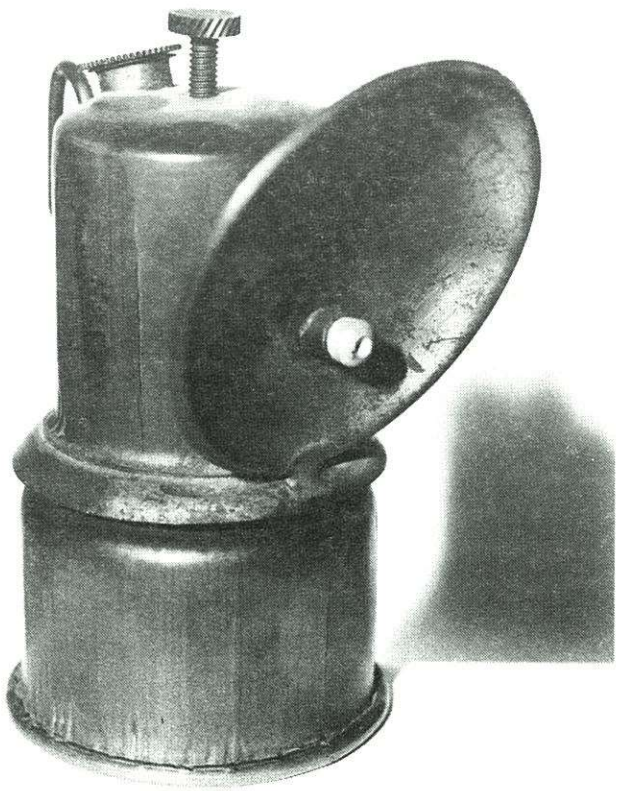
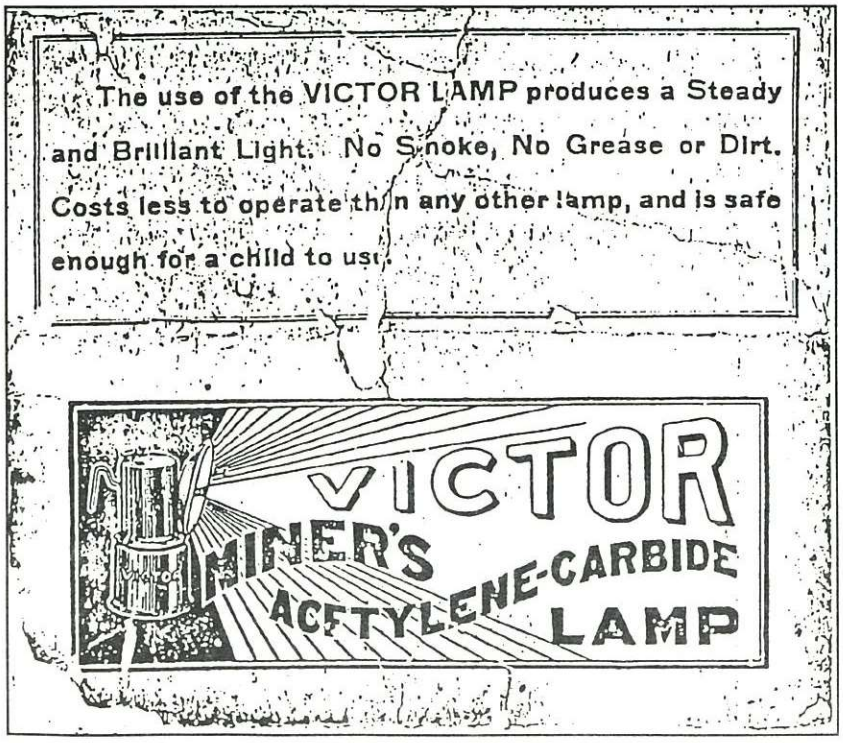
Victor - Acme - Pathfinder

Cap Lamp Series

David J. Des Marais



Victor cap lamp, E. Christman collection. The lamp's threaded water door and slanted reflector distinguish it from the later lamps in the sequence. The Victor and Acme cap lamps have virtually identical water tanks, water feed assemblies, and bases.

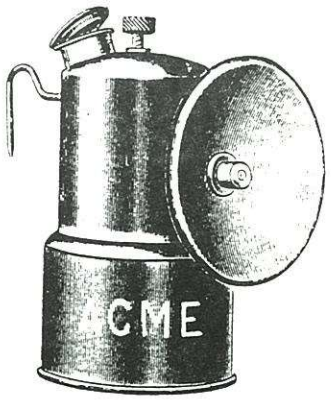


Mining carbide lamps from North eastern Pennsylvania are fascinating because of their distinctive, early designs and also because little is known about the history of their manufacture. Some of the design features resemble those of early Baldwin lamps, however the relationships between these lamp companies are obscure. Certain lamp features are characteristic of carbides from the Scran-

(Left) Two sides from a box for the Victor cap lamp. The lamp's distinctive water tank design, slanted reflector, cap hook, and vertically ridged metal exterior can be seen, but unfortunately no information about the company is given.[1]

Acme I cap lamp, K. Deem collection. Although the reflector is vertically oriented instead of slanted, it resembles the Victor's reflector in all other respects (e.g., diameter, curvature, etc.). All of the features on the Acme lamps can be found on either the Victor or the early Pathfinder.

ACETYLENE MINER LAMPS



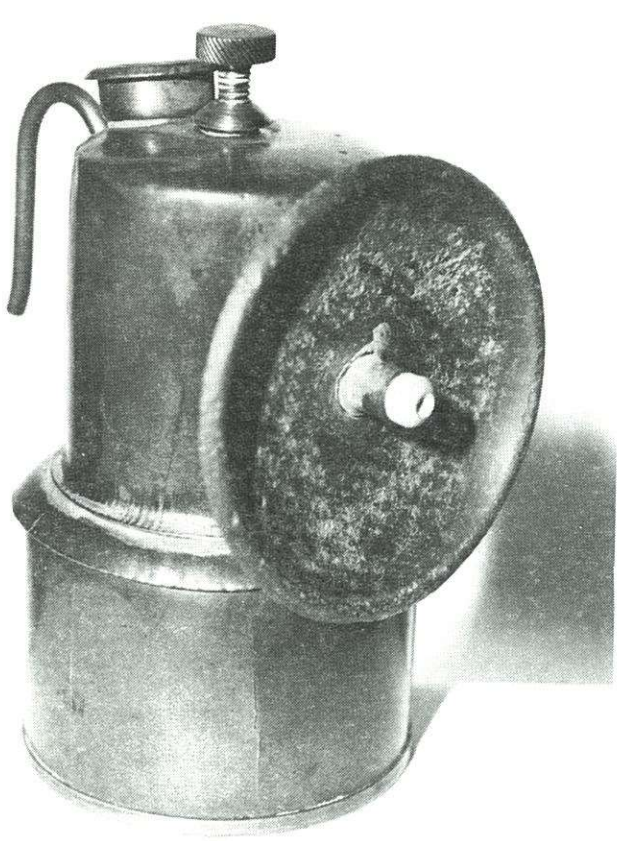
Made of brass. Nickeled reflector. Brass screw top carbide can with each lamp.

The valve does not extend down into the carbide and block the water supply. The valve stem is larger than any other lamp. It has a ground seat and shuts off the water absolutely; can be opened to the desired amount, giving a steady light of the desired quantity of the best quality. Every lamp is tested and warranted perfect.

Advertisement for the Acme cap lamp which appeared in the L. H. Smith Woodenware Co. General Catalogue #28, Pittsburgh, PA.[2] This ad shows the distinctive tank design, water feed, water door, cap hook and vertically oriented reflector. As with the Victor, no information about the manufacturer is provided.

ton, Pennsylvania area. The lamp water feeds typically had knurled finger wheels. Some of the lamps have reflectors slanted to protect the flame from dripping water, which was commonly encountered in the region's anthracite mines with their steeply-dipping beds of rock. The lamps' simple water doors resembled those of some early Baldwin lamps. These doors were shaped from a single disk of brass and their open tops resemble a small cup.

This article presents the evidence that the early (non Justrite) Victor, Acme and Pathfinder lamps are part of a single manufacturing sequence. That is, the manufacturer of the Victor subsequently changed the lamp to produce the Acme, and the Acme later led to the Pathfinder. Other examples of manufacturing sequences are Augie Hansen's Drylite, Force Feed and Hansen; and the Scranton Acetylene Lamp Company's Scranton and Scranto. A sequence typically embodies several manufacturing improvements. In the case of the Victor-Acme-Pathfinder sequence, improvements were made for convenience (e.g., the water door change from Victor to Acme), strength (better metal quality, stronger seams and edges, and reflector bracing), and appearance (streamlining the water tank, adding a manufacturer's label).



Acme II cap lamp, D. Des Marais collection. This differs from Acme I only in the reflector. Acme II and early Pathfinder lamps have identical hooks, water feeds (except for length of rod inside carbide tank), reflectors, and dimensions of the bases (except for thread diameter). Both lamps even share a distinctive tapered button which is situated on the top of water tank and is penetrated by the water feed.

This article also proposes a manufacturing chronology for the Victor, Acme and Pathfinder cap lamps, and it documents some of the details about the competition waged between Hughes Brothers of Scranton, PA, very likely the manufacturers of all three of these lamps, and their nearby rivals, the Scranton Acetylene Lamp Company, makers of the Scranton and Scranto cap lamps.

Evidence for the Victor-Acme-Pathfinder manufacturing sequence

Little published documentation exists on the production of these lamps, therefore the best evidence lies in the details of the lamps themselves. Table 1 lists 21 features about the style of construction and measured dimensions. Many of these features are also visible in the accompanying photographs and advertisements.

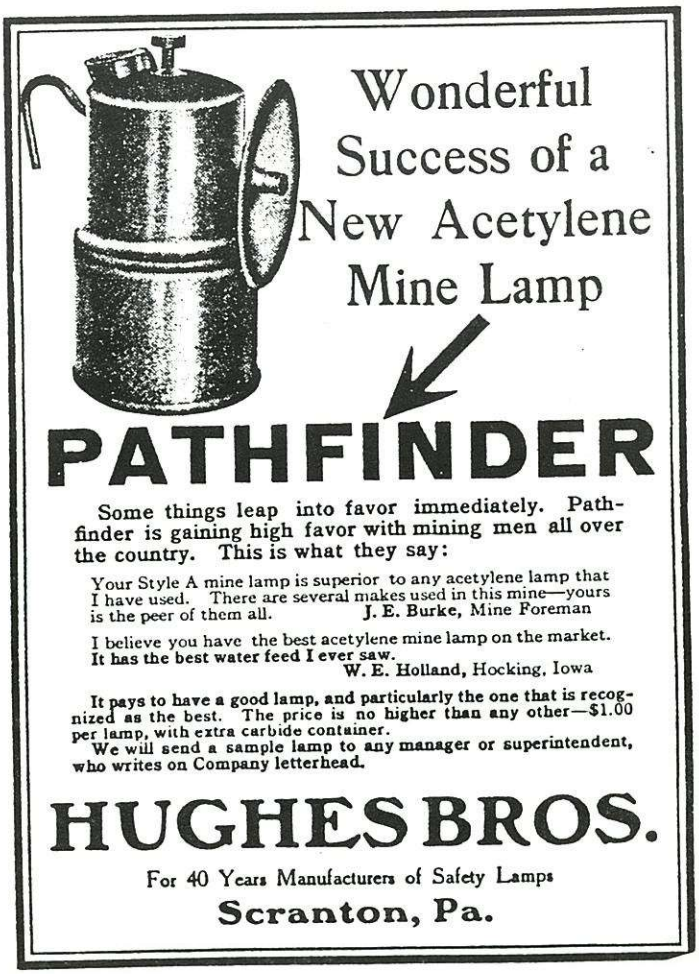
Water tank. The construction of the water tank shell is the most distinctive difference between the Victor and Acme lamps versus the Pathfinder lamps. The changes included the thicker brass on the Pathfinder, the relocation of the main seam between the tank shell and the threaded insert, and the Pathfinder's larger diameters on its tank shell and threads. However, the diameter of the Pathfinder's gas burner tube is the same as those on the Acme and Victor. Also, the cap hooks of the Victor, Acme and early Pathfinder are identical; they have the same wire diameter and hook shape, and they all penetrate the water tank. Small numbers have been stamped on the water tank beneath the cap hook (on the Victor: numbers 1 and 3 have been found; on the Acme: 1 and 2; and on the later Pathfinder: 1, 2 and 3). Mike Puhl has observed these numbers on the later Pathfinder lamps, and notes that the numbers frequently are obscured by the solder used to attach the cap hook.

Water feed. The feeds are remarkably similar across the entire lamp sequence. The diameters of the various components, the feed rod, water tube and knurled finger wheel, are identical. One minor change involves the knurling pattern on the finger wheels, however, the pattern used in the early Victors was restored in the latest Pathfinders. Thus even the changes that were made in knurling pattern demonstrate that the Victor and Pathfinder are ultimately related! The Pathfinder's feed rod extends to the bottom of the carbide chamber, an "improvement" which was duly noted in the advertisements. However, another key detail which links the Acme with the early Pathfinder, as well as some of the later Pathfinders, is that these lamps share an identical brass button which secures the water feed rod to the top of the water tank.

Water door. The Victor's threaded water door is unique in the sequence. Thereafter the water door is hinged and is absolutely identical in both design and dimensions on all of the Acme and Pathfinder lamps examined.

Reflector. The reflector was changed repeatedly to strengthen it. Between the Victor and Acme I, the reflector itself is identical, but its orientation changed from slanted to vertical. The diameter decreased between Acme I and II, and was soldered to the lamp in two places on the Acme II. The reflectors on the Acme II and early Pathfinder are identical. The reflector on the later Pathfinder is unique in the sequence, with its metal strap attachment, tightly rolled edge, and its availability in two diameters and two metal compositions.

Early Pathfinder cap lamp, K. Deem collection. This lamp shares at least as many details with the Acme II as it does with later Pathfinders! The big differences with the Acme are the design of the water tank shell and the diameter of the threads which join the base to the water tank. The early and later Pathfinders differ most prominently in their hook attachments, buttons on top of water tank and reflectors and reflector attachments.



Base. The Victor and Acme bases are virtually identical and are interchangeable. The difference between these and the Pathfinder base lies principally in the redesigned threads which were associated with the changes in the water tank. The body diameters are identical and other dimensions are very similar.

In summary, although several changes indeed occurred between the Victor, Acme and Pathfinder lamps, their similarities outweigh their differences. For example, of the 22 features catalogued (21 in Table 1, plus the small stamped numbers on the water tanks), only 6 features changed between the Victor and Acme lamps, 6 other features changed between the Acme and early Pathfinder, and 7 features changed between the early and later Pathfinders. The many aspects of the design and dimensions which are shared by these lamps indeed demonstrate their common origin.

Chronology and Competition

In ads published in the April and July, 1912 issues of the magazine *Mines and Minerals*, the Hughes Brothers Company of Scranton, PA boasted of their 40 years of experience as manufacturers of safety lamps. Although they certainly existed during the period when Victor and Acme lamps were made, it is not clear whether Hughes Brothers actually manufactured these lamps or, instead, they assumed ownership of the lamps' manufacture and then introduced the Pathfinder lamp.

Only a box for the Victor lamp establishes its name;[1] its dates of manufacture remain a mystery. The identity of the Acme comes only from an advertisement in catalog #28 of the L. H. Smith Woodenware Company of Pittsburgh.[2] However, both the manufacturer and the chronology of Pathfinder lamps are well established by several Hughes Brothers advertisements.

The early Pathfinder was introduced in April, 1912, and ads in the magazine *Mines and Minerals* depicting the early Pathfinder's soldered reflector persist until 1914. The first ad showing the later Pathfinder, with its reflector attached by a metal strap, appears in 1915, and ads persist until at least 1922. As late as 1931, the Hughes Brothers listing in the City Directory of Scranton mentions carbide lamps.[3]

Despite the sparse published record about carbide lamps manufactured by the Hughes Brothers and Scranton Acetylene Lamp companies, evidence of their competition does exist. In ads in both the June and July, 1912 issues of *Mines and Minerals*, the Scranto lamp is claimed to burn a long time on a single carbide charge. However, in their June, 1912 ad, Hughes Brothers claim that "The question of carbide economy doesn't count," and they extol instead the durability and bright, dependable flame of their own Pathfinder lamp.

Advertisements for the early Pathfinder lamp (above and previous page) with its characteristic soldered reflector and redesigned water tank. These lamps appeared in advertisements in Mines and Minerals *magazine from April, 1912 up until 1914.*

The competition is also apparent in the close correspondence between the design changes instituted between 1911 and 1915 by the two Scranton, Pennsylvania companies. In both lamp sequences, the flanges at the base of the water tanks became narrower from the earliest models to those introduced in 1912.

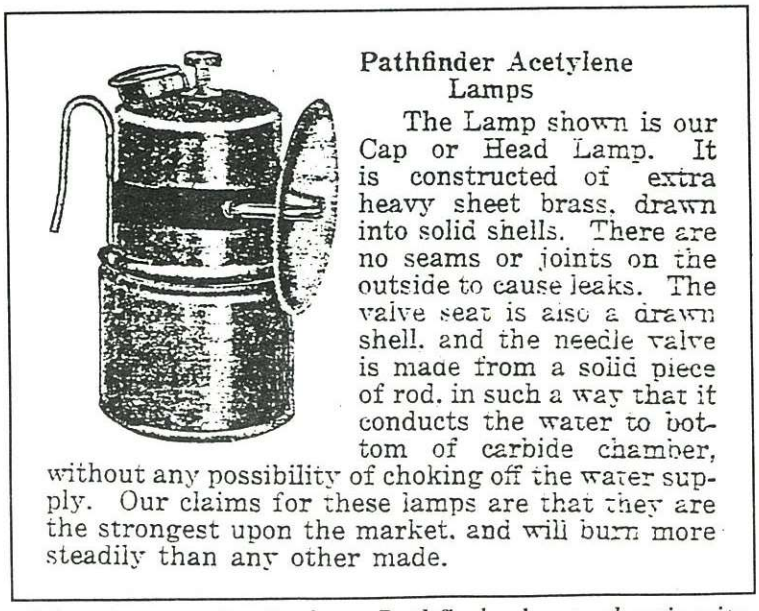
The water tanks were improved (metal strengthened and seams redesigned) between September, 1911 and late spring of 1912. In a 1912 ad, Hughes Brothers extols the superiority of their new lamp's internal solder seam over lamps with external seams. This comment must have been aimed at their competitor's Scranton and earliest Scranto lamps, which had external solder seams.

It also might be evidence that Hughes Brothers had recently modified their own Acme lamp, with its external seam, to the stronger Pathfinder lamp design.

Both companies improved reflector bracing between 1912 and 1915. By 1915, the reflectors made by both companies were significantly strengthened and were easily removable and replaceable. However, despite these improvements, the fortunes of both lines of acetylene lamps suffered severely during the 1920's. A declining market for carbide mining lamps, together with competition from other manufacturers outside the region, proved to be more significant sales factors than the cross-town rivalry between these two manufacturers.

Acknowledgements

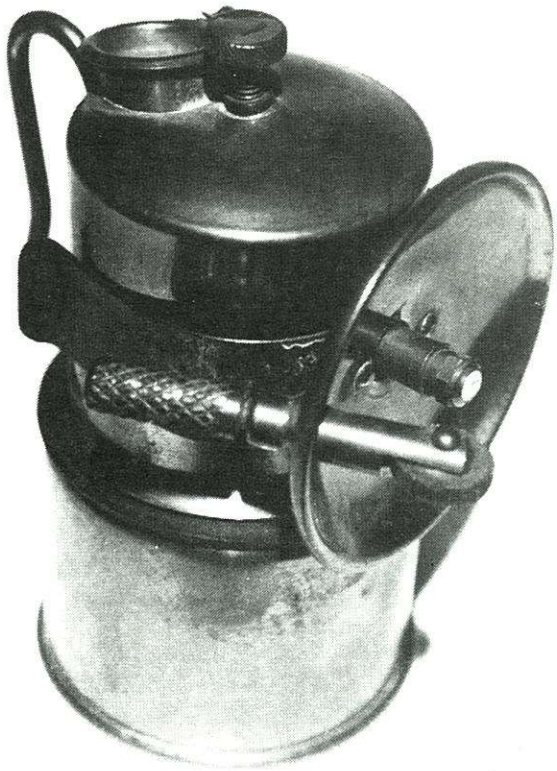
I thank K. Deem and E. Christman for permission to photograph lamps, A. Moon for the Pathfinder advertisements, and Al Quamen for measurements of his Acme lamp. I thank these and many other individuals for sharing their knowledge about these fascinating carbide lamps.



Pathfinder Acetylene Lamps

The Lamp shown is our Cap or Head Lamp. It is constructed of extra heavy sheet brass, drawn into solid shells. There are no seams or joints on the outside to cause leaks. The valve seat is also a drawn shell, and the needle valve is made from a solid piece of rod, in such a way that it conducts the water to bottom of carbide chamber, without any possibility of choking off the water supply. Our claims for these lamps are that they are the strongest upon the market, and will burn more steadily than any other made.

Advertisement for the later Pathfinder lamp, showing its characteristic steel reflector clamp. Ads for these lamps appeared from 1915 into the early 1920's.



Later Pathfinder cap lamp, K. Deem collection. This lamp's reflector (clip-on attachment, variety of compositions and diameters, and striker), its externally-soldered hook, and its (occasional) manufacturer's label are unique in the sequence. On some of these lamps, the brass button on top of the water tank (which secures the water feed) is identical to the button found on the Acme and early Pathfinder. The later Pathfinder is by far the most common cap lamp in the series.

References

1. Thorpe, D. (1992) A Brief Review of Scranton, Victor and Black Diamond. *Eureka! 4*, 11-13.

2. The Editors (1994) Acme Cap Lamp. *Eureka! 9* , 27.

3. Clemmer, G. (1987) American Miners' Carbide Lamps. Westernlore Press, Tucson, AZ, p. 75.

Table 1. Dimensions (inches) and other details of the "Early" Victor, Acme and Pathfinder cap lamps.

	Victor	Acme I	Acme II	Pathfinder, early	Pathfinder, later
Water tank					
Solder seam: on side or bottom?	side	side	side	bottom	bottom
Diameter of body	1.57	1.5+	1.58	1.72	1.72
Diameter at bottom edge	2.08	2.06	2.07	2.04	2.00
Hook attachment	enters tank	enters tank	enters tank	enters tank	external
Burner tube diameter	0.252	0.25	0.248	0.252	0.249
Water feed					
Finger wheel, diameter	0.381	0.382	0.382	0.382	0.380
Finger wheel, knurling ridges*	URtoLL or ULtoLR	UL to LR	UL to LR	UL to LR	URtoLL or ULtoLR
Button on tank top at feed rod, dia.	No button	0.375	0.374	0.374	0.370 or 0.236
Feed tube inside carbide tank, dia.	0.248	0.25	0.246	0.252	0.25
How far feed rod extends past tube	0.1	0.1	0.1	1.3	usually 1.14
Water door					
Outer diameter of widest part	0.58	0.73	0.73	0.72	0.73
Outer diameter of inserted part	0.375	0.54	0.543	0.543	0.542
How attached to lamp	threaded	hinged	hinged	hinged	hinged
Reflector					
Orientation	angled	vertical	vertical	vertical	vertical
Diameter	2.39	2.375	2.217	2.224	2.1 or 2.7
Attachment to lamp	solder	solder	solder	solder	removable clip
Base					
Manufacturer's label?	never	never	never	never	sometimes
Threads, outer diameter	1.49	1.49	1.49	1.61	1.60
Body, outer diameter	2.04	2.04	2.04	2.04	2.04
Bottom seam, outer diameter	2.2	2.13	2.08	2.13	2.16
Height, bottom to top of threads	2.05	2.04	2.04	2.18	2.15

*Example: "UL to LR" indicates that, when the water feed is viewed from the side, the knurled ridges on the finger wheel are oriented from upper left to lower right. Most Pathfinder and early Victor lamps have the "UR to LL" orientation.