

Museum's C-B Engine Wins Heritage Landmark Award

The American Society of Mechanical Engineers has advised the Knox County Historical Society that they will grant a Mechanical Engineering Landmark to the GMV engine in the Museum. A plaque will be presented signifying this designation. A portion of the text of the plaque reads:

Historic Mechanical Engineering Landmark

Cooper-Bessemer Type GMV Integral-Angle Gas Engine-Compressor, 1938

The GMV integral-angle gas engine-compressor was a major contributor to the world's economy for more than a half century, providing compression energy for the natural gas transmission, gas treatment, petrochemical, refinery and power industries in the United States and forty-four countries around the world.

The GMV product was designed and developed in Mount Vernon at the Cooper-Bessemer Corporation located on North Sandusky Street in Mount Vernon in what has evolved into today's Rolls-Royce Energy Systems facility. The local C. & G. Cooper Company had merged in 1929 with the Bessemer Gas Engine Company of Grove City, Pennsylvania to form Cooper-Bessemer. The GMV was a joint effort by engineers, designers, and technicians from both companies. Consequently, the technology and design heritage from both companies fed into this precedent-setting, compact, V-angle engine design. The key breakthrough in compactness was the articulated connecting rod arrangement, which allowed two power piston connecting rods to drive onto one master compressor rod for each throw of the crankshaft. This patented articulated rod design was much more robust than competitive side-by-side rod arrangements because it had much lower bearing loads.

This product enjoyed a remarkable 55 year production run. The assembly line style manufacture of this product in Mount Vernon provided a high level of employment which boosted the local economy. The success of this product also greatly strengthened Cooper-Bessemer's financial status, which had taken a hammering during the depression. Total production was:

| | |
|------------------------------------|-------------|
| Produced by C-B in U.S. and Canada | 2825 |
| Produced by licensees* | 225 |
| Produced by Soviet Union** | <u>1566</u> |
| Total | 4616 |

*Production locations included: United Kingdom, France, Germany, Italy, Mexico, and Japan

**Produced at Gorky Works. These are "clones" of 25 Lend-Lease engines delivered by C-B in 1945.

The impact of the GMV line of engines on industry can best be summarized by the following comments provided by two industry spokesmen associated with the operations of these engines:

"It gives me great pleasure to support the nomination of the Cooper-Bessemer GMV engine as an

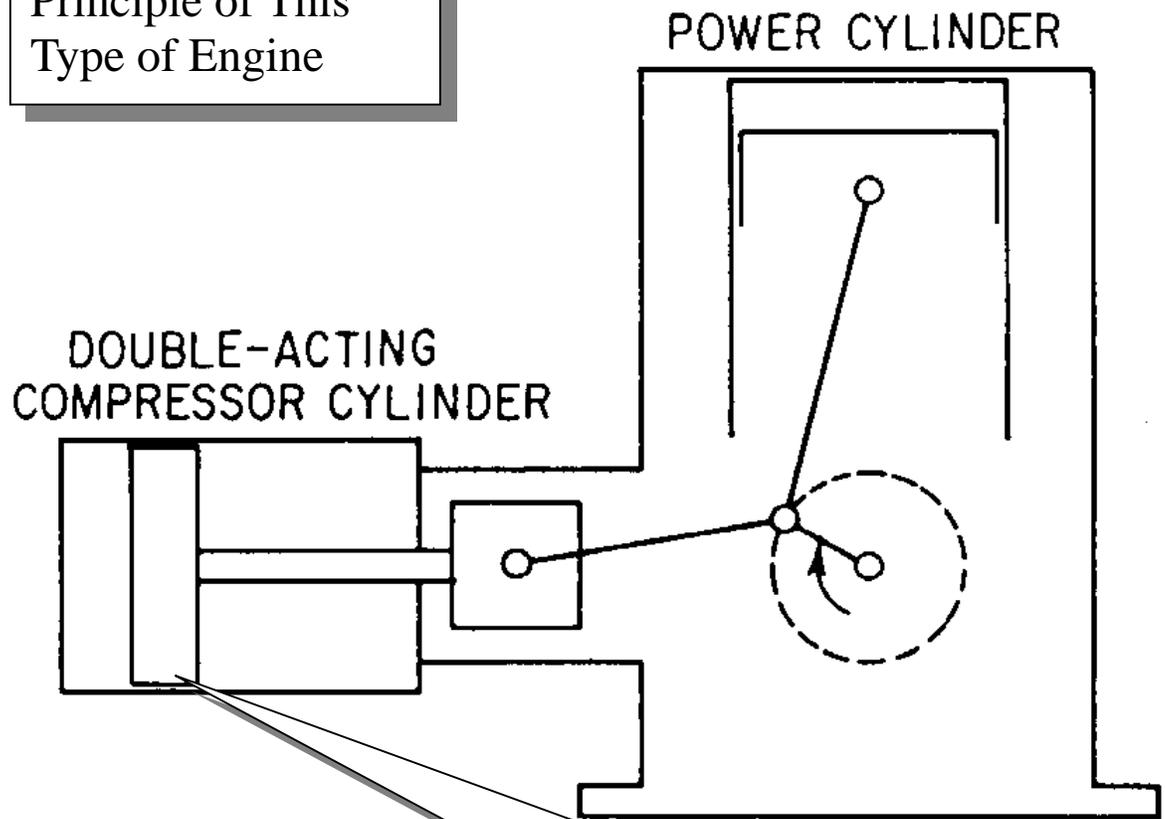
ASME Historical Landmark. The engine was one of the most advanced of its day, and one of the very first to be designed using modern diagnostic techniques. The effectiveness of the basic design is seen in the fact that the engine was in continuous production for 55 years. Many of the engines produced in the 1940's are still in use, operating '24hours/7days' with high reliability and good efficiency. The pipeline industry still operates over 2000 GMV model engines."

"It is my opinion, that from an operating standpoint the GMV series of engines have an unparalleled Safety, Reliability, and Cost of Operation record. Our station operators have always viewed the GMV series units as first on, last off compression."

The nomination of the GMV for the award was the work of Mel J. Helmich, retired Director of Engineering and Technical Director of Cooper-Bessemer Reciprocating. Mel, who is a member of the Society's Board of Trustees, spent many hours preparing documents for the nomination and shepherding the nomination through its many reviews. The American Society of Mechanical Engineers, founded in 1880, is the only national association serving all branches of mechanical engineering. Their Historic Mechanical Engineering Recognition Program illuminates America's technology heritage and serves to encourage the preservation of the physical remains of historically important works. It provides an annotated roster for engineers, students, educators, historians, and travelers, and helps establish persistent reminders of where we have been and where we are going along the divergent paths of discovery. Six years ago, in September 1998, the Museum was awarded a Mechanical Engineering Heritage Collection plaque by the same organization for the four Cooper agricultural steam engines.

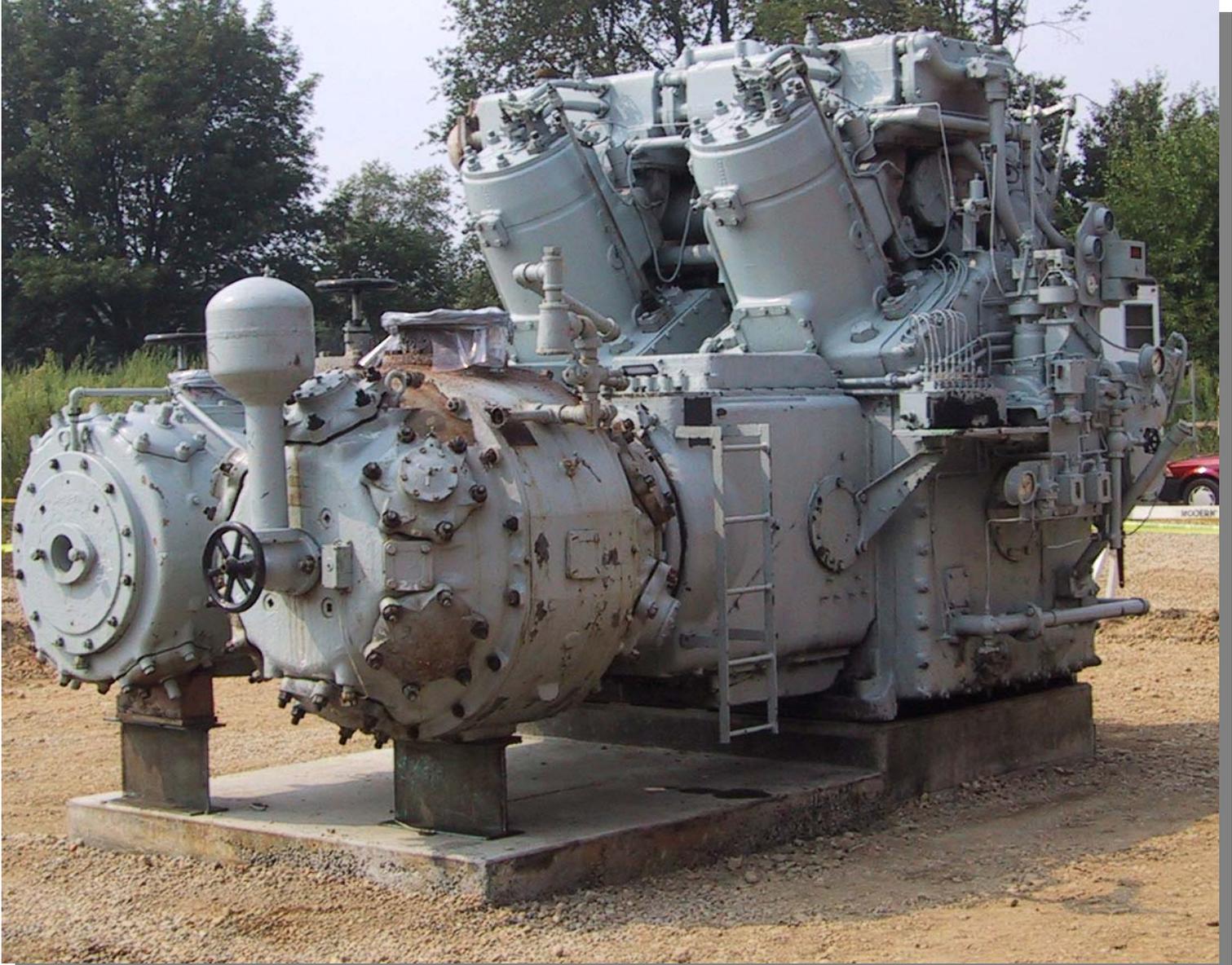
The GMV plaque will be on display at the Museum, 875 Harcourt Road, Mount Vernon, beginning at an open house to be held on Saturday, August 26, 2006, during the hours of 2 - 4 P. M.

Principle of This
Type of Engine



**COULD HAVE AS MANY AS EIGHT CYLINDERS =
SIXTEEN POWER CYLINDERS.**

**THE NEXT PIC SHOWS TWO COMPRESSOR AND
FOUR POWER CYLINDERS ONLY.**



Cooper Bessemer Gas Engine Compressor -4/5

Connecting Rod

