SELF-SERVICE GASOLINE STATIONS*

The self-service gasoline station has become a controversial issue in many communities. In at least 14 states and in 31 cities of over 100,000 population, they have been banned. In Seattle, Washington, a referendum vote after the legislative body had vetoed such stations was two to one in favor of granting permission. Petitions in California cities have been circulated both for and against self-service stations, and retail associations have been formed especially to defeat or promote them. Insurance rates have abruptly increased by 50 percent for the new-type station and as abruptly gone back to the former rate levels. The stations have been attacked as being a menace to public safety and have been defended as a vanguard of free enterprise. The planner needs the facts, should such a controversy arise in his community.

Arguments: Pro and Con

The distinguishing characteristic of the self-service gasoline stations, or "self-serves" as they are often called, is that the customers do the work. They fill the gasoline tanks, wipe the windshields, put air in the tires, check and add oil. Attendants are available to make change and to sell additional services such as lubrication (not all self-serves undertake additional services) and accessories, particularly tires. In order to sell gasoline at a price low enough to be attractive to the motorist, the self-serve must be a large scale operation -- a type of super-market for gasoline with a large volume of business. Fewer employees in relation to volume sale of gasoline are required for self-serves, and the lower labor costs consequently permit a lower cost of gasoline for the consumer.

The most frequently raised objection to the self-service stations is that they create fire and explosion hazards. It is claimed that customers are more likely than attendants to smoke when pumping gasoline and that they are more likely to spill gasoline. It is also contended that the driver is not trained to spot needed

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repairs and defects in the motor or other running parts and that his vehicle, not
checked by a trained attendant, will become a hazard itself through neglect. Also,
assertions have been made that the driver, especially if elderly or if a woman (or if
the weather is bad) will be unwilling to wipe the windshield and thus will fail to pro-
tect his own driving vision.

In addition, it is sometimes argued that undue traffic congestion will re-
sult at the stations and that accidents will be more likely to occur. The reduced
number of personnel, it has been stated, will result in a decrease in station cleanli-
ness and thus in depreciation of surrounding property. Implicit in the objections to
self-service stations, but only sometimes stated, is the fear that a number of
existing stations will be driven out of business and that a number of filling station
employees will be deprived of jobs.

The answer given by proponents of the stations to the contentions of in-
creased danger of fire and explosions that the motorist is not likely to spill gasoline
since he is paying for it. Spillage is apparently not an important factor in fire and
explosion -- it has in the past accounted for only 5 percent of the fires, while
collisions have been responsible for 20 percent. Traditional stations, it is stated,
are as likely (or more likely) to produce collisions since the lot area tends to be
more limited. It is further argued that the attendant at a self-serve is a "supervi-
sor" and can order a motorist to douse his cigarette, while with a "customer-is-
always-right" attitude at a traditional station, he could not do so. Moreover, the
self-serves claim that they have used safety innovations such as safety-nozzle hoses,
central control switches, etc., to guard against fire and explosion.

The planner can dismiss quickly many of the objections raised above; sta-
tion cleanliness must be maintained regardless of type of operation, and health
codes and other police powers should be sufficient to regulate those businesses not
adhering to standards. While traffic congestion may be a potential problem, it is
one which must be considered in connection with all types of gasoline stations. It
is undoubtedly true that if the self-serves are popular investments jobs in tradi-
tional gasoline retailing would suffer, but this is not sufficient reason for a commu-
nity to prohibit an enterprise. The only objection of merit is the question of safety.
If self-service regulations are needed to guard against their being hazardous, then
proper rules and standards should be established.

Nature of the "Trade"

There are today approximately 200 self-service stations in existence.
This compares to a total of over 81,000 stations (in 1948) in the country. About 90
percent of all of the self-serves are located in California -- and the bulk of these
are in the southern part of the state. Self serves have also been reported in
Houston and San Antonio, Texas; New Orleans, Louisiana; Norfolk, Alexandria and
Richmond, Virginia; Oklahoma City, Oklahoma; Tacoma and Seattle, Washington;
Chattanooga, Tennessee, and La Crosse, Wisconsin. Charlotte, North Carolina,
had one self-serve, but it has now reverted to a conventional basis. The stations
that have been located on the west coast are generally of new construction, while
those in the east are generally conversions of conventional stations. As of April 1950, only three newly constructed stations were reported in the east.

The chief advantage offered by the self-service station is an economic one -- gasoline prices have been reduced in some areas from 4 to 5 cents per gallon, or about 20 percent. The differential between prices offered by the self-serve and the conventional station is not as great where price wars have been initiated. The self-serve depends on volume: the conventional station averages around 14,000 to 22,000 gallons per month, while the average self-serve pumps about 150,000 gallons per month, with some stations pumping over a half million gallons in the same period.

Some self-serves have restricted themselves to bulk sale of gasoline (and with motor oil and air for tires also available) with no greasing, car washing or other services offered. Other self-serves furnish these services at approximately the same prices offered by traditional stations. Some self-serves have gone in heavily for "TBA", which is the trade's jargon for tires, batteries and accessories. By the early part of this year, the TBA volume had only been 1.3 percent of the total gasoline sales volume for self-serves, while the profit derived from the TBA sales was 2.4 percent of that from sale of gasoline. Sale of motor oil was 2.9 percent of gasoline sales and profit was 5.2 percent of that for gasoline.

Since the profit is greater on items other than gasoline, some self-serve operators claim that they are now aiming for "the motorist's entire automobile dollar." Although tires are the next most popular sales item after motor oil, refreshments, souvenirs, accessories, and incidental household equipment are also being sold. One operator of a chain of self-serves hopes to make his stations into a miniature Sears Roebuck. Space has been rented out to ice cream and soft drink salesmen or to automatic dispensers; the motorist who services his own car is often more attracted to these refreshments than one comfortably settled in his automobile.

In their initial struggle for existence, some self-serves have allied themselves with local garages. If the self-serve does not lubricate or perform such services as radiator flushing, etc., it is more likely to suggest that the customers go to the local repair garage than to a rival conventional station. Thus the self-service operators claim that they are reinforcing a valid division of labor, are creating jobs in local garages, and are aiding the motorist by referring him to a trained mechanic.

While the self-serve has been able to cut the prices of gasoline, many conventional stations have met the reduced prices. Self-service associations have advised their members not to indulge in prolonged price wars, but to consistently offer prices as low as is economically possible. It is believed that the bulk of the small (three to six pump) conventional stations cannot consistently meet the lowered prices of the self-serves, and will either go out of business or be forced to convert to the large-scale station, whether self-service or service. It has been estimated that another 200 self-service stations in the Los Angeles area could dry up the 5000
small conventional stations. Even the self-serve operators believe that there will always be people who will want attendants to service their cars, but they have found that some people enjoy tinkering with their automobiles, and that even in periods of price wars, when there is no price differential, these motorists patronize the self-serves.

The self-service operators feel that their greatest danger is in too much competition from other self-service stations. No ratios have as yet been worked out as to the number of these stations that can be supported by a community. Since there are relatively few skills involved, the gasoline station field is subject to overcrowding. Before the introduction of self-serves, there was an annual mortality rate of from 8 to 12 percent of all gasoline stations -- the mortality rate would be even higher if the number of failures were compared to the number of new enterprises started each year. A capital investment is required on an average of approximately $10,000 for a conversion of an existing station, $22,000 for a 12-pump and $30,000 for a 15-pump station. A gasoline station should have an anticipated "life expectancy" of 20 years.

The bulk of the existing self-serves are owned rather than rented. This is partly because the major oil companies have made leasing arrangements mostly with small, conventional stations and do not wish to jeopardize these arrangements by directly aiding the competing self-serves. However, major oil companies do sell their products to self-service stations which retail the wares under a different brand name (and there is even some direct experimentation with self-service stations by these oil companies). Self-serves are not likely to make contracts with a single oil company but are more likely to rely on the fluctuations of the market for the lowest prices. They occasionally do their own hauling of gasoline, and also have large underground storage capacities, thus eliminating some of the costs of distribution.

Self-service stations tend to remain open 24 hours a day, partly because it is not feasible to move all items on display into a locked shelter. They frequently use female personnel -- girl cashiers may be hired for less money than men and they attract customers. The American Federation of Labor Teamsters Union has launched a drive to organize self-service employees. According to contracts already signed, male employees will receive $260 per month for a 48 hour work week and female employees $240. Formerly, employees received $225 and $150 respectively.

Probably because they are new entrants in a highly competitive field, self-service stations have resorted to lavish advertising feats and campaigns. Huge and fancy signs attract the motorists' attention; costumed attendants and striking architecture displays are employed to clamor for business. If architectural control or sign control is desired in a community, the fact that the newer gasoline stations will probably attempt to be as eye-catching as possible should be anticipated.

The nationwide insurance rates for bodily injury and property damage at
self-service stations have been brought down to levels prevailing for the conventional stations according to reports in March, 1950. Self-service rates had been 50 percent above rates for conventional stations since December 1, 1948, in every state except Virginia where the rate hike was being studied by the State Corporation Commission, and where the application for rate increases has subsequently been recalled.

In appraisal, according to "Elements of Gasoline Service-Station Value" by J. C. Brick (The Appraisal Journal, July 1949), four factors influence the value of a station (a) plot, the specific tract of ground under study; (b) plant, the physical improvements on the land; (c) product, the public acceptance of a particular brand in an area; and (d) personality, the man who operates the station and who draws the trade. According to the author, a station or station site may be judged by means of a "Factors of Desirability Grid" which is included in the article.

Location

As mentioned above, there has not yet been sufficient experience with self-service gasoline stations to indicate roughly the population needed to support a station of this type. One operator states from his own experience that he believes a community of from 10,000 to 15,000 population is large enough to support such an enterprise. Although most of the existing locations have been opened in Southern states, to be able to maintain year-round volumes, the self-serve operating in Wisconsin only suffered a decrease in business of 37 percent in the worst winter weather, contrasting with the 50 percent decrease anticipated by the owner.

Since self-serves depend on high volume, they seek locations on heavily traveled streets or highways. The operator prefers to be located "early" rather than "late" on the road to an urban center, so that another station will not usurp his business. It is unlikely that a self-serve will attempt to be exclusively a "neighborhood" station, but it is important for the operator to locate in an area where the economic level is not so high that the price advantages of the self-serve will not be appreciated. A location on a route used throughout the year is of course superior to one that is traveled heavily in a particular season.

The station must be easily visible, particularly if on a highway where high speeds are maintained. If in a built-up area, visibility is considered good if a car approaching on the same side of the street can see the pumps at a distance of 200 feet, or if on the other side of the street, the pumps can be seen at a distance of 240 feet. Thus, locations on curves or where foliage or structures block vision, are considered undesirable. It has been said that any factor that tends to slow traffic will contribute to the success of a station. Operators have found this to be true to some extent -- a traffic light or stop sign often gives the motorist time to survey his surroundings and decide to purchase gasoline. However, if traffic conditions are very crowded the motorist often hesitates to lose time trying to get out of, and then later, back into line.
Ease of access to stations is important. Level ground is desirable, but it would be less disastrous to place a station on a sloping site in a hilly community such as Pittsburgh, than it would be in a community with fewer grades.

Design

As mentioned above, self-serves are operated on a large scale, generally with from 12 to 18 pumps, and thus require larger lot sizes than the conventional stations. Usually aisle spaces are generous -- this is partially for the psychological appeal to the motorist who views the wide space as easy maneuvering ground. It has been recommended that a 12 pump station be located on a lot at least 100 x 100 feet, a 15 pump station on a minimum of 125 x 100 feet and an 18 pump station on 200 x 150 feet. The longest dimension should be the frontage on the principal highway or street. If two major highways or streets bound the station, equal or approximately equal frontages should be obtained on both sides. Too much frontage has been regarded by operators as almost as undesirable as too little frontage. In the case of too much frontage, it is difficult to supervise the area and for cars to find correct entrances, etc. If the station is catering to trucks, frontages from 300 to 500 feet may be necessary.

Self-serves usually place pump islands perpendicular to the street rather than parallel to it. The automobile enters the station at a right angle, stops at the pumps, and then if no additional services are required, exits via a U-turn. The pattern of these stations has been to offer a multiplicity of uniform service islands rather than an elaborate service building. The layout of the station is designed to give the motorist the impression that with such an expense of equipment, he can get in and out of the station in a hurry. This type of station layout has been used by service type stations too, and has supposedly increased the gallonage of these stations one-third over what could have been otherwise anticipated.

The U-turn type of station supposedly is effective whether located in the middle or on the corner of a block. Thus the operator may save money by not paying the higher land costs for a corner location, although cross traffic may not be attracted to his station. Individual circumstances will determine whether a middle or corner location is desirable.

Pumps should be at least, but not much more than 20 feet from the inside of the sidewalk; islands on which the pumps are located should accommodate three pumps. (It is suggested that since customers have myths about the potencies of different gasoline, three types of gasoline should be offered - regular, ethyl, and super-ethyl. However, many stations include two regular and one ethyl pump on each island.)

Although the depth of lot is not regarded as being as important as frontage, it is somewhat more important for the self-service station than for the conventional station, since there must be ample space for motorists to tinker with their cars, and for parking if refreshments or sundry articles are to be purchased.
The entire area of the station should be paved. If there are curb cuts rather than a "smoothed" pavement permitting access at many points, they should be at least 27 feet wide. If pedestrians frequent the general neighborhood, there should be only a few and preferably one clearly marked entrance and exit. The lighting of the station, according to the operator's point of view, should be brilliant, as it is believed that the motorist instinctively slows down when he sees strong lighting. Stations have increased night sales by 25 percent and more when they improved their lighting. Officials, however, will be concerned about the effect of the lighting on the motorist and on surrounding property.

There is no unanimity about the value of landscaping the area between the street and sidewalk or street and station. Some operators believe that this helps present an attractive picture to the motorist, particularly the woman motorist.

Experience Report: Los Angeles County

More than half of all the existing self-service gasoline stations are reported located in the Los Angeles area. PLANNING ADVISORY SERVICE wrote to Mr. Arthur H. Adams, Director of Planning of the Regional Planning Commission of the County of Los Angeles, to ask him for an evaluation of the experiences with these stations. His reply, which he has kindly given us permission to reprint, is as follows:

"We have had considerable experience with self-service gasoline stations in Los Angeles County, briefly described as follows:

"About two years ago some of the first of these stations were installed in county territory at which time an agitation was started against them on the ground that they would probably become a fire hazard. The opposition argued that without a trained attendant the fire hazard would be considerably increased. There was also a proposal made that the number of pumps to be allowed should not exceed 8 or 10. The argument to support this proposal was that in some instances these stations would be situated close to residential areas and that if a large number of pumps were installed the resultant noise incident to the filling of the gasoline tanks might prove detrimental to the neighborhood.

"The Regional Planning Commission refused to take a stand against the installation of these stations or the placing of a limitation on the number of pumps to be installed. The result has been that many of these stations have been installed with the number of pumps varying from 9 to 24, usually arranged in groups of 3. These stations seem to be doing a very good business and to date no serious fire hazard has been apparent nor has the noise incident to the filling of gasoline tanks caused any considerable number of complaints. We have had a few complaints on noise but do not feel that they are serious; in other words, noises of this kind might have originated and sometimes do originate in the vicinity of other types of business as well.
"We have not adopted any special regulations for these stations and are allowing them to be installed on the same basis as the old style service station.

"Our C-1 and C-2 (Neighborhood Business) Zones restrict all gasoline station operations to prevent the doing of repair work for the reason that we feel this would be a detriment to a residential neighborhood. Our C-3 (Commercial) Zone does permit any gasoline service station to do certain incidental repair work such as tire retreading, battery charging, etc., but no body or fender work.

"I think you would be perfectly safe in recommending that self-service gasoline stations be subject to the same limitation as imposed upon the standard type station for reasons as outlined above."

Regulations

Connecticut, Illinois, Indiana, Maine, Michigan, Minnesota, New Jersey, Ohio, Oregon, Pennsylvania, Kansas, Rhode Island, Tennessee, and West Virginia are among the states reported as banning self-service stations. (Chattanooga's self serve operates under special permission received from the fire marshall). In general, state codes banning the stations contain phrases such as "no person other than service station owner or authorized employee shall use or operate any motor fuel dispensing equipment at any service station."

The American Automobile Association has taken a stand in opposition to the adoption of state laws and municipal ordinances which would prohibit self-service operations. When public hearings were held in Washington, D. C. to determine whether to permit or prohibit the self-service stations, a representative from the United States Department of Justice stated that the stations provide increased competition between retail outlets and appear to be marketing innovations that offer the public service at less cost than formerly. The representative advised that the stations should not be burdened by "excessive" supervisory costs that might nullify "marketing savings."

The National Fire Prevention Association has not adopted provisions governing self-service gasoline stations as part of its suggested ordinance for the storage, handling and use of flammable liquids. The suggested ordinance was tentatively adopted at the Atlantic City 1950 annual meeting, without the paragraph dealing with these stations. The meeting did accept the following provisions as "recommended good practice." The Committee on Flammable Liquids is to give further consideration to these proposed provisions:

"Unless a permit for a self-service station has been issued by the Chief and all conditions thereof have been complied with, no person other than the holder of a permit issued by the Chief, or the lessee, employee, or other agent of such permit holder, shall dispense Class I flammable liquid into the fuel tank of a vehicle at a service station. No permit for a self-service station shall be issued unless each dispensing unit for Class I Liquids is provided with an automatic locking device that prevents the re-use of the unit after the hose has been replaced"
until the unit has been manually unlocked by means of a detachable key or similar mechanism. A computing pump that automatically prevents re-use until the reset handle is operated may be approved as complying with the provisions of this section provided the re-set handle is detached and is used only by the attendant to start the pump prior to each use by a customer. No person shall allow any dispensing device for Class I liquid at a self-service station to remain unlocked except during the time that it is in actual use by a customer. No person shall unlock a Class I liquid dispensing device for the use of a customer if such customer is smoking, or is under the influence of liquor or is incompetent."

The Industrial Commission of Wisconsin adopted an amendment to its Flammable Liquids code which pertains to self-service gasoline stations. The provisions became effective in August, 1949, and include the following:

"Order 856, Gasoline Dispensing or Vending Devices.

(a) All gasoline gauging or vending devices shall be of approved type substantially secured to concrete or masonry foundations suitably located and of proper design and dimensions to normally prevent any portion of motor vehicle from colliding with the device.

(b) Systems wherein continuous air pressure is maintained on the gasoline storage tank in connection with gasoline dispensing or vending device are prohibited.

(c) The use of above ground gasoline storage tanks in connection with gasoline dispensing or vending devices is prohibited.

(d) Devices which discharge by gravity shall be so designed that it is impossible to retain in the measuring compartment materially more than 10 gallons of liquid, and so that it is not possible to lock the device without draining the measuring compartment.

(e) Glass cylinders of so-called visible pumps shall be protected by substantial wire or expanded metal screen.

(f) At any service station where automatic nozzles are installed on gasoline pumps, hold-open devices are not permitted, but nozzle shall be operated manually.

(h) Only owners, operators or trained employees shall dispense gasoline to the general public, except that the Industrial Commission may approve self-service under competent supervision if construction and supervision standards outlined in Order 856, Paragraphs (h) (i) and (j) are adhered to;

(i) Approval must be obtained for all service stations to be converted to self-service and all newly constructed self-service stations. Applicants must submit plot plans in triplicate showing distances from property lines, construction of building and other data as required by the Flammable Liquids Code of Wisconsin.

(j) In addition to other requirements of this code, the following requirements must be adhered to:

(1) A driveway of 24 feet shall be provided between pump islands and between any pump islands and building. Not more than four
pumps shall be placed on one island.

(2) Sufficient clearance shall be allowed as an exit driveway that will permit cars to leave the premises without interfering with service or incoming cars.

(3) Where oil, windshield and air services are available, separate areas shall be provided and located so not to interfere with entry or exit of cars.

(4) All pumps shall be equipped with approved self-closing nozzles and hold-open devices on such nozzles shall not be permitted, subject to paragraph (g).

(5) A master switch shall be installed at a central control point that will disconnect the electric power to all gasoline pumps.

(6) If a central control tower is installed it must be elevated to a height that will provide an unobstructed view of all pump islands.

(7) An approved fire extinguisher shall be provided at each pump island.

(k) Supervision...The operator...shall comply with the following....

(1) Agree in writing that requirements of Order 856 of this code have been met and will be maintained.

(2) If a central control tower with public address system is provided, one supervisor must be on duty in this tower at all times station is open. In addition, there shall be one instructor and one attendant for the first six islands, or fraction thereof, on the driveway at the pump islands at all times the station is open and cars are being serviced. There shall also be one additional instructor or attendant for each additional three pump islands or fraction thereof.

(3) If a central control tower is not provided there shall be one supervisor on duty in addition to one attendant for each two, or fraction pump islands, all of whom must be on duty at the pump island at all times station is open and cars are being serviced.

(4) Personnel required in paragraphs (2) and (3) above shall be in addition to any cashiers that are employed. Supervisors, instructors, or attendants shall not act as cashiers. Personnel shall be 18 years of age or over.

(5) A responsible supervisor must be on duty at all times the station is open."

A few examples of local regulations are those of Wilmington, Delaware, which banned the stations, and Richmond and Portsmouth, Virginia, which set up certain controls:

Wilmington provided by a city ordinance amendment that:

"No Class 1 liquids or motor fuel shall be dispensed at or in any automobile filling station, aircraft fueling post, or any public filling station or any place of business by any self-help or coin-operated pump, or other self-dispensing device, or by any other person than the owner, lessee or a duly authorized attendant employed by such owner or lessee for such purpose."
Although Portsmouth, Virginia, has laid down no specific self-serve regulations, the fire marshall requires that automatic nozzles be used and that no female be in charge of stations. The use of roller skates by station attendants is also prohibited.

In Richmond, Virginia, an ordinance adopted December 27, 1949, by the city council requires self-serve operators to obtain special permit from the office of the Director of Public Safety, and prohibits drunks or incompetents from using self-serve pumps and operators from unlocking pumps when an engine is running. It also forbids the use of certain types of nozzles.

**Legal Decision**

A state act prohibiting self-service gasoline stations was upheld in the case of Reingold et al. v. Harper, Commissioner of Labor and Industry, 72 A. (2d) 369 (Superior Court of New Jersey, Chancery Division, March 17, 1950). The plaintiffs operated a self-service station in Hackensack, New Jersey, since January, 1949. Approval of the station had been received from the local fire chief. A state statute, effective May 28, 1949, regulated the sale of gasoline and prohibited customers from dispensing gasoline. The validity of the statute was challenged, and the court, in upholding the statute, said:

"In its sphere the legislature is supreme and its enactment may not be lightly set aside... Nor can the court substitute its conception of a sound public policy for that entertained by the legislature.... The statute in question is regulatory. It forbids the operation of retail gasoline service stations upon a self-service basis. In effect, it is an expression of the legislative opinion that the use of gasoline pumps by persons unfamiliar with their operation is not in the public interest, and it requires that only qualified persons shall sell this highly inflammable liquid."

**Brief Bibliography**

*National Petroleum News* (a weekly magazine published at 1213 West 3rd Street, Cleveland 13, Ohio).
