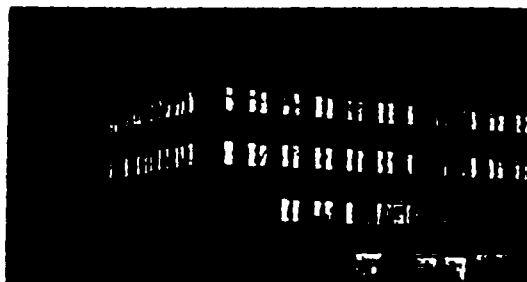


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DEVELOPMENT OF  
CIGARETTE PACKAGING

Arthur D. Little, Inc.

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## DEVELOPMENT OF CIGARETTE PACKAGING

### Phase I--Packaging Requirements

#### I. INTRODUCTION

In line with Liggett & Myers' interest in strengthening its market position in the menthol-filter cigarette area, we have undertaken to develop a new package for this kind of product. While new cigarette packaging will be our primary focus, it is possible that some packaging concepts may also be applicable to smoking tobacco and you have indicated that you would like us to be aware of consumer needs in this area. There has been very little change in tobacco packaging or merchandising methods with the exception of the introduction of the pouch package a few years ago. Packaging is expensive--particularly the large 14-ounce cans--and volume is low. On the other hand, with the current cigarette and health controversy, probably due to be revived again when the government report is released in November, pipe smoking may increase in popularity. With a new packaging approach and promotion, this increase might be further accelerated.

The first task in carrying out the packaging program is to define packaging requirements. These requirements must necessarily reflect the characteristics of the cigarette market from the point of manufacture to the point of consumption.

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## II. MARKET CHARACTERISTICS

### A. CIGARETTES

#### 1. Distribution

Cigarettes are the most widely distributed item in the United States. Sales by type of outlet break down approximately as follows:

- a. Supermarkets (defined by L & M as retail outlets doing \$1 million worth of business a year)--50%.
- b. Conventional over-the-counter retail outlets (from Ma-and-Pa stores to large drug stores)--34%.
- c. Vending machines--16% (according to "Vend" magazine, October 1, 1963).

The chain of distribution for cigarettes is from factory to warehouse, warehouse to jobber or wholesaler, and jobber to retailer. Some cigarettes are shipped direct to a few large accounts; e.g., large supermarket chains like A & P and vending operators. Merchandise in the warehouse is your property.

There are one half million outlets distributing cigarettes today but 38,000, mostly supermarkets, have 50% of total volume. The major trend is to greater sales of cartons in supermarkets. Vending continues to grow in volume in part because it is a very profitable business for the vendor. The trend to supermarket carton sales has been helped by the fact that supermarkets have done a good job of merchandising cigarettes. The

supermarkets have come to realize that cigarettes are both a very profitable business in themselves and an important traffic draw. The problem with supermarkets is to obtain distribution in all outlets. There is intense competition for shelf space and numerous demands for special promotions by manufacturers. Although 14 cigarette brands out of 51 have 93% of the volume, supermarkets must carry lower volume brands because customers who want them and cannot find them will take their trade to other stores.

The crux of the problem in introducing a new brand of cigarettes is to convince the supermarket operator that the manufacturer will stimulate substantial demand among his-- the supermarket's--customers and that the brand should be given not only shelf space but special introductory promotional attention. The problem is more difficult in some cases, e.g., A & P where both a New Product Committee and a Warehouse or Store Manager may refuse to handle the new brand.

## 2. Cigarette Types

There are presently four types of cigarettes:

- a. Regulars
- b. Kings
- c. Filter kings
- d. Menthols

In terms of gross appearance, packages are red, green, or white.

## 3. Markets

The objectives of cigarette marketing programs are:

- a. To reach male smokers aged 25-38.
- b. To appeal to young adult women.

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- c. Not to alienate older smokers, both male and female.

Men become smokers earlier and consume more cigarettes per capita than women. Cigarettes aimed at the female market exclusively have been flops. Marketing programs have been slanted at certain types of men, but always basically at the male market.

The cigarette market may be broken down into age brackets as follows:

- a. 16-21--the formative years; smoking starts and brand preferences are developed.
- b. 22-25--per capita consumption is the highest. This group can be influenced to switch brands more easily than any other. More men under 30 years old smoke non-menthol filter cigarettes (43% versus 21% non-filter regular, 26% non-filter king, 10% menthol). The same is true with men 30 and over except the spread is smaller (39% versus 30% non-filter regular, 19% non-filter king, 12% menthol). Women follow the same general pattern, but more of them smoke menthols and fewer smoke regulars. (Statistics from J. Walter Thompson report, Continuing Study of Smokers (Phase V), June 1963.)
- c. 36-45--still susceptible to sales promotion but traditionally harder to induce to change brands; still smoking as much as when younger but more conscious of brand and quantity smoked. This group is where filter kings and menthols have caught on.

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d. 46 and over--consumption begins to decline.

#### 4. The Menthol Market

The traditional menthol smoker profile--guilt-ridden, sensual, pleasure seeker; does not really think that smoking is very good for one. There has been a steady increase recently in the number of male smokers of menthols, and it is thought that these people have come to like the taste of menthols and smoke them for this reason rather than health connotation. In other words, the market for menthol cigarettes seems to be changing--the smoker is now an average person rather than an odd type, and he is smoking for enjoyment rather than for medicinal reasons. Salem with its filter had the most to do with changing the image from menthol Kools. Salem has just enough menthol to impart a pleasing flavor, not a jolt. Salem was the first flavored filtered cigarette. People accepted it because it had more flavor than regular filter cigarettes.

There was formerly a geographical pattern in the use of menthol cigarettes, but as they have increased in volume, the geographic issue has washed out.

The Salem case shows that innovation can pay off because if you have something with genuine appeal, imitators come along and help to build up the market.

#### 5. Market Segments

- a. Sociological--sex differences; 70% of men are smokers, 35% of women. Men are generally heavier smokers.
- b. Economic--not as important as sociological factors.

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- c. Ethnic factors--sales variations between races are a result of differences in promotion rather than basic radical differences in smoking desires or habits. The Jewish population makes up a large part of the cigarette market in metropolitan New York. It moves quickly to reflect current style trends. Promotion must be smart and sophisticated to get it to buy. The Spanish and Negro groups like to purchase only the best of everything--they are not looking for bargains. They can be reached successfully only by promotion that they understand, i.e., Negro salesmen and media (but not exclusively). Menthol cigarettes seem to be going very well in this market. The difference between the two markets is that in the case of the Spanish and Negro markets, there must be a racial slant in the marketing efforts directed toward them, while in the case of the Jewish market, this is not a requirement.
- d. Geographic--high population density in industrial areas means more smokers. A cigarette manufacturer must concentrate on the Northeast segment if he wants to succeed in penetrating the market with a new package.
- (1) Northeast to Southeast--per capita smoking slightly above average.
  - (2) Midwest and Northwest--below average.
  - (3) Southwest and Far West--average.

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## 6. Influences on Smoking Habits

- a. Urban versus non-urban. L & M thought the flip-top box would be a hit with farmers. They found, however, that boxes were more of an influence in terms of style than utility and therefore sales were higher in cities than in the country.
- b. Occupation affects opportunity to smoke but there are no significant market segments based on occupation.
- c. Appetites of smokers of both sexes are the same--men smoke more because they have more opportunity to smoke.
- d. Brand image is very important with men--more so than with women.
- e. The consumer today has gone the rounds of cigarette packaging gimmicks and come back to the old soft pack that has been used for the last 60 years. However, he is beginning to think change again now that he has settled down. It is still too early to tell the future of the plastic cigarette package. However, Paxton is apparently doing well in vending machines.

## 7. Purchase Patterns

- a. Marrieds versus non-marrieds; at age 16-21 there is much bumming of cigarettes; at 22-35 there is buying by the package if unmarried, buying by the carton if married.
- b. There is an average of one smoker per household--60 million smokers in the U. S.

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- c. Environment means a lot in terms of quantity of smokes and purchase pattern.
- d. College-age groups are very image conscious. Brand loyalties are very low, but preferences are being established.

#### B. SMOKING TOBACCO

L & M has two smoking tobaccos with significant sales volume, Velvet and Granger. Velvet is packaged in small, medium and large tins. Granger is packaged in a pouch inside a paperboard carton and also in a large tin (14 ounces). The Granger pouch is hard to open and expensive to make. The Velvet tins are even more expensive. L & M cannot decrease tobacco quantity or increase price to offset the high cost of packaging without losing volume and being forced to compete almost exclusively with imported high-priced tobaccos. L & M believes that tobacco packaging is not just expensive but also inconvenient to use. A rigid package is supposedly necessary for Velvet because it is used to fill roll-your-own cigarettes. However, metal packages are not acceptable in institutions.

Smoking tobacco distribution channels are the same as cigarettes, but no sales are made directly to supermarkets. Most tobacco sales are through small retail stores, but sales of 14-ounce tins in supermarkets have shown some growth. Tobacco sales vary widely from place to place. In Rhode Island, for example, there were no appreciable sales of Velvet, but Granger had big sales there. Prince Albert is reported to be the largest seller and most widely available.

During the war, L & M and its competitors went to paperboard cartons instead of tins, but after the war L & M

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returned to tins because competitors did. The large-size tobacco tins are a prospect for gift packaging ideas. Elaborate gift cartons for the Christmas season have been used, but they were expensive and moreover, dealers did not take tins out of the carton after the holiday causing a real promotional problem. Gift cartons have been largely abandoned. L & M now uses a wrap-around band for Christmas and Father's Day, big selling seasons for tobacco in large tins.

L & M feels there is an opportunity to expand the market for Granger with a new packaging approach. Your newest tobacco, Masterpiece, is packaged in a poly pouch. A quantity of pouches are then placed in a carton that can be used as a counter display. There is very little export business in smoking tobaccos.

The profile of the Granger smoker, particularly the one who buys the 14-ounce tins, is a middle-aged to older man who likes Granger's special rough cut and aroma. The product does not have a young man's product image. It sells best in Missouri, Maine, and Texas. About five million pounds are sold a year.

The feeling is that there needs to be a change in the Granger image that will get more business from younger people. The market we might shoot for is the non-traditionalist one where cigarettes are shaky. We would want to be very careful not to take away any of L & M's cigarette market. However, with the current health and smoking controversy, further exploration into pipe tobacco sales certainly seems indicated.

### C. CONSUMER PANELS

#### 1. Purpose and Procedure

The consumer discussion panels were not intended or could they be expected to take the place of market research. Their purpose was twofold: first, to supplement our knowledge of

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consumer usage of tobacco products (cigarette and pipe) and second, to develop clues that might open up some thoughts about packaging that we had not considered before.

There were two panels, each composed of ten male and female smokers--mostly cigarette and a few pipe smokers. The exact make-up of the panels is given in the table at the end of the report. The panels were given samples of domestic and foreign cigarette packages and packages of smoking tobacco to stimulate discussion. While the discussions were not tightly structured, they were directed about as follows:

- a. How do we feel about cigarette packaging?
- b. Offer a cigarette--group observe and comment.
- c. Get out personal smoking paraphernalia and samples--group observe procedure and comment.
- d. Open packages--group observe and comment.  
--Whole routine, including handling of debris.  
--Where is the pack kept--why?
- e. Hard versus soft versus plastic packaging--  
U. S. brands.
- f. Innovative packaging--U. S. and foreign cigarette samples--pick one that look "attractive"--  
why?
- g. Discuss and comment on cigarette cartons.
- h. Discuss and comment on above points related to smoking tobacco.

2. Major Themes and Possible New Packaging Approaches

- a. A principal fear seems to be running out of cigarettes. An important objection to the hard pack is that one cannot see how many cigarettes remain without opening the package. The soft pack is liked because it can be rolled up as it is used and gives an indication of the quantity of cigarettes left.
- b. The Paxton plastic package is attractive because it is made of a new (modern) material, is neat, and is rigid but still flexible enough not to tear pockets as the hard pack does. The loose top is not liked.
- c. Ritual is a very strong part of cigarette smoking enjoyment. There seems to be a desire to crush the package and throw it away after it is empty. The reason for crushing is apparently to make sure there are no cigarettes left in the package.
- d. The role of cellophane in the package is important because it is a symbol of freshness, including feel and sound (crinkle). Breaking a seal on the package is also important because of the freshness connotation.
- e. If a package is functionally new, it will get a trial.
- f. Green color identifies cigarette pack as menthol. However, different greens generate different connotations--more or less feminine or masculine.

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PROTECTION

MOISTURE

Cigarettes

1. Not over 11% and not less than 9 or 10% moisture content.

1. 3 months

Pipe

1. 6 months

Pipe Tobacco

1. 14-15% moisture content.

MECHANICAL

1. Same as present packaging.

COST FACTORS

MATERIALS

Cigarettes

Soft Pack  
Primary package \$2.29/A  
Carton .68/A  
Hard Pack  
Primary package \$4.72/A  
Carton .76/A

Pipe Tobacco

Pouch and carton \$15.72/A  
Can and poly bag 134.72/A

MACHINERY

Cigarettes

1. Capital Equipment  
Packer (soft pack) \$23,000  
Packer (flip top) 55,000  
Wrapper 7,500-10,000  
Cartoner 10,000  
2. Labor (conventional line)  
1 packer wrapper--1 operator  
1 boxer--1 operator  
\*1 relief operator  
\*3 machine adjusters  
\*service 10 machines  
3. Operating Speeds  
(soft pack) 120 packages/min.  
(hard pack) 100 packages/min.

Pipe Tobacco

1. Capital Equipment  
Granger--  
Bartlett pouch packer \$25-30,000  
(depending on cost of over-wrap equipment)  
2. Labor  
2 1/2 operators per machine.  
3. Speeds  
60-65/minute.

MERCHANDISING

	CONVENIENCE	DISPLAY	SURFACE	GOVERNMENT REGULATIONS	IMAGE
red ttes.  re- tax  ting tore	<p>Cigarettes</p> <ol style="list-style-type: none"> <li>1. Easy open, dispense and reclose.</li> <li>2. Fill indication.</li> <li>3. Easy to handle and carry (pocket or purse).</li> </ol>	<p>Cigarettes</p> <ol style="list-style-type: none"> <li>1. Single package.</li> <li>2. Carton or other suitable multi-package carrier.</li> </ol>	<ol style="list-style-type: none"> <li>1. Suitable for printing, labeling and/or other means of identification.</li> <li>2. Possibly transparent or translucent in whole or part.</li> </ol>	<p>Cigarettes</p> <ol style="list-style-type: none"> <li>1. Not significantly affected by federal regulations at this time.</li> <li>2. Must be compatible with state tax stamping procedure.</li> </ol>	<p>Cigarettes</p> <ol style="list-style-type: none"> <li>1. Universal appeal.</li> <li>2. Attention getting.</li> <li>3. Innovative form and function.</li> <li>4. Economy and quality.</li> </ol>
	<p>Pipe Tobacco</p> <ol style="list-style-type: none"> <li>1. Easy open, dispense and reclose.</li> <li>2. Easy to handle and carry in pocket.</li> </ol>	<p>Pipe Tobacco</p> <ol style="list-style-type: none"> <li>1. Single package.</li> <li>2. Multipackage for point-of-purchase holiday display.</li> </ol>		<p>Pipe Tobacco</p> <ol style="list-style-type: none"> <li>1. No federal or state at this time to best of knowledge.</li> </ol>	<p>Pipe Tobacco</p> <ol style="list-style-type: none"> <li>1. Youthful as well as middle age.</li> <li>2. Innovative form and function.</li> <li>3. Economy and quality.</li> </ol>
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PACKAGING

MERCHANDISING

SIZE AND SHAPE

CONVENIENCE

DISPLAY

SURFACE

GOVERNMENT REGULATIONS

IMAGE

Cigarettes

Compact volume required to contain 20 cigarettes.

Conform to dimensional requirements of state tax laws and vending.

Compatible with existing display stands and store fixtures.

Pipe Tobacco

Conform to larger pocket large-size package requirements.

Compatible with existing display stands and store fixtures.

Cigarettes

1. Easy open, dispense and reclose.

2. Fill indication.

3. Easy to handle and carry (pocket or purse).

Pipe Tobacco

1. Easy open, dispense and reclose.

2. Easy to handle and carry in pocket.

Cigarettes

- 1. Single package.
- 2. Carton or other suitable multi-package carrier.

Pipe Tobacco

- 1. Single package.
- 2. Multipackage for point-of-purchase holiday display.

Cigarettes

1. Not significantly affected by federal regulations at this time.

2. Must be compatible with state tax stamping procedure.

Pipe Tobacco

1. No federal or state at this time to best of knowledge.

Cigarettes

- 1. Universal appeal.
- 2. Attention getting.
- 3. Innovative form and function.
- 4. Economy and quality.

Pipe Tobacco

- 1. Youthful as well as middle age.
- 2. Innovative form and function.
- 3. Economy and quality.

KEY

MANDATORY REQUIREMENTS

- g. Cigarette pack should be noticeable--my pack (brand) is a strong theme.

These possible packaging approaches were developed.

- a. An economy carton pack--sold only as a carton with savings as the primary objective. The cigarettes are locked into the carton physically so that they cannot be sold separately.
- b. High-priced package (special market).
- c. Convenience-party pack--add a bridge card, shopping list, or some other convenience feature to the package or carton. Perhaps the carton design could be made more suitable for display in the home--for example, a decorative table dispenser.
- d. A smoking tobacco package might be more like cigarette package and vice versa.
- e. Something between tobacco and cigarette package--a multipack carton or individual smokes.
- f. Fold-open pack--two sides like a wallet or accordion.
- g. Package designed specifically to consumer panel specifications.
- h. Audible opening sound built into the package.
- i. Activator--an additive in the package that preserves the freshness of the tobacco. Possibly some kind of membrane that has a moisture reservoir built into it which allows moisture

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to enter the package when outdoor conditions are dry and closes completely when conditions outside are moist to keep additional moisture out of the package ("living" package).

- j. Valet package.
- k. Mixed carton.

### III. PACKAGE REQUIREMENTS

There appear to be definite indications that cigarette smokers are in the mood for packaging change--if the new package is clearly an improvement over the old. A safe packaging approach would probably be simply to add a little something to the package that is the current best seller (soft pack). Although it is more hazardous, a truly innovative package is much more likely to generate interest and trial.

For purposes of convenience and subsequent evaluation of possible package forms, materials, and machinery, package requirements are grouped under broad categories of merchandising, protection and cost factors. The requirements are organized in separate sections so that additional requirements or supplementary data may be inserted. The chart at the beginning of the report summarizes the information contained in the following pages.

MERCHANDISING

Package Size and Shape

A significant change in size, shape, and construction of package appears to be virtually impossible within the restrictions imposed by existing hardware at the factory, distributor and retail levels. The key items at the factory level are packers, wrappers and cartoners; at the distributor level, state tax-stamping machines (Pitney-Bowes); and at the retail level, vending machines, display stands and gondolas. The packaging machinery and the tax-stamping equipment are single-purpose machines built to the dimensions of present packages. Factory packaging machinery will accomodate packages up to 90mm but tax-stamping machines can be adjusted only to handle present package sizes. Vending machines have also been developed around standard cigarette packaging dimensions. Limited adjustability is provided by spacer plates in the racks that can accomodate the different package sizes as far as height is concerned (including "York" in the newest machines). The width dimension is fixed. The dimensions of built-in display racks and stands are also fixed, by and large, to accomodate current standard packaging. However, supplementary display units are relatively inexpensive and might be provided for new packages with non-standard sizes and shapes.

It is probable that if we become completely preoccupied with fitting all existing equipment, we will be unable to produce any significant package innovation. The alternative approaches to new equipment for new packages are:

- a. Obsolete all of the existing hardware built to handle standard packages at all points of manufacture and distribution.

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- b. Obsolete existing packaging machines at the factory and supply new displays if necessary.
- c. Obsolete only a part of the existing packaging machinery.

The second or third approaches seem to be the most practical because they do not tamper with hardware which could affect successful introduction and rapid volume distribution of a new package.

The dimensions of the primary cigarette package will reflect the volumetric requirement of 20 class A cigarettes. It would be very difficult to change the number of cigarettes in a package because this would affect federal taxes, and the price would be affected accordingly. On the other hand, L & M would like to have a larger carton--increasing the number of primary packages in the carton from 10 to 15. Selling smaller units containing less than 10 packages is never encouraged because it cuts down on the number of regular-size cartons sold. A 12-package carton size might be desirable from a vending point of view because the cigarettes could be stacked in the carton in the correct position for direct-carton loading into the machine. The current practice is for the service man to transfer packages, one handful at a time, from the carton to the machine.

Smoking tobacco packaging does not have the machine restrictions that cigarettes have. The only limitations in size, shape and construction of the package are imposed by in-plant packaging equipment. However, with the exception of pouch packaging equipment, operations are on old machinery, in some cases semi-automatic. We will base new packages on the new contents of present Granger packages.

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Product/Package Image

The primary job of the package is to create a desire to purchase and try. To do this, it must look new and different enough to attract the attention of the consumer. Repeat sales will depend mostly on acceptance of the product, although packaging features such as convenience in use and protection certainly play an important role.

The package design must have appeal from the viewpoints of both appearance and utility. The objective is to reach the male smoker first and the female smoker second. Men must be able to identify themselves readily with the package and the product inside. Of course, the package/product combination must also be appealing to women. Since the current thinking is that the product will be a menthol filter cigarette of a type already familiar to smokers, the package will have to project a highly innovative image to get attention and trial. While a new approach to both package form and function will be required, all ties with past packaging practices must not be cut because of the distribution problems and the need to have the product clearly identifiable as a cigarette.

Functional innovation in the way of new construction, convenience, and protective features appears to offer the best means to develop a new and different image with universal appeal. For example, an approach that appears to have considerable appeal is to develop an image of economy but quality by concentrating on unique carton packaging. The economy carton (multipack) package, designed so that the individual units of 20 cannot be sold separately, will be aimed at the smart shopper who is looking for quality at the lowest possible prices. Pricing will be based on quantity purchase discounts.

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Looking at the individual cigarette package, a unique image with considerable appeal might be developed around the concept of the "living" package. Since menthol cigarettes lose flavor more rapidly than non-menthols, a unique flavor booster or additive might be built into the package and released to offset the loss of the menthol. Another possibility along this line of approach might be to provide longer lasting tobacco freshness by a controlling membrane built into the package that will sense the need for more or less moisture, depending on environmental conditions.

This latter possibility would probably be even more effective in the case of smoking tobacco because moisture content can be detected by feel as well as by taste, and, of course, pipe smoking enjoyment is intimately associated with the feel and taste of the tobacco. The marketing objective of a new package for Granger is to broaden its appeal to younger age groups while not alienating present customers. An economy pouch carton concept along the lines of the cigarette multi-pack described above might prove applicable. The pouch carton would be constructed so that individual-use pouches can be made from the carton. The quantity discount price plus the convenience of the filled pouch should have a lot of appeal for the young-adult group and certainly not alienate the established middle-age market.

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Convenience in Use

Easy-open, dispense and reclose features are important in helping generate repeat sales because they seem to contribute a good deal to the pleasure of the "ritual" associated with cigarette smoking. In the case of the habitual smoker, it may even be possible that this presmoking ritual of opening the package, taking off the cellophane, and removing the first cigarette, is as, or even more, important than the act of smoking.

Package reclosure is particularly desired by women smokers because they carry cigarettes in their purses. However, if reclosure requires a rigid package, some way of seeing the contents of the package should be provided--possibly a window in the package. We might help relieve the anxiety about running out of cigarettes by developing a way to attach the last few cigarettes in a package to a new package so that a smoker has a reserve supply without the need to carry around full and half empty packages.

It is important to the male smoker particularly to be able to get cigarettes out of the package and into the mouth as easily as possible--preferably in a one-handed operation.

The form of the cigarette package should be easy to handle by either sex and be convenient to carry in a woman's purse or a man's pocket. The cigarette carton must be easy to open, dispense from and reclose not only at the consumer level but also at the vending and distribution levels (load vending machines and tax stamp). It might also be a convenience at these levels if a tear tape were added at the center of the shipping cases. This would not only provide easier opening but also prevent damage to cartons from cutting open cases. However, case opening is not a major problem as far as wholesalers and vendors are concerned.

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Convenience in use also plays an important role in smoking tobacco packages. The movement to pocket tins and pouches were significant steps. As in the case of cigarettes, easy opening, dispensing and reclosing are highly desirable features. The pouch should fit easily into a man's pocket.

The pipe smoker has the problem of carrying a pipe. It might be effective to provide storage space in a pouch for pipe, pipe cleaners, etc. It might be desirable and possible in the large-size (14-ounce) package to provide a reuse value after the tobacco has been smoked. For example, the package might be designed to fit into a holder (given as a self-liquidating premium) that would turn it into a decorative humidor.

Display; Point-of-Purchase Appeal

A key factor in cigarette sales is broad distribution and display. Display stands and fixtures take several different forms depending on the type of sales outlet. In supermarkets, cartons are displayed on gondolas and free-standing racks. Since carton sales in supermarkets are a major and growing outlet, perhaps package development should concentrate on the carton rather than the individual package. Many supermarket operators consider pilferage from display stands a major problem. The biggest complaint is that people take a carton and put it into a cart, empty part of the contents into a purse or shopping bag, reclose the carton, and replace it on the gondola. If a new carton were relatively pilfer proof, it could be a real plus in obtaining favorable shelf and promotion treatment from the supermarkets.

Cartons are typically displayed with only the ends visible. It would be more effective from a merchandising point of view if one of the long sides or top surface of the carton showed. Perhaps the carton could be designed to encourage "one-way positioning" that would expose the most effective display surface. On the other hand, with a unique end construction or over-all treatment (possibly a transparent carton for example), it might be possible to make the carton easy to identify even if only one end is visible.

Displays at conventional retail outlets consist primarily of individual package display racks supplied free of charge by manufacturers. There appear to be basically three types--cash register-mounted displays, counter displays, and free-standing displays. All racks are designed to handle all types of standard cigarette packages and are stacked with competitive

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brands as well as brands of the manufacturer who supplied the rack. A supplementary display rack could be attached to accomodate a new kind of package design--and it would also serve to make the package stand out from the others for easy identification.

Smoking tobacco display is much more informally handled than cigarettes. Display fixtures are, by and large, of the built-in store variety with the exception of point-of-purchase displays supplied for special holiday promotions or to introduce new brands.

Surface

The surface treatment requirements of both cigarette and tobacco packaging are not part of the work to be carried out in this part of the program. Therefore, we will touch on this aspect only briefly.

New packaging must be suitable for printing, labeling and/or other possible means of identification, e.g., surface embossing. The surface design can play a key role in establishing a masculine or feminine product connotation. Because a menthol cigarette may have feminine implications, surface design and color will be very carefully developed. The color of the package also plays an important part in vending because of the need for easy identification of the package when seen considerably reduced in size on the vending machine button. Montclair colors have been very successful in this respect apparently.

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Government Regulations

At present, cigarette and smoking tobacco packaging does not appear to come under FDA regulations except possibly in the areas of adhesives and printing inks. Labeling may be affected by the government report on cigarette smoking and health due to be released in the near future. The cigarette package and carton must be able to be state tax stamped.

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PROTECTION

Flavors and Odors

Retention of these properties by the new package must be as good or better than the present package. Tobacco is very susceptible to picking up environmental odors. An unpleasant odor can affect the flavor of the tobacco. Off-odors and flavors can come from paper stocks, printing inks, adhesives, and other packaging materials. Foil has been a problem at times. Musty or moldy atmospheres are very bad for tobacco. Gasoline or kerosene odors will penetrate the cellophane overwrap and can cause the tobacco to pick up their odors.

Menthol cigarettes lose flavor very quickly. There is apparently a loss of menthol to the packaging materials--a gradual loss in which the menthol permeates everything in the package.

Moisture

The principal packaging problem from a technical point of view is moisture control. According to your research, the moisture content should not be over 12% and anything less than 9 or 10% leads to a dry taste. New cigarettes are packaged at a moisture content of 11% plus or minus  $\frac{1}{2}$ % by weight. In general, they dry out in storage, typically dropping from 11% to 7% linearly in about five months. In a humid environment, cigarettes absorb moisture; at a content of over 13%, they develop mold. A drop of 2% is noticeable to most smokers. A problem in present cigarette packaging is to improve the sealing of the cellophane overwrap for better moisture protection. It is difficult to get adhesive under the end folds to seal them properly.

Cigarettes with 11 $\frac{1}{2}$ % moisture content are in equilibrium with an environment of 60% relative humidity at 75°F. A drop to 50% R. H. at 75° will cause the moisture content to fall to 8.5% in five days.

Smoking tobacco is packaged at 14-18% moisture. There seems to be a belief among pipe smokers that a plastic pouch provides more moisture protection than a foil pouch although technically this should not be true. The belief appears to have some connection with the feel of the plastic pouch.

Shelf Life

Cigarette packages must provide for a minimum shelf life of three months with no significant property degradation. We were told by a vending operator that he had been given to understand that the shelf life of L & M cigarettes is about six months.

Shelf life is a greater problem with pipe tobacco than cigarettes because it contains more aromatics. Furthermore, pipe tobacco is handled directly by the user and drying out is therefore very apparent. A shelf life of at least six months should be provided for the pocket-sized tobacco package and considerably longer--probably up to a year--for the large-size (14-ounce) package.

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Mechanical

The mechanical properties of new cigarettes and smoking tobacco packaging should be at least comparable to and retain the product as well as the present packaging.

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COST FACTORS

In order not to inhibit the development of innovative packaging concepts, we have purposely not established specific cost requirements at this time. However, it is necessary to have a basis for cost comparison between present packages and new packaging concepts we develop. Therefore, we have identified the appropriate packaging cost factors based on your current packaging procedures (cigarette and smoking tobacco) as follows:

Materials

1. Cigarettes

	<u>Regular Chest.</u>	<u>King-size Chest.</u>	<u>Flip-top L &amp; M</u>
	(cost/M packages at Durham)		
Primary pack	\$2.29	\$2.63	\$4.72
Cartons	.68	.64	.70
Case	.23	.28	.30
Total	<u>\$3.20</u>	<u>\$3.55</u>	<u>\$5.72</u>

2. Smoking Tobacco .

a. Granger Pocket Size (cost/M packages at St. Louis)

Primary pack

Pouch	\$8.05
Carton	7.67
Total	<u>\$15.72</u>

(Velvet pocket tins  
\$22.85/M)

Box	\$1.98
Case	.86
Miscellaneous	.12
Total Material	<u>\$18.68</u>

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b. Granger 14-ounce Size (cost/M packages)

Primary pack

Can	\$130.00
Poly bag	4.72
Total	<u>\$134.72</u>

(Velvet 14-ounce can  
\$122.76/M)

Case	\$9.53
Miscellaneous	1.22
Total Material	<u>\$145.47</u>

Packaging material costs are very low percent of factory price. This is due to the small package size compared with the value of the product. Doubling materials costs would move packaging costs to only 4% of sales (assuming regular-size soft pack).

Machinery

1. Capital Equipment

<u>a. Cigarettes</u>	<u>Approximate Cost</u>
Packer (soft pack)	\$23,000
Packer (flip-top box)	55,000
Wrapper (cellophane)	7,500-10,000
Carton filler	16,000

Machine write-off traditionally is 20 years

b. Smoking Tobacco

Granger pocket size

Bartelt pouch packer \$25-30,000  
(depending on cost of  
overwrap equipment)

Machine investment is high if you include makers. Even without them, however, it is still fairly high--particularly in the case of the flip-top box. Movement into the box package required an increase of 70% in material costs and an additional investment of \$1,100,000 per line for new packers (10 per line at \$55,000)

2. Labor

a. Cigarettes

Your labor requirements are based on groups of ten conventional cigarette packers (soft packs) as follows:

10 packers }  
10 wrappers } --10 operators  
5 boxers--5 operators and inspectors  
                  combined  
1 relief operator  
3 machine adjustors

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On the new (and still under test) integrated lines where two makers are coupled to one packer and wrapper, the situation is as follows:

2 makers--1 operator

1 catcher--1 operator

1 packer and wrapper--1 operator

1 boxer--1 operator

Maintenance, repair and adjusting-- $\frac{1}{2}$  operator

b. Pipe Tobacco

Granger pouch packers require  $2\frac{1}{2}$  operators per machine. Six packaging and wrapping machines feed one automatic carton packer with one operator.

Packaging labor costs are very low relative to sales but fairly high compared to materials (20% of total material and labor). Labor cost per 1,000 cigarette packages is approximately 72¢ and per 1,000 Granger packages (pocket size) \$1.71. Labor and materials cost per year per line (10 packers) are: regular Chesterfield--\$510,000, king-size Chesterfield--\$555,000, and flip-top box--\$835,000.

3. Operating Speeds

a. Cigarettes

The current cigarette packaging practice is to relate two AMF makers at 1,200 cigarettes/minute to one packer at 120 packages/minute, both running at about 90% over-all efficiency. The flip-top box is packaged at 100/minute.

b. Pipe Tobacco

Granger pouches are packaged at speeds of 60-65/minute on a Bartelt line which boxes and cellophane wraps each box.

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Sales Volume

1. Cigarettes (volume in billions of domestic cigarettes per year)

Chesterfield regular 9 billion

Chesterfield king 13 billion

L & M king 23 billionn

L & M boxes 3 billion

Leading competitor,  
Pall Mall 72 billion

2. Smoking Tobacco

Granger pocket size 1.2 million/year

Velvet pocket tin 2.2 million/year

CARDINAL PANEL THURSDAY, AUGUST 29, 1963

<u>Name</u>	<u>Age</u>	<u>Occupation</u>	<u>Packs/Day</u>	<u>Brand</u>	<u>Soft Pack Flip Top</u>	<u>Pipe Smoker</u>
1. Lawrence Alphen	30	Salesman	1	Lucky Strike	Soft Pack	
2. Louis Duncan	43	Housewife	1	Parliament	Flip Top	
3. Barton Harmer	26	Accountant	1+	Kent	Soft Pack	Does
4. Jeanne Hartin	25	Housewife	1/2	Tareyton	Soft Pack	
5. William Germs	44	Engineer	1-2	Winston	Flip Top	Does
6. Holly Stiller	48	Housewife	1-2 Cig.	No Special	Soft Pack	
7. David Germs	26	Eng. Writer	1+	Harbor/Winston	Both	Does
8. Mary Smith	35	Housewife	1+	Viceroy	Soft Pack	
9. Lawrence Stearns	41	Hfg. Rep.	1-1/2 (stopped recently)	Kent	Flip Top	Does
10. Ruth Sherman	52	Housewife	?			

<u>Name</u>	<u>Age</u>	<u>Occupation</u>	<u>Packs/Day</u>	<u>Brand</u>	<u>Soft Pack Flip Top</u>	<u>Pipe Smoker</u>
1. Joan Alphen	29	Housewife	1/2	Alphas	Soft Pack	
2. Charles Duncan	48	Corp. Officer	1	Lucky Strike	Soft Pack	
3. Elaine Harter	25	Housewife	1-	Kent	Soft Pack	
4. Bernard Hartin	29	House. Ad.	1+	Camden (etc)	Soft Pack	Does
5. Francis Germs	50	Housewife	1-2 Cig.	Salem	Soft Pack	
6. Harold Germs	23	Housewife	1+	Harbor/Winston	Flip Top	
7. Edward Stiller	55	Self Employed				Does
8. William Smith	35	Plumber	1-1/2	Viceroy	Soft Pack	
9. Sylvia Stearns	37	Housewife	1- (stopped about 3 yrs. ago)	Kent	Flip Top	
10. Gladys Sherman	53	Insurance				

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