, Kaman handed over the guitar and simply said, "Try this." Campbell played it, turned to his manager, Stan Schnieder,



Blues musician Lonnie Mack, rock's Jon Bon Jovi and Richie Sambora, jazz great Al DiMeola and country star Steve Wariner prefer Kaman Music products. Bon Jovi, Sambora and DiMeola are Ovation endorsers.

and said, "Get this for me."

His manager took Kaman aside and asked him what he wanted. "I told him I didn't want anything," says Kaman, "that I simply offered Glen Campbell the guitar to play, that's all. I wasn't looking for anything special. I told him we were making the Ovation and I thought Glen might like it. 'Oh,' he says. We went back into the room and he said to Glen, 'You can have it if you want it.' He must have played it for an hour. For years, we'd watch Glen play the Ovation on his *Goodtime Hour*. He also later became an endorser."

The Ovation guitar now holds a place

"Kaman and his team of engineers made a guitar with a rounded back and new top bracing that provided better sound. They called it the 'Ovation.' Others called it the most important development in almost 400 years of fretted instrument manufacturing."

in music history. Charles Kaman was recently recognized by *The Music Trades* as one of the most important contributors to the music industry over the last century (see boxed article).

"I think the Ovation is one of the more interesting products in the music industry because it is so unique," says Brian Majeski, editor of *The Music Trades*. "The interesting thing is you've got a conservative marketplace that is loath to accept change. Most of the instruments that are made are based on designs that were refined in the early '20s. The Ovation is really the only departure of significance since then and that's a tribute to the people at Kaman. They put it together, stuck with it and had the confidence in the design to make it stick. It's got a legion of fans all around the world in every market."

"It hits me between the eyes when I see people using our guitars," says Bill Kaman. "That same feeling my father had watching Glen Campbell for the first time doesn't go away. It is very satisfying when musicians of the artistic stature of Larry Coryell or Mark O'Connor tell me that without the Ovation guitar they could not have created the kind of music they have. I believe the Ovation guitar has helped keep acoustic music alive in an electric world."

INDIVIDUALS WHO MADE A DIFFERENCE

The Music Trades special centennial issue on the history of the U.S. music industry, honored individuals whose vision and skill enriched the lives and works of music makers. Charles H. Kaman was one of those individuals ...

"A distinct parallel exists between the evolution of the acoustic guitar and the typewriter keyboard. A standard configuration for the two devices was established about 75 years ago, and in the ensuing years the public has staunchly rejected any and all products that have deviated significantly from the accepted standard. There is one notable exception, however, in the acoustic guitar markets: the roundback Ovation guitar.

"Twenty-four years ago, Charles Kaman defied tradition and the accepted wisdom when he introduced an acoustic guitar with a bowl-shaped body fabricated from [fiberglass]. Skeptics predicted that the Ovation would be short lived, but they failed to take into consideration Kaman's ferocious tenacity and the musical quality of the guitar. Totally convinced that his guitar represented a major improvement, he ignored his critics and forged ahead. The current success of the Ovation guitar vindicates his original convictions.

"The Ovation story traces back to 1942 when Charlie Kaman joined the engineering staff of United Aircraft. At the time the company was engaged in developing one of the first helicopters, and Kaman was assigned to design the rotor blades. When top management greeted one of his design innovations with indifference, he quit and started the Kaman Aircraft Company to build a new type of helicopter. By the mid-1950s Kaman was prospering with large military contracts. However, under the Kennedy administration, due to politics and changing procurement procedures, Kaman lost much of its defense business and was forced to diversify.

"Kaman was an accomplished guitarist, so it was only natural for him to explore the possibility of building guitars. After unsuccessful attempts to purchase the Harmony and Martin guitar companies, he decided to build his own guitar.

"Helicopters and guitars are outwardly dissimilar, but Kaman felt that the technical skills he had acquired in producing helicopters could be successfully applied to creating guitars. After building hundreds of prototypes, Kaman and his team of engineers came up with the unique Ovation design. Charlie Kaman's personal involvement in the guitar is evidenced by his patent, number DES 109924, for the roundback design. Today the Ovation ranks as one of the world's best selling guitars and is used by such notables as Al DiMeola, Larry Coryell, and Nancy Wilson.

"While Kaman Corporation has subsequently evolved into a highly diversified \$800 million (sales) company, Charlie Kaman remains active and involved in the music business."

A copy of the article can be obtained by writing to Kaman News at P.O. Box 1, Bloomfield, CT 06002 or calling (203)243-6319.

IN MEMORIAM:

FORREST PETERSEN, KAMAN DIRECTOR, DIES



Forrest S. "Pete" Petersen, retired U.S. Navy vice admiral and director of Kaman Corp., died December 9, 1990. He was buried with full military honors at Arlington National Cemetery, Arlington, Va.

"We have lost a great patriot, distinguished director and dear friend," said Kaman Corp. chairman and chief executive officer Charles H. Kaman. "Pete epitomized all that we value and admire in our military leaders: courage, loyalty, initiative, and integrity. His contributions to the Navy and

aviation played a vital role in shaping this country's defense capability. And, his wisdom and guidance as a director of Kaman greatly contributed to our focus on leading technologies for defense and other endeavors.

"We shall miss Pete dearly, but he has made a lasting mark on the country and Kaman Corporation," said Kaman.

For his work on the X-15 flight program and his career as an aviator, Admiral Petersen was inducted into the Carrier Aviator Hall of Fame and Test Pilot Hall of Honor in 1990. He also received NASA's Distinguished Service Medal and the Navy's Distinguished Flying Cross. He was a joint recipient of the Collier Trophy presented by President John F. Kennedy.

NEWS BRIEFS:

NEW PRESIDENT NAMED AT KAMAN SCIENCES (31 JAN '91)

Dr. J. Lamar Allen has been appointed president of Kaman Sciences Corp. Formerly senior vice president, Allen now oversees the Kaman Corp. subsidiary's scientific research and development activities. Allen, 54, joined Kaman Sciences in 1982, and has since held various positions including division manager, directorate manager and chief engineer. He became vice president in 1984 and senior vice president in 1990.

BOARD DECLARES DIVIDEND (20 FEB '91)

The Kaman Corp. board of directors declared a regular dividend of 11 cents per share on shares of Kaman common stock. The dividend was paid on April 15, 1991, to shareholders of record on April 1, 1991.

CHARLES H. KAMAN HONORED (11 APR '91)

Connecticut Knights of Columbus and Rotary International Clubs presented their highest awards to Charles H. Kaman. Both awards are in recognition of outstanding service and humanitarian influence to better the community. The Knight's Father Michael J. McGivney Award, named after the organization's founder, is the highest tribute given by the group in Connecticut. Rotary's Paul Harris Fellow, also named for the group's founder, honors those who best exemplify Rotary's motto, "Service Above Self."

1991 FIRST QUARTER RESULTS (18 APRIL '91)

Kaman Corp. reported 1991 first quarter earnings declined to \$3.8 million, or 21 cents per share primary and fully diluted, from \$4.3 million or 24 cents per share primary, 23 cents per share fully diluted in 1990. Revenues for the first quarter of 1991 were \$195.0 million compared to \$203.9 million in 1990.

"The decline in sales and net earnings reflects continuing changes in the defense market and economic pressures in the industrial sector," according to chairman and chief executive officer Charles H. Kaman.

Kaman News is published quarterly by Kaman Corporation. News or other items of interest may be sent to J. Kenneth Nasshan, assistant vice president, director of public relations, Kaman Corporation, Bloomfield, CT 06002. Contributors to this issue were: Russell H. Jones, vice president/Beth O'Neill, PR representative/Mary Ann Semmelrock, communications assistant.

KAMAN NEWS

Kaman Corporation
Bloomfield, CT 06002

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