



The American blend includes three different types of tobacco with varying nicotine content. Virginia tobacco, also known as bright tobacco, has a moderate amount of nicotine relative to burley and oriental tobacco which are used in the American blend.

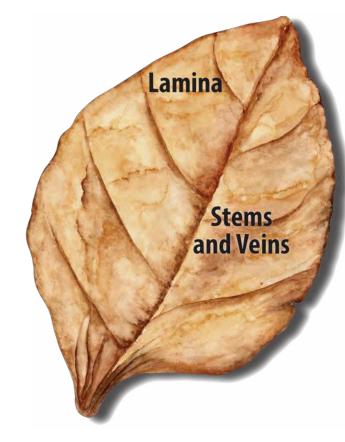
The American Blend

- Virginia tobacco is flue cured. Flue curing involves the use of heat which turns the green leaves to a bright (hence the name) golden brown color.
- Burley tobacco has a higher amount of nicotine, but can be hard to inhale unless mixed with other tobaccos.
 Burley tobacco is typically air cured.
- Oriental tobacco also referred to as Turkish tobacco is low in nicotine content and is added to the American blend because of its flavor characteristics. Oriental tobacco is

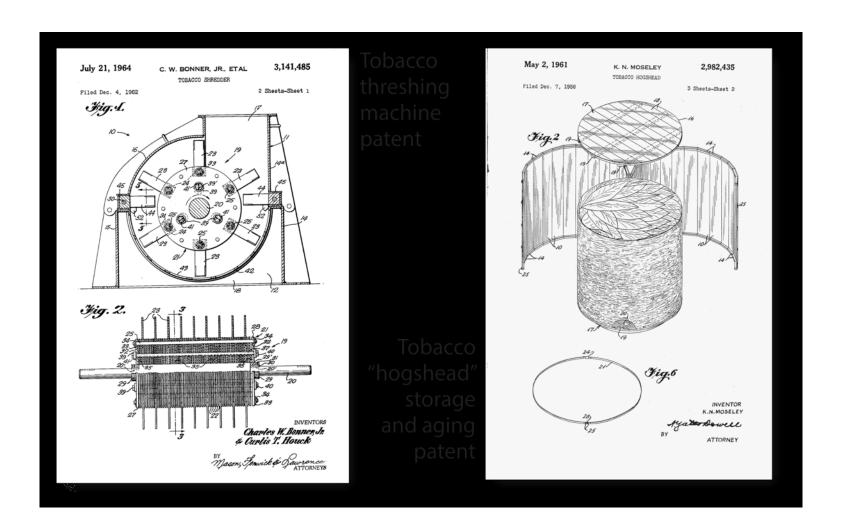


Threshing and Aging

After curing, the dried tobacco leaves are sent to the threshing processing plant also referred to as the stemmery, where the ribs and veins from the leaf are separated from the leaf or lamina. The stems are used in the manufacturing of reconstituted tobacco sheet. Sugar and other additives are often added to the lamina, which is packed into bales, called hogsheads, for aging. The highly controlled aging process lasts for several months to enhance smoking characteristics before the material is processed into cigarettes. The process controls for pests as well as heat and moisture to prevent mold.



Threshing and Aging



Cigarette Automation

Early Cigarette Production

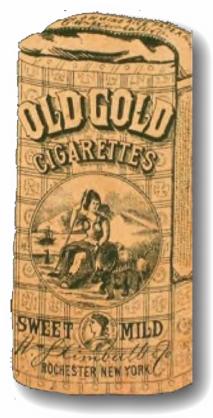
The first mention of cigarettes in the United States was around 1863. Early cigarettes were typically made of a single blend of oriental tobacco with sugar and additives to retain moisture for hand rolling. In the mid-nineteenth century tobacco companies began to establish cigarette factories employing mostly immigrant woman at low wages to hand roll cigarettes. A fast roller could make up to 2,000 cigarettes a day or about 4 cigarettes per minute.



By the 1870s hundreds of hand rolled cigarette makers had opened shop along the eastern seaboard including plants in Durham, North Carolina, Richmond, Virginia, Baltimore, Maryland, New York City and Rochester, New York.

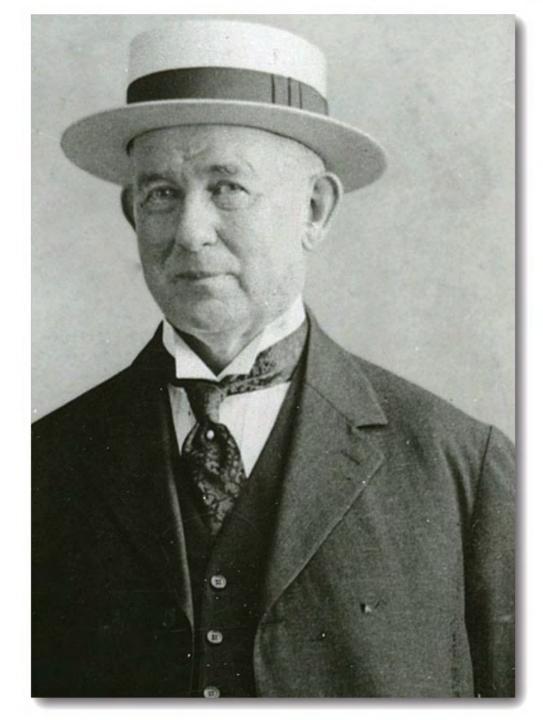


Until the mid-1880s cigarettes were sold in paper-wrapped bundles. Old Gold, by the Peerless Co., Rochester,



1876, James Buchanan Duke "Duke of Durham"

James Buchanan "Buck" Duke grew up in the family business, Washington Duke, Sons & Co. Tobacco. As cigarettes became more and more popular Duke hired 125 experienced hand-rollers and a factory manager from New York. By 1883 the workers could roll up to 250,000 cigarettes a day.



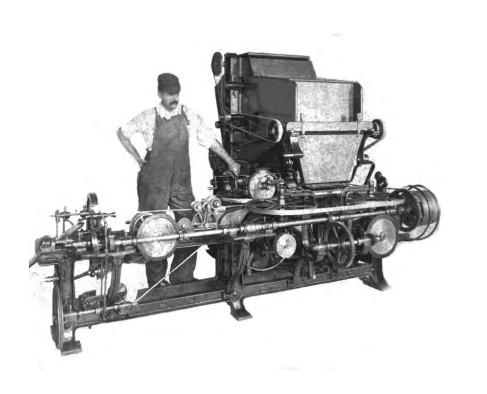
1850s First Cigarette Factories

In 1850 Baron Josef Huppmann established the Ferme cigarette factory in St. Petersburg, Russia. Subsequently, in 1872, he opened another factory in Dresden, Germany. In 1856 Robert Gloag opened the first cigarette factory in London selling a brand called Sweet Threes. A few years later, another Londoner, Philip Morris, began hand-making custom cigarettes and sold them to the carriage trade. In 1868 the Bedrossian Brothers opened a cigarette factory in New York City. Their brands such as Non Plus Ultra, Petite Canons, No Name 10s, and Neapolitans, were made from blended Virginia and oriental tobaccos.



Robert Gloag

1880 - Cigarette Machine



In 1880, the Allen and Ginter Tobacco Company offered a \$75,000 prize for the invention of a machine capable of automating cigarette production. A young inventor James Bonsack won the contest by inventing a machine that could produce 120,000 cigarettes in 10 hours or about 200 per minute, 50x faster than hand rolling.

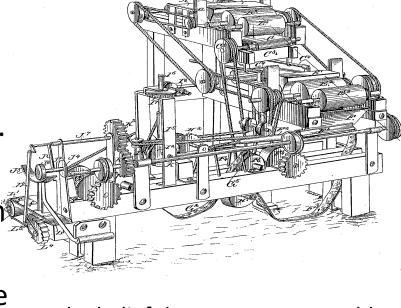
The machines broke down often which discouraged companies from buying them.

1884 Duke's Deal and the American Tobacco Company

In 1884, the Duke Company took a chance on the imperfect Bonsack machine. They leased and installed two of the machines in their Durham factory.

The Bonsack Machine Company sent a mechanic, William T. O'Brien, to Durham to maintain and refine the apparatus.

O'Brien and James B. Duke improved the machinery to such a point that the cost to make a cigarette was 25% percent below the competition.



The belief that consumers would continue to prefer hand-rolled cigarettes added to the stigma against the precision uniformity of machine-rolled smokes. Most major cigarette makers rejected the Bonsack machine almost immediately.

An American Tobacco Monopoly

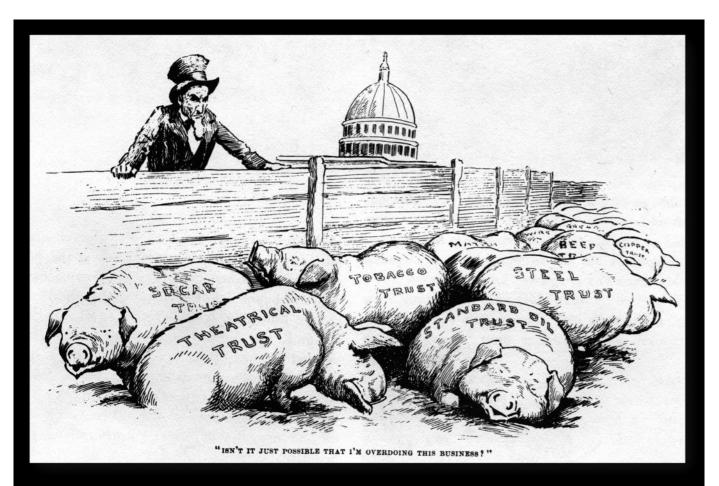
- 1890s -1911 A Duke Monopoly American Tobacco Company
- With automation the Duke company grew rapidly absorbing four rival companies: W. S. Kimball, Allen & Ginter, Kinney Bros. and Goodwin.
- Within two decades, under the umbrella of his American Tobacco Company, Duke-led corporations controlled almost four-fifths of all tobacco product market shares in cigarettes, plug tobacco, smoking tobacco, and snuff produced in the United States.
- The American Tobacco Company became one of the first giant holding companies in American history. With the Sherman Anti-Trust Act, American Tobacco would catch the eye of government regulators.





American Tobacco - Anti-Trust

1908 American Tobacco - Anti-Trust: The Department of Justice filed suit against American Tobacco for violations of the Sherman Anti-Trust Act. In 1911 American was found in violation of the Act.



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Are Found Guilty.

tates Attorney Declare: Lawyer Tried to Reach Him and Juror



Tribune.

STEEL TRUST MEETS CUTS AMERICAN TOBACCO COMPANY FOUND OF SHERMAN LAW UNDER LIBERAL INTERPRETATION OF REPUBLIC COMPANY

With its Allies Will Slash Prices of All Competitive Products

MORNE BACKS UP CHARGES

SOME OF THE PROMINENT DIRECTORS OF THE AMERICAN TOBACCO COMPANY



NEW YORK TRIBUNE

Scaffold Had Collapsed Above Them.

TEN WORKMEN UNINJURED

United States Supreme Court Declares It a Monopoly and Combination in Restraint of Trade.

DISSOLUTION OF TRUST ORDERED

Chief Justice White, Giving the Opinion, Reaffirms the "Rule of Reason" Applied to Standard Oil-Harlan Dissents Again - Case Sent Back to Circuit Court.

"Mikado" Meets Death in

WHOLE NUMBER 18,773.

TOBACCO TRUST'S Plan made public

Parent Company Will Be Split Into Three Corporations.

"MELGA" CUT, ING PROVIDED FOR

Surplus of \$70,000,000 Which May Be Distributed as Dividends Among Common Stockholders of American Tobacco Company—Disintegration Scheme.

(Special to The Times-Dispatch.)
New York, October 11.—Official announcement was made from the head-quarters of the Tobacco Trust that its plan for dissolution and reorganization under the decree of the Supreme Court would be submitted Monday morning to the United States Circuit Court for approval. This does not necessarily mean that the plan will be approved by the Circuit Court. Even if it is approved the government, through the Department of Justice, has the right to appeal.

Then, again, the 600,000 independent tobacco dealers in the United States have intervened by petition to see to it that the dissolution proposed is actual and that there is nothing lurking in the plan that would give the same men and interests continued control of the tobacco business under another either.

Louis D. Brandels, of Boston, one of the most successful antitrust lawjers in the United States, has charge of the case for the independents.

The principal feature in the plan is the issuance of new securities by subsidiaries and a "meion" cutting for common stockholders.

The plan provides for the splitting of the American Tobacco Company into three corporations—one to be American Tobacco Company, a new

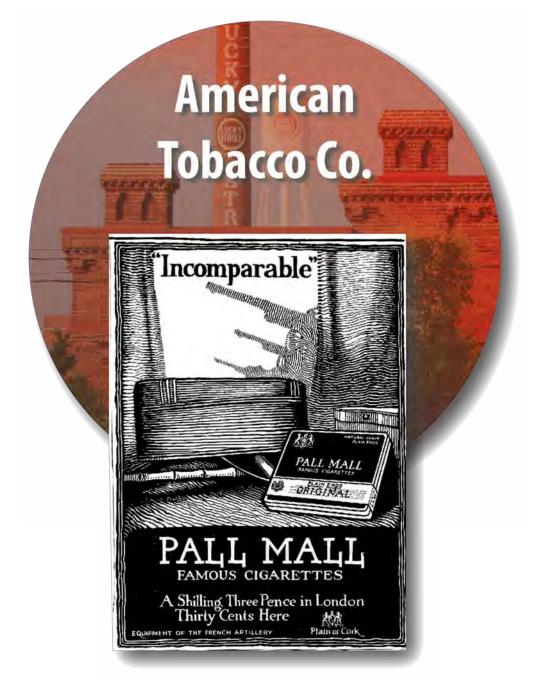
American Tobacco Break-up

1911 American Tobacco Co. Break-up

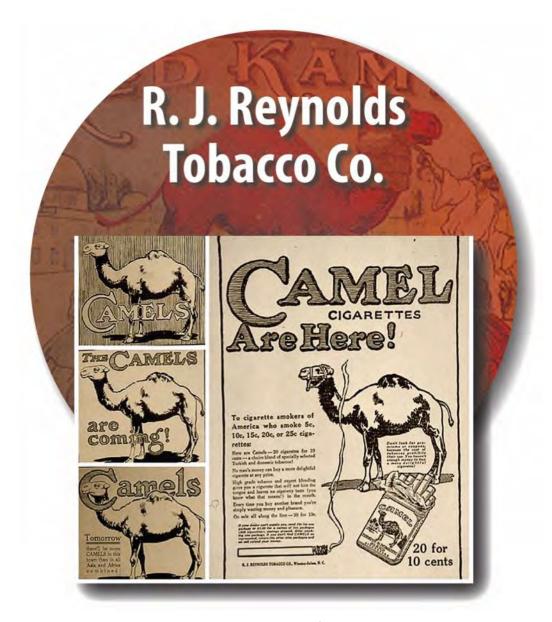
The Supreme Court extended the finding of guilt and remanded the matter to a federal circuit court in New York, with instructions to dissolve the Trust.

Rebirth of Competition

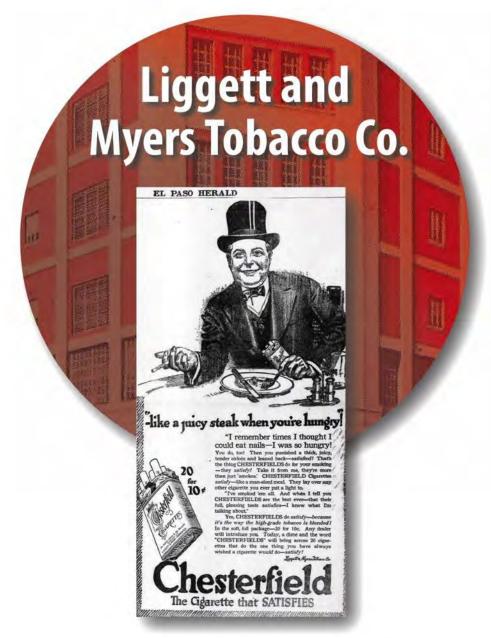
In October of 1911 the American Tobacco Company Trust was dissolved and broken into several competing companies including: American Tobacco Company, Liggett and Myers Tobacco Company, R.J. Reynolds Tobacco Company, and P. Lorillard Company.



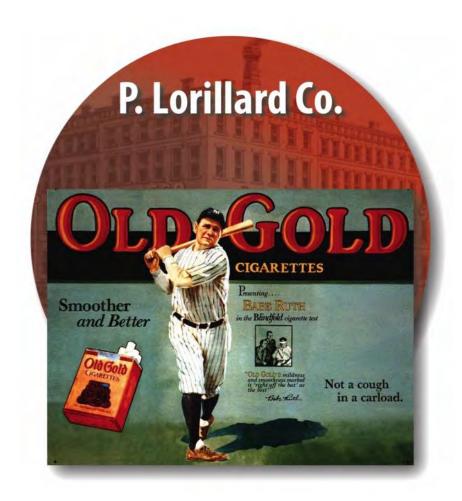
1899 Pall Mall



1913 Camel



1896 Chesterfield



1884 - Old Gold 1926 Lorillard recreated the Old Gold brand with the slogan"Not a cough in a carload"



1902 Philip Morris Comes to American

In 1902 Philip Morris, opened his first shop in the United States.

A transplant from London he sold, among other brands, the Marlboro cigarette for ladies.

Philip Morris was a minor cigarette industry player in those days, but is the largest cigarette manufacturer in America today.



Brown & Williamson

In 1984, George Brown and Robert Williamson founded the Brown & Williamson (B&W) Company which specialized in the sale of chewing and pipe tobacco. In 1927, British-American Tobacco Industries PLC, purchased B&W and relocated the company to Louisville, Kentucky.

In 2004, B&W was acquired by R..J. Reynolds.

Anti-Trust Concerns

Even though cigarette companies claim to be fierce competitors, there have been instances when they have worked together illegally to protect their profits. In 1946, the Supreme Court upheld a conviction for price fixing by cigarette makers. In 1953, cigarette makers developed and executed an over four decades long public relations effort to protect cigarette sales threatened by mounting concerns about the health risks of smoking. In 2006 a federal judge ruled that the tobacco companies actions had violated the Racketeer Influenced and Corrupt Organizations Act.





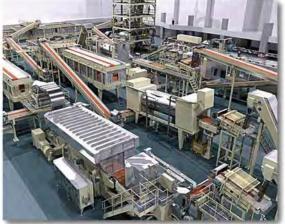




The Engineered Cigarette

Cigarette companies continue to perfect their ability to make more cigarettes with greater precision and at lower prices. There has been no end to improvements in the engineering and efficiency of modern cigarette making.





The Modern Cigarette: Engineered for Addiction



Blending to Optimize Nicotine

Tobacco companies have developed sophisticated R&D programs to maximize nicotine delivery focusing on tobacco blending, the use of additives, and engineering.

Taste and Character of Cigarette Tobscen half a new Ar

A LIGHT SMOKE

1935 Early Nicotine Manipulation

lending for Nicotine Delivery

A 1935 American Tobacco Company document noted that the "removal of nicotine produces an emasculated cigarette, some of those very qualities which give a cigarette character and appeal."

1935, American Tobacco Company



"Cigarette smoke should contain as little as possible (preferably at the zero level) of the polycyclic hydrocarbons, should possess satisfactory flavor to please the consumer, and should contain sufficient nicotine to supply the necessary requirements of the smoker with respect to this compound (nicotine)."

> 1959, Dr. Alan Rodgman, Analytics Chemist, R.J. Reynolds Tobacco Company

The nicotine delivery of a cigarette is carefully engineered into the product "we can regulate fairly precisely the nicotine and sugar levels (in tobacco) to almost any desired level management might require."

1963, R.B. Griffith, Brown & Williamson Director of Research

"In a sense, the tobacco industry may be thought of as being a specialized, highly ritualized, and stylized segment of the pharmaceutical industry. Tobacco p contain and deliver nicotine, a potent drug with a variety of physiological effects."

1972, Claude Teague, Assistant Dire R.J. Reynolds To

"...without the chemical compound (nicotine) the cigarette market would collapse, Phillip Morris would collapse, and we'd all lose our jobs and our consulting fees."

> 1977, William Dunn, Director Smoker Psychology Program, Philip Morris

Industry Denials



While publicly downplaying the role of nicotine in cigarette design, inside the companies the role of nicotine in cigarette design was front and center.

Dr. T.	. S. Osd	ene	The A	Profit in	Nov	ember 3, 1977
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Blending for Nicotine Delivery

Improving the Taste and Character of Cigarette Tobacco

with a view to
removing irritants and producing

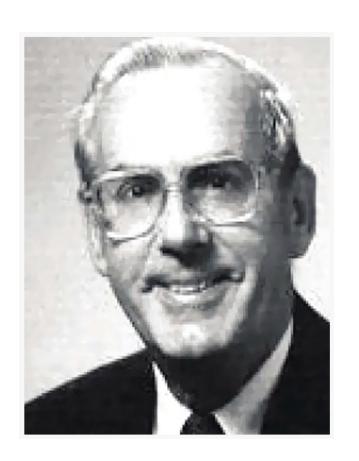
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Early Nicotine Manipulation

1935, American Tobacco Company

A CHAPTER IN LABORATORY RESEARCH



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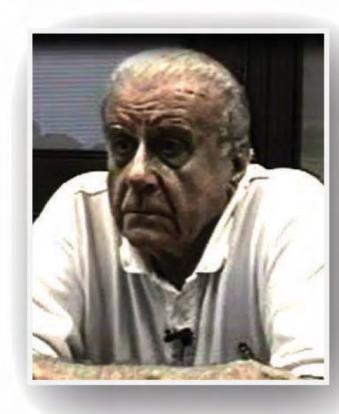
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"...a cigarette with substantially lowered nicotine could not deliver the smoking satisfaction to sustain consumer purchase."

1980, Richard Smith, Group Brand Manager, New Products, Lorillard Tobacco Company

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While publicly downplaying the role of nicotine in cigarette design, inside the companies the role of nicotine in cigarette design was front and center.



Dr. T. S. Osdene

November 3, 1977

W. L. Dunn

Proposed Study by Levy

I have given Carolyn approval to proceed with this study. If she is able to demonstrate, as she anticipates, no withdrawal effects of nicotine, we will want to pursue this avenue with some vigor. If, however, the results with nicotine are similar to those gotten with morphine and caffein, we will want to bury it. Accordingly, there are only two copies of this memo, the one attached and the original which I have.

WLD:jh



Man-Made Tobacco

Reconstituted (man-made) tobacco, also known as homogenized tobacco, is made from pieces of tobacco leaf such as dust, stems and by-products. These are finely ground, processed with liquids and rolled into a flat sheet of uniform thickness and quality. In the reconstitution process, nicotine is extracted and then reapplied to the sheet along with other additives so as to control the amount of nicotine in the overall blend. Reconstituted leaf was first proposed as a cigar wrap and for packaging for cigarettes in the mid-1800s. Reconstituted tobacco was first introduced into commercial cigarette production in the United States in the 1950s.



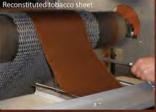
and additives













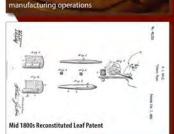


Precise Control

The Kimberly-Clark tobacco reconstitution process used by LTR INDUSTRIES permits adjustments of nicotine to your exact requirements."

Reconstituted tobacco producer, LTR Industries, a subsidiary of Kimberly Clark.









Puffed Tobacco

When chemicals like carbon dioxide or freon are applied to tobacco pieces the tobacco expands.

The expanded, puffed pieces are largely empty space and are hence less dense yielding lower machine-measured evels of tar and nicotine.

Tobacco pre and post "Dry Ice Expanded Tobacco"

Genetically Modified and Bio-Engineered Tobacco

MORE OR LESS NICOTINE

PRODUCTION & CONTRACT OF PRINCIPLES

In the 1980s cigarette manufacturers began investigating genetic bio-engineering of tobacco plants as a way to control nicotine delivery.

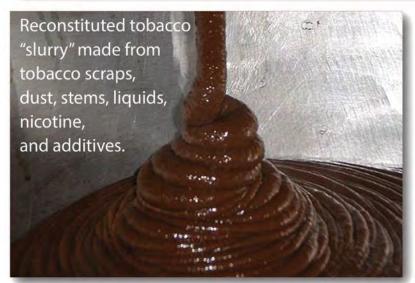
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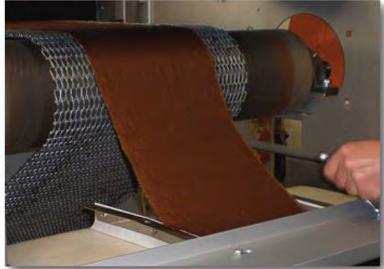
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MORE OR LESS NICOTINE

Nicotine levels are becoming a growing concern to the designers of modern cigarities, particularly those with lower 'tar' deliveries. The Kimberly-Clark tobacco reconstitution process used by LTR INDUSTRIES permits adjustments of nicotine to your exact requirements. These adjustments will not affect the other important properties of customized reconstituted tobacco produced at LTR INDUSTRIES: low tar delivery, high filling power, high yeld and the flexbility to convey organoleptic modifications. We can help you control your tobacco.





Get more tobacco from all your tobacco

LTR INDUSTRIES, a subsidiary in France of

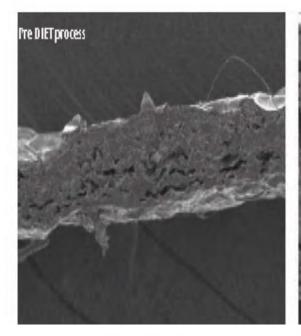
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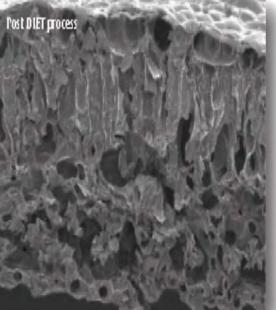
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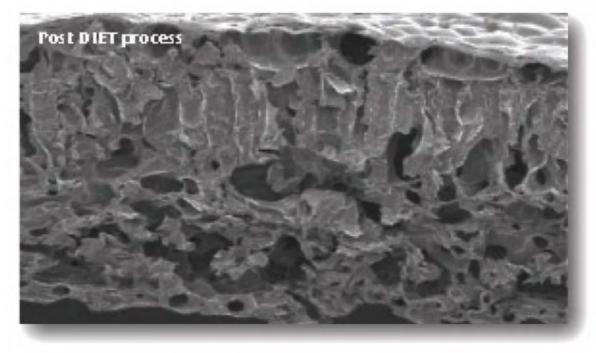
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Source: http://industrydocuments.library.ucsf.edu/tobacco/docs/rnxm0129







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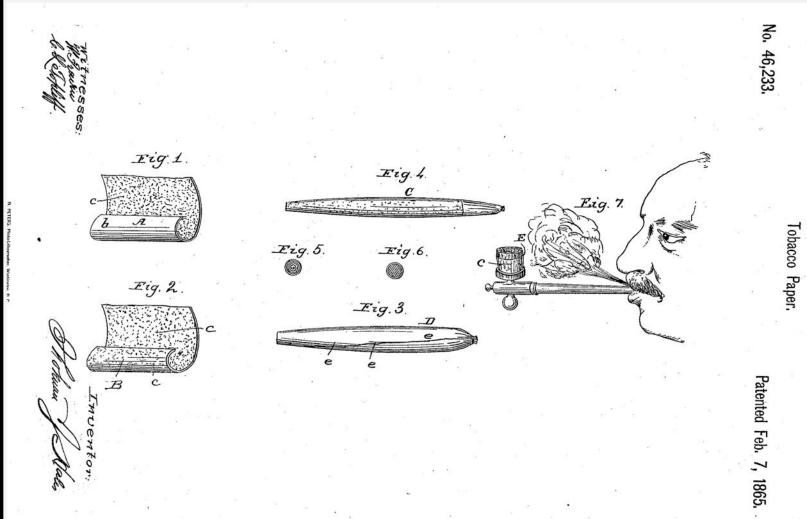
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Genetically Modified and Rin-Fngingered Tobacco



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Mid 1800s Reconstituted Leaf Patent



H. J. HA



Flavors



FINAL SURFACE OF THE STATE OF T

Menthol Cigarettes

Menthol cigarettes were born when asthma sufferer Lloyd "Spud" Hughes, who inhaled menthol crystal vapors to help relieve asthma symptoms, hid his stash of cigarettes in a tin of the crystals. Hughes discovers that menthol flavoring is absorbed into the tobacco and now tastes "cool."

Menthol is common as a flavoring additive in many cigarette brands, helping to mask harsher smoke. About 30% of the 44 million smokers in the U.S. identify menthols as their preferred cigarette, and around 57% of the young smoked menthols.

Overall, more than 88 percent of African American smokers (ages 12+) smoke menthol cigarettes, compared to 26 percent of white smokers. Among middle and high school students, 70.5% of African American smokers use menthol cigarettes, compared to 51.4% of white smokers.





In the early 2000s, heavily flavored cigarettes, branded by their flavors, like vanilla, orange, chocolate, cherry, coffee, Kahlua, berry, and others, became popular and especially attractive to youth. The 2009 Family Smoking Prevention and Tobacco Control Act prohibited "characterizing flavors" (e.g., candy, fruit, and chocolate) other than tobacco and menthol in cigarettes. Flavor branding is not restricted for other tobacco products like little cigars and oral tobacco.

1931 KOOL

Brown and Williamson joins the menthol cigarette market with KOOL.



1956 Salem

R.J. Reynolds joins the menthol market with Salem, "Springtime Fresh."



1956 Newport

Lorillard joined the menthol market with Newport cigarettes



In 1970, Lorillard introduces the "Alive with Pleasure" campaign and begins heavily marketing Newport cigarettes in urban areas. Newport market share grows among African American teenagers making it among the fastest selling brands in the market.

2004 KOOL Mixx



2007 Camel Crush



Camel Crush allows smokers to switch between regular and menthol flavored smoke. Pinching the filter breaks a flavor bead and releases a menthol additive.





Menthol Cigarettes

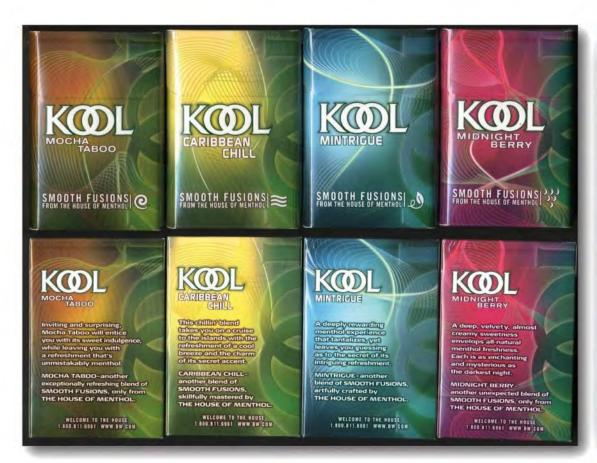
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Additives for Nicotine Manipulation and Manufacturing

Hundreds of additives are used in making cigarettes. On average they make up about 10% of the weight of the rod. Additives include seam adhesives, glues, branding inks, paper, ash modifiers to control the ash from the burning cigarette rod, humectants to prevent the tobacco from drying out, pH modifiers to alter nicotine absorption and affect the chemosensory properties of the smoke.

Additives to Control Nicotine Delivery

It was found that adding ammonia and other chemicals to tobacco could alter smoke pH and increase the amount of "free nicotine" available in the smoke. Free nicotine makes it easier for smokers to inhale smoke deep into their airways and is more rapidly absorbed into the blood stream

Ammonia

Application

Applied to paper

Processing

Residuals

Casing (applied to tobacco)

Casing (applied to tobacco)

Casing (applied to tobacco)

Top dressing (applied to tobacco, filter and packaging)

May be added to tobacco or

To filter; may also be applied

filter or used in processing

Top dressing (applied to

tobacco or filter)

Ammonium hydroxide Processing

Citrates and

Diammonium

'Natural and artificial

Organic acids

Propylene glycol

Pesticides

Sugars

Glycerine Liquorice

Сосоа

Use

Modifies smoke pH and affects

Modify burn rate or puff count

chemosensory properties of

Humectant (moisture control

chemosensory properties of

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Flavor and affect chemosensory

Growing and harvesting oftobacco

properties of smoke

Humectant

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properties of smoke Modify smoke pH and affect

Flavors and affects

Modifies smoke pH

Flavors and affects

chemosensory properties of

During the 1960s cigarette manufacturers such as Philip Morris began adding ammonia compounds to their tobacco blends with an observed positive impact on brand sales for Marlboro and other brands.

Manipulation of Smoke pH

A 1973 R.J. Reynolds document describes various methods that could be used to increase smoke pH

- · Increasing the amount of (strong) burley in the blend.
- · Reduction of casing sugar used on the burley and/or blend
- · Removal of acids from the blend
- Special filter systems to remove acids from or add alkaline materials to the smoke, · Use of high air dilution filter systems.

CHART 1 PH CONCEPT AND SCALE

DEFINITION: WHILE A MEANS FOR EXPRESSING, ON A 0-14 SCALE, THE DESIRE OF ACIDITY OR ALKALISHTY OF A SYSTEM. LYE (STRONGLY ALEALINE) 13 SULDER'S LINE 12 AMMOUTA HILE OF WAGNESIA PURE WATER - HINAN TALLES CIGARATTÉ SROKE

LENCE JUICE

BATTERY ACID (STRONGLY ACIDIC)

Scientist, Claude Teague charted



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Additive	Application	Use
Ammonium hydroxide	Processing	Modifies smoke pH and affects chemosensory properties of smoke
Citrates and phosphates	Applied to paper	Modify burn rate or puff count; control ash
Cocoa	Casing (applied to tobacco)	Flavors and affects chemosensory properties of smoke
Diammonium phosphate	Processing	Modifies smoke pH
Glycerine	Casing (applied to tobacco)	Humectant (moisture control)
Liquorice	Casing (applied to tobacco)	Flavors and affects chemosensory properties of smoke
Menthol	Top dressing (applied to tobacco, filter and packaging)	Flavors and affects chemosensory properties of smoke - cools it.
"Natural and artificial flavors"	May be added to tobacco or filter or used in processing	Flavor and affect sensory properties of smoke
Organic acids	To filter; may also be applied to tobacco	Modify smoke pH and affect chemosensory properties of smoke
Pesticides	Residuals	Growing and harvesting of tobacco
Propylene glycol	Top dressing (applied to tobacco or filter)	Humectant
Sugars	Casing (applied to tobacco)	Flavor and affect chemosensory properties of smoke

List of common additives used cigarettes

Additives to Control Nicotine Delivery

 Cigarette manufacturers studied the effects of adding chemicals to influence nicotine delivery. It was found that adding ammonia and other chemicals to tobacco could alter smoke pH and increase the amount of "free nicotine" available in the smoke. Free nicotine makes it easier for smokers to inhale smoke deep into their airways and is more rapidly absorbed into the blood stream.

Ammonia

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Manipulation of Smoke pH

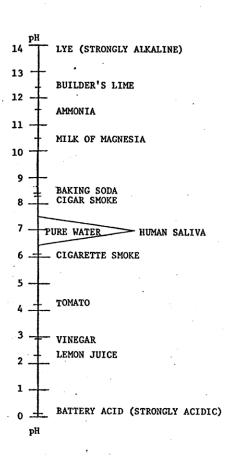
- Manipulating smoke pH became a major focus of product design by all cigarette manufacturers.
- A 1973 R.J. Reynolds document describes various methods that could be used to increase smoke pH and/or nicotine "kick." These included:
- Increasing the amount of (strong) burley in the blend,
- Reduction of casing sugar used on the burley and/or blend
- Use of alkaline additives, usually ammonia compounds in the blend,
- Addition of nicotine to the blend
- Removal of acids from the blend
- Special filter systems to remove acids from or add alkaline materials to the smoke,
- Use of high air dilution filter systems.



CHART I

PH CONCEPT AND SCALE

<u>DEFINITION</u>: ph is a means for expressing, on a 0-14 scale, the degree of acidity or alkalinity of a system.



1972, R.J. Reynolds Research Scientist, Claude Teague charted comparative levels on the pH scale.

As the smoke pH increases above about 6.0, an increasing proportion of the total smoke nicotine occurs in "free" form, which is volatile, rapidly absorbed by the smoker, and believed to be instantly perceived as nicotine "kick."

Encouraging Smoking through Misperceptions of Reduced Risk

In the 1950s scientific evidence implicate cigarette smoking as a cause of cancer a diseases began to mount. Internal busi records from the companies show that scientists accepted this evidence by the 1950s. However, rather than acknowled truth about smoking, cigarette makers of present a unified front denying that smoking to health.

They shifted their marketing budgets to the public that they could smoke withou New filtered and low tar cigarettes were introduced and quickly began to dominion market, even though the companies know their repeated promise to remove anyth harmful in smoke was unachievable.



1961 Reduction of Carcinogens in Smoke

Philip Morris VP, Helmut Wakeham's presentation to the Philip Morris Research and Development Committee.

III. REDUCTION OF CARCINOGENS IN SMOKE

To achieve this objective will require a major research effort, because

L Carcinogens are found in practically every class of compounds in smoke.

This fact prohibits complete solution of the problem by eliminating one or two classes of compounds.

The best we can hope for is to reduce a particularly bad class, i.e., the polynuclear hydrocarbons, or phenois.

- 2. Present technology does not permit selective filtration of particulate smoke.
- 3. Flavor substances and carcinogenic substances come from the same classes, in many instances.
- 4. Many pyrolysis products have multiple precursors in tobacco.

Carcinogens are found in practically every class of compounds in smoke.

The best we can hope for Is to reduce a particularly bad class, i.e., the polynuclear - hydrocarbons, or phenols.

1968 Safe Cigarette and Denial of Current Cigarette Dangers

R. J. Reynolds Tobacco Company Research Director, Murray Senkus, responds to an invitation to join a National Cancer Institute "less hazardous cigarette" working group program by denying the hazards of current cigarettes.

I am agreeable to serving on the informal work group referred to by you and making available my experience and knowledge in research relating to tobacco and smoking if it is clearly understood that I am in no manner accepting the view (1) that present cigarettes are hazardous or (2) that the smoke of such cigarettes causes or contributes to the development of human lung cancer. It is important that this reservation be noted, particularly in light of the unfortunately designated purpose of the group, namely to develop a "less hazardous cigarette". Perhaps a better working arrangement and understanding by all involved could be achieved if the purpose were rephrased in a manner that would not assume the existence of a "hazard" that has not been scientifically established.

1972 If Our Product is Harmful We'll Stop Making It

James Bowling, Vice President of Philip Morris

on flaws in research that purports to show that smoking definitely is dangerous. "If our product is harmful," says James Bowling, vice president of Philip Morris, "we'll stop making it. We now know enough that we can take anything out of our product, but we don't know what ingredients to take out. In 1920 it was accepted as scientific fact that smoking caused TB. It was later found out they had no connection-after some states had even outlawed; smoking. We don't know if smoking is harmful to health, and we think somebody ought to find i













WHY
PARLIAMENTS
VA MOR RECESS IS
SO IMPORTANT
TO YOU

HI-FI Filter Parliament



...the better the taste!





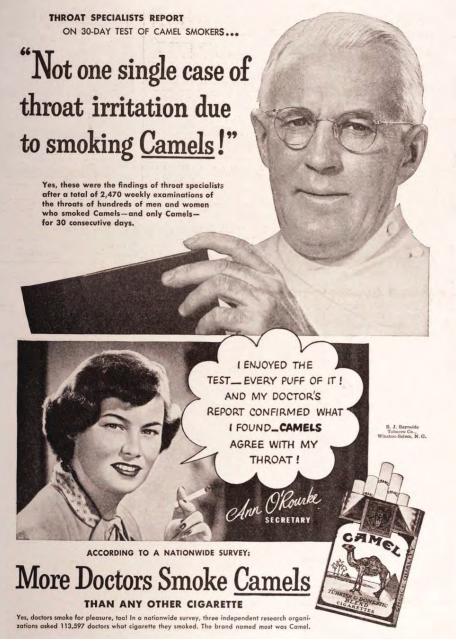




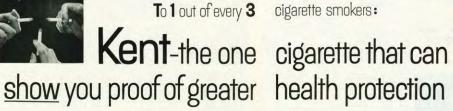


1960 1960

1966 P 75







THE SATURDAY EVENING POS

"Micronite" Filter is the cigarette filter that really works giving true smoking pleasure, yet removing up to 7 times tine and tars than other filter cigarettes.

The pictures shown here are action shots of one of thes



MICRONITE Filter full smoking pleasure...

plus proof of the greatest health protection ever





cigarette smokers:



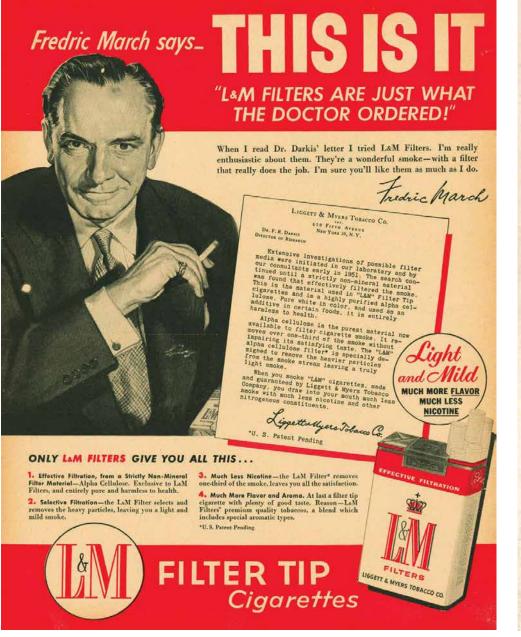




THE SATURDAY EVENING POST



1953

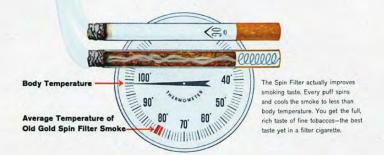




Smoke WINSTON America's best-selling, best-tasting filter cigarette!



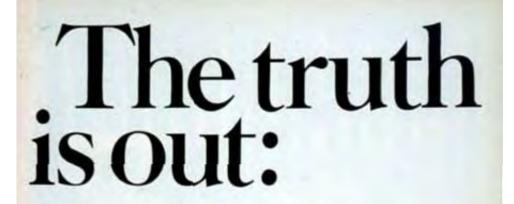
Old Gold's Spin Filter spins and cools the smoke to less than body temperature





and the <u>cooler</u> the smoke ...the <u>better</u> the taste!

1960



The wire services recently released a new report that revealed new TRUE Filter Cigarettes delivered less tar and nicotine than other brands tested...





Twelve Year Effort **Ends With** Unprecedented Flavor In Low Tar Smoke.

New Enriched Flavor'discovery for 9 mg tar MERIT achieves taste of cigarettes having 60% more tar.

MITTEL AND MERITALENTISS.

MERIT

MERIT

The avenues challenge to regardine makers in more source has been been to make a low targeterm, with good time Many have most

Philip Morro are autoreded

It track receive long years The apprents a gailed MERIT is delivers only 9 mg of

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If you wrother - you? I be West-said

Key Flavor Ingentieren Of Totocro Isolated

By mosting certain way flower ingradement education against one ke, may further that deliner texts may one of prospertions to use researchers of Philip Morris lime developed a may reputh estra favor introducio terthout the term fremuse

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Thousands of filter agreeme smakers tested 9 mg, nor-MERTI agents five commer leading line on brands reagong from H mat to 35 mat to

The results were a molasive

Form I the common travel has be more to a membrane materies of all vendors arrest. reported new Enriched Flason MERIT delivered more and

Report, delivered more time. To autolar tests against 11 mg to Fing Inmibal brands Fing on MERIT MEN CHINE performed strongly net delevering avmuch-or may - taste than the lugher to

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New year to got the engineering MERLY Trunchlike on word pleasant words from the

Action Control Street

\$100 for \$250 names or transfer by FC Market. 9-07-

Warning. The Surption Edward Has Distremented That Caperiors Services In Disease out in Four Health





1976

Fact Cigarettes - Lower Carbon Monoxide

In the mid-1970s Brown & Williamson developed Fact, a cigarette that selectively filtered carbon monoxide. But Fact failed in test markets.

B&W rejected an advertising agency campaign proposal to educate the public about the health hazards of carbon monoxide. B&W deemed the campaign "appalling" and decided not to market Fact at all. B&W chose instead to wait "until the problem of gas becomes public knowledge through government investigation or media coverage."

Apparently, B&W was worried that identifying carbon monoxide as a health hazard would constitute an admission that conventional cigarettes were hazardous.

Fact: If you're concerned about smoking, you should know something about gas.

You might not know it, but cigarette smoke is mostly gas—many different kinds. Not just 'tar' and nicotine.

And despite what we tobacco people think, some critics of smoking say it's just as important to

cut down on some of the gases as it is to lower 'tar' and nicotine.

No ordinary cigarette does both. But Fact does.

Fact is the first cigarette with the revolutionary Purite filter. And Fact reduces gas concentrations while it reduces 'tar' and nicotine.

Read the pack. It tells how you get the first low gas, low 'tar' smoke with good, rich taste.

Taste as good as the leading king-size brand.

And that's not fiction. That's a Fact.



Fact is the first cigarette with Purite granules.

The selective filtering agent. Selective.

I hat means it reduces specific gases in smoke that taste bad.
Without removing the element that taste good.

So, for the first time, you get low gas, low "tar," and satisfying taste in one cigarette. Fact: The low gas, low "tar."

Available in regular and menthol.

Fact: The low gas, low 'tar.'

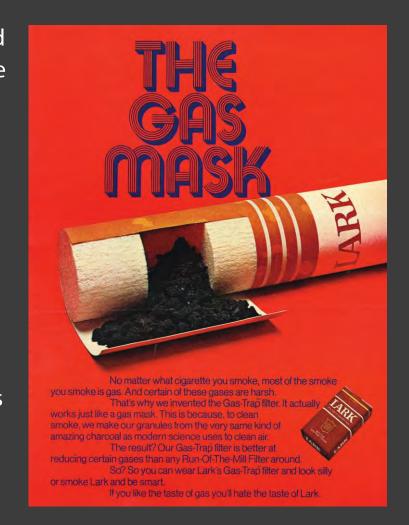
Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

Regular, 14 mg. "tar," 1.0 mg. nicotine; Menthol, 13 mg. "tar," 0.9 mg. nicotine, av. per cigarette, FTC Report Dec. 76

1963 Lark

The 1964 Report to the Surgeon General contained a brief reference to the effects of hydrogen cyanide on the trachea and lungs and the benefits of the Lark's charcoal filter. After the report, Liggett contacted medical doctors to bring this reference to their attention without informing them that the reference was based on their own research that they had provided to the Surgeon General's committee.

Liggett promoted the health benefits of Lark using third party "endorsements" of the charcoal filter. The fact is that the Lark filter did not remove toxins as it reported and its own researchers doubted the health claims made on behalf of Lark.



1970s Liggett & Myers Project XA

In the mid 1970s Liggett & Myers initiated Project XA. The goal was a 'safer' cigarette and L&M discovered that an additive, palladium nitrate (also used in automotive catalytic converters) produced a lower rate of disease in biological tests.

Project XA was discontinued when Philip Morris allegedly threatened to thwart the marketing of any new so-called 'safer' cigarette because such a product posed a United States Patent [19] 4,177,822 [11] Bryant, Jr. et al. Dec. 11, 1979 TOBACCO COMPOSITION [56] References Cited U.S. PATENT DOCUMENTS Inventors: Herman G. Bryant, Jr., Bahama; 3,292,636 12/1966 Mays 131/17 R Vello Norman, Raleigh: Thomas B. Williams, Durham, all of N.C. FOREIGN PATENT DOCUMENTS 841074 7/1960 United Kingdom 131/17 R [73] Assignee: Liggett Group Inc., Durham, N.C. Primary Examiner-Robert W. Michell [21] Appl. No.: 763,267 Assistant Examiner-V. Millin Attorney, Agent, or Firm-Michael L. Hendershot; J. [22] Filed: Jan. 27, 1977 Bowen Ross, Jr. ABSTRACT [57] Related U.S. Application Data A smoking composition comprising tobacco and a catalytic agent for causing a decrease in the yield of polycy-Continuation-in-part of Ser. No. 548,983, Feb. 11, 1975, clic aromatic compounds arising from pyrolytic reacabandoned, which is a continuation of Ser. No. 344,589, Mar. 26, 1973, abandoned. tions of the composition, the agent being selected from the group consisting of finely divided unsupported me-Int. Cl.² A24B 15/02 tallic palladium or palladium salts which are heat de-U.S. Cl. 131/17 R; 131/140 R composable into metallic palladium. 9 Claims, No Drawings

danger to P.M.'s best selling conventional cigarettes. Since the palladium cigarette process was patented the other companies had no way of competing with it.

Should L&M have brought a so-called 'safer' brand to market P.M. was prepared to enforce the ban on cigarette health claims. Liggett concluded that marketing the palladium cigarette would result in lawsuits based on the company's implied admission that their conventional cigarettes contained something hazardous.

Nicotine is Addictive

 The cigarette companies long understood the role of nicotine in cigarette design and smoking addiction. When the 1988 Surgeon General's Report declared that people smoked due to nicotine addiction, public attitudes about smoking began to shift. While attacking the Surgeon General's Report on nicotine addiction as irresponsible and unscientific, cigarette manufacturers began shifting their R&D efforts to develop alternatives to conventional cigarettes including those with lower levels of nicotine.

- Very Low Nicotine Cigarettes
- In 1989 Philip Morris conducted a small test marketing study of its very low nicotine cigarette (Next Denic) made by using a new processing method to remove most of the nicotine from tobacco. The product was pulled from the test markets after a few months, even though the product generated substantial consumer trial.
- In 2003, Vector Tobacco (formerly Liggett & Meyers) introduced a very low nicotine cigarette (Quest 3) manufactured using its newly patented genetically modified tobacco.
- In 2015, 22nd Century Group, Inc. introduced Magic cigarettes using genetically modified tobaccos to create a very low nicotine delivery product.







Filters

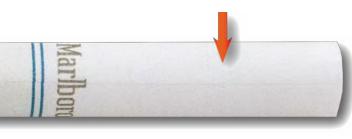


Most consumers perceive filtered cigarettes as safer than non-filtered cigarettes. Filters dominated the market by the 1960s and filter cigarettes' market share climbed from 0.5% in 1950 to more than 98% today.

Filter manipulation has been instrumental creating lights and ultra light cigarettes.

Filter Ventilation Holes

Filter ventilation holes that are perforated into the tipping paper vary in quantity and size. The barely visible ventilation holes are typically not noticed by smokers but can impact how deeply and easily smokers inhale cigarette smoke.





Several Marlboro line extensions show different ventilation hole configurations.

1976 Filtration: More Nicotine and Tar

"In most cases, however, the smoker of a filter cigarette was getting as much or more nicotine and tar as he would have gotten from a regular cigarette. He had abandoned the regular cigarette, however, on the grounds of reduced risk to health."

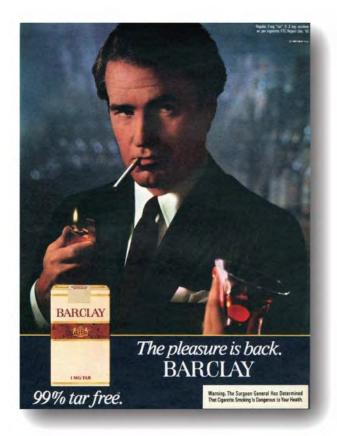
Ernest Pepples, Vice President Brown & Williamson

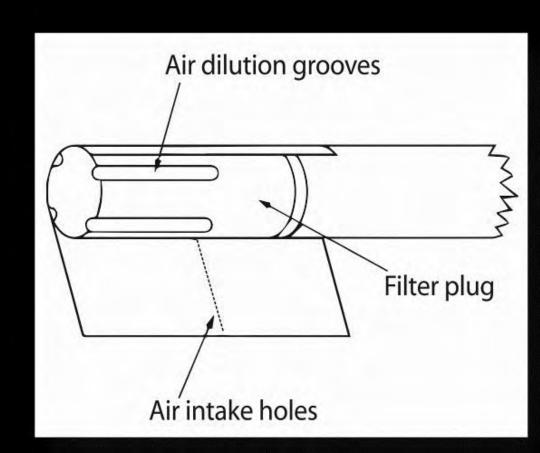
Barclay "99% Tar Free"

In 1980, Brown and Williamson marketed Barclay cigarette as an ultralow tar brand using the FTC testing method. But its special ventilated

'grooved' filter was designed

normal act of smoking.



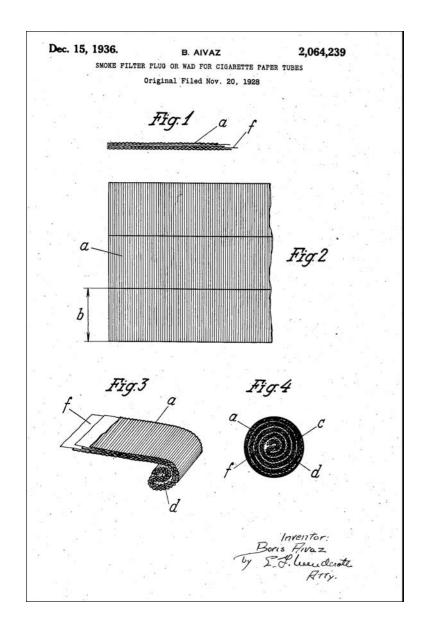


Ventilation and Lung Cancer



Since the rise in popularity of "low-tar" and ventilated brands that are particularly easy to inhale, the location of lung cancer has moved outward toward the lung's periphery. Adenocarcinoma is a common tumor in that location compared to small cell and squamous cell tumors that occur in the center of the lungs.

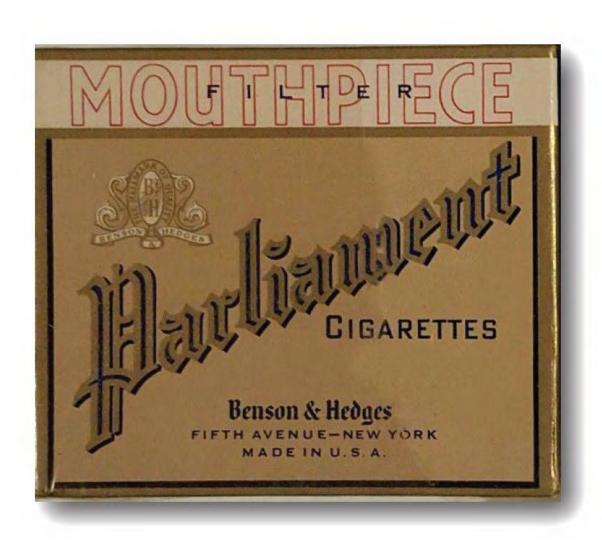
Filters Over Time



1928 First Cigarette "plug" Filter

Hungarian inventor Boris Aivaz patents a process for the production of cigarette filters from crepe paper.

1931 Parliament First Paper Filter



1952 Viceroy First Cellulose Filter



1952 Kent

Lorillard introduced Kent cigarettes, with its Micronite filter, promising"the greatest health protection in cigarette history." The original filter was made with crocidolite asbestos. After 1956 the Kent filter was reformulated without asbestos.





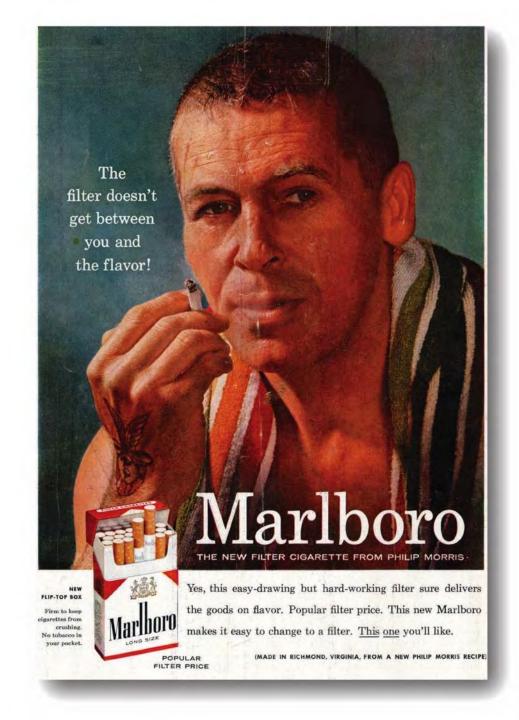


1954 Winston

R.J. Reynolds introduced Winston emphasizing the "pure snow white filter" and "filter blend," which internal studies revealed had more carcinogens than unfiltered Camels.

1954 Marlboro

Marlboro cigarettes with cork tipped "Selectrite" filter and flip-top box was marketed by Philip Morris.



1955 Tareyton
Activated
Charcoal Filter

Brown & Williamson introduces the Tareyton activated charcoal filter, claiming that the activated charcoal "scrubs the smoke clean."

Here's how:



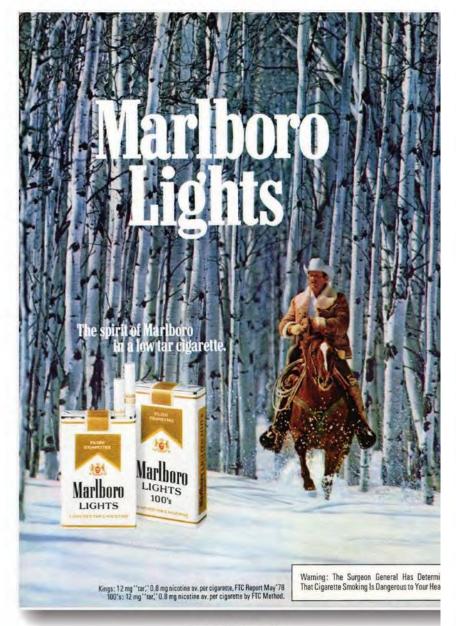
Tareyton's activated charcoal scrubs the smoke to smooth the taste the way no ordinary filter can.

Put Tareyton's activated charcoal filter on your cigarette, and you'll have a better cigarette. But not as good as a Tareyton.



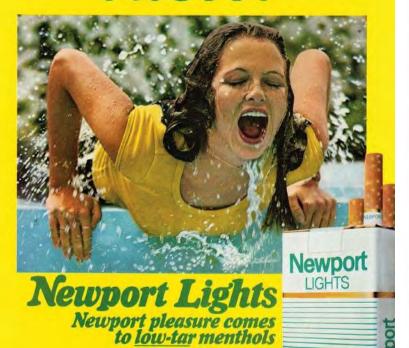
Low-Tar, Light, Mild, Ultra Light

- Beginning in the 1970s, so-called light, mild, and low-tar cigarette brands were heavily marketed.
- Most consumers of these brands falsely assumed that they were getting less tar and nicotine because the package label was required to carry tar and nicotine figures that used the Federal Trade Commission (FTC) standardized testing method.
- Removal of Tar & Nicotine Listings
 In 2008 the FTC took action that prompted the removal of nicotine and tar listings from cigarette packs and ads since they were clearly misleading consumers.
- Ban on DescriptorsIn June 2010, the US Family Smoking Prevention and Tobacco Control Act prohibited the use of explicit or implicit descriptors on tobacco packaging or in advertising that convey messages of reduced risk or exposure, specifically including terms like "light," "mild," "low" and similar descriptors.





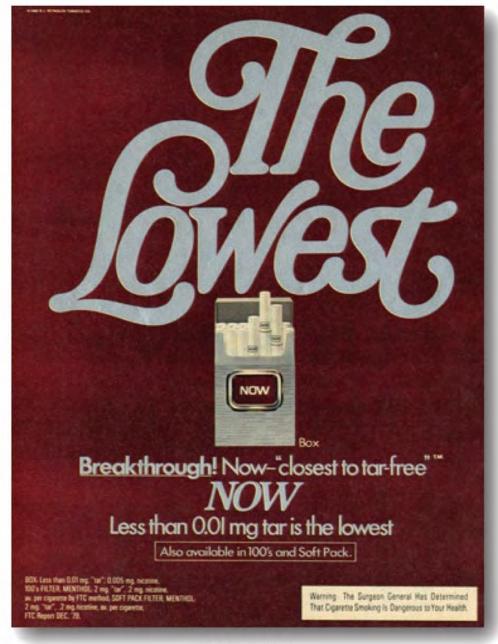
Revive your taste!



Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

10 mg. "tar", 0.8 mg. nicotine av. per cigarette, FTC Report January 198

MENTHOL KINGS



1977

1980

1981 U.S. GOV'T REPORT:

CARLTON LOWEST.

In the 17 U.S. Government Reports since 1970 no cigarette has ever been reported to be lower in tar than Carlton. Today's Carlton has even less tar than the version tested for the Government's 1981 Report. Despite new low tar brands introduced since—Carlton still lowest.



10 packs of Carlton have less tar than I pack of...

	Mg./Cig.	Mg./Cig.
Benson & Hedges Light 100's	10	0.8
Kent	12	1.0
Marlboro Lights	11	0.8
Merit 100 Menthol	10	0.8
Salem Lights	9	0.7
Vantage 100's	9	0.9
Virginia Slims Lights	8	0.6
Winston Lights	11	0.9

Carlton is lowest.

Carlton Box-lowest of all brands.

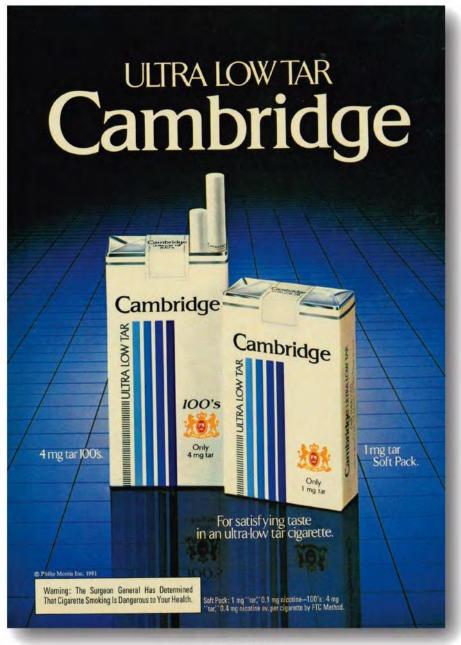
Less than 0.01 mg. tar, 0.002 mg. nic. Carlton Menthol-Less than 1 mg. tar, 0.1 mg. nic.

Box: Less than 0.01 mg. "tar", 0.002 mg. nicotine av. per cigarette by FTC method.

Menthol: Less than 1 mg. "tar", 0.1 mg. nicotine;

Soft Pack: 1 mg. "tar", 0.1 mg. nicotine av. per cigarette, FTC Report May '81.

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.



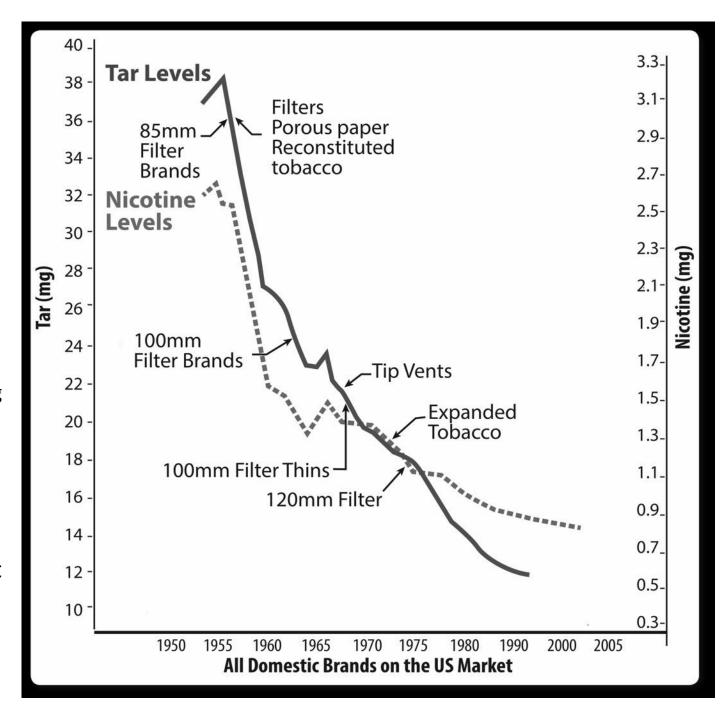
1981

1981



Tar and Nicotine Drops When Machine Measured

The chart shows the decrease in FTC tar and nicotine levels as cigarette manufacturing innovations took place. Unfortunately the manufacturers concealed how they manipulated their cigarettes to produce low readings on the FTC tar and nicotine tests. Machine testing does not translate into what most consumers would actually inhale



1961 - Low Tar Smokers Smoke More

"As we know, all too often the smoker who switches to a hi-fi cigarette winds up smoking more units in order to provide himself with the same delivery [of nicotine] which he had before."



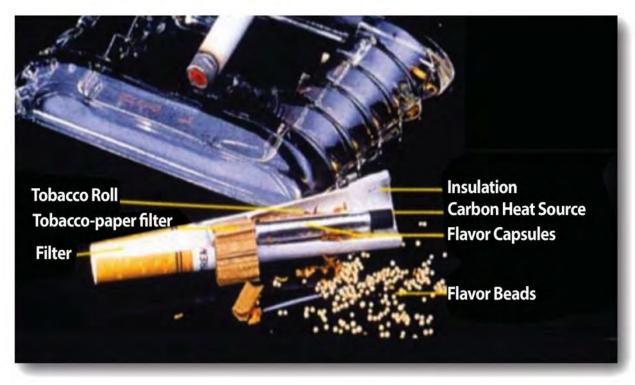
Memo from Philip Morris VP Helmut Wakeham



Heat Not Burn and Other Products

Heated products use an electric element (Accord) or a carbon tipped heating element (Premier and Eclipse) to release the nicotine. Additives such as polypropylene glycol are used to create a visible vapor.

Premier Cigarette 1988-1989 - R.J. Revnolds



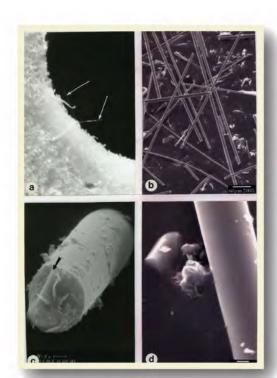
While these products might be somewhat less harmful than smoking regular cigarettes, it is unclear whether their presence in the marketplace will reduce cessation and/or increase initiation.

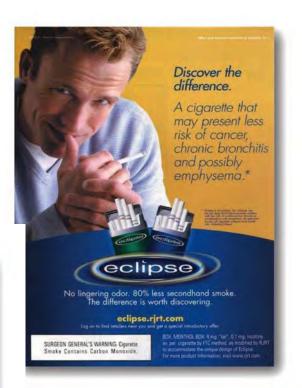
Premier never achieved popularity, as smokers complained about a charcoal-like aftertaste and special instructions were needed to teach smokers how to light it. It was withdrawn from the market in 1989, less than a year after its introduction.

Eclipse 1996 R.J. Reynolds

 Eclipse, like its predecessor Premier, heated the tobacco instead of burning it. Because the product struggled to gain traction with adult smokers, Eclipse was pulled from most test markets.

 It was found that glass particles contaminated the filter tip of the Eclipse cigarette (right).





Accord 1999 Philip Morris

 Accord, Heat Bar, and IQOS are devices that heat a special cigarette rather than burning it.
 They claim to produce no noticeable secondhand smoke, only a vapor.



Heat Bar 2006 Philip Morris

 Designed to emit reduced secondhand smoke, the Heat Bar was positioned as an ultra-low tar product with a full body and real taste.



IQOS 2014 Philip Morris

Like Accord, IQOS is a smokeless cigarette with real tobacco refills that are heated instead of burned to produce a tobacco-flavored vapor.





Revo 2015 R.J. Reynolds

- Revo, the next generation of R.J. Reynold's Eclipse cigarette, was launched in 2015.
- Revo was pulled from the test market within months of its release due to lack of interest in the brand.
- Like Premier and Eclipse, Revouses a carbon tip to light the rod to heat rather than burn tobacco.



Selling Cigarettes

Brand Line Extensions





Brand Line Extensions

In the 1950's cigarette brand line extensions began to appear as a marketing gimmick to offer consumers new variants of an established brand often implying a safer and/or improved version. When advertising of cigarette brands were banned from TV and radio in 1971, brand line extensions became an important way for manufactures to keep older brands relevant



Pall Mall

Pall Mall was marketed in 1899 as a 70mm cigarette. In 1921 it introduced new brand extensions such as Originals and Rounds. In 1939 it moved to the 85mm size. "Pall Mall's modern design filters the smoke - lessens throat Irritation." In 1965 Pall Mall Gold added a filter and was the first brand to grow in length to 100mm.





Chesterfield Regular and King-Size

First launched in 1896, Chesterfield released a King size non-filter pack in 1952, one of the very first brand extensions. With other extensions, Chesterfield 101 (millimeters) was released in

1968.





Lucky Strike and Lucky Strike Filters

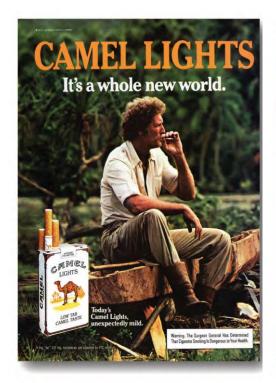
Introduced in 1911, Lucky Strike added a filter and filter 100s line extension in 1968 - more than 10 years into the filter boom.

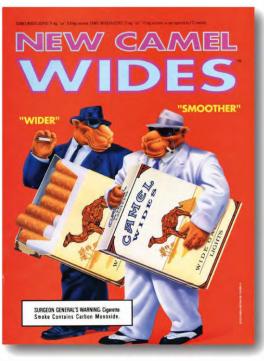




Camel

Since it's introduced in 1913 as a 70mm non-filtered cigarette, R.J. Reynolds has added over 35 line extensions using the Camel brand name starting with the release of Camel Filters in 1965. Among them, Camel Lights were released in 1977, Camel Wides in1992, Camel No. 9 in 2007, and Camel Crush was launched in 2008.





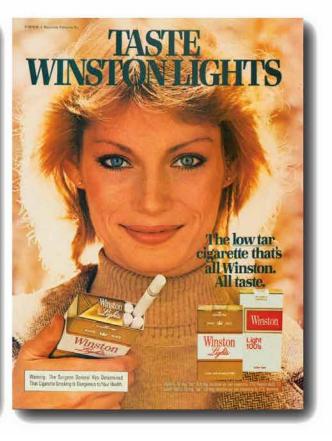


Winston

Winston cigarettes became the best-selling filtered cigarette brand in the 1950s and 60's. It was launched in 1954 in a soft pack (85mm) and in a hard pack (80mm) in 1957. In 1968, a 100mm length regular and menthol version of Winston was introduced. R.J. Reynolds introduced Winston Lights in 1974 after a legal battle with Philip Morris over the use of the brand descriptor "light."



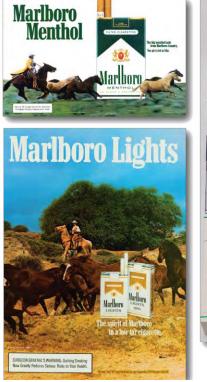




Marlboro

Philip Morris introduced Marlboro Red filtered cigarette in hard (80mm) and soft pack (85mm) versions in 1954. In 1966, Philip Morris introduced Marlboro Menthol, in 1967 Marlboro 100s, and in 1971 Marlboro Lights. Marlboro Lights was the first brand to use the "lights" brand descriptor. Today, there are dozens of Marlboro brand variants.







Some of the more than 50 Marlboro brand line extensions



Products that Enable Smoking





1844 Safety Matches

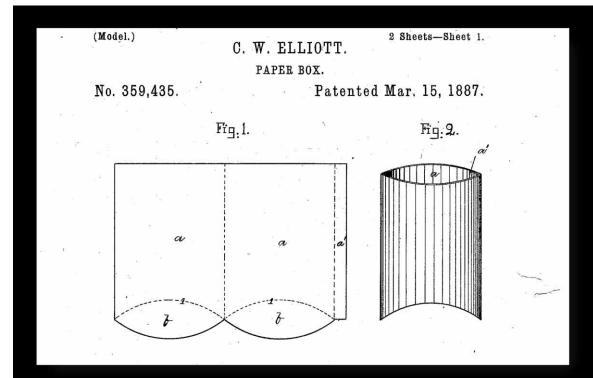
After many attempts to develop a match that was non-toxic, Swedish inventors Gustaf Erik Pasch and Johan Edvard Lundström improved design and manufacturing of the "safety" match, making smoking more convenient. In 1864, the first automatic match producing machine was developed. Strike anywhere matches were invented in 1889.



1884 Cardboard packs

The first cardboard push-pack was introduced in 1884 and was designed for holding 10 cigarettes or small cigars.

In 1954 Philip Morris re-introduced its hard pack – flip top box design when it launched its new Marlboro filtered brand.





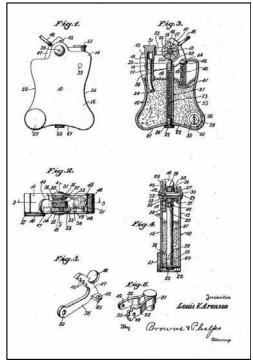
1880s Improved Cigarette Lighter

The earliest lighters used a "catalyst" reaction to ignite a flame. The design was improved when steel and flint were used to spark a wick soaked with a flammable fluid, like naphtha. In 1889 the Magic Pocket Lamp Co. and others improved the safety of personal lighters. In 1926, the automatic flame pocket lighter was born with Aronson's "one finger-one motion" lighter.

In 1932, the Zippo company created its flip open design that became a classic. In the 1950s Zippo began to use butane fuel for flame control and less odor. Bic sold its first throw-away lighter in 1973.

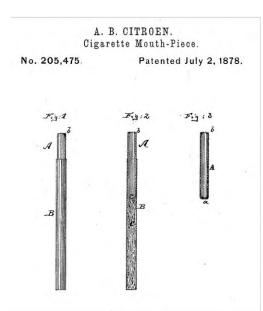
Many current lighters use a piezoelectric spark for ignition.





1870s Cigarette Holder/Mouth Piece

The cigarette mouth piece was originally invented to keep tobacco flakes out of the smoker's mouth, to keep cigarette paper from sticking and tearing on the smoker's lips, to prevent finger stains, and to keep secondhand smoke from stinging the smoker's eyes. Cigarette holders came in varying lengths and fashions. They were popular from the 1920s and into the 1970s.





1926 First Cigarette Pack Vending

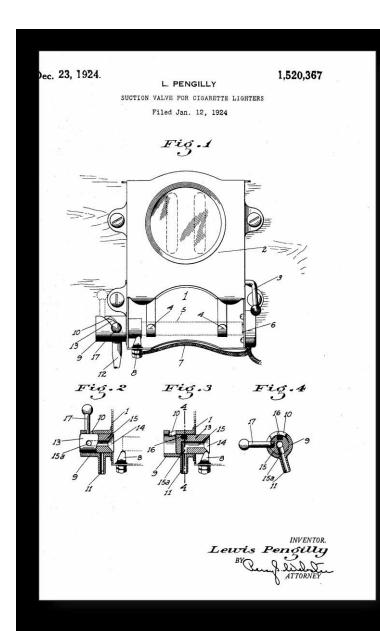




Rowe invented the world's first automatic vending machine for cigarettes using a confiscated moonshine whiskey still and a cigar box.

In 1928, with Robert Z. Greene, William H. Rowe founded the Rowe Manufacturing Company, Inc., in Los Angeles, the first company in the US to manufacture cigarette vending machines.

The Automobile Lighter



The electric cigar-lighter was nvented and patented in the early 1880s by the German inventor Friedrich Wilhelm Schindler.

As cigarette sales overtook cigars the device was renamed the 'cigarette lighter." In the 1920s the first lighter with a heated coil was wired into a car battery and the automotive lighter was born.

Patented versions of the car lighter also lit and dispensed a cigarettes or cigar as needed.

1931 Cellophane Used for Cigarette Packs

Swedish scientist Jacques E. Brandenberger invented cellophanein 1900. DuPont Chemicals acquired the U.S. rights to the clear wrapping material in 1923. R. J. Reynolds and Benson & Hedges were the first companies to use cellophane for cigarette packaging in 1931 touting the extra freshness of the tobacco, because the cellophane added to the product's shelf life



Cigarette Cases



By the turn of the 20th century the cigarette case had become an essential personal accessory. In addition to the ordinary commercial market even the finest jewelry houses, such as Fabergé, produced lavishly decorative sterling silver cases. During the 1920s and 30s American cigarette tins stored 50 cigarettes. They were sometimes referred to by the nickname "flat fifties." In 2003 the European Union witnessed a huge resurgence in the sale of cigarette cases used to hide the severe blackbordered warning label that was mandatory on all cigarette packs.

Target Marketing

The tobacco industry always uses the most advanced mass media to advertise cigarettes. From the very beginning cigarette makers advertised generously in newspapers, magazines and in outdoor venues. During the heyday of radio from the 1930s to the 1950s, cigarette companies began to sponsor prime-time programs. During the rise of television in the 1950s cigarette companies again moved aggressively and quickly to dominate prime time advertising time.

In 1967, under the Fairness Doctrine, the Federal Communications Commission (FCC) required TV stations to broadcast anti-smoking ads at no cost to the agencies providing them. In 1969, Congress passed the Public Health Cigarette Smoking Act that banned all cigarette ads on television and rastarting January 2, 1971.



ANIDO GOODE

Target Audiences

Advertising is important to cigarette makers who strive to recruit new smokers (usually in their teens), maintain current smokers, and persuade smokers to switch to their brands.

Scientific evidence shows that tobacco company advertising and promotion influences young people to start using tobacco. Tobacco ads make smoking appear to be appealing to young people which can increase adolescents' desire to smoke. Young smokers are more likely to smoke the most heavily advertised brands.

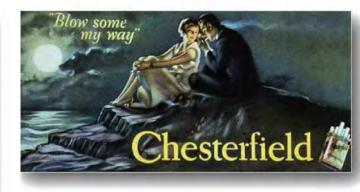
Cigarette makers also study the attitudes of women, girls, and minorities to better target their products and their advertising. Internal tobacco documents show the tobacco industry's deliberate strategies to target various groups.

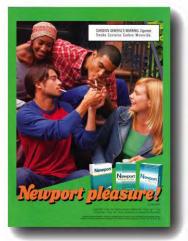


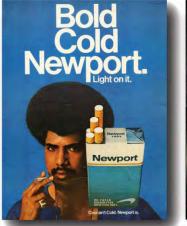
1928, R.J. Reynolds memorandum encouraging sales people to target high schools and colleges.













1870s-1900s Color Lithography

Color lithography of the late 1870s allowed companies to create more attractive package illustrations to better promote their products. By the 1890s magazines carried advertisements for cigarettes, snuff and pipe tobacco. A common marketing device in those days was the collectible picture card that was inserted in cigarette packs. They portrayed popular sports stars, actors and attractive women. Cards would also serve as coupons.



Retail Point of Sale and Self Serve

 In the late 1940s Lorillard and R.J. Reynolds added self-service displays at checkout counters. From 1970 until 1989 most stores featured a cigarette kiosk near its main

entrance.



Retail Point of Sale and Self Serve

Cigarette companies continue to pay retailers for prime advertising display space as cigarette kiosks have evolved into the "Power Wall" of retail cigarette branding and sales.

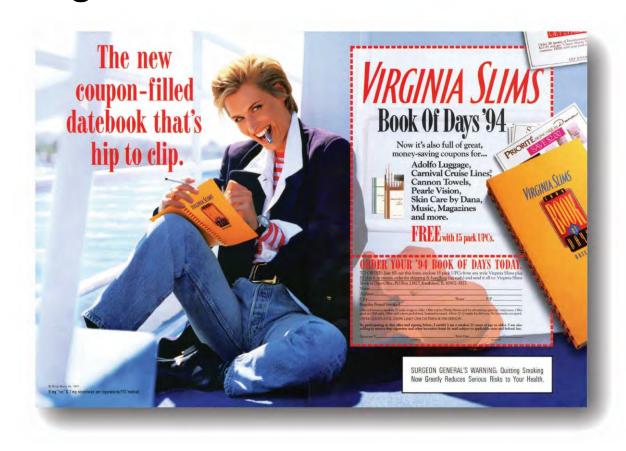


Loyalty Marketing Programs

Brown and Williamson sold every pack and Carton of Raleigh cigarettes with coupons through the 1960s and 1970s. Raleigh, and later Belair smokers, could collect B&W Coupons in exchange for gifts that could be ordered through the Brown & Williamson Premium Plan catalog. Later, Philip Morris and R.J. Reynolds would create similar loyalty programs using Marlboro Miles and Camel Cash.



The "Virginia Slims Book of Days" calendar could be obtained by mailing a \$1.00 check to Virginia Slims and enclosing two labels from any packs of Virginia Slim cigarettes.





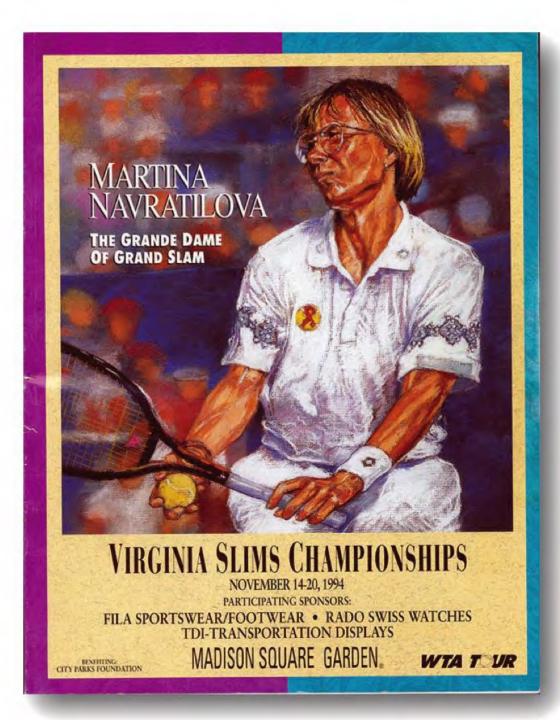


2006 Bahrain Grand Prix

Sponsorships

In spite of the ban on sports sponsorship, the regulations allowed indirect promotion of brands by way of stadium billboards and other advertising devices. This practice has been banned in the U.S., but cigarette sports sponsorship and promotion continue around the world.

From 1970 into the 1990s, Philip Morris sponsored the Virginia Slims tennis tournaments that featured tennis pros like Billie Jean King, Martina Navratilova, Chris Evert, Steffi Graf and others.



Movies

Cigarette makers have long understood the value of encouraging tobacco use through product placement in movies of all ratings.







Email coupons

Web and Social Media Marketing

Cigarette companies use websites to register new users under the guise of age verification, and capture personal information to use for marketing programs.

A study found that of the top representative cigarette brands there were 238 Facebook fan pages, 46 cigarette brands identified on Wikipedia, and over 120,000 pro-tobacco videos on YouTube associated with 61 cigarette brands.





YouTube product reviews

Facebook cigarette fan nage



Smokers' Databases

Cigarette makers have developed sophisticated consumer monitoring databases containing information on millions of smokers that were acquired through website registrations (below), sign-ups, give-away programs, special events, and through data-base companies.

Companies use these lists to market to smokers with promotions, coupons, free merchandise, and product information.

