

PRODUCT TESTING AND THE CONSUMER'S RIGHT TO KNOW

By MORRIS KAPLAN

Technical Director, Consumers Union

The Council on Consumer Information considered many aspects of the consumer problem, from those of low-income consumers to anti-trust laws; from "fair-trade" to family financial counseling; from how to choose your doctor to burial practices.

Although Consumers Union concerns itself with all of these problems of the consumer, its special domain is the evaluation of consumer goods (and services, where possible) by brand name and the publication of these evaluations in the form of ratings for overall quality. This part of our activity looks at the market through the bewildered eyes of the prospective individual buyer, applies the resources of current technology to searching out meaningful answers for him and presents these answers in specific form for his direct use.

Such advice is so clearly worthwhile that more than 900,000 people are willing to contribute money to the effort. Although I shall not concern myself with it, I must note in passing that there is a by-product of this effort which is in some ways more significant: this is the insight into some of the forces at work in our society which produce the facts we uncover; our society's values as seen through the operation of the buyer-seller relationship; our society's aspirations as interpreted in the laws governing this relationship.

CONSUMER PROBLEM ALWAYS WITH US

The consumer problem has always been with us. In 1265, St. Thomas Aquinas was concerned with "whether a seller is bound to point out a defect in the thing sold" including matters of quality, quantity and "substance", i.e., the composition of the article. And testing in one form or another is also part of our heritage—checking if a coin is counterfeit by estimating its bending modulus, i.e., putting it between the teeth and trying to bend it; checking to learn if a ring is made of gold by dipping it into acid; determining the quantity of wheat by the number of standard-sized containers it will fill.

In 1821, John Quincy Adams reported to Congress that "the knowledge (of weights and measures) as established in use is among the first elements of education and is often learned by those who learn nothing else, not even to read and write. This knowledge is riveted in the habitual application of it to the employment of men throughout life". He might have said the same about other components of consumer knowledge. For the world of the consumer was much simpler then than it is now and the consumer in the early 19th century could cope more effectively than his counterpart in today's market.

A century later, Wesley Mitchell in *The Backward Art of Spending Money* was led to observe about the products then to be found in the marketplace: "Surely, no one can be expected to possess the expert knowledge of the qualities and prices of such varied wares". How much truer it is in today's marketplace, which boasts color television and multiplex radio, fully transistorized; automatic washing machines and automatic defrost refrigerators and freezers; processed and prepared foods from flash-dried to freeze-dried; from boil-in-the-bag to heat-and-serve; synthetic *fibers*, stretch *yarns*, *fabric* treated against staining, shrinkage and pests and *garments* permanently pressed into desired shapes; unheard of chemicals in the form of detergents, pesticides and drugs more potent than any witch's brew; and plastics, to name a few.

And our producers assert proudly that the number of fundamentally new products developed in the next ten years will exceed *all* the ones we know today.

SPEECH DRAMATIZES DIFFERENCE IN PROBLEM

A colleague of mine, in a speech last year, dramatized the difference in the consumer's problem, old and new, this way:

"Consider with me for a moment two consumer purchases—a horse and buggy in 1864, and an automobile in 1964.

"The typical consumer in the 1860's did not live in a big city, or in its suburbs. He lived on a farm or in a town and he earned his living in agriculture or the service of agriculture. He and his wife as producers and handlers of raw material knew a good deal about the goods they bought as consumers. And the goods they handled or bought were not only relatively simple in construction, they also changed slowly, if at all, in form and content.

"Such knowledge was not, of course, equally distributed or equally effective. But access to the heritage, to such knowledge as there was, was generally available and failure to make good use of it could be held to be an individual idiosyncrasy. Furthermore, as a seller of his own farm produce or a vendor of products of his special handicraft, the consumer of those days carried into the marketplace his producer's knowledge.

"Tricks of the trade, of course, are as old as trade. But the consumer was more aware of the trickery in those days and better able to defend himself. Even in the purchase of a horse from a Yankee trader, the buyer was forewarned. If he had reason to doubt his ability to read the product's history through an examination of its teeth, the character of the flesh of the lips, the look in the eye, and so on, he could, in established communities, buy from the livery a horse whose history and genealogy he knew—and also he knew the livery man.

"Now let's look at today's typical automobile buyer. He lives in a city or its suburbs. He earns his living servicing highly centralized mass production. If he functions in the productive process itself, his contact with the product is confined to a specialized segment of it. He neither knows nor can he learn from direct, immediate handling more than a little, if anything at all about the products he lives with. He spends a significant share of his income on complex household durables. These, and a host of smaller housewares, are powered by electricity.

"He, who usually cannot describe even roughly how a motor functions, owns a variety of electric motors upon which he and his family may depend for shaving, laundry, refrigerating, freezing, heating, mixing, cleaning, ironing, cooling, and even can-opening. The materials from which such goods are made, as well as many other materials in his home and wardrobe, are themselves also fabricated—and increasingly out of substances with which he has never had any experiences. Not only are the makers of the things he buys unknown and remote to him but the things are mysterious in their origin.

INFLUENCED BY HUGE ADVERTISING CAMPAIGNS

"Looking under a car's hood is no analogy to looking into a horse's mouth. The most important clues to an automobile's performance lie not where they may be read in the product but in somebody's files in Detroit."

What, then, does a contemporary consumer do, faced with the bewildering array of new products, new materials, new processes, compounded by the brand explosion? How does he choose?

He is influenced by the self-serving, unsupported (and often unsupportable) \$12 billion dollars of advertising claims which impinge on his senses at the incredible rate of 1600 per day. He is seduced by the sweet purrings of an attractive salesman (or woman), often less informed about product differences than the customer and also often biased by "push money", "spiffs", and other manufacturers' bribes. He is beguiled by style at the expense of safety and stamina, by gleam instead of guts, by features and gimmicks in place of performance and economy.

Some assume that high price will assure high quality, others that there are no differences in quality, so they buy the lowest priced product—both erroneous assumptions as each issue of Consumer Reports demonstrates. And so on and on. The most complete listing of all the techniques available to a present-day consumer would not disclose any combination that would provide even a reasonable assurance of a rational choice for most products sold in the jungle of our modern marketplace.

As President Kennedy said in his consumer message: "The consumer typically cannot know whether drug

preparations meet minimum standards of safety, quality and efficiency. He usually does not know how much he pays for consumer credit; whether one prepared food has more nutritional value than another; whether the performance of a product will in fact meet his needs; or whether the large economy size is really a bargain."

He could have continued with example after example of what the consumers put up with these days. Not long ago, Consumers Union asked its readers about their experiences with their washing machines. We tabulated replies from 76,000 homes; they dealt with 12 brands of washing machines purchased during the preceding eight years. In the brand making the poorest showing, 76% required service; even in the best brand (in terms of trouble-free operation), 45% of the owners required service. Although, as expected, the older machines required more repairs at higher cost, 11% of even the *two-year-old* machines requiring service cost over \$50 to repair. (8% cost between \$51 and \$100 and 3% cost over \$100.)

What kinds of troubles did people encounter?

Machine did not complete cycle correctly . . .	14,300
Pump	11,500
Excessive noise or vibration	11,300
Extensive water leaks or flooding	7,800
Transmission	6,700

The report concluded: "CU's business is testing washing machines, not building them, and we will not be so presumptuous as to tell manufacturers that they ought to be able to build a reasonably service-free washing machine for whatever price is necessary to maintain their competitive position. But surely the record can be better than it is."

32 CARS FOR TESTING AND TROUBLES GALORE

In a recent year, Consumers Union purchased 32 cars for test. Here is what we had to say about our experiences: "In anything as complicated as a car, pure chance will play a part in the presence or absence of troubles. But something more than chance is at work when 32 out of 32 cars chosen at random for testing show troubles of one kind or another in the first few thousand miles.

"Cars were delivered with rain leaks, a dent in one fender, a window running out of its channel, door handles that fell off, a broken distributor cap, a speedometer needle that fell back to zero and stayed there, a broken seat adjuster, an ignition lock that wouldn't lock, a door that wouldn't latch, brake lights that went on when nobody was around, engines that leaked oil, directional signals that wouldn't cancel, and a gas gauge that lied like Ananias.

"Front wheels were often out of alignment (something the ordinary buyer is not apt to notice until his tires

have worn out), and headlights arrived aimed at the ground or at the eyes of approaching motorists or at birds in trees.

"After delivery, other ailments revealed themselves: rear axle gears grew noisy and had to be replaced or, if they were not replaced, failed. The torque converter of an automatic transmission went out of business. A set of ignition points closed up and stalled a car at 300 miles. A steering gear was so tight that the steering wheel wouldn't return by itself. The arm of a folding station wagon seat broke.

"The wheels of car after car had to be balanced against shimmy and wheel fight. Poor fitting parts in one engine gave forth a knock and had to be replaced. A radio blew a fuse every time it was turned on. And a playful windshield washer sprayed the hood, instead of the windshield."

Documentation can be found by reference to the monthly issues of Consumer Reports. Our reports of such staple products as refrigerators, toasters, television sets, automobile, washing machines, kitchen ranges, to name a few, are replete with sad, angry, critical references to the low level of quality to be found in the channels of trade today.

Our wanton and wasteful practice of manufacturing and selling style and not stamina, form and not function, has not always been with us. As recently as the 1930's Buick was talking up its cars with the claim that "after 5, 10, even 15 years of use" they were still going strong. Currently, Buick talks about its "raised roof . . . a new kind of shaded glass . . . and a forward-facing third seat".

LOSS OF SATISFACTIONS CANNOT BE MEASURED

Why *the consumer* should be concerned about making rational choices is thus evident: The individual consumer who buys inferior products may endanger his life, waste his money and lower his living standard or suffer great inconvenience. In her book, *Standards and Labels for Consumer Goods*, Jessie Coles said: "The loss of satisfactions cannot be measured." She also indicated that, in terms of money, even a loss arbitrarily estimated at 10% would represent a significant amount of money to the individual and a great deal in the aggregate. She quotes Carol Moffet as setting the figure at 25%. Alfred Oxenfeldt, in a study published in the *Review of Economics and Statistics*, estimated an increase of 1½ to 2 times in a consumer's standard of living if he bought the products rated best in Consumer Reports, rather than those rated average.

Beyond all of this—and more significant—is why *our economy* should be concerned with the problem of rational choice. Dexter Masters puts it this way:

"Consumer sovereignty . . . is the . . . keystone of our economic system, at least in theory. . . . The weakening of the power of the consumer as a rationally motivated, well-informed arbiter to the marketplace threatens us with the loss of a balance wheel for the whole economic system. . . . Withdraw consumer sovereignty, and free competition becomes a kind of jungle warfare."

In a society of irrational buyers we waste our economic resources by using the same metal, the same plastic, the same machines, the same labor to make an inferior product rather than a superior one.

"But this is not a waste at all," we are told. "If products were made superior by making them last longer, for example, the wheels of industry would soon slow to a halt. More and more production and consumption is what keeps the economy going. Build products to wear out rapidly enough, and you maintain full employment and humming factories. Furthermore, longer life means higher costs and higher costs mean fewer sales. It is thus not a waste but a boon to the economy to keep the replacement market moving."

BUILT-IN RATES OF DETERIORATION

Look closely at what this argument means: we must build-in rapid rates of deterioration and waste if we are to maintain our economy. How shameful for us if this were true!

Note that the argument is applied to consumer goods and not, generally, to capital goods. In a most interesting article entitled *Deterioration Costs and Consumer Goods* by F. P. Huddle, published in the *Prevention of Deterioration Newsletter* of April, 1959, the author, referring to this double standard, says "electric motors made in 1930 are still running. Lathes in many shops are older than their operators. . . . In short, we have a double standard of wear. Producer goods must deliver proper service for as long as possible. Consumer goods must last only long enough to satisfy the minimum expectations of the purchaser."

Keep in mind the washing machine data I gave you earlier as Mr. Huddle's article continues: "If a piece of consumer durable equipment costs \$250 and lasts 10 years with 10 repairs at \$20 per call, the consumer pays \$45 per year for its use. If expenditure of an added \$50 would eliminate these 10 repair calls, he pays \$30 for the use. The difference is the direct cost of deterioration." He estimated that such unnecessary deterioration amounted to \$10 to \$20 billion a year, and that "a vigorous campaign against deterioration with the understanding co-operation of the producers of durable goods, in particular, could surely halve the loss.

"This would not mean any reduction in purchasing power of the American consumer [but] fewer 'dead horses' would be bought. More consumers would enjoy more goods and services. The consumer would get a

better run for his money and his higher living standard would reflect the efforts of more producers of more goods."

ANNUAL MODEL CHANGE RATED A NIGHTMARE

Another practice which wastes the resources of our nation by encouraging the discard of still useful products is the annual model change—the dream of the sales manager and the nightmare of the designer, quality control engineer, production man and service man. Obsolescence of a refrigerator by color or by "square looks" is a criminal and immoral waste of material, labor and capital equipment. A study showed that four out of five buyers of the new tinted refrigerators admitted that the old one was still in good condition.

Van Doren, a well-known industrial designer has said, "The cost of continuous restyling . . . because of tool expense and constant revision of merchandising and promotional plans, tends to cancel out the advantages of mass production by keeping prices artificially high." And this does not consider the many other virtues of longer production runs: time to refine the design, to seek out and correct problems in manufacture, to train salesmen and servicemen to understand the product, to simplify problems of inventory of the product itself and of repair parts.

So on both counts—that of the individual consumer and of society as a whole—there is much to be gained by making purchasing of consumer goods a more rational act. One of the ways, and there are many, is the consumer-controlled product testing and reporting approach. By this method the consumer (in the form of a union of consumers) deals with the technological complexity to today's products by retaining experts to do it for him—engineers, chemists, textile technologists, statisticians—and providing them with the tools required to unravel the mysteries of our modern marketplace. These experts can perform many wonders for their masters:

1. They can help determine for some products *how much* he is buying. A fifth of a gallon, 4/5 of a quart, 25.6 ounces of wine, he tells his amazed employers are one and the same quantity and more than 1 pint, 9 ounces. And a quart of one household ammonia is *not* effectively the same quantity as a quart of another if they have 11% and 4% respectively of ammonia. And that 2 ounces of *Brand A* insect repellent contains less of the same active ingredient as 1 1/2 ounces of *Brand B* insect repellent.

2. They can help determine the *cost* at which a product may be purchased. A shopper for a Maytag A-502 automatic washing machine might find it available at, say, \$275, \$285 and \$300 in three stores checked. Our study of price in many more stores showed that the same

machine was available for as little as \$229 (also, by the way, for as much as \$340).

CONSUMER NEEDS CALCULATING MACHINE

Too, in the matter of cost, most shoppers need a little help in comparing $14\frac{7}{8}$ ounces at 92c with 1 pound, $2\frac{1}{2}$ ounces at \$1.05. Calculating machines, however, have no trouble with such problems, nor with some of the problems associated with buying on time, if they are simple enough. (Even the computers, however, have difficulties with the complicated credit problems—revolving credit, for example.)

3. The *performance* characteristics of many products can be elucidated. Take a refrigerator-freezer, for example. It takes more than \$100,000 worth of equipment and trained engineers to determine that in a kitchen at 70° that beautiful blue model wouldn't be able to maintain its refrigerated space at a desirable 37°, but would hover around 39°. And that in a warm kitchen (90°) those very attractive and convenient egg shelves would reach temperatures of 60°. And that in a kitchen in the Deep South, with its thermostat at the coldest setting and running continuously, the refrigerated space would average 42° while the freezer would exceed 32°, allowing even the ice cubes to melt.

4. Sometimes *economy in use* can be determined. Given the appropriate water gauges, temperature-and pressure-regulating devices and engineers to run them, one can learn that two washing machines not greatly different in appearance, use 24 and 32 gallons of hot water respectively for each wash load—a difference of 8 gallons of hot water per load. And for a refrigerator no consumer could ever learn in the store (nor, for that matter, after he has taken it home) that one costs \$1.25 per month more to operate than another. Over a ten-year period, this amounts to \$150, a significant portion of the cost of the appliance.

5. *Durability* is occasionally determinable by experts. Given automobiles, a statistical design and computer to match, drivers, technicians, and ancillary laboratory equipment, engineers can determine the relative rate at which tire treads wear. With other equipment and skills, one can learn how well tennis balls will fare in use; and what kind of failures to expect from certain kinds of appliances.

EXPERT CAN DETERMINE HOW SAFE PRODUCT IS

6. How *safe* a product is also often requires experts. It is a sad fact that with precious few exceptions there are no restrictions against marketing unsafe products. And such things as the hazard of an electrical shock from

an electrical appliance, unfortunately, can't be determined without a laboratory, equipment and personnel. It took the alertness and skills of Consumers Union to sound the alarm about an electric toothbrush with a potential lethal hazard.

The consumer-controlled product testing approach is thus clearly a powerful one and can answer many of the questions of the would-be rational consumer. But it has its limitations as well—some inherent and some as practiced. The very complexity of the technology out of which this solution is born requires a corresponding sophistication in the state of the art of product testing.

Yet, it doesn't necessarily follow that the knowledge of how to produce and sell pesticides, for example, carries with it the knowledge of how to evaluate accurately their effectiveness, and more important in this case, their concomitant effects. The methods for studying the consequences of the use of modern pesticides on man's health and on the ecology of his environment lag by a large time span what little knowledge is needed to sell them to farmers.

More mundanely, but similarly, it is enough for a manufacturer to be able to show that washing machines wash and that vacuum cleaners clean. He does not need to know how to distinguish a better-performing machine from one of inferior performance.

Why should a carpet manufacturer worry about differences between the life of his carpet and that of his competitor's if the difference doesn't become evident until, say, seven years later?

Why should a vacuum cleaner manufacturer try to find methods of determining how well his product gets at the deep-down dirt if the only effect the purchaser could conceivably note (and that only after he purchased it) would be that his carpet was worn well before its time?

Why should a washing machine manufacturer be concerned with washing effectiveness if the differences between his and his competitor's machine could only be demonstrated conclusively in a side-by-side comparison of the washed clothes after, perhaps, 10 washings?

DEARTH OF VALIDATED TESTING METHODS

Thus, there is a dearth of validated test methods for characteristics of consumer products that rational consumers are interested in. It comes as a shock to many that although more than 300 million automatic washing machines have been sold in this country during the last 10 years, only during the last few years have manufacturers of washing machines *begun* to consider the development of a standard method for measuring the performance of washing machines—and with no success to date. Nor are they agreed upon methods of evaluating detergents, or the warmth of blankets, or the sizing of

women's hose, or the performance of floor coverings, both hard and soft; or the durability of clothing or shoes; and on and on.

I do not mean to imply that methods are lacking only because of a lack of concern. Sometimes the technical difficulties are great. To devise a method for estimating in a reasonable time the durability of a product that has a relatively long life is not an easy problem. I'm sure, however, that for a nation capable of splitting the atom, orbiting the earth, and hitting the moon, it would be within our capability if it had the deserved priority.

Beyond the problems of test methods there are others associated with the testing approach. It is costly, well beyond the expectations of most laymen. It is time-consuming. These circumstances, along with the widespread practice of the annual model change, combine to make it extremely difficult to obtain and maintain current information about many products. Some tests, for example those involving the hazards of drugs, pesticides, or the health implications of certain devices like the electric toothbrush, are so costly and prolonged as to be outside the capability of an organization like Consumers Union.

The seasonal nature of some consumer goods, e.g., air conditioners, lawn mowers, heaters, etc. makes it very difficult, sometimes impossible, to provide timely information. For example, we test lawn mowers in Florida during the winter so they may be ready for early summer publication. One summer, Florida had a drought and the grass was growing very slowly. So, we bought hundreds of pounds of fertilizer, used thousands of gallons of water, pushed Nature along a little and made our deadline. But even such dramatic solutions are not always within our grasp and seasonal products remain a problem.

TESTING DOESN'T FILL THE WHOLE NEED

Articles of high style, with brief model life, are difficult or impossible to treat by the brand rating method. So are unbranded products and products made under hundreds of brand names and products without national distribution. Having tested and reported on, say, 50 different brands of canned peas, for example, we have covered perhaps 10 or 20% of the market and some 600 other brands remain untested.

I have listed enough examples of problems in the product testing approach to demonstrate that, important and significant though it is, it doesn't fill the whole need. To solve our problem, we must look to other methods of introducing the essential rationality in consumption which we have established as so important to each of us and to our economy. Let me mention a few.

Despite the rapidly changing technology in consumer goods, consumers, home economists, researchers are constantly building a reservoir of information about prod-

ucts—generalizations developed from experience, from testing and from research. Thus, many things are known about detergents, synthetic fibers, foams, aerosols, plastics and other new products that can help us decide when to buy them in preference to older products and how to use and care for them most effectively.

Nor must we overlook the lag in getting information of an even less advanced kind, to the less educated and economically deprived segments of our people—about nutrition, cleanliness, maintenance of the conventional materials, about how to buy wisely. *Consumer education* is clearly the tool of choice in all these areas.

Those of you who have tried this approach, recognizing its virtues, must soon have become aware of its limitations as well. Generalizations in the broad usually require exceptions in the specific. In general, nylon is a very strong fiber, with high abrasion resistance. In a specific use, the weave may be wrong or the seams poorly designed or executed so that the end product turns out to be less durable than one made of a fiber generally weaker than nylon, say, cotton. Transformer-equipped TV sets are inherently safer than transformerless ones, except when the former are poorly designed and the latter well designed in respect to safety. And so it goes. Generalizations are helpful only in the absence of specifics or when supplemented by them.

HONEST LABEL TELLS LOT ABOUT PRODUCT

Another way to educate a consumer is through *label information*. I need not belabor this point since Jessie Coles' pamphlet, which CCI published, says everything that needs saying in a most excellent way. A well-educated consumer reading a good and honest label can learn a lot about the product. But the label of even the simplest product must, to be fully effective, contain a great deal of information (impractical to do and for the consumer to use) and the consumer must have a great deal of education in the field (more than most consumers would want to get or could get).

The problem of conveying information to the consumer about the "overall quality" of a product is, in my opinion, solved most effectively by a system of *standardized grades*. A grade, *properly set*, conveys in the simplest form all the information about the overall quality of a product that the purchaser needs to make a wise choice. When I say "properly set," I mean in accordance with the *concept* of a grading system, not as set by the few such schemes now in use, many of which have serious limitations not inherent in the scheme itself.

Setting up such a system would not be easy to do, even if there were no objections from the business community, since some of the problems of the product-testing approach are relevant here also. But with a will to do so

we can define all the characteristics of a product important to a consumer and develop standardized methods for determining them. These tasks are not beyond our technological capabilities.

And all the other tired arguments—the stifling of initiative and inventiveness, less of variety with consequent restrictions on freedom of consumer choice, problems of enforcement, and so on—can also be answered, given the will to restore true consumer sovereignty to the marketplace. For with a universal system of effective standards of grade, competition becomes true price competition, the most efficient producer/distributor relationship prevails, meaningless product differentiation disappears, advertising is restored to its legitimate function of conveying information, and we reap all the other benefits of an orderly production-distribution system.

Why aren't we living in this marketplace paradise? Because too many important interests are vested in the present inefficient system. Perhaps when it is recognized that the general welfare and the welfare of the consumer are virtually synonymous, some system will be devised to restore consumer sovereignty.

SHOULD WE MAKE THE SELLER LIABLE?

An interesting proposal for taking a long step in this direction is to change the 16th century caveat emptor principle to that of caveat venditor, i.e., to make the seller liable in the courts for the truth of all sales claims, explicit or implied. This would be tantamount to a compulsory minimum standard of grade which would

constitute the implied claim that the product would perform reasonably (for example, that a refrigerator would keep food cold enough, a washing machine wash reasonably well, etc.). It would also require the seller, on pain of court action, to be responsible for all explicit claims for his product.

The problems we have been talking about are not trivial. Whether any single consumer gets a best buy in a refrigerator may not seem important in the context of a war on the grinding poverty that one-fifth of our people endure. But the effect of millions of wasteful purchases is billions of dollars.

And what would we do with all the resources saved in this way? Wouldn't we end up with saturated markets, bankrupt industries, idle equipment, unemployment? Printers' Ink in a 1961 study, pointed out that "42% of the 53 million families in this nation do not own their own homes, 26% do not own an automobile, more than 60% spend less than \$100 per year on appliances. . . . Fuller production certainly would result if these underprivileged consumers could somehow be given the opportunity to buy."

It continues, "In the world today some 2 billion people, 2/3 of the total population, are classified by the U.N. as ill-fed, ill-housed, ill-clothed. Should the U.S. market ever reach saturation, the world market still would remain virtually untapped. . . . Means must be found to make this consumption possible."

Means are at hand. It remains for us to find ways to implement them.