

# Corporate Connections

The History of the Weston Electrical Instrument Company  
and  
Associated Electrical Instrument Companies

# Edward Weston and the Formation of the Weston Electrical Instrument Company

- Edward Weston was born in 1850 near Wolverhampton England
- Trained in physics, chemistry and medicine
- Emigrated to the United States after graduation, in 1870
- Employed in the electroplating field
- At the time Electroplating relied on batteries which produced inconsistent power.
- Weston developed improved dynamos and generators for electroplating, and as a result got into the field of electric arc lighting.

# Edward Weston – Bio (Cont'd)

- In 1886 Weston went to the Franklin Institute to measure the electrical output of a dynamo using a tangent galvanometer.
- The experience was so frustrating due to the fact that the measuring time took about a week to set up and the galvanometer was so sensitive to magnetic fields that getting an accurate reading was described as “an act of God”
- Weston, who had made money through the sale of his previous business set up a laboratory to develop a more reliable and accurate electrical measurement instrument, less sensitive to external influences.

# The Development of the Electric Meter

- It had already been established that electricity could be measured using magnets, based on the principles laid down by Hans Christian Oersted, a Danish physicist, that a current passing through a wire set up a magnetic field around that wire and that a magnetized needle, if held over it, “would turn aside” (1819); and Andre Ampere, the French physicist who provided the laws governing the strength of electric currents (1821).
- Weston determined through experimentation that the most practical and accurate instrument would use a fixed permanent magnet and a moving coil of wire which would carry the current to be measured.

# The Development of the Electric Meter

- The idea of having the coil of wire move, instead of the magnet had been patented by D'Arsonval in 1881, though Weston had experimented with this arrangement before the patent date.
- The major issue at the time was how to make the magnet permanent, and that was Weston's major contribution, along with the development of various materials and forms to make the electric meter practicable. Note that Weston later on developed the electric shunt (1893) which meant that only a fraction of the current would have to go through the meter coil.
- Weston also developed the Weston Standard Cell, adopted as the universal standard for Electromotive Force (1908)

# Early Weston Meters (No. 1) and Std Cell

**WESTON** ELECTRICAL INSTRUMENT CO.  
114-120 William St., Newark, N. J.  
U. S. A.

WESTON STANDARD PORTABLE  
DIRECT READING

**VOLTMETERS,  
MILLIVOLTMETERS,  
VOLTAMMETERS,  
AMMETERS,  
MILLIAMMETERS,  
Ground Detectors and  
Circuit Testers,  
Ohmmeters,  
Portable Galvanometers.**



Our Portable Instruments are recognized as **THE STANDARD** the world over. **THE SEMI-PORTABLE LABORATORY STANDARDS** are still better. Our **STATION VOLTMETERS** and **AMMETERS** are unsurpassed in point of extreme accuracy and lowest consumption of energy.



# Camera Light Meters and Transducers

- Weston also developed the Photoelectric Cell which made possible the light meter. Along with this Weston developed a system for rating the emulsion speed of films which made possible for the first time an accurate measure of available light for camera exposures. (1932)
- Transducers which converted physical properties into electric voltages and/or current have permitted the electric meter to serve as the instrumentation for various mechanical systems.
- Examples include: thermocouples which convert heat to current, tachometers which convert shaft speed to voltage, etc.

# Lightmeter and Aircraft Gauges

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# Weston Electrical Instruments - Corporate

- Established 1888 in Newark, NJ
- Edward Weston
  - VP and General Manager 1888 – 1905
  - President 1905 – 1925
  - Died 1936
- Corporate Identities
  - Weston Electrical Instrument Company (1888-1924)
  - Weston Electrical Instrument Corporation (1924-1954)
  - Weston Instruments & Electronics Division (1954-1964)
  - Weston Instruments, Inc. (1964-1989)

# Weston Corporate Changes

## Addresses:

- 43 Weston Avenue, Newark, NJ. (1915)
- 582 Frelinghuysen Avenue, Newark, NJ. (1936)

## Subsidiaries

- Weston Electrical Instrument Company (London, England)
  - Known as Sangamo-Weston after Sangamo takeover
  - Exists today after management buyout as Sangamo ([www.Sangamo.co.uk](http://www.Sangamo.co.uk))
- Weston purchased Jewell Electrical Instrument Company of Chicago in 1931.
- Weston sold to Sangamo Electric in 1936
- Weston Instruments division of Sangamo sold to Daystrom 1954, integrated into its parent company 1964, which changed its name to Weston instruments Inc.

# Weston Corporate Changes (cont'd)

- Daystrom acquired by Schlumberger in 1962.
- Schlumberger sold off its electrical meter division in Weston shut down most of its operations in 1987, and two years later was acquired by Ametek Inc. and combined with its U.S. Gauge Division.

# Jewell Electrical Instrument Co of Chicago, Ill.

## 1899 - 1931

- “Has been organized to take over sales of the electrical instruments formerly and under the name of McIntosh Battery & Optical Company. Mr. Edward W. Jewell is president of the new concern and Mr. Geo. M. Willis is General Sales Manager. These instruments will be manufactured as heretofore by the McIntosh Battery and Optical Company and under Mr. Edward W. Jewell’s personal supervision” American Electrician Magazine, October 1899
- Addresses:
  - 816 W. Lake Street, Chicago (1915)
  - 1650 Walnut Street, Chicago Il. (1926)



- Produced many panel and portable meters and later tube testing and radio set analyzer equipment
- Ray Simpson was President from 1922 until 1931
- In 1931 the firm was bought by Weston Electrical Instrument Company of Newark, New Jersey
- Weston used the Jewell brand for about a year, with the Jewell address being that of Weston in Newark, NJ
- Jewell Instruments of Manchester New Hampshire is not related to the original Jewell Electrical Instrument Company

# Jewell after Weston takeover

Weston Model 677  
Tube-Seller



Find now low priced Tube-Zeller marks another important forward step in tube manufacturing. Now, the proven mechanical features of Weston-Jewell Tube-Zellers are available at a cost so low that no dealer can afford to be inadequately equipped. The Weston Model 577 has the famous three-color direct reading tube performance meter, exclusive zero-out, hot circuit, a new high voltage shunt-leak circuit, and provision for testing 4, 5, 6, and 7-atom tubes. Write for details.

**Jewell Pattern 444  
Set Analyzer**



These women  
with Wiles, Janel  
Shaw, and others  
get some serious  
work, some profits,  
and some education  
on life-size 1041  
books and more.

The improved Incofil Plus 6000 440 (see *Analysis*) is competitive for every service job, yet is especially recommended for its resistance to the most difficult wear. All necessary surface treatments are provided for by using 0.5, 1, 2, and 3-mil layers. Adhesive (3M) is available in 100, 200, and 300 mil thicknesses. The 100 mil thickness is available for applications requiring the toughest performance. While the company's information,

**WESTON-JEWELL**

Western Electrical Instrument Corp.  
Jewell Electrical Instrument Co.  
201 Portsmouth Avenue, Newark, N. J.  
Please send me your latest edition of the Western/Jewell sales  
instrument catalog (WJ).

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_



# Sangamo Electric Company of Springfield Ill.

- Incorporated in 1899 by Jacob Bunn, Jr., and R.C. Lanphier, the company was an offshoot of the Illinois Watch Co.
- Main product was Watt-Hour meters to measure electric consumption for utility billing purposes
- The company expanded its product line to include clocks, timers, motors, transformers, and capacitors.
- A Canadian subsidiary, [Sangamo Co., Ltd.](#), was established in 1911 and began manufacturing in Toronto in 1917 to avoid tariffs.
- Bought Weston Electrical Instrument Company in 1936.



# Daystrom Incorporated

- Thomas Roy Jones (April 26, 1890 – June 21, 1985)
  - American industrialist and management author, company president
  - Became Chairman and executive officer of Daystrom Incorporated, a management holding company that owned five different companies:
    - “Managed American Type Founders (ATF), a printing company, purchased the original Daystrom Company, which made furniture. During the Korean War, Jones changed the name of the company to Daystrom because he thought it had the ring of a diversified technology firm. At that point ATF became one of its divisions. The purchase trend continued into the mid-1950s as Jones bought American Gyro Company, the Heath Company and Weston Electrical.”
    - Daystrom Furniture
    - Daystrom Electric
    - Daystrom Laminates
    - Daystrom Instruments Division
  - In 1954 Daystrom bought Heath Company and was in 1962 absorbed by oilfield services company Schlumberger ltd.

# Daystrom History (Cont'd)

- Company was named for its two founders, Daymen and Brunstrum who launched the company in Olean N.Y. in 1934. It got its start manufacturing metal ashtrays, but in 1938 manufacturing expanded to include chromium kitchen furniture, upholstered stools and chairs. In February 1962, the Olean plant closed and relocated to South Boston, Virginia, operating under the name Daystrom Furniture.
- After the company's relocation to South Boston, Schlumberger Ltd. Purchased the company in 1962. In 1971 when Sperry and Hutchinson purchased it, the Daystrom Furniture division was manufacturing wood, metal, plastic and plastic-laminate furniture for dining rooms and kitchens. Ultimately, Daystrom Furniture became part of a furniture conglomerate called LADD (Lea Industries, American Furniture, Daystrom Furniture, Drew Furniture) Furniture Inc. In 1996 the Daystrom Furniture Company ceased operations.
- There is some indication that Daystrom changed the name of the company to Weston Instrument Company just before being sold to Schlumberger, but that would need further research.
- The Transformation of Corporate Control by Neil Fligstein
- From website [Cultureify.com/daystrom-furniture](https://cultureify.com/daystrom-furniture), retrieved 2022-04-02

# Daystrom Associated Company Logos



# Schlumberger NV (Limited) SLB

Purchased Daystrom in 1962

- Global Oilfield Services company,
- Founded in France in 1926 by two brothers Conrad and Marcel Schlumberger as the Electric Prospecting Company.
- Now incorporated in Willemstad Curaco, with executive offices in Houston Texas and operates under the name “slb”.
- The company first sold electrical-measurement mapping services, and recorded the first-ever [electrical resistivity well log](#) in [Merkwiller-Pechelbronn](#), France, in 1927.
- Invested heavily in research



- In 1956 Schlumberger Limited was incorporated as a holding company for all Schlumberger businesses, and listed on the NY Stock Exchange in February 1962.
- That same year Schlumberger purchased Daystrom “an electronics instrument manufacturer based in South Boston Virginia.”
- Along with Weston, Schlumberger acquired Heathkit and the Furniture manufacturing side of Daystrom.
- In 1979, Fairchild Camera and Instrument (Fairchild Semi) became a subsidiary of Schlumberger.

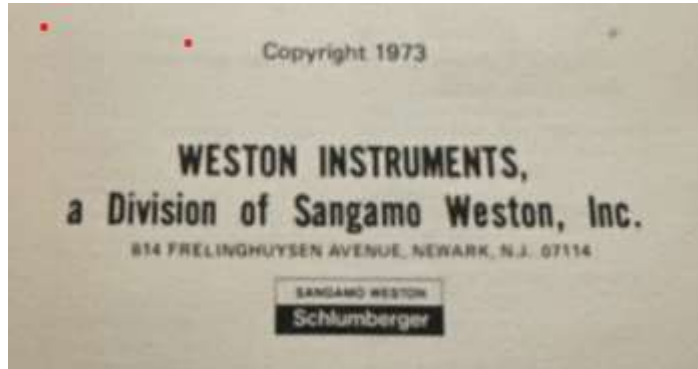
# Schlumberger - Sangamo

- But, in 1975, Schlumberger acquired the American company, **Sangamo Electric**.
- Heathkit was sold off to Zenith in 1979 as a result of the success of the computer side of the business, to become Zenith Data Systems (ultimately sold off to Groupe Bull in 1989).
- The Furniture division was sold off to Sperry and Hutchinson.
- Schlumberger organized into 4 divisions in 1987, one of which was based on the electric power-meter field of which Sangamo was a pioneer. Other related companies were acquired.



- A leveraged buyout of its power-metering business establishes the Actaris group in 2001 incorporating Sangamo and Weston.
- The Weston brand has not been used by Actaris, but Sangamo in the UK presently exists as a company producing electric power timer switches.
- Actaris was sold to Itron in 2004, founded by a small group of engineers in 1977 intent on finding more efficient ways to read electric-power meters. Based in Hauser Lake, Idaho.
- Schlumberger has rebranded as SLB in 2022. A 3-letter acronym similar to Raytheon's rebranding as RTX corporation in July 2023.

# Schlumberger subsidiary logos



# Weston Related Companies

- Several well-known companies are connected with Weston and its corporate owners, notably:
  - Simpson Electric Company – founded by Ray Simpson, the President of Jewell Electrical Instruments Company when it was purchased by Weston, and Bach-Simpson Limited the Canadian subsidiary of Simpson.
  - Heathkit is perhaps the best known subsidiary of Daystrom, as most of the members of the Radio Club have seen Heathkits with the Heathkit-By-Daystrom logo
  - Jewell Instruments of Manchester, New Hampshire – a company with the same name as the original Jewell Electrical Instrument Company of Chicago, but with no direct heritage to the original company

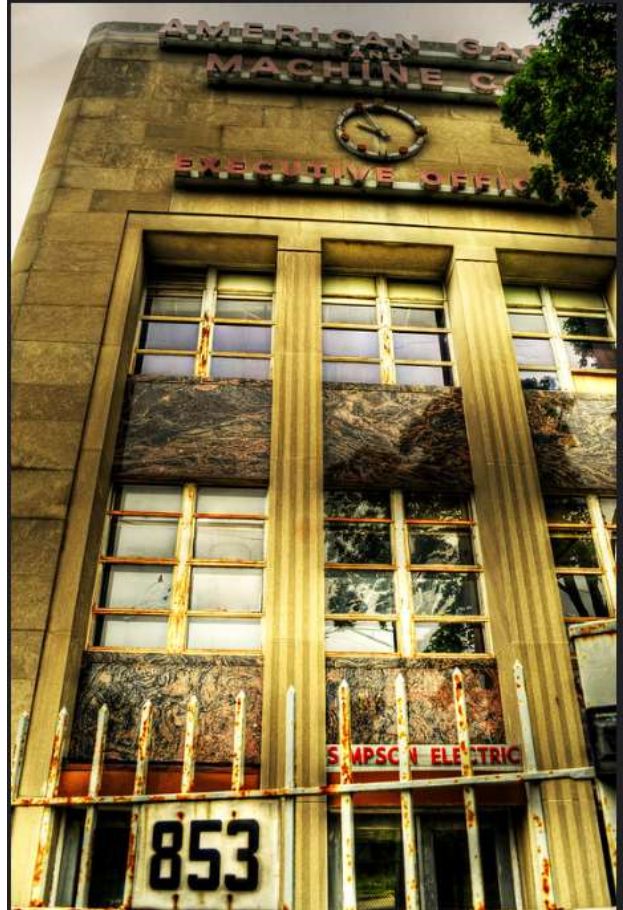
# Simpson Electric Company

- Founded 1934, chartered (incorporated 1936)
- Founder Ray Simpson, former president of Jewell Electrical Instrument Company
- In 1970 Simpson was the world's largest manufacturer of electronic measuring instrument and test equipment employing 800 people in Elgin, Illinois.
- Produced the famous Simpson 260 meter, introduced in 1939
- Canadian subsidiary, Bach-Simpson of London, Ontario, established 1946

# Simpson Electric today

- Ownership changes (partial history) of Simpson & Bach-Simpson
- Simpson, a subsidiary of American Gage and Machine Company as of 1959 (Wallace Carroll who was owner of American Gage and Chairman of Simpson)
- American Gage did a reverse takeover of the Missouri-Kansas-Texas (MKT) railroad, creating the holding company Katy (K-T) Industries in 1968.
- By the mid-1980's Simpson's sales performance was faltering and in 1985 the Lac du Flambeau Indian tribe acquired Simpson from Katy Industries, which it owns to this day

# Photo of Simpson Electric In American Gage (formerly Illinois Watch Case Building)



# Bach-Simpson today

- Bach-Simpson was not included in the sale of Simpson
- The sale of Bach-Simpson by Katy Industries was completed in January of 1999.
- ACS sold Bach-Simpson to Global Railway Systems, a Canadian company in 2005
- Bach-Simpson , which was now producing railway signalling and event recorders (Black Boxes) was sold by Global Railways to Wabtec, a merger of Westinghouse Air Brake Company and MotivePower in 2010. It is now a division of Wabtec.

# Heathkit

- Well-known manufacturer of electronic kits from 1947 to 1992
- The Heath Company was founded as an [aircraft](#) company in 1911<sup>[5]</sup> by [Edward Bayard Heath](#) with the purchase of Bates Aeroplane Co, soon renamed to E.B. Heath Aerial Vehicle Co.
- Starting in 1926 it sold a light aircraft, the [Heath Parasol](#), in kit form.<sup>[6]</sup> Heath died during a 1931 [test flight](#).<sup>[7]</sup> The company reorganized and moved from Chicago to [Niles, Michigan](#).
- In 1935, [Howard Anthony](#) purchased the then-bankrupt Heath Company, and focused on selling accessories for small aircraft. After World War II, Anthony decided that entering the electronics industry was a good idea, and bought a large stock of surplus wartime electronic parts with the intention of building kits with them.

# Heath in the Electronic Kit Business

- In 1947, Heath introduced its first [electronic kit](#), the O1 [oscilloscope](#) with 5-inch diameter [cathode-ray tube](#) (CRT) display that sold for [US\\$39.50](#) (equivalent to \$556 in 2024) – the price was unbeatable at the time, and the oscilloscope went on to be a huge seller
- After the death of Howard Anthony in a 1954 airplane crash, his widow sold the company to Daystrom Company, a management holding company that also owned several other electronics companies
- Daystrom was absorbed by oilfield service company [Schlumberger Limited](#) in 1962, and the Daystrom/Schlumberger days were to be among Heathkit's most successful.

# Heathkit Computers and The End of Kits

- By fiscal year 1980 computers were 40% of Heathkit revenue.
- [Zenith Radio Company](#) bought Heath Company from Schlumberger in 1979 for \$63 million, renaming the computer division Zenith Data Systems (ZDS).
- Zenith organized the 54 American Heathkit Electronics Centers under the Veritechnology Corporation.
- ZDS, Heath and Veritechnology all sold to Groupe Bull, a French owned computer company in 1989
- The kit business ended in 1992.

# Other Electrical Instrument Companies of Note

- Supreme Instruments Corporation
  - Founded by Jewell R. Williams in 1926
  - Bought by Hickok in 1956
- Precision Apparatus Company (PACO)
- Triplet Electrical Instrument Company
  - Bought by Jewell Instruments of Manchester, NH
- Jackson Electrical Instrument Company
- Hickok Electrical Instrument Company
  - is **an electronics company founded in 1910 by Robert D. Hickok Sr** in Cleveland, OH. They are still in business.