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THE AMERICAN BOILER INDUSTRY

A CENTURY OF INNOVATION

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ABMA
100th ANNIVERSARY
AMERICAN BOILER
MANUFACTURERS ASSN.
1888 - 1988

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THE HARTFORD STEAM BOILER INSPECTION AND INSURANCE CO.

When organized in 1866, it was described by one of its founders, Jeremiah M. Allen, as "...the first institution in America devoted primarily to industrial safety." Initially the company was concerned with the construction and operation of steam boilers. However, it soon introduced a novel concept in the United States: combining inspection with insurance, providing an incentive to inspect.

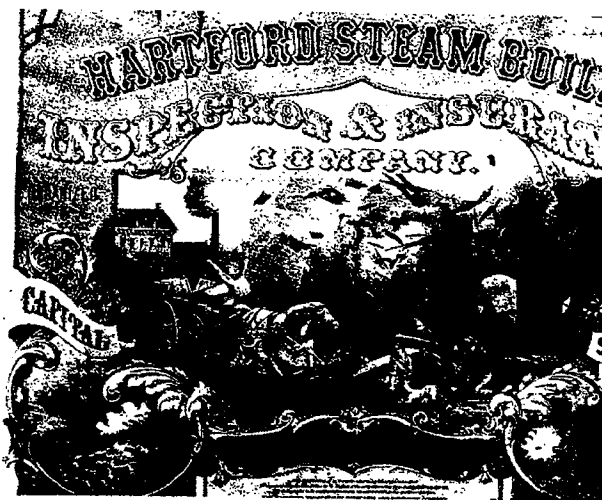
Hartford Steam Boiler Inspection and Insurance Company has never lost sight of its mission, devoting its energies to the task so eloquently expressed by Mr. Allen, who served as one of its early presidents. A pioneer in the practice of loss control through engineering and preventive maintenance as a basis for underwriting, Hartford Steam Boiler expanded its early business focus from steam boilers to all industrial machinery involved in the generation and use of energy.

THE COMPANY'S COMMITMENT to loss prevention rather than risk sharing expresses a major objective set by the founding directors. They formed the company on the principle that industrial growth creates an everlasting need for energy, and for the means to help make the production and use of that energy safe and economical.

At the turn of the century, the height of the Age



Through its Boiler Condition and Useful Life Study, Hartford Steam Boiler is developing improved techniques to help predict, analyze, and prevent equipment problems.



A reproduction of an insurance advertising lithograph print, circa 1870. Typical of the early advertising signs displayed during that era, it is graphic in its portrayal of insurance hazards common to the operation of boilers.

of Steam, there was widespread ignorance about the properties of steam and the causes of boiler explosions. Although explosions were occurring at the rate of almost one every four days, most people concerned with the use of steam power simply accepted these explosions as "acts of God."

As Hartford Steam Boiler focused on the need for better construction and operating procedures for safely and efficiently generating and using steam, the "Hartford Standards," uniform specifications for boiler construction created by the company, became the specifications adopted by virtually all boiler makers in the United States. In addition, Hartford Steam Boiler helped to improve the technology of boiler settings, and it was the "Hartford Setting" that became the standard for the boiler industry. In those early years, Hartford Steam Boiler was also involved in the formulation of the ASME (American Society of Mechanical Engineers) Code for the design, construction, in-

stallation, and operation of steam bo

According to Hartford Steam Bo president, Wilson Wilde, "As industr more complex, Hartford Steam Boile have expanded along with the growtl logy. [They are] guided by our corpor "To provide technical and professio which contribute to the safe, reliable, use of property and equipment in the t of society."

AS A SPECIALIST in the insuran Hartford Steam Boiler insures machi ment and property — risks requiring s nical experience — and provides rel tion and engineering services. The ma equipment the company insures r boiler and refrigeration systems to t transformers. Hartford Steam Boiler i vide coverage for virtually all types o and institutions, including dry cleanir ments, hotels and motels, apartmen churches, schools, and office building some of the largest power-generating manufacturing operations in the world

Insurance and technical services o marily in North America through Har

Boiler and its subsidiaries, The Boiler Inspection and Insurance Company of Canada, Professional Loss Control, Inc., an engineering services company, and Radian Corporation, a scientific research and consulting company. Insurance products are distributed by independent insurance agents and multi-line insurance companies. Engineering services are sold by the company's sales force and technical staff.

Project All Risk (PAR), the company's builders' risk policy, provides broader coverage than traditional builders' risk policies, covering plants and equipment from ground breaking through performance testing. PAR is particularly appropriate for projects where machinery and equipment are major components of the risk.

The company's all risk property insurance product, UNITECH®, introduced in 1984, provides all risk property coverage for major accounts in industries where sophisticated engineering services are important to loss prevention and loss control. UNITECH customers are also offered technical services, including computerized property diagrams and computerized evaluations of fire protection systems.

In 1985, Hartford Steam Boiler introduced two policies designed to facilitate long-term financing of alternate energy projects. System Performance Insurance provides coverage of refuse-to-energy, biomass-to-energy, cogeneration, and ethanol projects. System Performance is not a financial guarantee coverage. It protects insureds against default in the repayment of a loan only in the event of a technological failure or under-performance of energy-related projects. For hydroelectric projects, the company developed Water Resource Insurance to protect the project owners against default in the repayment of loans in years when water flow is insufficient to generate the power necessary to cover the obligation.

ENGINEERING SERVICES are specialties that differentiate Hartford Steam Boiler in the marketplace. The company's engineering department designs and provides a number of engineering services sold separately from its insurance products.



Hartford Steam Boiler's engineering services help customers track problems to help prevent losses.

These services are marketed to customers in equipment-intensive industries, including utilities, petrochemical plants, pulp and paper mills, and a variety of other manufacturing plants. Engineering services are offered for a fee, on both a national and international basis, in three key areas: ASME Codes and Standards Services, Industrial Services, and Environmental Services.

Hartford Steam Boiler is the world's largest agency for inspection to the ASME Code of boilers and pressure vessels. ASME Codes and Standards Services include third-party inspections to the ASME Boiler and Pressure Vessel Codes, the National Board Repair Code, and other industry codes. Hartford Steam Boiler also offers Code-related training seminars and materials, including public seminars, in-house seminars, home study courses, NDT (non-destructive testing) workshops, and weld inspection videotapes.

Hartford Steam Boiler provides a number of third-party industrial inspections and services: the Boiler Condition and Useful Life Study, Pressure Vessel Studies, Vendor Surveillance, Hartford Wedge, Government Inspections, and Acoustic Emission Services, which is the application of electronic and computer technology to non-destructive testing of industrial structures. In 1983 the company introduced TANKSCAN™, an application of acoustic emission which screens above-ground storage tanks for leakage.

A range of environmental services is offered through Hartford Steam Boiler's Environmental Services facility, formed in Hartford in 1985 to address growing concerns about the quality of the environment. The facility offers advanced technical engineering and scientific services, including asbestos sampling, industrial hygiene surveys, indoor air quality studies, and laboratory services. These are available through labs in Hartford, Connecticut; Austin, Texas; and Research Triangle Park, North Carolina.

INSURANCE OPPORTUNITIES — Hartford Steam Boiler has consistently pursued new insurance opportunities where there was a potentially valuable form of engineering service to be provided with that insurance. This approach results in the inclusion of coverages which benefit from the company's specialized knowledge and capabilities.

Responding to increased demand for customized products and services, Hartford Steam Boiler has designed inspection programs and insurance packages to fit individual needs for cost-effective ways to better serve its industrial customers. Specialized services offered to insureds only include failure analysis, vibration monitoring, infrared thermography, transformer testing, and the application of expert systems.

RADIAN CORPORATION, based in Austin, Texas became a subsidiary of Hartford Steam Boiler in 1975. Its staff is comprised of more than 400 degreed chemists, chemical engineers, physicists, mathematicians, meteorologists, biologists, geologists, metallurgists, mechanical and electrical engineers, and computer scientists, many with advanced degrees.

Radian's business is broad and reaches into



Hartford Steam Boiler's new home office building was completed in 1983.

areas such as environmental impact assessments, environmental monitoring, coal gasification and liquefaction, air, water, thermal and noise pollution, waste disposal, computer science and mathematical modeling...areas that relate to energy and the environment.

Radian and Hartford Steam Boiler work together in helping to solve basic problems for customers, both corporate and governmental. Through Radian, Hartford Steam Boiler is engaged in research to benefit its largest customer groups, such as the paper, electric utility, chemical, and primary metals industries. Radian's scientists, sharing the commitment to loss prevention, experiment with the most sophisticated methods to help detect accidents before they occur.

Hartford Steam Boiler and Radian have also been involved in the development of artificial intelligence (AI) and expert systems as a loss control technique. Future plans include the application of expert systems to a wide variety of problems in the industrial and governmental sectors.

Professional Loss Control, Inc. (PLC), a company specializing in loss control services, became a subsidiary of Hartford Steam Boiler in December, 1986. Based in Oak Ridge, Tennessee PLC expands Hartford Steam Boiler's ability to provide fire protection services to its customers.

HARTFORD STEAM BOILER expects to grow in these and related areas through both internal growth and external acquisition which are natural extensions of its present capabilities. The company also intends to expand its capabilities in the area of professional and technical engineering services to keep pace with changes in technology.

Hartford Steam Boiler expects to serve both government and the private sector as their needs evolve by bringing the benefit of its research to its customers and applying new technology to help improve the reliability and efficiency of plants and equipment.

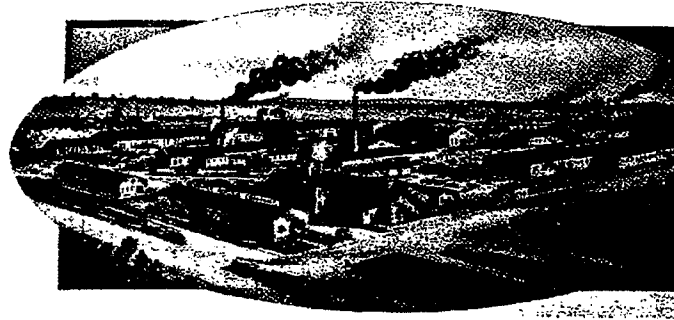
**The Hartford Steam Boiler
Inspection and Insurance Company
One State Street
Hartford CT 06102**

Look ahead, America, with **KEWANEE**

KEWANEE BOILER COMPANY, INC. A subsidiary of Coppus Engineering Corporation

The history of what today is the multi-million dollar Kewanee Boiler Company, Inc. began in 1868 when an entrepreneur by the name of Valerius D. Anderson set up a facility in Kewanee, Illinois to produce steam feed cookers. This new venture, known as the Anderson Steam Feed Cooker Company, was based on the discovery that cooking animal feeds led to dramatically reduced levels of hog cholera, a major problem for the local farmers. The company prospered, expanded its product offering, and went through a series of name changes: in 1871 to Anderson Steamer and Heater Company, in 1873 to Anderson Universal Steam Boiler Manufacturing Company, and in 1875 to the Haxtun Steam Heater Company.

The last name change acknowledged the fact that Anderson had taken on a partner, a New Eng-



Kewanee factory at turn-of-the-century

lander by the name of W.E. Haxtun, who brought with him his patented invention permitting the "magazine feeding" of a boiler. By 1876, the firm had grown to be the largest manufacturer in Henry County (Illinois), was capitalized at \$50,000, used 40 tons of steel, and employed about 30 people.

By 1882, sales volume reached the \$387,000 level. In the following year, the firm expanded its product line by installing equipment to roll pipe for steam heating lines in large buildings and homes. The name was changed again in 1891, this time to Western Tube Company.

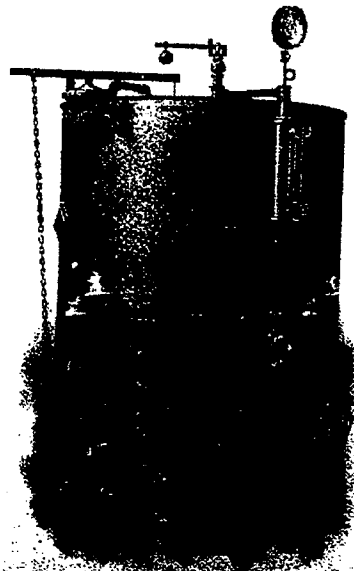
RAPID GROWTH, PRODUCT LINE EXPANSION, and a dip in the economic cycle resulted in a disagreement regarding future strategies and the fracturing of the company into two separate entities. One was the National Tube Company (forerunner of the Walworth Company which purchased National tube in 1917); the other segment became Kewanee Boiler Company. Kewanee Boiler was led by Emerit E. ("Double E") Baker, a long term executive with the company. "Double E" is still well-remembered in Kewanee not only for his business abilities in building Kewanee during his more than 50-year tenure with the firm, but also for his charitable and philanthropic works.

The advent of the twentieth century saw continued growth and expansion. In 1900, the Kewanee Boiler Company sold its property to the National Tube Company and purchased seven acres of land west of the city along the Chicago, Burlington & Quincy tracks. New facilities were erected and the entire operation moved. In 1902, a

new steam radiator foundry was added

The year 1906 saw Kewanee Boiler the "Kewanee Smokeless Boiler," a breakthrough in the embryonic effort to reduce pollution (smoke, ash, and soot) in American cities and industrial areas. Sale and the company established a national as the manufacturer of the famous Down Draft Smokeless Boiler."

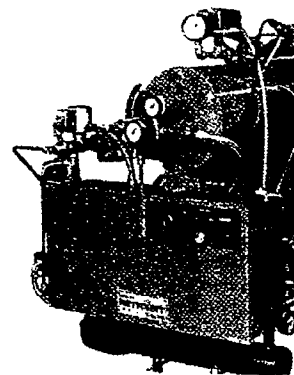
During World War I, the company produced its regular product line for installations, but also manufactured boilers for the government. In a nine-year period, Kewanee shipped an astounding 19,410 boilers, heaters, and hot water



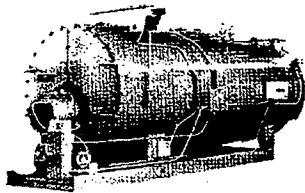
THE KEWANEE STEAM BOILER

Complete with trimmings.

Features of this unit, shown in 1905 catalog, included self-cleaning, all-vertical surface, and 100 psi rating.



Kewanee RETROFIT™ Burners provide fuel option on Scotch marine and fire up to 800 hp.

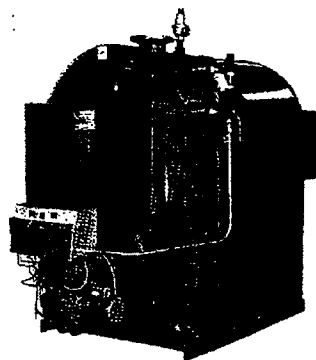


Kewanee CLASSIC® III Scotch Package Boiler

tanks.

Next came the fabulous post-World War I expansion of 1920 when the company acquired a total of thirty-three acres of land, invested a million dollars in additional facilities, and followed that with another million dollar building program in 1926-27. It was during these prosperous years that Kewanee boilers became known all over the world, synonymous with quality, craftsmanship, and sound engineering. By the mid '20s, Kewanee Boiler Company was established as the largest manufacturer of steel firetube boilers in the world.

In 1928, Kewanee employees and the Kewanee community were surprised when E.E. Baker, as controlling shareholder, agreed to sell the company to the American Radiator Company (now known as American Standard) for \$7 million.



Kewanee package firebox gas/oil boiler

KEWANEE PROSPERED through the late '30s into the early '40s. During World War II, Kewanee continued to produce its regular product line plus a variety of fabricated steel items, such as submarine net floats, boilers for locomotives, harbor mines, V-type bridge trestles, synthetic rubber tanks, and agricultural implement castings.

Through the '50s and early '60s, as markets changed in their complexity and business became more competitive, American Standard continued to operate the plant, but under mounting dif-

ficulties. This caused the corporate parent to combine Kewanee with the Ross Heater and Manufacturing Company of Buffalo, another subsidiary of American Standard, to form the Kewanee-Ross Corporation. Once reorganized, the manufacture of the larger heat exchangers was moved to Kewanee.

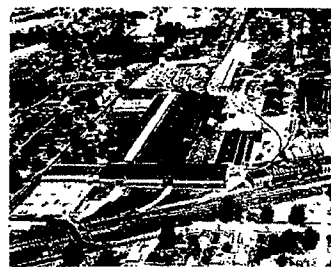
The problems of coordinating the two manufacturing operations became increasingly difficult with heat exchanger engineering in Buffalo, and the manufacture of the engineered products in Kewanee. These problems were never fully overcome, and in 1955 the Kewanee-Ross Corporation was dissolved, and the two units again became separate operating divisions.

DIFFICULT TIMES in the Kewanee marketplace limited profits in the late '50s, and American Standard again looked to consolidation as a solution, merging Kewanee Boiler and the American Blower Division to form the American-Standard Industrial Division, headquartered in Detroit.

With a failing economic climate, coupled with an era of difficult labor relations, Kewanee's problems became overwhelming and in 1970, American-Standard sold the company to a group of businessmen from LaCrosse, Wisconsin. The new owners were established plumbing and heating wholesalers who successfully operated the firm for about five years.

Again in 1975, Kewanee Boiler Corporation was sold to Stanwood Corporation, part of a group of firms controlled by a parent called WestAlloy, Inc. During this era, additional product lines, including electric boilers and deaerators, were added. The company enjoyed some reasonably prosperous years until the mid '80s when a combination of problems, including very competitive conditions in the marketplace, and excessive financial demands by other companies controlled by the holding company, forced all the units in the group into Chapter 11 bankruptcy.

In January, 1987 the bulk of the assets of Kewanee Boiler Corporation were acquired in Bankruptcy Court by Coppus Engineering Corporation, an employee-owned company headquartered in Worcester, Massachusetts. Oper-



Kewanee manufactures industrial and commercial steel boilers at this 340,000 sq ft facility, located on a 35-acre tract in Kewanee IL.

ations were restarted under the name Kewanee Boiler Company, Inc.

COPPUS ENGINEERING, with manufacturing facilities in Worcester and Burlington, Iowa produces and sells on a world-wide basis a range of single- and multi-stage steam turbines, industrial blowers and fans, and large industrial burners. The new owners have committed to rebuild and rejuvenate Kewanee. Operations will be maintained at the 35-acre, 340,000 sq ft facility in Kewanee. The company will continue to offer, through its agent network, the premium quality industrial and commercial steel boilers that have been the cornerstone of Kewanee's reputation for decades.

Kewanee Boiler Company, Inc.
101 Franklin Street
Kewanee IL 61443



"The good old days...", circa 1943