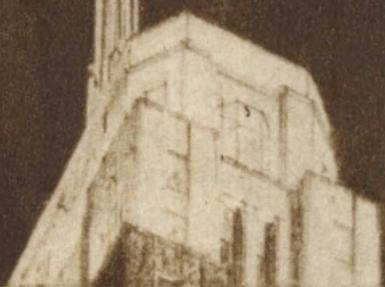


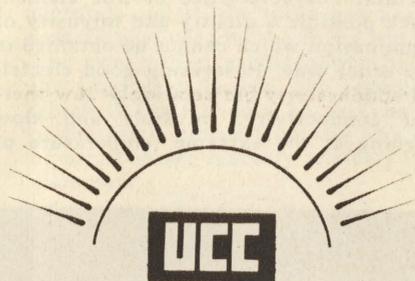
4A



UCC

UNION CARBIDE AND
CARBON CORPORATION

Lighting
**CARBON
PRODUCTS**



LIGHTING CARBON PRODUCTS

In the year 1801, Sir Humphry Davy formed an electric arc between carbon electrodes connected to a Voltaic battery. History does not state whether he was searching for a source of light or heat but whatever the object, this classic experiment found no immediate commercial application since sources of electric power of sufficient capacity were not then available.

With the development of mechanical generation of electric power on a commercial scale, Davy's experiment found practical application in the carbon arc

lamp. This was the original commercial application of manufactured carbon products on an extensive scale. Here the peculiar characteristics of this element make possible a quality and intensity of illumination which cannot be obtained in any other way. Possessing good electrical conductivity but relatively low thermal conductivity, infusible and slow burning at the extreme temperature of

adapted to the lighting of photographic studios, to photo-engraving, to motion picture photography, to the illumination of airports, to the projection of motion pictures, and to the large and powerful searchlights used by the Army and Navy. The two billion candle-power beam of the Lindbergh beacon, the visibility of which is limited only by the curvature of the earth, comes from the tiny crater of a carbon arc scarcely one-half inch in diameter.



*Important airports are
lighted by carbon arcs*

the arc, carbon has proved to be the ideal electrode material for this purpose.

The carbon arc has the greatest brightness per unit area of any artificial light source known, rivaling that of the sun. It is not surprising then that it has been

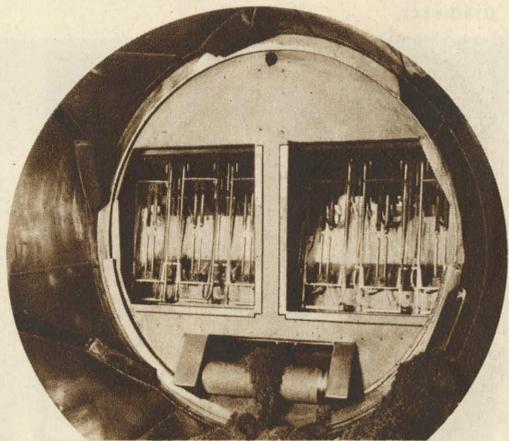


The white flame arc (insert) reproduces daylight for the photographer

Photography and Photo-Engraving

The development of the flame type carbon arc, in which flame supporting minerals give color and brilliancy to the arc stream, provides a source of illumination for photographic processes that has not been surpassed. The white flame

arc produces all colors of the rainbow in approximately equal amount so that they blend into a pure white light closely resembling daylight. From the standpoint of photography, this light and daylight are considered identical. National Photographic Carbons are extensively used in photographic studios and motion picture studios and stand supreme in the photo-engraving industry.



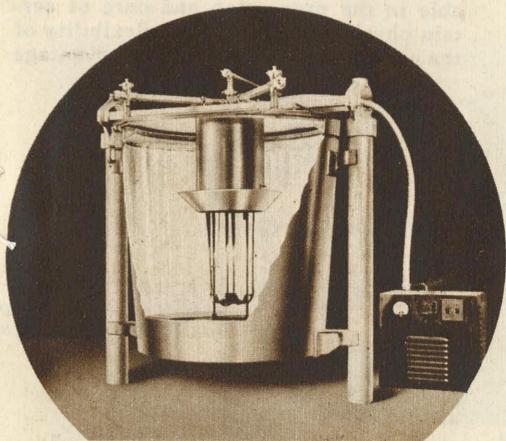
Ultra-violet irradiation prepares cigarette tobacco

Industrial Uses of Carbon Arc

The versatility of the carbon arc adapts it to many industrial processes. The white flame carbon arc is used to

provide a source of artificial sunshine, uniform in intensity and quality and always available regardless of weather or season.

With suitable electrodes, such as the Eveready "C" Carbon, the carbon arc emits powerful ultra-violet irradiation which finds use in many industrial applications such as accelerated testing of paints and dyes, the manufacture of pat-



The carbon arc increases the Vitamin D content of milk

ent leather and linoleum, the preparation of cigarette tobacco, and the irradiation of food and drug products for the purpose of Vitamin D activation. During the past year, carbon arc irradiating

equipment has been installed in over two hundred cities for the production of irradiated Vitamin D milk.

Light Therapy

In the home, as well as in hospitals and sanatoria, the carbon arc is used to produce artificial sunlight and radiation of specialized character which physicians practicing light therapy have found valuable in the prevention and cure of certain physical disorders. The flexibility of the carbon arc is of particular advantage



Eveready "Sunshine" Carbons closely duplicate natural sunlight

in this application. Not only does it provide radiation closely duplicating that of natural sunlight when Eveready "Sunshine" Carbons are used, but with suitable carbons, such as Eveready Thera-

peutic "B", "C", "E" or "K" Carbons, ultra-violet or infra-red radiation may be emphasized as desired.

Projector Carbons

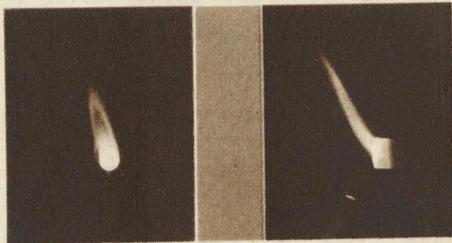
The motion picture industry would never have reached and could not maintain its present high plane without the aid of the carbon arc. The large screens, long throws, and high level of screen



Many hospitals have modern sunshine rooms

illumination in modern theatres require an intensity at the light source that only the carbon arc can supply—a crater brilliancy sixteen million times the brilliancy of the screen.

The demands made upon projector carbons are extremely severe. They must conduct electricity at very high current densities, as much as one thousand amperes per square inch. At the same time they must conduct little heat from the arc in order that the maximum possible crater temperatures may be maintained and a minimum amount of heat conducted to the operating mechanism of the lamp. Only carbon can satisfy these conflicting demands. Only the High Intensity Carbon Arc provides a light source, the intrinsic brilliancy of which rivals that of the sun. National Projector Carbons are



Front and side views of the High Intensity Carbon Arc

found in the theatres of every city in the land.

Other Uses for High Intensity Arc

The brilliant concentrated light of the high intensity arc finds other applications outside the motion picture field. The powerful searchlights used by the Army and Navy have, as their source of

light, the high intensity carbon arc; likewise has the Lindbergh beacon, whose powerful, sweeping beam, visible for more than forty miles, adds safety to night flying. Night landings at airports have been made safe by high intensity carbon arc floodlights which spread a mile-wide pancake of brilliant light over the landing field. National Searchlight Carbons are thus agencies for safety as well as for defense.

NATIONAL CARBON TECHNICAL LITERATURE on the Carbon Arc and Light Therapy

Available without cost by writing to Union Carbide and Carbon Corporation, 30 East 42nd St., New York, N. Y.

- NC-100—Eveready Carbon Arc Industrial Units
- NC-101—Ultra-Violet Radiation in Industry
- NC-102—Photography with the Carbon Arc
- NC-103—National Projector Carbons
- NC-105—Eveready Carbon Arc Solarium Units
- NC-106—Typical Medical Uses of the Carbon Arc
- NC-107—The Irradiation of Milk
- NC-108—Radiation Characteristics Eveready Sunshine and Therapeutic Carbons
- NC-109—Eveready Professional Model Carbon Arc Lamp

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If you have found this booklet interesting, you will undoubtedly enjoy others in this series:

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- F - UCC Synthetic Organic Chemical Products
- G - UCC Vinylite—The Thermoplastic
- H - UCC Products for Alloy Steels and Irons
- I - UCC Carbon and Graphite Electrodes and Specialties
- J - UCC Haynes Stellite Products
- K - UCC Eveready Flashlights and Batteries
- L - UCC Eveready Prestone
- M - UCC Eveready Layerbilt "B" Battery
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Ask for these booklets at the Union Carbide and Carbon Corporation exhibit at *A Century of Progress*, or write them to:

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