

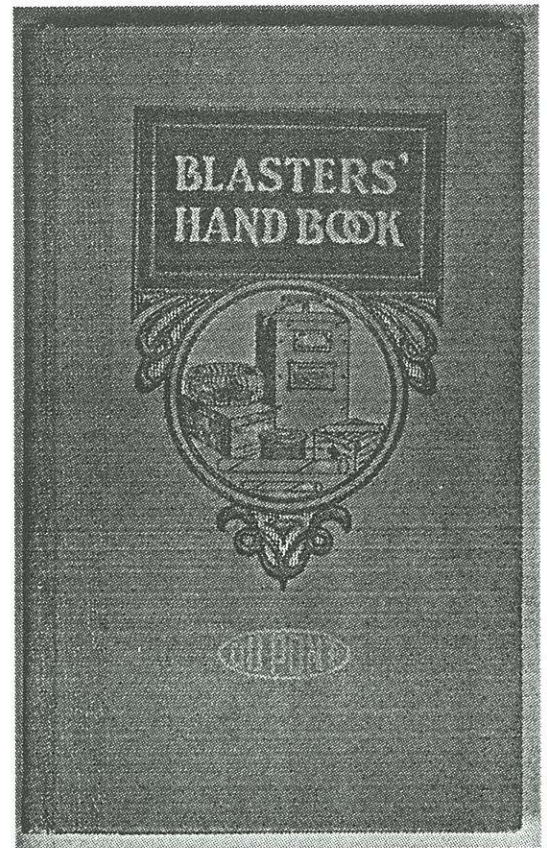
Blasters' Handbooks

by

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Introduction

To an unsuspecting antique shop owner, finding the book "Blasters' Handbook" in her inventory perhaps conjures up images of a mad bomber and potential liability if a local teenager uses the information in the book to blow up the high school. No doubt, a few of these fine informational texts have been burned rather than have them go out to the "irresponsible public." However, the reality is that these books provide a wonderful insight to the lifestyle of miners and developers and are quite collectible by those of us fascinated by the risks and rewards of mining. Many of the techniques listed in these books are still useful today.



Third edition, cover.

In this article, we will describe what Blasters' Handbooks and their relatives are, which ones are more valuable, and what makes them so interesting. If you are a collector, you already know what we mean, but if you are not, and are looking for something that complements your collection of other mining artifacts, the Blasters' Handbooks may be of interest and can reflect your breadth of knowledge about the work of a miner. From its first edition in 1918, a small book at 122 pages, a Blasters' Handbook was probably close at hand wherever a mine was located or where a miner was "capp'n up." This silent but essential partner helped to keep the miner safe and the mine productive.

The need for the handbook probably originated in the 1880's when powder and dynamite became more widely available with the increased transportation infrastructure of railroads and reduced threat of backcountry attack. A wide open western U. S. invited fortune-seekers to head for the hills and their meager savings could now be efficiently used for mining equipment and supplies rather than defense. With every sort of person out conquering the wild west and with highly mechanized mining still a few decades in the future, the primary tool was the dynamite stick which was sold in ever increasing quantities. The E. I. DuPont DeNemours & Co. of Wilmington, Delaware was a primary manufacturer of blasting powders at the turn of the century and they enhanced the market for their products through the Handbook which was given away or sold at a nominal cost. This tactic of educating their customer continued through the years by modifying and issuing a new edition of the Handbook every so often. One of the first versions of helpful data was published as "Useful Information For Practical Men" in 1893 and has continued until the most recent Blasters' Handbook, the 16th, in 1977 (Table 1).

Earlier Publications and Blasting Books by Companies Other Than DuPont.

There are a few precursors to the DuPont Blasters' Handbook and there are a few similar publications by other companies worth mentioning. The early DuPont books were not called "Blasters' Handbooks" but they still contained some basic information about explosives and the DuPont company. The earliest book about the practical use of explosives seems to be a 1885 publication called "High Explosives" and may have been put out as a product catalog published by Repauno Chemical Co., a subsidiary founded by the DuPont Powder company, incorporated in 1880 to market their new line of "Atlas" dynamite while DuPont stayed focused on their blasting powder products. Repauno was dissolved in 1903 but the Atlas product name was chosen for the Powder company when anti-trust laws forced DuPont to divest on June 13, 1912. In 1905 an "Explosives Handbook" was put out as a product catalog and marks the beginning of the use of the DuPont Powder Co. name for this and in all subsequent books. Little information about these books was available to the authors and was obtained from discussions with collectors and hearsay. The Repauno Chemical (1893) and the DuPont (1908) "Useful Information For Practical Men" contains 29 pages of explosives information along with another 186 pages of general knowledge providing the less-educated reader information about a diverse array of subjects such as masonry, pumping, roofing, hoisting, first-aid, postal information, and general scientific tables. This limited information about explosives must have filled a niche because ever more specific publications soon followed.

In 1910 DuPont issued "The Farmer's Handbook of Explosives." It is packed with pictures of some really interesting products that DuPont was producing at that time. On pages 91 to 115, there is a section called "Explosives and Blasting Supplies - How to Handle, Store and Use Them". Basically, this is a mini "Blasters' Handbook" and perhaps proved so popular with the miner crowd that a detailed book on general blasting was warranted. In 1915, a two part catalog of products (High Explosives Handbook) was published by DuPont that really must have lit the fuse. Three years later, the first Blasters' Handbook was born.

In 1932, the California Cap Company produced their own book called "Detonators for High Explosives" in a softbound, light green format. This was revised and reissued three times, in 1934, 1936, and in 1939 as far as we know. The book focused on the use of California Cap products to enhance mining productivity. A good looking book, a copy of "Detonators" fits in well with any collection of cap tins, especially with the large variety of California Cap tins.

Not to be outdone, the Hercules Powder Company produced an explosives handbook in 1927 which was authored by J. Barab. It was titled "Modern Blasting In Quarries And Open Pits" and was available in either a hard or soft bound cover. As usual, pictures in this book prominently show Hercules products being used. We are not aware of any later revisions to this book. Because it was larger in size (6"x9") and didn't fit in a hip pocket, it may not have been as popular. Hercules did produce other publications which are collectible. Among them are "Rock Tunnel Methods" (1931), "Drilling and Blasting in Some American Metal Mines" (1928), by Theodore Marvin, and "Mining by Block Caving" (1945), edited by Phillip B. Bucky.

Table 1 Chronology of Blasting Books

<u>Date</u>	<u>Title</u>	<u>Remarks</u>
1893	Useful Information for Practical Men	"Atlas memorandum and reference Book" compiled for Repauno Chemical Co. by Wm.G. Ramsay
1895	High Explosives	Published by Repauno Chemical Co. Product catalog and how-to manual.
1905	Explosives Handbook(?)	Begin DuPont Powder Co. name in all subsequent books. Product Catalog
1908	Useful Information for Practical Men	DuPont Powder Co.. General information including explosives section. Limited edition(?). Hardbound Textbook.
1910	The Farmer's Handbook of Explosives	DuPont Powder Co., Pages 91 - 115, section "Explosives and Blasting Supplies - How to Handle, Store and Use Them".
1911	Blasting Supplies	DuPont Powder Co., 125 pages w/lavender soft cover.
1913	Blasting Powder	DuPont Powder Co., 63 pages.
1915	High Explosives Handbook	DuPont Product Catalog in two parts: "Section 1 and Section 2"
1916	Better Stump Removing with Giant Powders	Giant Powder Co. Color booklet. 25 pages.
1916	Ditches	Giant Powder Co. Color booklet. 9 pages.
1917	Handbook of Explosives	DuPont Powder Co. Instructions in the Use of Explosives for Clearing Land, Planting and Cultivating Trees, Drainage, Ditching, Subsoiling and other Purposes.. Textbook.
1918	1st edition Blasters' Handbook	No edition number. Black cover. Hard Textbook about 4.25" x 7" in size. 121 pages.
1920	Blasting Accessories	DuPont Powder Co. 95 pages.
1920	2nd edition Blasters' Handbook	Also limited ed. w/embossed black cover. Hard Textbook. No edition number. 120 pages.
1922	3rd edition Blasters' Handbook	No edition number. Blasting supplies picture on cover in blue or embossed black Fabrikoid . 154 pages
1922	Eliminating Waste in Blasting	by N. S. Greensfelder published by Hercules Powder Co., 48 pages.
1923	Explosives and Blasting Supplies	Atlas Powder Company. "Catalog of Products", 119 pages.
1925	Blasting Accessories	DuPont Product Catalog, 80 pages.
1925	Safety in the Use of Explosives	by N. S. Greensfelder published by Hercules Powder Co., a professional paper, 84 pages.
1925	4th edition Blasters' Handbook	Red/grey spine. No edition number. Hard Textbook.
1928	Nitrocellulose	Hercules Powder Co., w/ illustrations.
1928	5th edition Blasters' Handbook	Red cover First to list edition number on the spine. Hard Textbook.
1930	6th edition Blasters' Handbook	Light blue spine or blue Fabrikoid cover. Hard Textbook.
1932	7th edition Blasters' Handbook	Yellow spine. Hard Textbook.
1934	8th edition Blasters' Handbook	Grey spine. Hard Textbook.
1935	Making Better Explosives	Hercules Powder Co.
1938	9th edition Blasters' Handbook	Brown spine. Hard Textbook.
1939	10th edition Blasters' Handbook	Reddish brown Fabrikoid cover. Hard Textbook.
1942	11th edition Blasters' Handbook	Black/grey spine or black Fabrikoid. Hard Textbook.
1949	12th edition Blasters' Handbook	Reddish cover - first with cover all the same color. Hard Textbook.
1954	13th edition Blasters' Handbook	(Sesquicentennial edition) Blue cover and larger in size (5.5" x 8"). Multiple revision dates - 1952, 1953, 1954. Hard Textbook.
1958	14th edition Blasters' Handbook	Green cover. Multiple revision dates - 1958, 1963. Hard Textbook, larger size.
1969	15th edition Blasters' Handbook	Brown cover. Slight cover differences. Multiple revision dates - 1966, 1967, 1969. Hard Textbook, larger size.
1977	16th edition Blasters' Handbook	Green cover but came with dust jacket Has thumb indents for reference. Hard Textbook, larger size. 494 pages.
1997	17th Edition Blasters' Handbook	Available December, 1997. International Society of Explosives Engineers, edited by Bob Hopler. ISBN 9992662123

EQUIVALENTS

- 1932 Detonators for High Explosives California Cap Co. equivalent. Revised 1934, 1936, 1939. Green cover w/red lettering.. Softbound. 77 pages. (All 4.25" x 7")
- 1926 Modern Blasting In Quarries And Open Pits Hercules Powder Co. equivalent to Blasters' Handbook. Authored by J. Barab. Dark red hardbound or softbound. (Both 6" x 9") 169 pages.

OTHER PUBLICATIONS RELATED TO BLASTING:

- 1935 Red Star Powder: Manufactured by New York Powder Company Shows all their products and several pull up Blasters. The powder was produced in Mauch Chunk, PA (now Jim Thorpe, Pa.)
- 1931 "Rock Tunnel Methods" Hercules Powder Co. Hercules Powder Company. Cover: paper, light blue, dark blue, on gray. 23 Pgs, 3 photo & 8 pages of illustrations.
- 1934 Hercules Blasting Machines Hercules Powder Co. History of the Ensign-Bickford Company to 1936. They are still in business today.
- 1936 "Ensign-Bickford Centennial" Hercules Powder Co. by Theodore Marvin,
- 1928 "Drilling and Blasting in Some American Metal Mines"
- 1945 "Mining by Block Caving" Hercules Powder Co., edited by Phillip B. Bucky.

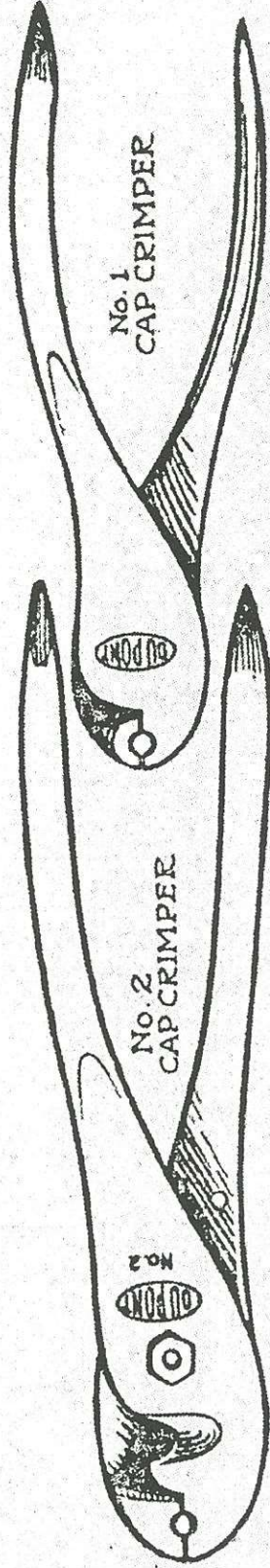
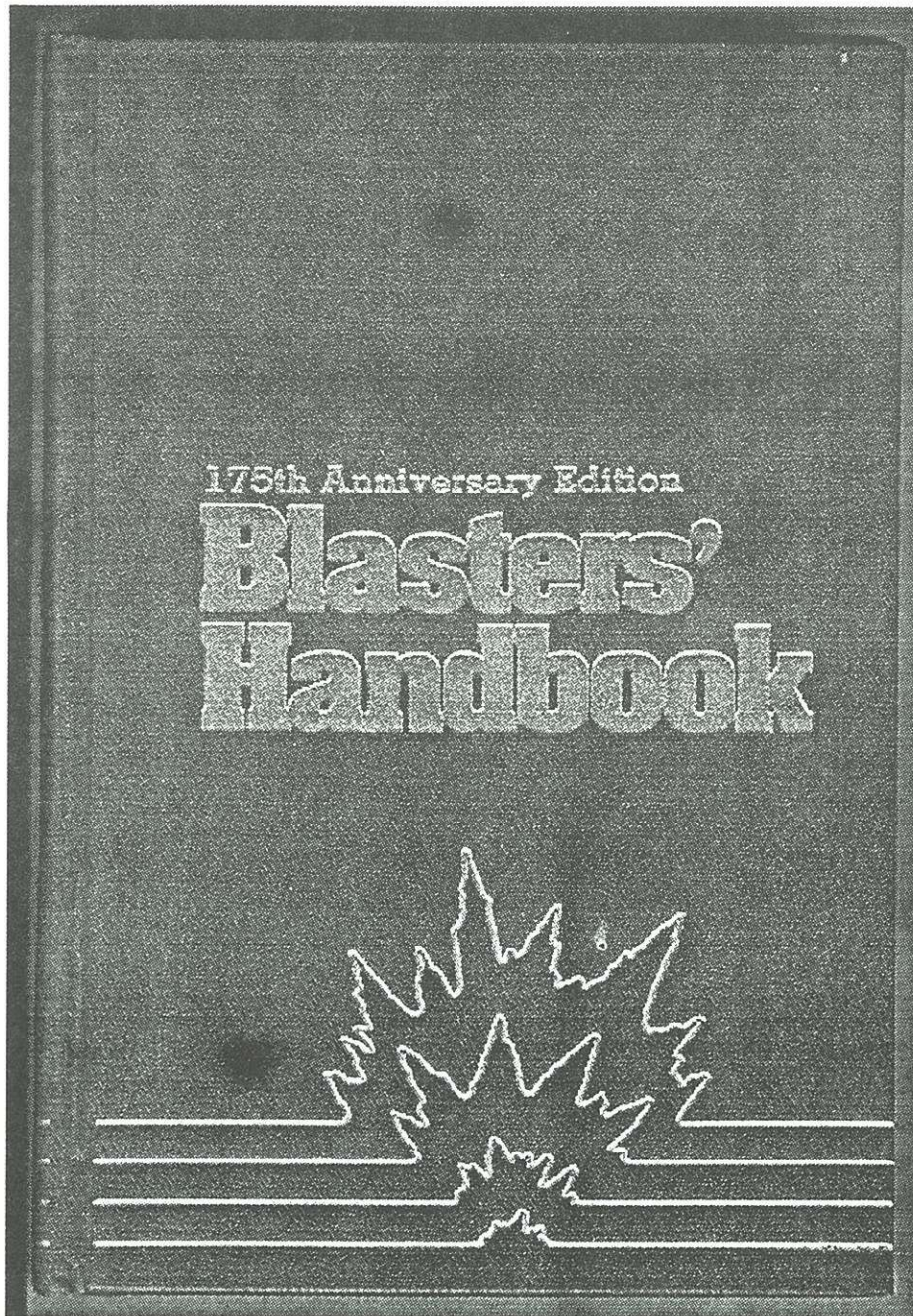


Fig. 15.—The cap crimpers are necessary for attaching blasting caps to fuse. They are also useful for making holes in cartridges of high explosives when making primers. The one shown at the right is the No. 1 type. The No. 2 type has a fuse cutter.

3rd edition: crimpers.



16th edition cover

The Canadian Industries Limited company also published their own Blasters' Handbook. This Canadian version was printed from about 1946 until 1977 in 6 editions and showcased the CIL product line. CIL Blasters' Handbooks seem to be less popular than the DuPont equivalent and when located can usually be purchased for about half the price of a DuPont. The quality of the book is good and perhaps doesn't deserve the lack of respect. Any collector of Canadian minerals should have a CIL Handbook to display with them.

We know of additional publications by DuPont and Hercules plus other blasting companies such as Giant and Atlas but they are too numerous to mention here. Notably absent are publications from Trojan and Gold Medal. Some are included in Table 1 but there are undoubtedly other books that assisted miners with their blasting chores and a comprehensive listing would be useful. The authors would like to hear about related publications that may fill in the picture.

Finding DuPont Blasters' Handbooks

Table 1 summarizes our best information available about Blasters' Handbooks and contains a few other selected blasting publications. The authors have seen all but a few of these books. How hard are they to collect? It may be relatively easy to find Handbooks if you have the time and stamina to visit the hundreds of used bookstores and antique stores in many cities. Most

bookstores will have Handbooks located in their "Engineering" or "Science" section. More often than not, they don't have anything of the sort and you just invested your time for nothing. You could let your fingers do the walking but you run the considerable risk of talking to a hired hand who doesn't have a clue how to help you, although owners of shops we have spoken with are both knowledgeable and helpful. Once in a while a Handbook will be found through a walk-in effort making that days hunt worthwhile. There are dealers who will do searches for you through a computerized database. The bad news is that many charge a nominal fee even if nothing is found and, their list changes daily (even hourly). The good news is that Handbooks found in this way tend to be affordable with most less than \$50 although \$70 or higher is becoming more prevalent.

The older the book, the rarer it tends to be and the higher the price it will command. Handbook availability for the four editions (6th -9th) published during the Great Depression (1930-1938) tends to be a bit lower. This period saw fewer investments in mining activities and fewer Handbooks have surfaced from this vintage. Of these, the 6th edition is the easiest to find. The 10th through 12th editions (1939-1949) get easier to find and lead up to a "golden age" of mining in the 1950's. Mining activity in the US seemed to hit a peak in the 1950's (uranium boom, heavier machinery, better engineering, higher metal demand, etc.) and quite a few 13th and 14th edition Handbooks were printed to meet the demand. These are the most common Handbooks to be found. The chart (Figure 1) represents our perception of rarity based on personal experience in obtaining Handbooks and is not grounded in scientific data such as quantities of books printed. The 1960's and 70's saw a decline in mining or other activities where small operators would need a handbook to use explosives. By then, terrorism became chic and it became increasingly difficult for individual non-professionals to obtain explosives. Hence, the availability of the 15th edition and the 1977 16th edition is significantly less. The value of a Blasters' Handbook, as with any other collectible, is what someone is willing to pay. Some would gladly pay a couple hundred dollars for one that is hard to locate but \$100 or less should be the norm.

The Handbooks and publications prior to the 5th edition in 1928 are the most difficult to find overall. Perhaps not many survived because the information in them became obsolete and newer, better books replaced them. How many of you still have a business text or geography book in your library from 30 years ago? Same reasoning applies here. Few people would have considered the historical significance of books about explosives before discarding their dated copies. Also, houses were smaller back then and storing unused items were a luxury that few could afford. These early editions really provide some interesting details of explosives usage and can be a big help to place an approximate date on some blasting artifacts.

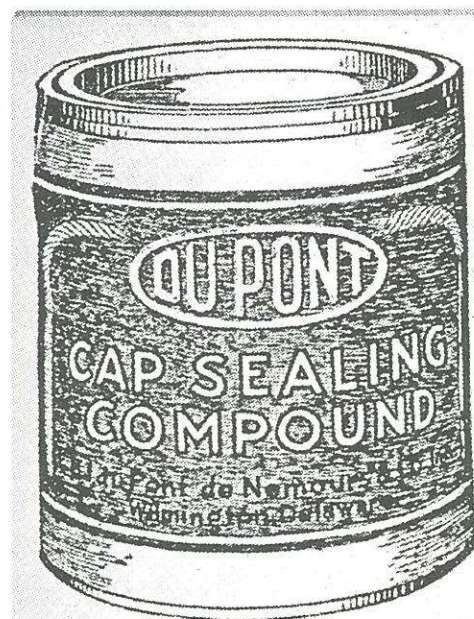


Fig. 17.—Du Pont Cap Sealing Compound.

From 4th edition. An ad for their own cap sealer.

Special Covers, Features, and Trivia

Here are some "little interesting, but known facts".

The 3rd edition is the only one that has a cover image showing a case of powder, caps, fuse, and a blasting machine (see page 12). Two copies of a fancy, presentation-quality 3rd edition cover have surfaced that are embossed such that the image stands up off the cover.

The 16th edition is the only one that has thumb indents to access subjects quickly and the only one that has a dust jacket. (see page 16)

DuPont produced Handbooks with two different cover materials, Fabrikoid and hardboard, until 1949. Fabrikoid was a premium DuPont product that was similar to leather and was sold for buggy carriage covers. The hardboard cover was a working-mans' copy while the Fabrikoid was used for upscale, deluxe copies for editions one through twelve. Fabrikoid covers seem to be rarer in the older editions.

After the 12th edition in 1949, the Handbooks became a bit larger in size (1.25" wider and 1" taller) and came with only the nicer cover (either Fabrikoid or other modern materials) probably because the previous cost difference became insignificant.

The 14th edition was revised in 1956, 1957, and 1963. Oddly, the 1967, 1968, and 1969 revisions of the 15th edition mention all the earlier revision dates except the one in 1963. Was the 1963 revision too insignificant to cite or simply forgotten? Of the numerous 14th editions around, the 1963 revision seems to be the hardest to find.

One of the founders of the DuPont empire, Lammont DuPont, was killed in a nitro explosion March 29, 1884.

Hercules and Atlas Powder companies evolved as the result of a government anti-trust lawsuit and were split off from DuPont as separate companies in 1913 and 1912 respectively.

The Ensign-Bickford Company has been a manufacturer of blasting supplies since 1836 and continues to do so to this day, yet they have produced few historical publications about their products. At least, we don't know of many.

The Hagley Museum in Wilmington, Delaware has a great deal of information about the big three powder companies and one or more complete sets of Blasters' Handbooks in their reference library.

GREAT NEWS! The Blasters' Handbook, 17th Edition, is being published by the International Society of Explosives Engineers and edited by Bob Hopler, a long time explosives historian and engineer. The ISEE acquired the rights to the "Blasters' Handbook" title from DuPont. The revised edition should have been out in December 1997 at a list price of \$35.00. The ISBN is 9992662123 to help you locate it.

Conclusion

Like gold, Blasters' Handbooks are where you find them. We know of 2 or 3 complete sets of Handbooks from 1st to 16th and several more that lack just a few editions. Some collect only the earliest editions. Some collect the two or three revisions of the 13th, 14th, and 15th editions as if they were separate editions and some do not. Some collect Handbooks with different cover materials. However, everyone collects the sense of risk and expectation that drove miners to earn their living in this way. "Just one more shot and the Glory Hole will surely be exposed!"

Go forth and search! Just don't forget to put the apostrophe in the right place.

References

"History of the Explosives Industry in America" 1927, by Arthur Pine Van Gelder

Leo Stambaugh (verbal communication, 10/31/97)

Bob Schroth (verbal communication, 1997)

The DU PONT COMPANY, the oldest and largest manufacturer in the business in the United States, manufactures the following standard brands of "HIGH EXPLOSIVES."

Atlas Powder,	Repauno Gelatine,
Hercules Powder,	Hercules Gelatine,
†Giant Powder,	†Giant Gelatine,
Red Cross Dynamite,	Forcite,
Judson R. R. P.,	Nyalite,

From 1908 edition, this shows the brands Dupont sold prior to the antitrust breakup in which several brands became separate companies.