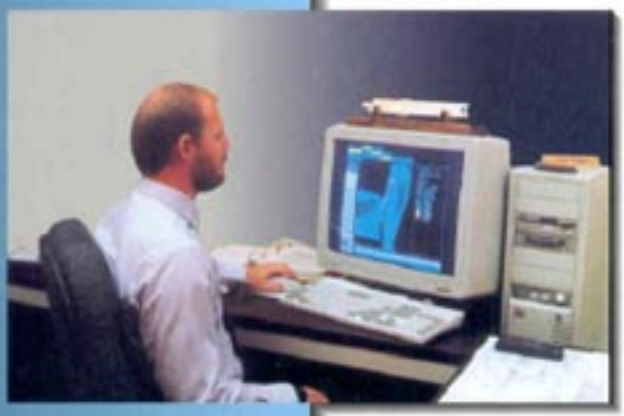
PEERLESS TECHNOLOGY

Peerless Leadership in Research and Technology



- State-of-the-Art Diagnostics
- Development and Testing Laboratory
- Analysis and Technical Services
- Computational Fluid Dynamics Simulation

PEERLESS MFG CO
DALLAS TEXAS

Peerless Research and Technolog

Your separation and filtration equipment should be designed with state-of-the-art technology. Depend upon the Research and Technology Services of Peerless Mfg. Co. for the ideal design to achieve optimum performance, size and cost. Our Dallas, Texas laboratory facility is outfitted with some of the industry's most innovative equipment for research and development , qualification testing, and computational fluid dynamics (CFD) modeling.

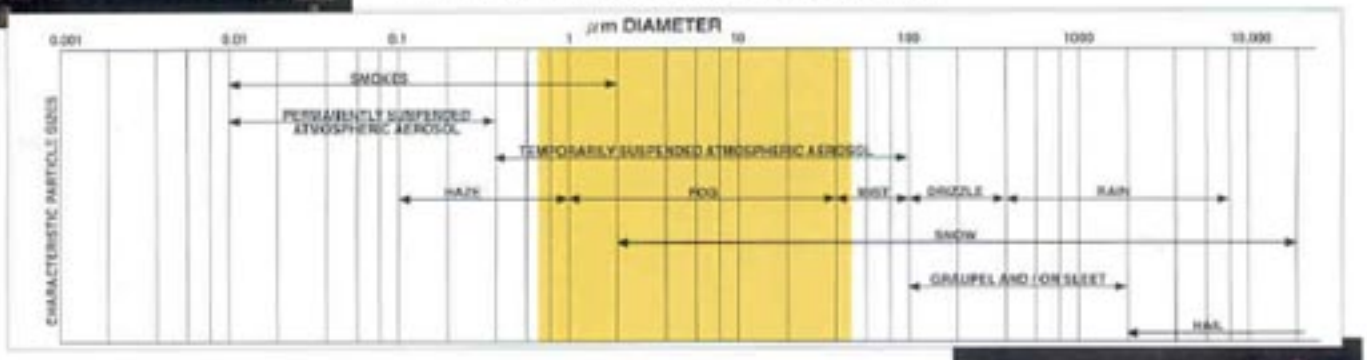
Research and Development

The Research and Development lab at Peerless is equipped with a computerized Forward Scattering Spectrometer Probe (FSSP). The FSSP uses precision optics and a laser to measure liquid droplets down to submicron diameters. In addition to the FSSP, the lab is equipped with a humidifier to achieve saturated conditions, and a meter run which can achieve 24,000 SCFM air at standard conditions. The modern lab is in constant use for testing and product development of separation and filtration equipment designed to perform at maximum efficiency.

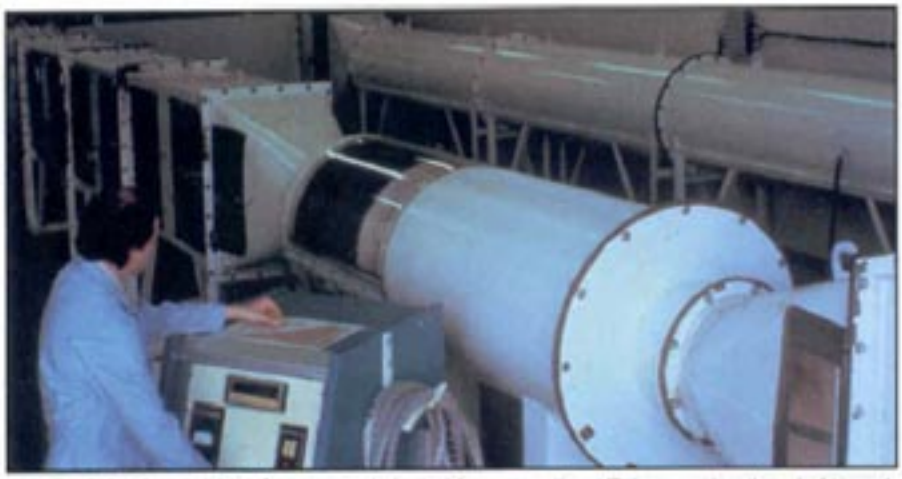
Testing (bottom left) was conducted to develop more efficient separation performance for liquids and solids. This application is primarily for gas transmission separation and filtration.

FSSP computer CRT (below) shows particle size distribution graphically, in real time.

Range of particle sizes (shaded area) measured by Forward Scattering Spectrometer Probe (FSSP) in the Research and Development laboratory at Peerless.



Technician monitors particle size spectra with FSSP system data computer.



A 30-inch horizontal filter/separator is tested for separation efficiency using the wind tunnel in the R&D lab at Peerless.

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Qualification Testing

The Peerless laboratory is equipped for qualification testing to determine filtration performance prior to final design or manufacture. Research and Technology Services has qualified separation performance for many stringent programs such as those for the United States Navy and Air Force, NASA, and navies of numerous NATO countries.

Peerless accomplished design verification testing for the futuristic X-30 National Aero-Space Plane (right) for the U.S. Air Force and NASA.

The U.S. Navy's DDG class of destroyers (left) utilizes separation equipment developed, tested and manufactured by Peerless.

Three tests underway (left) in the Peerless Research and Development lab for separation equipment pressure drop, bulk efficiency, and particle efficiency.

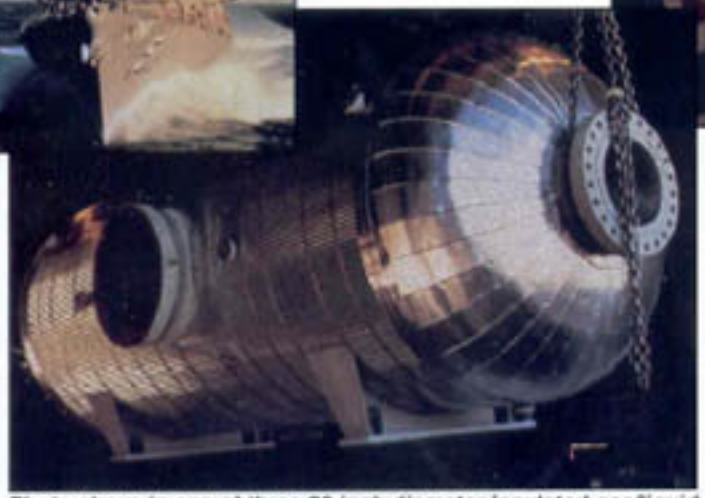


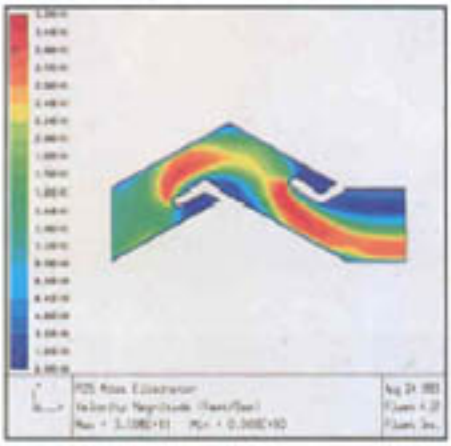
Photo above is one of three 90-inch diameter insulated gas/liquid separators manufactured by Peerless to protect a TEG dehydrator in Prudhoe Bay, Alaska. Each vessel has a capacity of one billion standard cubic feet of gas per day. Both lab qualification tests and computational fluid dynamics simulations were performed by Research and Technology Services in Dallas.

Ships of the Royal Navy (below) depend upon Peerless qualified moisture separation systems for all weather conditions they encounter--including those of the rugged North Sea.

Computational Fluid Dynamics (CFD) Modeling

Research and Technology Services at Peerless has managed a fluid dynamics simulation computer lab to facilitate the design, development and retrofit of separation and filtration equipment since 1988. Because computational fluid dynamics (CFD) makes possible the flow simulation of gases, liquids and solid particles through computerized models, the product design and development processes are greatly accelerated. The CFD lab at Peerless is a breeding ground for new ideas and a design center for process equipment retrofits.

Peerless Computational Vane Model



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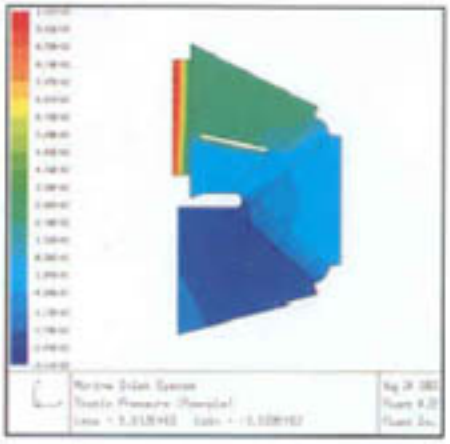
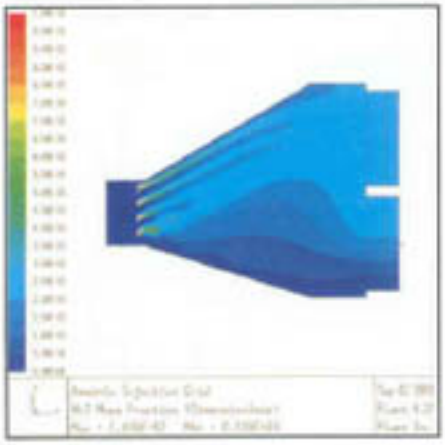
The Application of CFD Accelerates Product Design and Development.

Marine Gas Turbine

This application shows how CFD can simulate flow distribution through a marine gas turbine inlet chamber, determining pressure drop and particulate loading characteristics.



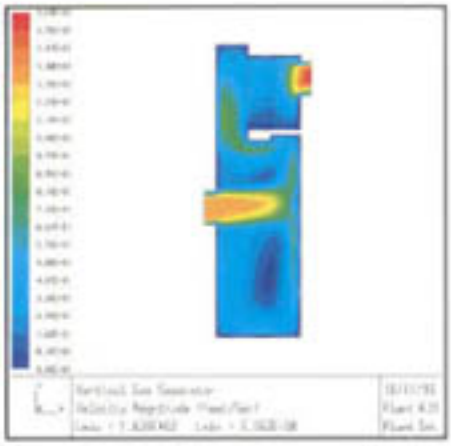


SCR Mixing Chamber

The complexities of mixing gases can be simulated with CFD. This example is of a CFD model depicting exhaust gases being mixed with ammonia in a Peerless Selective Catalytic Reduction (SCR) NO_x removal system. This model can also be used to optimize the mixing process, thereby improving the NO_x removal performance of the SCR system.

Vertical Gas Separator

This application utilized CFD to study the flow distribution through a vane-type separator bank installed in a pressure vessel to determine ultimate capacity limitations.



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WORLD HEADQUARTERS

Peerless Mfg. Co.
2819 Walnut Hill Lane
Dallas, Texas 75229
Phone: 214-357-6181
Fax: 214-351-0194
sales@peerlessmfg.com

EUROPE & MIDDLE EAST

Peerless Europe Limited
Bridge House, 18 Bridge Street
Halstead, Essex C09 1HT England
Phone: 44-1787-478847
Fax: 44-1787-473918
enquiries@peerlesseurope.demon.co.uk

Peerless Mfg.Co. *(Netherlands Branch)*
Stadhoudersplein 1-502
2404 BE Alphen aan den Rijn
Phone: 31-172-490055
Fax: 31-172-424617
peerlessmfg@planet.nl

ASIA-PACIFIC

Peerless Mfg.Co. *(Regional Office)*
No. 35 Jalan Perimpin, #07-02
Singapore 577176
Phone: 65-354-2308
Fax: 65-354-2297
peerlessmfg@pacific.net.sg

PEERLESS MFG CO
DALLAS TEXAS