SCRAP EVERY SUNDAY: BEHAVIORAL ANALYSIS OF A CHURCH-CENTERED ALUMINUM RECYCLING PROGRAM

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(ABSTRACT)

The methods of applied behavioral science were used in developing and evaluating a program of resource recovery in a number of local Presbyterian churches. Household aluminum scrap was collected and sold to a local recycling center, and the proceeds were contributed to the established 'Halt Hunger' program of the Presbyterian, U.S., denomination. Behavioral interventions were prompts, proximity of collection container, and feedback; the dependent variable was pounds of aluminum recycled. Results indicated that smaller churches which used frequent prompts tended to have larger collections of aluminum; the location of the collection container did not significantly influence the size of the aluminum collections. Contributing the proceeds from the recycled aluminum to an established church program was reported by participants to be an important incentive for collecting aluminum scrap. Because volunteers collected and transported the scrap aluminum, the program was markedly cost effective.

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INTRODUCTION

The Problem

Disposal of solid waste in the United States is a big problem which is getting bigger. The average family of four discards three tons of trash per year (Geller, Winett, & Everett, 1982). Nationwide, the current annual cost of $4 billion to collect and dispose of solid waste is expected to increase to $6 billion by 1985 (Purcell, 1980; 1981). A growing population, disposal-oriented society, and increasing per capita consumption contribute to the rapid growth of the problem (Moore, 1982).

The traditional and still predominant method of disposing of solid waste in this country is to bury it (i.e., in a sanitary landfill), a method which wastes energy and material resources and contributes to environmental pollution. One possible solution to these interrelated problems is to re-use the discarded material in some form, a procedure broadly and popularly referred to as "recycling." The practice of recycling is not new: this country recycled paper, tin, steel, and rubber on a fairly large scale during World War II. Recycling is currently in use on a significant scale in some European countries; Denmark recycles 60% of its municipal solid waste (Moore, 1982). Although the United States presently recycles only about 10% of its solid waste, programs for re-using solid waste in some form are growing in extent and effectiveness (McDermott, 1980; Moore, 1982).

Geller (1981) differentiated and defined a number of technical terms for current approaches to resource conserving waste management in this country. "Waste reduction" is simply using less of a product or material; e.g., using less water for a shower, or driving fewer miles in the family car. "Resource recovery" is re-using discarded materials by employing them as raw material (either alone or mixed with virgin materials) for processing. "Recycling" is resource recovery which reprocesses the original material for remanufacturing, as in smelting aluminum scrap to produce new aluminum articles. "Reclamation", also termed conversion, is resource recovery which uses discarded materials to produce a different product; e.g., grinding up rubber tires for paving material, or burning garbage to produce steam (for generating electricity, or manufacturing processes, or both).

"Reuse" puts a container or other manufactured article back into service after cleaning or refurbishing it; returnable drink bottles and recapped tires are examples. Reuse is classified as recycling by some groups (e.g., League of Women Voters of U.S., 1972), but is more often termed waste reduction (Wahl & Allison, 1975).

All of these approaches - waste reduction, recycling, reclamation, reuse - make significant contributions to the solution not only of the initial problem of solid waste disposal, but also to the related problems of environmental pollution and wasted energy and resources. Discarded materials which are reused in some form reduce the demand for virgin raw materials. Less energy is required to reprocess used materials than to process an original raw material; e.g., to reprocess aluminum scrap

requires only 5% of the energy needed to produce virgin aluminum from bauxite. Environmental pollution is reduced at three levels: there is less waste material to dispose of, less virgin raw material is needed, and less energy is used.

The nature and extent of these savings differ in the two principal approaches to resource recovery, termed "high technology" and "low technology." A high technology resource recovery system takes in mixed waste, separates it mechanically into recyclable components (steel, aluminum, glass, paper, etc.) and non-recyclable components; and burns the latter. The burning waste can produce steam for manufacturing processes, electrical power, or both; or can produce oil through the process of pyrolysis (Seldman, 1975, 1976a, 1976b). High technology systems offer a maximum of convenience for the individual consumer, in that no change is required in conventional waste disposal habits; but high technology systems are much more expensive to build and maintain, and are less efficient in processing waste, than low technology systems (Geller et al., 1982).

Low technology resource recovery systems require the consumer who discards the waste to separate it into its various components: glass, paper, metal, food wastes, etc. Each type of material is then re-processed in the way which makes maximum use of the material with the least possible expenditure of energy and the greatest possible protection of the environment. This system results in a greater response cost for the individual consumer, and requires adequate facilities for collecting and reprocessing the various materials, but it avoids high costs and other disadvantages of the high technology system.

The necessary commercial/industrial facilities for low technology resource recovery for a number of materials are currently available to large numbers of consumers. Within fifty miles of the author's home, for example, there are collection points which pay individuals even for small quantities of sorted recyclable materials, including: glass, newspaper, mixed paper, high grade paper, and metals such as iron, steel, and aluminum. Prices paid for these materials vary somewhat as the industrial demand for them fluctuates; but the continuing presence of such recycling operations is evidence that industries using these materials have found recycling to be a cost effective and viable source of raw material.

Some residential waste which is not recyclable commercially can be processed inexpensively and easily by the individual consumer in ecologically sound ways. Lawn clippings can be composted and food wastes can be vermicomposted (Geller et al., 1982). Low technology resource recovery systems do require that the individual consumer practice consistent resource recovery behavior. This behavior, and the conditions which encourage it, have been the primary focus of attention on the part of behavioral scientists concerned with conserving resources and preserving the environment (Geller, 1981).

Principles of the Behavioral Approach

Behavioral principles are summarized by Geller et al., (1982) in this way: "The general principle is to define specifically and objectively the target behaviors which need to be changed (i.e., increased or decreased in frequency) and then manipulate the environmental stimuli or events preceding and/or following the target behaviors in order to effect behavior change in desired directions." (p. 17). Target behaviors may be classified broadly as repetitive behavior, such as setting back the home heating thermostat every night; or single occurrence or "one-shot" behaviors, such as installing a solar heating system. The "one-shot" behavior is usually more expensive initially, but more convenient in that the desired outcome is achieved while at the same time the necessity of repetitive behavior by the consumer is significantly reduced or even eliminated entirely. Recycling behavior is necessarily repetitive behavior, and behavioral studies of recycling focus on interventions which result in repetitive behaviors.

Interventions for behavior change may be antecedent or consequent strategies (Geller et al., 1982). Antecedent strategies, sometimes termed "prompting" or "response priming" procedures, are initiated before the target behavior occurs. Prompts may be either "response-approach" or "response-avoidance" (Geller, Koltuniak, & Shilling, in press). Response-approach prompts are intended to increase the frequency of the desired behavior; response-avoidance prompts are intended to decrease the frequency of undesired behavior. The function of prompts is further clarified by Geller et al., (1982).

Prompts may specify a contingency (i.e., describe the consequences which will follow a target response); they may simply signal that the previously announced consequence is now available; or they may do both. Some prompts request the desired behavior but do not either describe a contingency or signal an available consequence. Such prompts may be general ("Please do not litter" - a general response-avoidance prompt) or specific ("Deposit trash here" - a specific response-approach prompt). Geller et al., (1982) reported that "prompts which did not announce or signal a consequence were only successful in promoting a substantial amount of compliance relating to environmental protection"(p.23) when they (1) were specific, (2) were in close proximity to the desired behavior, and (3) requested convenient behaviors in polite, non-demanding language. The latter requirement was supported by Reich and Robertson (1979) who observed that a demanding, negative message ("Don't you dare litter") was significantly less effective in promoting anti-litter behavior than a polite positive request ("Help keep your pool clean").

Consequnce strategies for modifying behavior are events which follow behavior and which may be either pleasant or unpleasant. If the behavior preceeding a pleasant consequnce is subsequently increased in frequency, the consequence is termed a positive reinforcer. Unpleasant consequnces are termed negative reinforcement if the consequence is avoided or escaped by the preceeding behavior and the frequency of the behavior is subsequently increased. Unpleasant consequences are termed punishment when the frequency of the preceeding behavior is subsequently decreased.

All the consequences used in the studies reviewed for this paper were pleasant consequences. As summarized by Geller et al., (1982):

> "Applied behavior scientists have demonstrated empirically a variety of reasons for preferring positive reinforcement over punishment and negative reinforcement, including the fact that positive reinforcement is usually most acceptable and can be easiest to administer and most effective in the long run. Therefore, behaviorists working for environmental preservation have avoided the use of negative reinforcement and punishment procedures." (p.26).

LITERATURE REVIEW

Antecedent vs. Consequence Strategies

In a study of paper-recycling behavior in six college dormitories, Geller, Chaffee & Ingram (1975) compared the results of three interventions. Six dormitories were grouped in three pairs, with one male and one female dormitory in each pair; and each pair of dormitories was subject to three experimental conditions in a Latin Square design.

In the Baseline condition, posters on the dormitory bulletin boards announced that a "Paper Collection Area" (a designated room in each dormitory) had been opened to receive paper for recycling at specified hours. The contest condition awarded $15.00 for the most recyclable paper per capita in one week (each contest was between the two dormitories of a pair). The Raffle condition gave a raffle ticket for each delivery of recyclable paper (minimum delivery was one 8.5 by 11 inch sheet of paper or cardboard). Each ticket provided one chance in a weekly raffle of prizes donated by local merchants. During each week of the raffle contingency the rules for the raffle, and a list of the prizes to be raffled off that week (on Friday), were posted on the door of the Paper Collection Area.

Total pounds of paper delivered during the study were 845 for the Baseline condition, 1420 for the Contest condition, and 1515 for the

Raffle condition. Participation by dormitory residents averaged 2.2% for Baseline, 3.9% for Contest, and 7.3% for Raffle. Ingram and Geller (1975) followed up the Geller, et al., (1975) study, with some refinement of the antecedent intervention. Flyers describing the paper recycling program and urging participation were delivered to each dorm resident with a verbal reminder of the place and time (5:30 to 7:30 p.m., Monday through Friday) for depositing paper for recycling. In the Raffle condition, one raffle ticket was given for each pound of recyclable paper delivered. Both the percentage of dormitory residents participating and the pounds of paper collected increased substantially during the Raffle condition.

Witmer and Geller (1976) conducted a similar study, comparing the effects of prompting and two reinforcement conditions. Baseline for the study was a program of paper recycling already in progress under the sponsorship of a Campus Committee for Ecological Rebalance, which had provided a paper collection room in each dormitory and a poster on the bulletin board of each dormitory floor announcing the recycling program. The Prompt condition was a flyer delivered to each dormitory room, announcing the paper recycling program and urging participation. The individual reinforcement contingency was a raffle, for which one raffle ticket was given for each pound of paper delivered to the collection room. The group contingency condition was a contest between paired dorms (two male-female pairs, one male civilian-cadet pair) in which the winning dorm of each pair was awarded a $15.00 prize. Both reinforcement conditions resulted in significantly more pounds of paper

delivered than either Baseline or Prompt conditions. However, Witmer and Geller found participation to be "disappointingly low"; fewer than 15% of dormitory residents participated.

Couch, Garber, & Karpus (1979) studied the effects on paper recycling behavior of a raffle contingency in which the pounds of paper required for one raffle ticket was gradually increased. Subjects were female students in two university dormitories. In one dormitory, one raffle ticket was given for one-half pound of paper throughout the study. In the other dormitory, the amount of paper required for one raffle ticket was increased from one-half pound, to one pound, to two pounds, to three pounds at weekly intervals. The increase in pounds of paper required for one raffle ticket did not significantly affect the pounds of paper delivered by residents of that dormitory, but neither did it increase response maintenance when the raffle condition ended. Couch et al. recorded 32% participation in one dormitory and 22% participation in the other, but also noted that 58% of the paper delivered in one dormitory was collected by two students.

Reid, Luyben, Rawers, & Bailey (1979) investigated the impact of prompts and proximity of containers on a newspaper recycling program in four apartment complexes. The Baseline condition for each complex was a container for recycling newspaper located in the laundry room of each complex (placed earlier in a program by the local Environmental Action group). In three of the complexes, a Prompt and Proximity condition was established after varying periods of Baseline (20, 32, and 61 days in the 110 day study). The Proximity component of the experi-

mental condition was the placement of two additional containers for recycling newspaper adjacent to the trash dumpster for each apartment complex. The Prompt component was a verbal explanation of the recycling program in brief door-to-door interviews. The Prompt and Proximity conditions increased the pounds of recycled paper 50% in one complex, 60% in the second, and 100% in the third.

Luyben and Bailey (1979) designed a study to replicate the Reid et al., (1979) study with different subject populations, and to compare the effects of proximity with reward. Target populations were four "moderately large" mobile home parks. During Baseline a large plywood box was positioned at the entrance to each park, with a sign requesting that newspaper be left in the box for recycling. The Proximity condition, implemented in two parks, consisted of placing six additional containers for newspapers at convenient points throughout each park, so that every resident in the park passed a container when traveling between his residence and the park entrance.

The Prize and Prompt condition implemented in the two other parks offered children prizes for collecting newspapers. The value of the prize increased with the number of pounds of paper turned in, from a minimum of two pounds to a maximumn of eight pounds. Frequency of collection varied from every day to once a week. The authors noted the age of children participating, and the number of children living in each park. The number and age of children were higher in the parks which recycled more paper. The Prompt and Prize condition resulted in a greater increase in pounds of paper recycled than the Proximity condi-

tion, but increases were significant in the Proximity condition also. The pounds of paper recycled varied widely from week to week, and declined with time after peaking early in each experimental condition.

Hamad, Cooper, & Semb (1977) observed the effects of reward in a group contingency on paper recycling in an elementary school. Paper was received and weighed on two days each week (Tuesday and Thursday), and a contest conducted for three and one-half weeks on three levels (Grades 1 and 2, Grades 3 and 4, Grades 5 and 6). During the contest, the amount of paper collected by each room was displayed daily on a large "thermometer" graph in the hallway of the school. At the end of the contest, winning classrooms received coupons for hamburgers, given to each pupil in a winning classroom who had collected some paper. Some individual participation was thus required for earning the reward, even though the contingency was essentially a group contingency. The paper collection then continued for two weeks without contest or rewards, but with announcements and take-home flyers encouraging continued paper collection. A second period of contest and reward identical to the first was then conducted, followed by two final weeks of collection without contest or reward.

The results were impressive: 11,254 pounds of paper collected during the first contest period, dropping to 292 pounds in the subsequent two-week, no-contest period; 3,044 pounds collected during the second contest period, falling to 500 pounds for the final two-week, no-contest period.

A cost-benefit analysis of the program took into account revenue from the sale of the paper, savings estimated in waste disposal, savings in energy cost for processing recycled materials, and savings in natural resources. Subtracting from these savings the cost of hamburgers and transportation gave a net savings of $337.72 for the project if it were assumed that no additional expense was incurred by parents and children bringing their paper to the school. One year after the Hamad et al. (1977) study, a second study was conducted at the same elementary school by Hamad, Bettinger, Cooper, & Semb (1979). This study used paper collection boxes which were open only from 8:00 to 8:30 a.m. each school morning; and alternated periods of baseline with three conditions. In the Public Feedback condition, cumulative paper collections by each classroom were displayed on a large poster. The Goal-Setting condition urged students to bring some paper for recycling every school day, and to try to achieve eight pounds per day. The Self-Recording condition provided for each student to record his/her daily paper collection, and offered ten extra minutes of recess to a classroom if at least 75% of the students in that room brought at least one newspaper for recycling on seven out of nine days. Hamad et al. recorded a total of 19,749 pounds of paper recycled in the eight months of this study. The mean collection per day across all baseline periods was 235 pounds. The mean collection per day for the Feedback condition was 157 pounds, for the Self-Recording condition 296 pounds, and for the Goal-Setting condition 366 pounds. Participation was 30% in the Self-Recording condition, and 2% in the Feedback and Goal-Set-

ting conditions. Estimated costs were $187.50, with a total benefit of $425.18, for a net estimated benefit of $237.65.

Humphrey, Bord, Hammond, & Mann (1977) studied a waste paper recovery program in a large (16 floor) office building. Three methods of separating recyclable paper were used. A central waste can for non-recyclable paper and other non-recyclable waste, with individual baskets for recyclable paper, resulted in an 83.6% return of recyclable paper. Two personal wastebaskets, one for recyclable paper and the other for non-recyclable waste, resulted in a 92.3% return. A divided wastebasket collected 92.7% recyclable paper.

Two prompt conditions were used in the study. All personnel received a letter describing the program and asking all employees to participate; 50% of the staff received, in addition, two personal prompts from supervisors, who asked about any problem with the recycling procedure and encouraged its use. The two prompts (at weeks three and seven of the study) reversed a tendency for the percentage of recyclable paper to decline with time; and the group receiving the prompts showed a slightly higher overall effectivess in separating recyclable paper (92.5% vs. 88.0%).

Luyben, Warren, & Tallman (1980) observed beverage can recycling in four college undergraduate dormitories, and compared the effect of a single container in each dorm with the effect of six containers distributed through the dormitory. The single container was placed adjacent to the soft drink machines in each main lounge of the four dormitories.

A sign on the container itself, and signs on the vending machines, asked that cans be recycled by being deposited in the container. Once a week, flyers urging that cans be recycled in the container were placed in residents' mail boxes.

The Multiple Container condition implemented in a multiple baseline design in three dormitories increased the recycling of beverage cans significantly. For the single container, weekly means of 130 steel cans and 49 aluminum cans were collected; with the multiple containers, weekly collection means were 165 steel cans and 128 aluminum cans.

Arbuthnot, Tedeschi, Wayner, Turner, Kressel, & Rush (1977) designed a study to test the hypothesis that an individual who performs convenient recycling-related behavior will subsequently be more likely to perform recycling behavior which is relatively less convenient. Three antecedent conditions were assigned in various combinations to groups of households which were not participating in a community-wide recycling program. The three conditions were: 1) a door-to-door Survey which assessed residents' knowledge of recycling issues; 2) an Appeal condition which gave residents a hand-out of recycling suggestions and a plastic bag for collecting aluminum cans for recycling; and 3) a Letter sent two weeks after the Appeal, describing the benefits of recycling and askings participants to write to the city council in support of an expanded community recycling program.

Groups of residents each received a different combination of the three conditions. One group received all three, three groups each received a different pair of conditons (Survey and Appeal, Survey and

Letter, Letter and Appeal), each of three groups received a different single condition, and one group received no condition.

In telephone surveys made two months later and eighteen months later, participation in a community recycling program was reported by 87.5% of those residents who had received and responded to all three conditions, and by 80% of those receiving the Letter and Appeal conditions. Recipients of the other conditions reported participation ranging from 32% to 0%. As Geller et al. (1982) pointed out, the dependent variable in this study was self-report rather than observed behavior, leaving some doubt as to how much influence the interventions had on actual recycling behavior.

Jacobs and Bailey (1978) compared the behavioral impact of five interventions in a community recycling program. Two months after a bi-weekly pick-up of recyclable newspapers and aluminum cans had been initiated in an area of 700 residences, the area was divided into five groups, and one of five treatments put into effect for each group. The Information Only condition consisted of a flyer delivered to the door of each residence on alternate weeks for eight weeks; the flyer described the procedure for the pick-ups of recyclable paper and aluminum. The Penny-a-Pound condition offered residents one cent per pound for each pound of newspaper put out to be recycled. The Lottery condition awarded a lottery prize of $5.00 to each household in that group after each bi-weekly pick-up of paper and cans. The Weekly Pick-Up condition made weekly instead of bi-weekly collections of recyclable materials. The Control group received no intervention, but materials put out for

recycling were picked up under the original community program conditions (bi-weekly pick-up with no additional intervention).

Participation in the Information Only condition increased from 2.8% at Baseline to 8.3%; Penny-a-Pound, 4.1% to 9.0%; Lottery, 2.9% to 14.2%; Weekly Pick-Up, 3.4% to 8.8%. There was, however, no oberveable increase in the amount of material recycled.

In a comprehensive series of field experiments, Jacobs and Bailey (1979a, 1979b) made a systematic study of several possible determinants of participation in recycling programs in residential neighborhoods. The first study showed that participation in a recycling program varied with socio-economic level: the higher the socio-economic level, the higher the rate of participation.

The second study looked at the effect of the time of collection of recyclable materials, and found that there was more participation in a recycling program when the collection of recyclable materials was made on the same day as the regular garbage collection.

The third study by Jacobs and Bailey compared handbills and telephone calls as prompts in a neighborhood recycling program. Neither handbills nor telephone calls had significant lasting effect on participation in the program. A fourth study compared the effects of newspaper ads with the effects of a brochure delivered door-to-door.The door-to-door brochure was found to be significantly more effective, resulting in 7.6% participation as compared to 2.9% for the newspaper ad.

In further studies, Jacobs and Bailey (1979a, 1979b) analyzed the effects of distributing a three-compartment source separation container

(the "recycl-it" sold by Sears, Roebuck and Co.). Distributing the "recycl-it" in an upper-income residential area resulted in markedly greater participation in a recycling program; a mean of 19.3% participation for the container group compared to 7.8% participation for a group which received only an information brochure. In a lower-middle-income neighborhood, however, distributing the "recycl-it" was followed by only a temporary increase in participation: an increase for four weeks of ten percentage points above the baseline of 10% to 12% participation. Similar groups which received a prompt but not the "recycl-it" maintained a participation rate of 9% to 13% throughout the 27 week study. However, intensive prompting (a handbill delivered twice a week for five weeks) was followed by an increase in participation of ten percentage points in the "recycl-it" group, with no change in the prompt group.

In one final study, Jacobs and Bailey gave one group of residents in a middle-to-upper-income neighborhood a package of encouragements to recycle. The package included a "recycl-it", a reminder flyer, an offer of a "We Recycle" sticker for participation, and twice-a-week prompts for five weeks. Participation in this group increased from a baseline of 20% to 25% to an average of 50% which was maintained for 13 weeks.

The Role of Environmental Context

It is noteworthy that the place in which recycling was promoted in each of the preceeding studies apparently had some bearing on the recycling response. In order for recycling behavior to be effective, or even possible, there must be, at the very least, a supply of recyclable material, people with access to those materials, a way to contact those people (for prompts, feedback, rewards, etc.), and a place to deposit recyclable materials. A variety of places have been settings for recycling programs, with some indication that the characteristics of the place itself influenced the outcome to some extent.

In college dormitories, the results of several paper recycling programs "suggest that university dormitories are inappropriate environments from which to run a paper recycling program, perhaps because the average dorm resident does not attend to poster or handbill announcements, because meagerly reinforced recycling behaviors are too inconvenient to fit into the busy daily routine of the average college student, or because the supply of recyclable paper per dorm resident is perceived as too minimal to make paper deliveries worthwhile." (Geller et al., 1982, p. 136). The elementary school recycling program reported by Hamad et al. (1977) resulted in a greater quantity of paper collected for recycling than any reported program in a college dormitory. Geller et al. (1982) suggest that several factors probably contribute to the greater quantity of paper collected in the elementary school setting: more children were aware of the program because they formed a "captive" audience in the classroom; parents of school children were

urged to participate; the supply of recyclable paper was probably significantly greater in the average child's home than in the average college dormitory; and paper could be brought to the school by the child when coming to school, thus avoiding additional trips for recycling.

A paper recycling program in a large office building (Humphrey et al., 1977) did not report the total quantity of paper recycled, but did report that when separate wastebaskets were provided for recyclable paper and non-recyclable waste, there was a 92.7% separation of recyclable paper. For this program there was an abundant supply of recyclable paper, the recycling response was very convenient, and all participants were prompted to participate by written and verbal encouragement from job supervisors. These favorable conditions for paper recycling would seem to be at least in part attributable to the fact that this program was conducted in an office building.

Several studies have suggested another possible function of place in relation to behavior. Newsom and Makranczy (1978) recorded energy conservation responses in university dormitories and found that group goals resulted in greater reductions in energy use than did individual goals. These results suggest that where the characteristics of a place make it easy or advantageous to form group goals, responses supporting these goals may be more effective than individual responses supporting individual goals. On the other hand, Carlyle (1979) and Geller, Ferguson, & Brasted (1977) found that the formation of temporary groups (i.e., residents of an apartment complex assembled for a three-hour workshop on residential energy conservation) had no effect

on subsequent energy conservation behavior. It would seem, then, that a more permanent, naturally occurring group is more apt to support the attainment of group goals than is a short-term group.

In summary, the environmental context in which a recycling program is developed is likely to influence markedly the results of a recycling program by influencing several factors important to recycling behavior: (1) the supply of recyclable material, (2) the attention paid to the program by the target population, (3) the convenience of the recycling response, (4) the social influence of other people, and (5) the cost effectiveness of the program.

The recycling programs reviewed in the present paper were located in elementary schools, university dormitories, mobile home parks, apartment complexes, and single family residential areas. No study which considered churches as places for recycling programs was found, although Geller (in press) suggested that churches should make good recycling centers for the same reasons that elementary schools make good centers: both schools and churches have captive audiences for prompts to recycle, and both school students and church members could take recyclable materials to the collection point in their regular trips to school or church, thus making recycling behavior both convenient and cost effective. A further advantage of churches as recycling centers is that church members usually represent a wider cross-section of the community than school students; in churches there is a greater range of ages, occupations, and incomes than in schools. One possible advantage of churches in rural areas serving as recycling centers is that

rural churches tend to be the principal places in the rural community where groups of people gather regularly. It may also be that church members, who are regularly called upon to volunteer for altruistic undertakings, are a little more likely to agree to participate in such projects.

PURPOSE AND RATIONALE

Churches as Recycling Centers

The present study was designed to test the hypothesis, first suggested by Geller (in press), that churches should make good centers for collecting recyclable materials; and to determine the essential components of a church-based resource recycling program. Aluminum was selected as the material to be recycled because: (1) several commercial recycling centers are established in the area; (2) aluminum brings a good price at these recycling centers; (3) aluminum throwaway containers and packaging materials are in reasonably common use in homes; and (4) aluminum is relatively easy to store and transport.

The program was developed for churches belonging to the Fincastle Presbytery of the Presbyterian Church in the United States (PCUS) because the author is an ordained minister in that denomination, is acquainted with the ministers of the Presbytery and familiar with its customary procedures, and has access to its organizational structure.

The leadership of the PCUS has endorsed the concept of energy conservation and resource recovery. The 1980 PCUS General Assembly approved and recommended for study by local congregations a paper which reviewed the question of energy and material shortages (PCUS, Minutes, 1980). The paper concluded that the danger of serious shor-

tages is real and imminent, and urged both church organizations and individual church members to begin immediately to conserve both energy and material resources.

This recognition and verbal endorsement of energy conservation and resource recovery has not, however, resulted in any effective resource recovery program, on either denominational or local level, so far as this writer was able to determine. Local congregations have some degree of autonomy within the national organization of the PCUS, and exercise considerable freedom in deciding what programs to implement in the local church, even when the programs in question are promoted by the national leadership of the denomination. (For example, the denominational leadership formally encourages churches which are seeking pastors to give serious consideration to women and minority candidates, yet the vast majority of PCUS churches continue to employ white male pastors). The nature and number of programs which any local congregation will agree to undertake is therefore limited both by the general position of the denomination and by the interests and commitments of the local church members or pastor.

Because a program of resource recovery had never been a part of the program of any local church in the Fincastle Presbytery, it seemed advisable to present the proposed aluminum-recycling program as a potential source of support for an already accepted, established program. Such a program was found in the "Halt Hunger" program of Fincastle Presbytery.

Church Organizational Structure

A "Presbytery" is a major administrative unit within the national body of the PUCS, which is composed of 60 Presbyteries. Fincastle Presbytery has 59 churches and 13,169 members in an area covering the Virginia counties of Roanoke, Botetourt, Allegheny, Montgomery, Floyd, and parts of Rockbridge and Pulaski, with the city of Roanoke at the approximate geographic center. One established program of the Presbytery is the "Halt Hunger" program administered by the Hunger Task Force, a permanent committee of the Presbytery. The Hunger Task Force directs in Fincastle Presbytery the "Halt Hunger" emphasis of the PCUS denomination, which has worked since 1969 to help alleviate hunger both nationally and internationally, and in both short term (crisis) and long range (developmental) programs.

The Hunger Task Force of Fincastle Presbytery promotes, receives, and distributes contributions to the Halt Hunger programs of the denomination, and reports the needs and achievements of these programs to the churches of the Presbytery. The major fund-raising program in Fincastle Presbytery for this work is the "Two Cents per Meal" program, which asks church members to set aside two cents for every meal they eat and contribute the accumulated total regularly (usually in a monthly offering) to the Halt Hunger work. The "Two Cents per Meal" program has been adopted by 31 (52%) of the churches of the Presbytery, and in 1981 raised a total of $38,678.37 (Fincastle Presbytery, Minutes, 1982).

Incentives for Recycling in a Church Setting

The Halt Hunger program of Fincastle Presbytery was selected as the established program which would benefit from the aluminum recycling project. One potential reward then, for a church member who recycled aluminum scrap, would be the knowledge that a contribution was being made to the Halt Hunger work. The choice of other contingencies for this project was limited by some long-standing policies and practices of the PCUS. Raffles, which have been used with remarkable success in prior studies of newspaper recycling (e.g., Crouch et al., 1979; Geller et al., 1975; Witmer & Geller, 1976) are not acceptable practices in the PCUS. Individual and group rewards for achievement are acceptable in the form of public recognition (either verbal or printed), such as a certificate for church school attendance, but are not acceptable in the form of money or gifts, as were used by Luyben and Bailey (1979) in their study of newspaper recycling at an elementary school. Feedback, which has been used in studies of paper recycling (Hamad et al., 1979) and residential electricity conservation (Winett, Neale, & Grier, 1979; Winett, Neale, Williams, & Yokely, 1979) is an acceptable practice in the PCUS. Feedback in the form of verbal and/or written reports of achievement and expressions of appreciation are common on both local and national levels. Polite non-demanding prompts (e.g., Geller et al., 1982) are also acceptable, and are widely used on all levels of church organization. Proximity of containers, which has been shown to have a significant effect on recycling behavior (e.g., Reid et al., 1979) is also an intervention acceptable in a church setting.

Prompts, proximity, and feedback, then, were selected as the independent variables (i.e., intervention strategies) for the present study. The weight of collected aluminum in pounds per church member was the dependent variable.

It was expected that the minister of each church would adapt prompts and feedback for his particular congregation, and would decide on the exact location of the aluminum collection container, so that some naturally occurring variation in the independent variables from church to church would be unavoidable. Thus, a case study format was selected for evaluating the impact of various interventions.

METHOD

Subjects

The subject pool for this study was composed of the ministers and members of the 59 churches of Fincastle Presbytery. These churches varied in size and location, from a rural church of 26 members with no regular pastor and an annual budget of less than $3 thousand, to a downtown city church of 1,530 members with three ordained minsters plus a staff of more than a dozen full-time employees, and an annual budget of more than $403 thousand (PCUS, Minutes, 1982, pp. 132-133).

Procedure

Initial Contact With Churches

Endorsement of the aluminum-recycling project was obtained from the Hunger Task Force. In April 1981 a letter was sent in the Newsletter of the Hunger Task Force to all pastors of churches in the Presbytery. The letter (a copy of which is shown in Appendix A) invited churches to increase their contributions to the Halt Hunger program by setting up a project of collecting household aluminum scrap for sale to local recycling centers, with all proceeds going to the Halt Hunger work. The procedure suggested was that a large container be placed

at a convenient point at or near the church building, and that members be encouraged to bring their aluminum scrap every Sunday as they came to church. The letter also offered weekly pick-ups of the collected aluminum by a member of the Hunger Task Force (i.e., the author).

Follow-Up Letter

A second letter was sent on September 23, addressed personally to each minister of a church in the Presbytery. This letter (a copy of which is given in Appendix B) described the aluminum recycling project again and outlined some potential benefits of the project.

Containers and Proximity

Churches which agreed to enter the aluminum recycling project were provided with a large collection container to be placed in or near the church building. Containers for use inside the church building were large cardboard boxes, painted a light green after the edges had been reinforced with heavy paper tape. A typical indoor collection container is shown in Figure 1. Containers for outdoor use were provided for two churches at the request of the ministers. One container was a large barrel, painted aluminum and provided with a water-tight cover (shown in Figure 2), and one container was a covered box constructed of 5/8" wafer board and painted aluminum (shown in Figure 3). A hand-lettered sign, 8.5" by 14" in size, reading "Let your scrap aluminum help halt hunger" was affixed to each container. (The sign appears in Figures 1, 2, and 3).

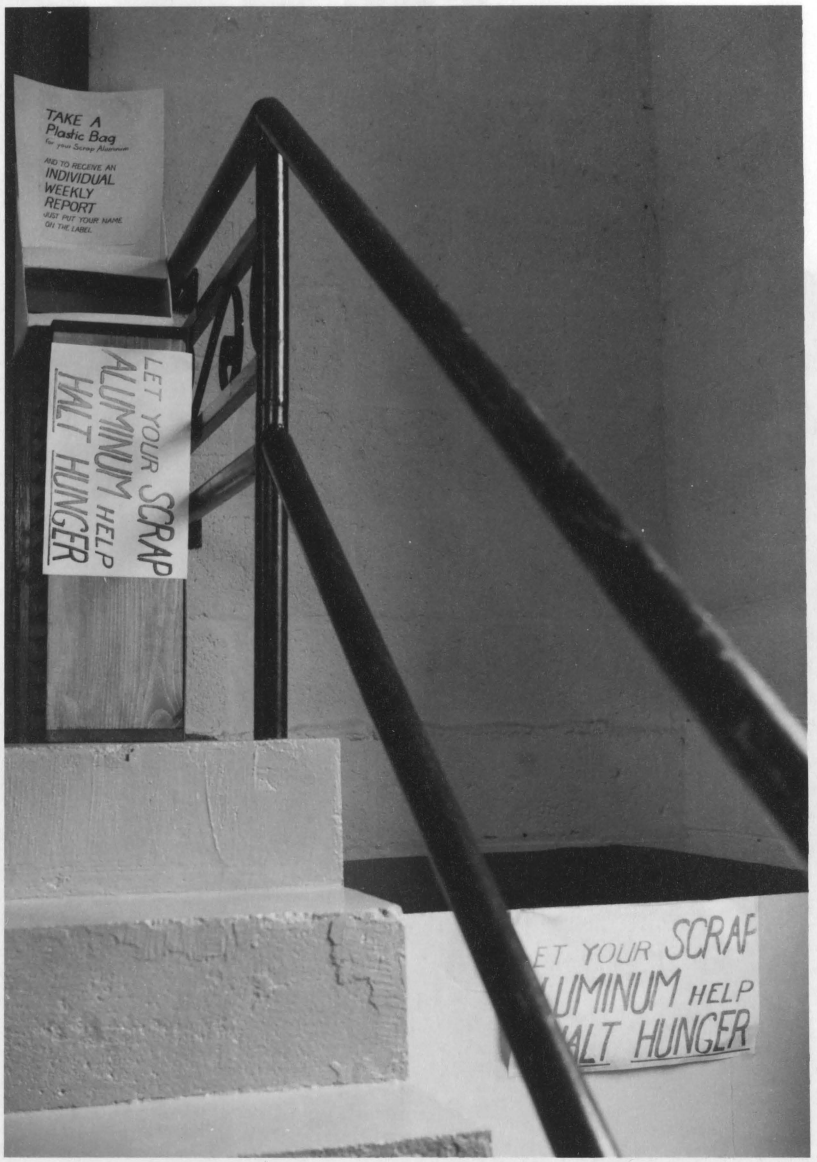

FIGURE 1

Indoor aluminum collection container located in the vestibule of Old Brick Presbyterian Church

FIGURE 2

Outside aluminum collection container
for Blacksburg Presbyterian Church

FIGURE 3

Outside aluminum collection container
for Raleigh Court Presbyterian Church

The location of the container at each church, and hence the proximity of the container to the church entrance, was decided by the pastor of each church.

Prompts

In a personal conversation with each minister whose church entered the project, the author asked the minister to announce the project and encourage church members to participate. Prompts used in each church were obtained from the ministers, and are reported in the Case Studies.

Weighing Aluminum and Checking Reliability

Pick-ups of collected aluminum were made once a week at each church by the author. Aluminum was sorted and weighed as it was picked up at each church, using a kitchen scale which measured weight to the nearest ounce. Each week, after all aluminum had been picked up, weighed, and recorded, the total collection was sold to a commercial recycling center (Cycle Systems, Wonju Street, Roanoke). The aluminum station at Cycle Systems weighed the collected aluminum as it was received, and this weighing provided a reliability check. Table 1 shows a typical weekly record of weights by the author and by Cycle Systems, and a calculation of reliability for that week. Reliabilty averaged 93% over the ten months of the study, with a high of 99% and a low of 82%.

TABLE 1

Aluminum Weights and Reliability Calculations for March 23

Church	All-Aluminum Cans	Steel cans with Aluminum Tops	Foil	Other	TOTALS
	lb.- oz.	lb.- oz.	lb. - oz.	lb.- oz.	lb.- oz.
Roanoke Valley	3 - 0	1 - 0	1 - 0	- 0	5 - 0
Blacksburg	1 - 8	- 0	- 0	- 0	1 - 8
Fairlawn	19 - 8	23 - 0	- 0	- 0	42 - 8
Old Brick	- 0	- 0	0 - 4	0 - 6	0 - 10
Christiansburg	- 0	- 0	5 - 0	- 0	5 - 0
West End	- 0	- 0	2 - 4	- 0	2 - 4
Raleigh Court	3 - 4	1 - 4	3 - 8	- 0	8 - 0
Northminster	7 - 0	0 - 8	10 - 8	15 - 4	33 - 4
TOTAL PICK-UP WEIGHT	34 * 4	25 - 12	22 - 8	15 - 10	98 - 2
TOTAL SALE WEIGHT	38 - 4	27 - 12	18 - 12	17 - 0	102 - 2
Reliability	.90	.93	.83	.92	.96

Feedback

Group Feedback.

After weekly pick-ups of collected aluminum had been made for eighteen weeks, weekly group feedback was begun in all churches which had begun the program by that time. Feedback was begun on the same date for all churches, but because some churches entered the project earlier than others, the number of weeks between entering the project and beginning to receive feedback varied from church to church. Table 2 gives the chronological sequence of churches entering the project. The public or group feedback which all churches received was in the form of a brief statement mailed to each pastor every week, reporting the value of the aluminum collected that week by his congregation, the cumulative value of the aluminum collected to that date by his congregation, and the cumulative value of all aluminum collected to that date by all participating churches. The form used for weekly group feedback is shown in Appendix C.

Individual Feedback.

At the same time that weekly group feedback was begun for all participating churches, individual feedback was offered to the members of four churches. Each congregation which was offered individual weekly feedback was paired for purposes of comparison with a congregation which was not offered individual weekly feedback. Paired churches were as similar as possible in the number of members and the characteristics of their location, as shown in Table 3.

TABLE 2

Chronological Summary of Aluminum Recycling Project

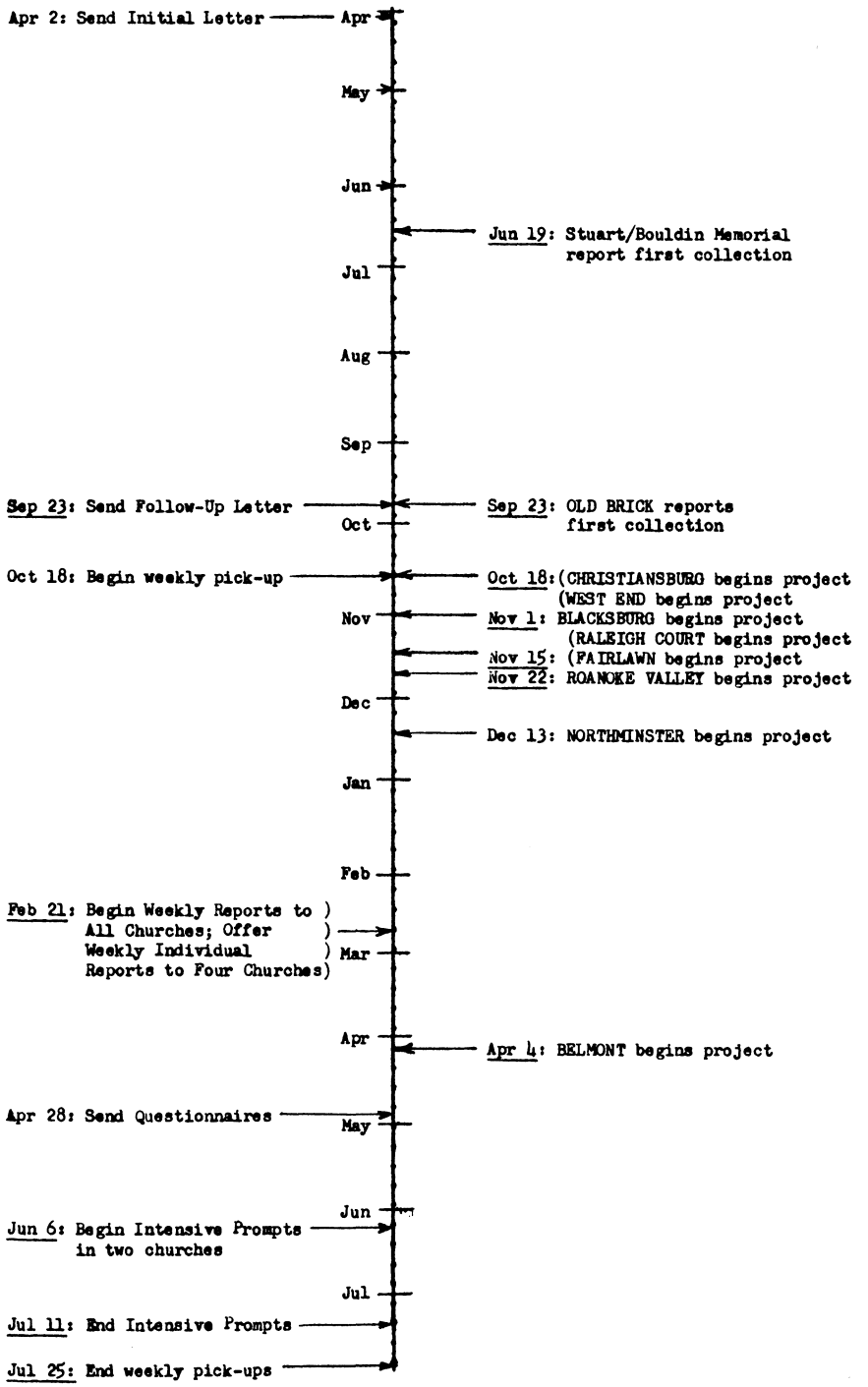

TABLE 3

Pairing of Churches for
Individual and Group Feedback vs. Group Feedback Alone

A. Individual and Group Feedback B. Group Feedback Only	Number of Members	Location
A. Old Brick	45	2 miles from Radford (population 17,000)
B. Roanoke Valley	44	4 miles from Blacksburg (population 35,000)
A. Northminster	308	Northwest Roanoke (pop. 92,000)
B. West End	253	Southwest Roanoke (pop. 92,000)
A. Christiansburg	453	Christiansburg (population 8,500)
B. Fairlawn	276	Fairlawn(residential suburb of Radford, pop. 13,000)
A. Blacksburg	645	Blacksburg (pop. 35,000)
B. Raleigh Court	807	Southwest Roanoke (pop. 92,000)

To provide individual feedback, a small cabinet was placed beside the aluminum collection container in each of the four churches selected to receive individual feedback. Cabinets were 12" wide by 8" deep by 26" high, with sixteen shelves spaced 1.5" apart. A hand-lettered sign 10" by 12" invited individuals and family units in the church to sign their bags of collected aluminum each week and receive a weekly report of the amount of aluminum they had collected and its value when sold for recycling (i.e., the amount of money contributed to the Halt Hunger work). With the cabinet and the sign was a dispenser of plastic bags, each bag bearing a label which provided space for the name of the collector. Attached to each plastic bag also was a half-page note giving a more detailed explanation of the procedure for receiving individual weekly feedback. The cabinet, sign, and plastic bag dispenser are shown in Figure 4, the label is shown in Figure 5, and the explanatory note is shown in Appendix D. Two sizes of plastic bags were provided: small bags 12" by 8" by 30" of clear plastic, and large bags 23" by 17" by 46" of brown plastic.

Signed bags of aluminum deposited in the aluminum collection container were sorted, weighed, and recorded individually; a report of the weight of the aluminum and its value was attached to a new plastic bag with label; and the report and the bag were placed on a shelf labeled with the name of the contributor. A report and new bag were provided in this way each time a signed bag of aluminum was deposited. The individual feedback form is shown in Appendix E.

FIGURE 4

Cabinet, sign, and plastic bag dispenser
for individual weekly feedback

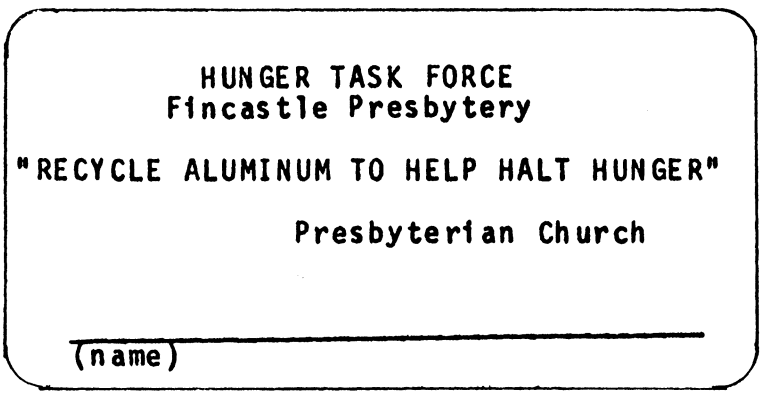

FIGURE 5

Label for Individual Weekly Feedback

Intensive Prompts

As the study progressed, weekly aluminum collections did not seem to be significantly affected by any intervention, and therefore it was decided to use an additional intervention of intensive prompts in an approach similar to that reported by Jacobs & Bailey (1979 b). The pastors of two churches were asked to provide intensive prompts for their congregations in the form of six leaflets, one of which was distributed to members of the congregations each Sunday morning for six weeks. The leaflets described, in a brief, factual, positive manner, the Halt Hunger work of the denomination, its relation to national and international concerns, the contribution made by the aluminum recycling project, some additional benefits of the recycling program, and instructions for recycling aluminum in the local area. A brief announcement in the church bulletin each Sunday drew attention to the leaflet being distributed that morning. Appendix F shows each leaflet, and Appendix G shows the accompanying bulletin announcements.

The Belmont church inserted the leaflets in the Sunday morning bulletin. The Christiansburg church included in their bulletin the announcement that leaflets were available at the door of the sanctuary. The leaflets were placed on small tables on either side of the single central door opening out of the sanctuary. The tables are routinely used to hold newsletters, offering envelopes, and other materials which members of the congregation are asked to take as they leave the church.

Questionnaire

A Questionnaire (a copy of which appears in Appendix H) was designed to give some indication of the reasons church members did or did not participate in the recycling project. In eight churches which participated in weekly aluminum pick-ups, the minister was asked to distribute questionnaires as widely as possible among his congregation. One copy of the questionnaire was sent to the ministers of non-participating churches, with a cover letter requesting that the minister, or an appropriate church officer, fill out the questionnaire. The cover letter is shown in Appendix I.

Demographics

At least one study (i.e., Jacobs & Bailey, 1979a) included socio-economic status in the analysis of determinants of participation in a recycling program in a residential neighborhood. In order to attempt a similar evaluation of demographic factors in the present study, the project director (i.e., the author) asked the pastors of participating churches to estimate the age and occupational status of members of their congregations. This information was provided by the pastors of six church units taking part in the project: Roanoke Valley, Stuart and Bouldin Memorial, Fairlawn, Old Brick, Belmont, and Christiansburg. The demographic data from these churches are summarized in Table 4, and reported individually in the Case Studies. Demographic data was not available for the other four churches in this study: West End, Northminster, Raleigh Court, and Blacksburg.

TABLE 4

Summary of Demographic Data from All Churches

	Total Members	Total Women Members	Ages (percentages) 12-20	21-40	41-65	over 65	Average Family Size	Occupation White Collar	Blue Collar
Roanoke Valley	44	26	12	16	30	42	2.4	53%	47%
Stuart and Bouldin Memorial	131	65	18	23	41	18	2.5	51%	42%
Fairlawn	281	165	18	27	30	25	4.0	46%	54%
Old Brick	45	29	13	22	41	24	2.5	42%	58%
Belmont	200	120	13	13	25	49	3.0	31%	69%
Christiansburg	464	273	15	25	30	30	2.5	73%	27%

Transferring the Project to Individual Church Initiative

With the weekly report to churches for the first week in June, a letter was sent announcing that weekly pick-ups of aluminum by the Presbytery Hunger Task Force would necessarily be terminated with the last pick-up in June, and asking each church to consider continuing the project on its own initiative (this letter may be seen in Appendix J). Detailed instructions for sorting aluminum for sale to recycling centers, and the locations of those centers in the Roanoke and Blacksburg areas, were included (the instructions are shown in Appendix K).

Follow-Up

With the weekly report to churches for the last week in June, a second letter (shown in Appendix L) was sent, reminding pastors that the last weekly pick-up by the Presbytery Hunger Task Force had been made, and indicating that pastors would be contacted within two weeks for a summary evaluation of the church's response to the aluminum recycling project. At that time pastors were also asked if their church planned to continue the aluminum recycling project; and were given a report form to be returned at the end of September if the project were continued. At the end of September a reminder was sent asking churches which had continued the project to report on the amount of aluminum collected through the end of September.

For the two churches which distributed intensive prompts for six consecutive Sundays, and for two other churches, weekly pick-ups were continued until July 25 (two weeks after the last intensive prompt

was distributed). These four churches received the initial announcement of the termination of weekly pick-ups during the first week of July, and the follow-up announcement of termination during the last week of July.

RESULTS

Participation

A total of 17 churches (33% of the 51 churches of Fincastle Presbytery) entered the aluminum recycling project sometime during the course of this study. Five churches began to recycle aluminum after receiving the intial letter (mailed April 2; shown in Appendix A). Twelve more churches began the project at various times following the second letter (mailed September 23; shown in Appendix B). Nine of these churches were selected for detailed analysis in this study; these churches established weekly pick-ups of collected aluminum, and were within a practical distance (50 miles) of the project headquarters (Blacksburg). In addition, a somewhat less detailed analysis was made of two churches (Stuart and Bouldin Memorial) which did not have weekly pick-ups of collected aluminum and were more than 50 miles distant. Stuart and Bouldin Memorial churches were analyzed as one unit, because the two congregations brought their scrap aluminum to a single collection point and made no attempt to record separately the scrap collected by each congregation. Contributions to the Halt Hunger fund were designated as contributions made jointly by the two congregations.

Pounds of Aluminum Collected

The mean aluminum collection in pounds per member per week for the ten church units selected for analysis is given in Table 5, which also shows the number of weeks each church collected aluminum, the total pounds of aluminum collected in that time, the membership of each church, and the proximity of the collection container to the sanctuary entrance. When churches were rank-ordered on the basis of their aluminum collections in pounds per member per week, Roanoke Valley was first, with .20 pounds per member per week and a total collection of 292.7 pounds. The next three church units each had collections of .12 pounds per member per week: Stuart and Bouldin Memorial, Fairlawn, and Old Brick, with total collections respectively of 887.0 pounds, 1209.4 pounds, and 171.9 pounds. Belmont had .07 pounds per member per week and 224.7 total pounds; Northminster had .05 pounds per member per week and 471.6 total pounds.

The last four churches in this rank-ordering had markedly smaller collections in pounds per member per week: West End and Christiansburg, .02, and Raleigh Court and Blacksburg, .01; total pounds collected by these churches were 178.0, 281.8, 356.0, and 215.7, respectively. Mean aluminum collection in pounds per member per week for the ten church units is compared graphically in Figure 6.

TABLE 5

Summary of Aluminum Collections in All Churches

	Mean Pounds of Aluminum per Member per Week	Number of Members	Weeks in Project	Total Pounds of Aluminum Collected	Proximity of Container: Distance in Feet from Sanctuary Entrance
Roanoke Valley	.20	44	33	292.7	22
Stuart and Bouldin Memorial	.12	131	56	887.0	-
Fairlawn	.12	276	37	1,209.4	102
Old Brick	.12	45	33	171.9	3
Belmont	.07	200	17	224.7	174
Northminster	.05	308	29	471.6	12
West End	.02	253	41	178.0	144
Christiansburg	.02	453	41	281.8	211
Raleigh Court	.01	807	33	356.0	193
Blacksburg	.01	645	35	215.7	207

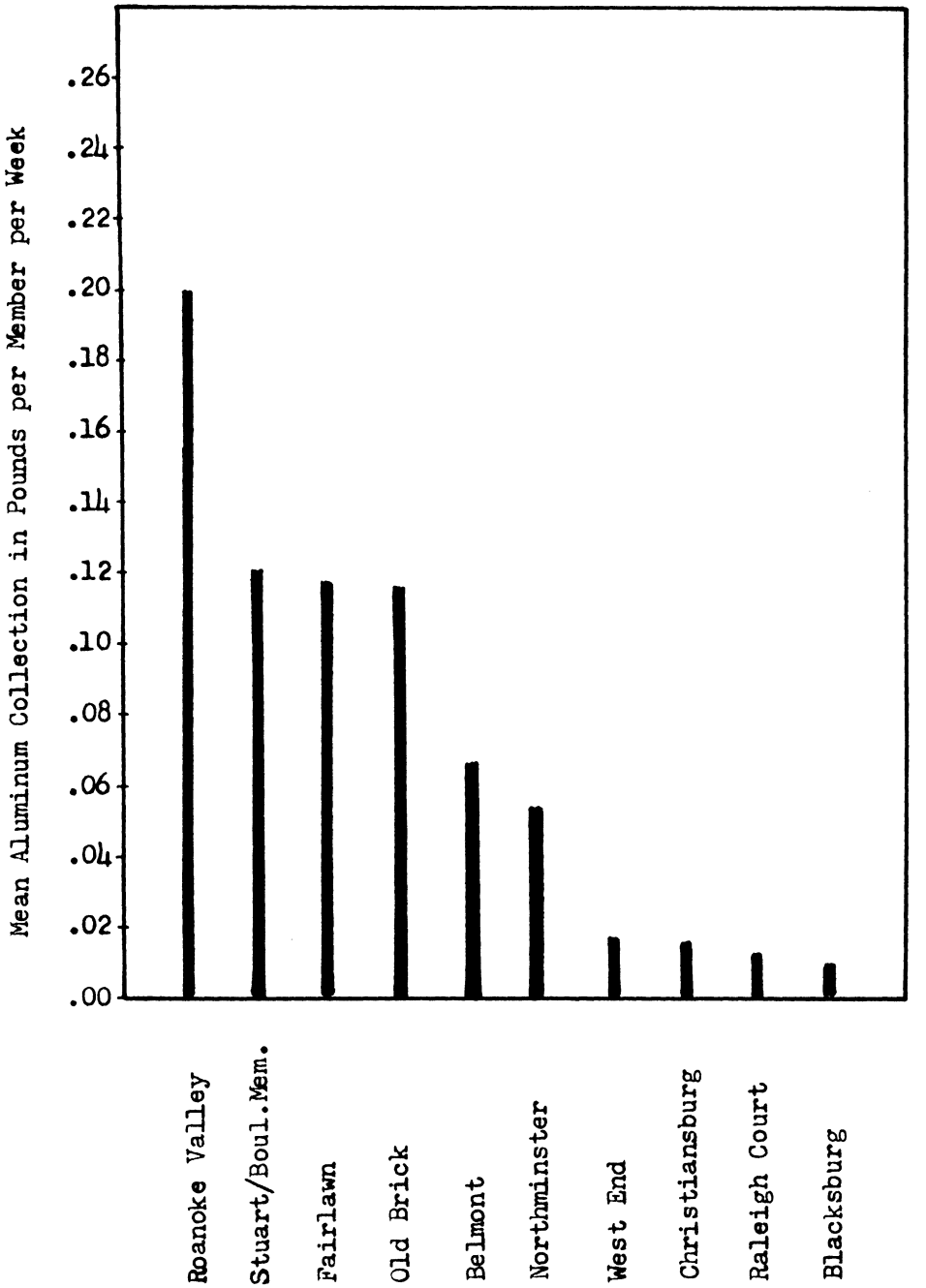

FIGURE 6

Mean Aluminum Collection for All Churches

Proximity of Container

The location of the collection container at each church was determined by the pastor of that church, and so the proximity of the container to the entrance of the sanctuary varied considerably from church to church. The distance of the container from the sanctuary entrance, and whether or not the container was visible from the entrance, is indicated in Table 5. A diagram showing the location of the collection container is included in the Case Study of each church.

Feedback

Group Feedback

Group feedback to all participating churches was initiated at the same time and given in the same way each week. (The form used for group feedback is shown in Appendix C). However, the manner and frequency with which individual pastors transmitted feedback to their own congregations varied widely. The Case Studies detail the manner and frequency of group feedback received by each congregation.

Individual Feedback

Individual feedback was offered to the members of four churches for a period of 12 weeks. A total of eight families deposited their collected aluminum in signed collection bags at least once, and three of these families signed their collection bags at least once more. In only one case, however, did the family actually receive their individual feedback by taking from the cabinet shelf labelled with their name the new collection

bag with feedback from the previous week's collection attached. This one family (Martin, Blacksburg) consistently used the signed collection bag with feedback attached throughout the period individual feedback was made available; no other families did so. Except in the case of this one family, then, individual feedback cannot have influenced the amount of aluminum collected, since individual feedback was not received except in the one case. The Case Studies discuss the use of signed collection bags in each church, and document the tentative conclusion that individual feedback had no significant effect on the amount of aluminum collected.

Questionnaire

The purpose of the Questionnaire (shown in Appendix H) was to indicate the respondents' perception of their reasons for taking part, or not taking part, in the aluminum recycling project. The number of respondents (sample size) in each church was dependent upon the individual pastor's distribution of the Questionnaire, and varied from church to church.

Questionnaire responses were summarized as follows:

Questions 1, 2, 5, 7 asked the respondent to select one answer from several possible answers, and were summarized in percentages; i.e., for Question 2, 25% of the respondents from the Christiansburg church indicated that they were recycling aluminum regularly. Questions 3, 4, 6 asked the respondent to rank order the suggested responses. These questions were summarized as follows:

In Question 3, for example, there were five items to be ranked in order of importance. When a score of five was assigned to each item ranked first in importance, a score of four to each item ranked second in importance, and so on, the relative importance of these items for all respondents was obtained by the calculation:

"Index of Importance" = sum of scores/(5 x number of respondents)

If, for example, 18 respondents from the Christiansburg church had ranked item two as second in importance, its "Index of Importance" would have been:

(4+4+4...+4)/(5x36) = 72/180 = .40

A comparison of results from all churches which filled out the Questionnaire is given in Table 6.

Continuing the Project

The pastors of five church units: Belmont, Christiansburg, Northminster, Stuart and Bouldin Memorial, and West End: reported that their congregations were continuing the project on their own initiative. For the first month of the continuing project under local church initiative, the aluminum collection reported by each church was approximately equal to the average collection by that church during the time of the study.

TABLE 6

Summary of Responses to Questionnaire

		CHURCHES								
		Roanoke Valley	Fairlawn	Old Brick	Northminster	West End	Christiansburg	Raleigh Court	Blacksburg	MEAN
A. Sample size		13	42	6	20	30	36	22	32	
B. Membership		44	276	45	308	253	453	807	645	
C. Average attendance		23	171	-	186	-	171	-	-	
D. Sample/Membership		29.5%	15.2%	13.3%	6.5%	11.8%	7.9%	2.7%	4.9%	
E. Sample/Avg.atten.		56.5%	24.6%	-	10.7%	-	21.0%	-	-	
1. Is your church participating?	YES	100%	93%	100%	100%	100%	100%	100%	78%	96.4%
	NO	0%	2%	0%	0%	0%	0%	0%	0%	0.3%
	DON'T KNOW	0%	2%	0%	0%	0%	0%	0%	22%	3.0%
	Did not answer	0%	3%	0%	0%	0%	0%	0%	0%	0.4%
2. Are you participating?	REGULARLY	61%	33%	0%	35%	33%	25%	50%	28%	33.1%
	OCCASIONALLY	39%	36%	50%	30%	37%	20%	27%	13%	31.5%
	NOT AT ALL	0%	26%	33%	35%	23%	55%	18%	59%	31.1%
	Did not answer	0%	5%	17%	0%	7%	0%	5%	0%	4.3%
5. Do you like regular reminders?	YES	54%	64%	83%	55%	67%	47%	59%	69%	62.3%
	NO	8%	5%	0%	0%	7%	14%	9%	3%	5.8%
	INDIFFERENT	38%	29%	17%	35%	10%	28%	27%	22%	25.8%
	Did not answer	0%	2%	0%	10%	16%	11%	5%	6%	6.3%
7. Would you support this project of proceeds went to you?	DEFINITELY YES	23%	5%	0%	5%	3%	19%	0%	6%	7.6%
	PROBABLY YES	8%	19%	17%	10%	13%	14%	5%	16%	12.9%
	PROBABLY NO	54%	19%	83%	10%	13%	36%	32%	31%	34.8%
	DEFINITELY NO	15%	36%	0%	65%	40%	28%	45%	28%	32.1%
	Did not answer	0%	21%	0%	10%	31%	2%	18%	19%	12.8%
3. Why are you participating?	FEED THE HUNGRY	.88	.71	.70	.40	.63	.54	.68	.29	.604
	REDUCE WASTE	.42	.30	.53	.30	.24	.21	.35	.37	.340
	SUPPORT YOUTH	.14	.23	.43	.06	.25	.03	.04	.19	.171
	SUPPORT PASTOR	.29	.15	.17	.16	.12	.11	.05	.01	.133
	OTHER	.00	.00	.00	.00	.00	.00	.00	.00	.00
4. If you are not participating, why not?	NOT ENOUGH SCRAP	.00	.29	.17	.35	.18	.25	.11	.33	.210
	DIDN'T KNOW ABOUT	.00	.02	.00	.00	.06	.14	.08	.24	.068
	NOT CONVENIENT	.08	.00	.00	.04	.03	.00	.00	.06	.026
	DISLIKE AT CHURCH	.00	.00	.00	.00	.00	.00	.00	.03	.004
	CHURCH SHOULDN'T	.00	.00	.00	.00	.00	.00	.00		.00
	OTHER	.00	.00	.17	.00	.00	.19	.00	.05	.038
6. What type of reminder is most helpful?	CHURCH NEWSLETTER	.05	.44	.39	.26	.67	.50	.42	.86	.449
	PASTOR ANNOUNCEMENT	.76	.39	.58	.31	.02	.25	.05	.18	.318
	SUNDAY BULLETIN	.04	.25	.61	.13	.03	.19	.35	.22	.228
	WEEKLY REPORTS	.19	.10	.06	.10	.09	.08	.13	.28	.129
	NEWSPAPER NOTICES	.08	.00	.00	.00	.00	.04	.00	.03	.009
	OTHER	.00	.00	.00	.00	.00	.00	.00	.00	.00

CASE STUDY 1: ROANOKE VALLEY PRESBYTERIAN CHURCH

Interventions

Prompts

All prompts were verbal in the Roanoke Valley church, which had neither a Sunday bulletin nor a newsletter. The Sunday School Superintendent announced the aluminum recycling project in the Sunday School assembly on the Sunday before the first weekly pick-up of collected aluminum (November 15) approximately as follows:

"The Hunger Task Force of Fincastle Presbytery is beginning an aluminum recycling project to help raise money to feed the hungry. We are asked to bring scrap aluminum to the box at the corner of the church, where it will be picked up every week and sold for recycling. The money will go to the "Two Cents per Meal Fund" for world hunger. Pie plates, aluminum foil, drink cans - anything aluminum - can be collected."

The Sunday School Superintendent gave subsequent verbal prompts once a month in the briefer form, "Remember to bring your scrap aluminum to help feed the hungry."

Proximity

The aluminum collection container was placed outside the church building near the front corner, at the head of the outside stairway to the church basement, where the container was sheltered under the stairwell roof. The container was plainly visible from the parking lot of the church, and was almost directly in the line of travel from the parking lot to the sanctuary entrance. The container was not visible, however, from the sanctuary entrance. The location of the container is shown in Figure 7.

Feedback

The Sunday School Superintendent gave group feedback verbally once a month in the Sunday School assembly, at the same time as the monthly verbal prompt, by reading the current report of aluminum collections from the project director (i.e., the author).

Individual feedback was not offered to this congregation.

Demographics

Ages and occupations of the congregation are summarized in Table 7. Roanoke Valley shared with Old Brick a tendency to have a relatively high percentage of older members and farmers.

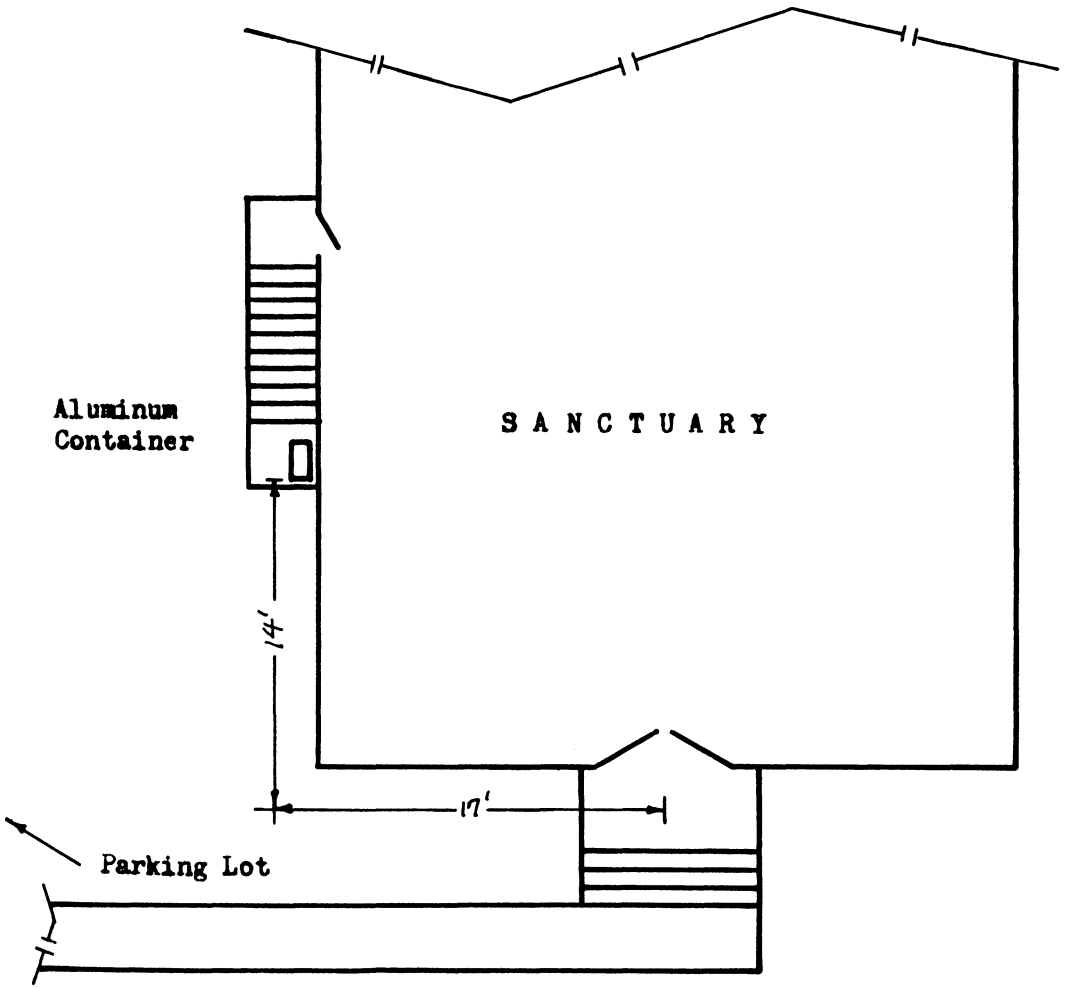

FIGURE 7

Roanoke Valley Presbyterian Church
Location of Collection Container

TABLE 7

Roanoke Valley Presbyterian Church

Membership, Ages and Occupations of Members

Membership: total 44 women 26

Ages: 12-20 18%

21-40 16%

41-65 30%

over 65 42%

Average size of family: 2.4

Percentage of women working outside the home 23%

Occupation	Men	Women[1]
Professional	0%	0%
Teaching	22%	17%
Management (large companies)	0%	0%
Small business (owner, sales, etc.)	22%	0%
Military	12%	0%
Farming	22%	0%
Secretarial	0%	33%
Skilled labor	12%	17%
Semi-skilled and unskilled labor	0%	0%
College student	10%	33%
Retired[2]	33%	31%

[1] percentage of the total number of women working outside the home

[2] former occupations of retired persons are included in the occupational percentages

Results

The mean collection for the 33 weeks of participation by the congregation was .20 pounds per member per week. Weekly collections, in pounds per member, are shown in Figure 8, which also gives the dates of prompts and feedback and the weekly attendance at Sunday services. Figure 8 indicates a marked tendency for the aluminum collections to fluctuate from large amounts to small amounts in cycles of three to four weeks. From March 28 to April 18, for example, the amount collected fluctuated from .0 to .38 to .30 and back to .0 pounds per member. Attendance at Sunday services remained relatively stable during this period.

Severe cold and heavy snow caused the cancellation of Sunday services on four Sundays (January 10, 17, 24, and February 28). In spite of the cancellation on January 24, a relatively large collection of aluminum was at the church for the pick-up that week, indicating that at least on one occasion aluminum was brought to the church even though there were no church services. One possible explanation, of course, is that individuals were not aware that services had been cancelled and came as usual, bringing their aluminum, and left it before returning home. Another possibility is that individuals made a special trip to the church to leave their aluminum collection.

The amount of recycled aluminum in pounds per member per week was higher for the Roanoke Valley church than for any other of the ten church units reported in the Case Studies. The result is partly attributable to the small membership of the church (44 members) since the

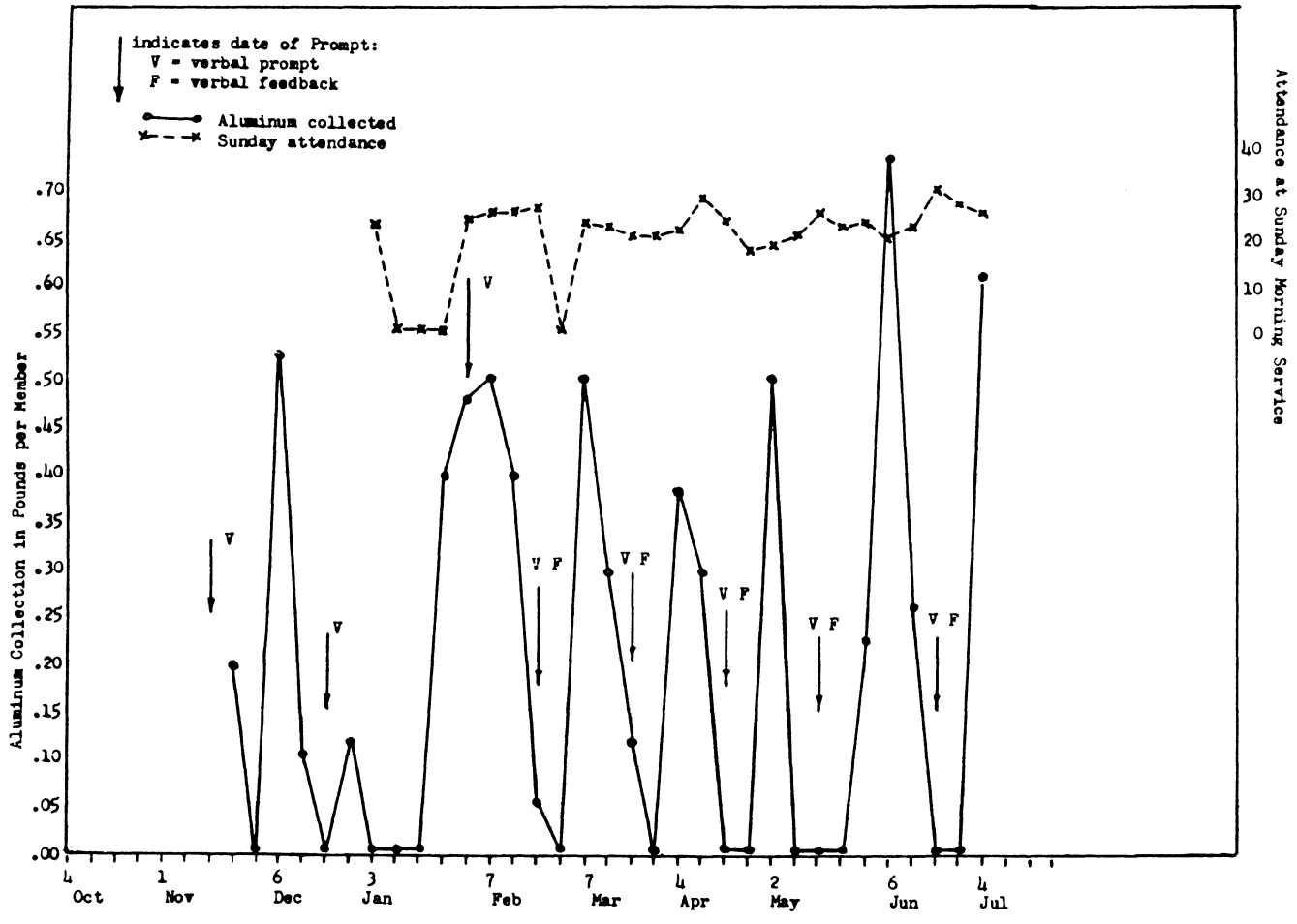

FIGURE 8

Roanoke Valley Presbyterian Church
Weekly Aluminum Collection and Church Attendance

total of aluminum collected ranked fifth among the ten Case Studies (292.7 total pounds; see Table 5).

The procedure for picking up and weighing the aluminum did not make provision for identifying individual contributors, and so it is not possible on the basis of available data to know how often any particular contributor brought aluminum, or how much each contributor brought. One retired member of the church, however, indicated to the pastor that he had found it a source of satisfaction to pick up aluminum drink cans discarded along the sidewalks and in the street-corner waste containers in his neighborhood. On several Sundays when aluminum was brought to the Roanoke Valley church, it could be observed that the greater part of the collected aluminum consisted of drink cans brought by this individual.

Aluminum drink cans (both soft drink and beer cans) made up the greater part of the aluminum collected during this study. Aluminum foil was a smaller proportion of the total.

The Roanoke Valley congregation did not continue the aluminum recycling project as a congegation, although one individual (the retired member mentioned above) indicated to the pastor that he intended to continue collecting and recycling cans on his own.

CASE STUDY 2: STUART AND BOULDIN MEMORIAL CHURCHES

Interventions

Prompts

The Stuart and Bouldin Memorial churches began their aluminum recycling program soon after the initial letter to churches was sent out on April 2. The same prompts and feedback procedures were used in each church (these two churches have two pastors - husband and wife - who share responsibilities in both churches and work together very closely in all programs in both churches).

To initiate the program, the following announcement was printed in the Sunday bulletins of both churches for three consecutive Sundays:

"The Presbytery has suggested that we consider a new project which collects scrap aluminum for recycling and gives the proceeds to help fight world hunger. Please begin to collect all your aluminum scrap instead of throwing it away - drink cans, aluminum foil, pie plates, etc. Anything aluminum can be recycled. Bring your collected aluminum to the Fellowship Hall or to the screened porch of the manse."

Subsequent reminders appeared in the Sunday bulletins of both churches once a month in a briefer form:

"Keep on saving your scrap aluminum to help halt world hunger."

Each time a printed announcement appeared in the church bulletins, the pastors referred to it verbally in the church services.

Proximity

No container was provided for the aluminum collection in these two churches, but a collection area was specified. The pastors' residence (manse) was situated next to the Staurt church, about 250 feet from the church. Church members were asked to leave their aluminum on the screened porch of the manse or in the Fellowship Hall of the church. The entrance to the Fellowship Hall was 45 feet from the entrance to the sanctuary, and the one entrance was not visible from the other. Members of the Bouldin Memorial church, an open country church located four miles from Stuart, brought their aluminum to the Fellowship Hall of that church or to the Stuart church.

Contributors provided their own paper or plastic bags for collecting aluminum, and left the filled bags on the manse porch or in the church Fellowship Hall, usually on Sunday. Occasionally, however, individuals stopped at the manse during the week to leave bags of aluminum at the porch door, often without waiting to notify the pastors.

Feedback

Each time a load of aluminum was taken to the recycling center, the pastors announced to each congregation on the following Sunday the quantity of aluminum recycled, the proceeds contributed to the Halt Hunger work, and the cumulative total of money contributed through that date.

Demographics

Ages and occupations of the congregation are shown in Table 8. Employment among both men and women was divided about equally between white-collar and blue-collar work.

Results

The Stuart and Bouldin Memorial churches had the second highest pounds per member per week collection of aluminum (.12) and the second highest quantity of aluminum in total pounds collected (887 pounds, indicated in Table 5). The collected aluminum was sold for a total of $190.07. Figure 9 shows the pounds of aluminum per member for each sale of collected aluminum to the recycling center. The Stuart and Bouldin Memorial congregations not only were among the first to begin the project but also conducted the project largely on their own initiative.

Aluminum was stored on the screened porch of the manse until a van load had been collected, and then taken to the recycling center in Roanoke (83 miles distant). The project director (i.e., the author) made two trips to Stuart (on December 6 and March 28) in a pick-up truck to take collected aluminum to Roanoke. At other times (June 14, August 16, September 27, November 8, February 28, June 20) the pastors brought collected aluminum to the recycling center in their van when church meetings or other business made a trip to Roanoke necessary. For six of the eight trips to the recycling center during the period of the project, then, it can be said that no transportation expense

TABLE 8

Stuart and Bouldin Memorial Presbyterian Churches
Ages and Occupations of Members

Membership: total 83 women 43

Ages: 12-20 22%
21-40 16%
41-65 36%
over 65 16%

Average family size: 3

Percentage of women working outside the home 54.7%

Occupations	Men	Women[1]
Professional	44%	13.8%
Teaching	12%	20.7%
Management (large companies)	0%	0%
Small business (owner, sales, etc.)	12%	10.3%
Military	0%	0%
Secretarial	0%	24.2%
Skilled Labor	32%	13.8%
Semi-skilled and unskilled labor	0%	0%
College student	0%	17.2%
Retired[2]	20.5%	17.2%

[1] Percentages of the total number of women working outside the home

[2] Former occupations of retired persons are included in the occupational percentages

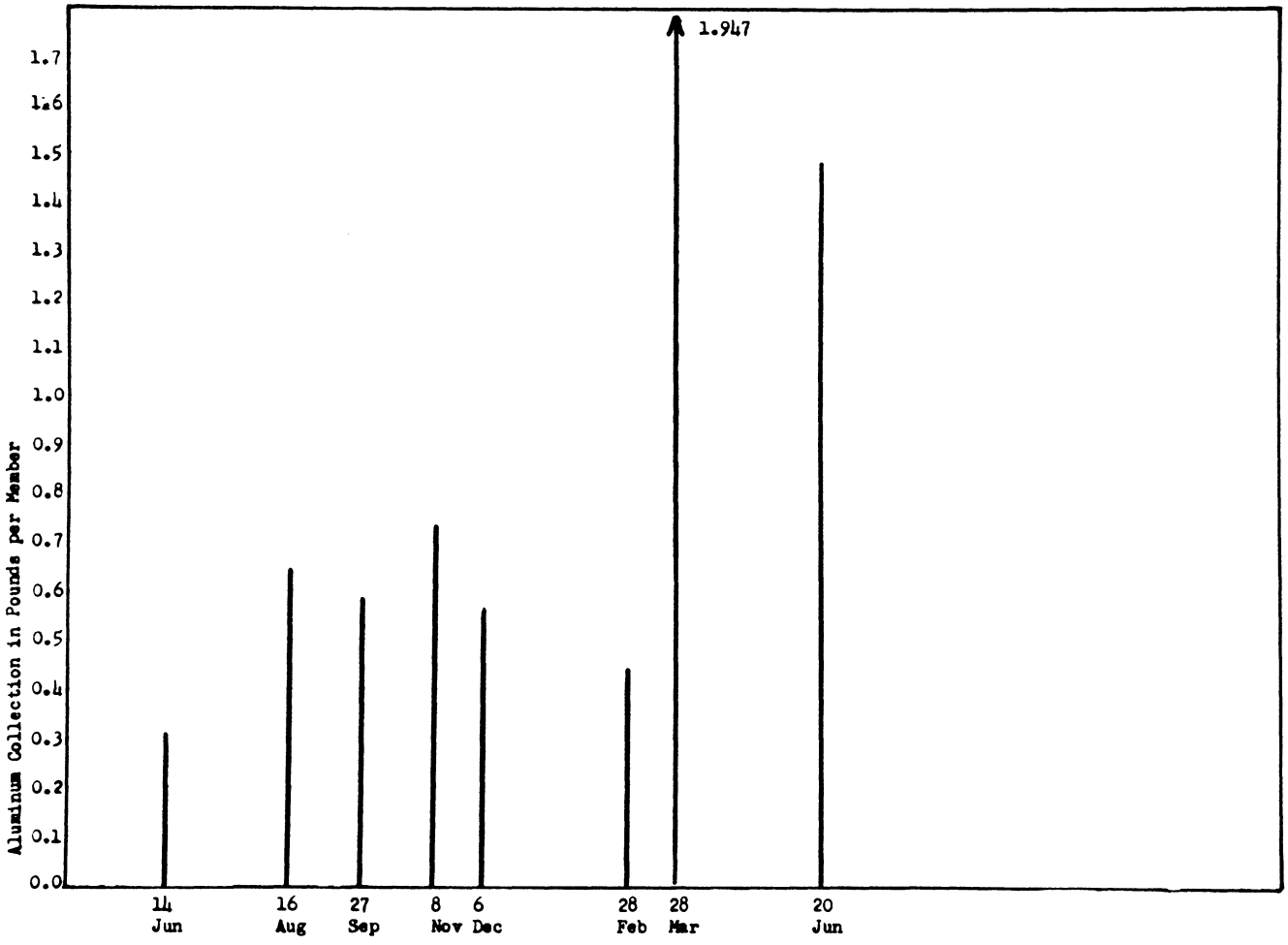

FIGURE 9

Stuart and Bouldin Memorial Presbyterian Churches
Aluminum Collections

should be charged to the project, since the travel involved was necessary for other reasons.

The project was supported enthusiastically by these two congregations. Several members regularly collected discarded aluminum drink cans along the roadside. One of these members was heard to comment, as he helped to load the pastors' van for the trip to Roanoke, "It's a messy business, but if it helps to feed the poor hungry children, it's worth every minute." Another consistent collector observed that "it didn't seem quite right to take all those beer cans to the church, but it was for a good cause."

A whole van load of aluminum scrap was contributed by one member, whose business was building stock car racers; he contributed his scrap bin of discarded aluminum auto body parts.

CASE STUDY 3: FAIRLAWN PRESBYTERIAN CHURCH

Interventions

Prompts

The Youth Fellowship sponsored the aluminum recycling project in the Fairlawn church, and members of this group made posters for the bulletin boards of the church. A typical poster is shown in Figure 10. The minister wrote brief prompts for the monthly church newsletter; these prompts are compiled in Table 9. An initial verbal prompt from the pulpit on the first Sunday of the project (November 15) was similar in content to the first newsletter (printed) prompt; the pastor was unable to recall the exact wording of the verbal announcement.

Proximity

The aluminum collection container was placed in the Sunday School Superintendent's office, as shown in Figure 11. The container was not visible from any outside entrance to the church building, nor from any entrance to the sanctuary, and was approximately 80 feet from the nearest entrance to the sanctuary.

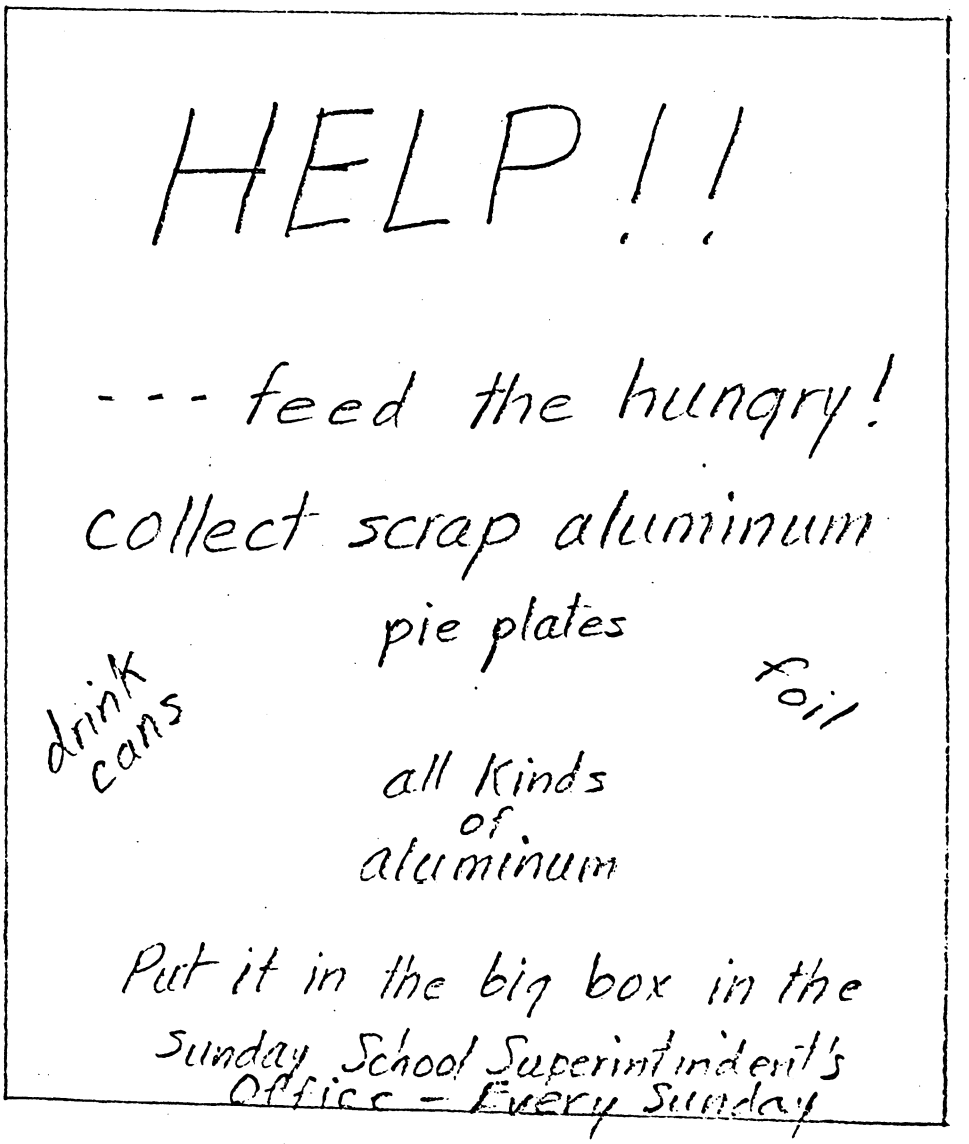

FIGURE 10

Poster Announcing Aluminum Recycling Project
Fairlawn Presbyterian Church

TABLE 9

Fairlawn Presbyterian Church
Prompts Printed in Monthly Newsletter

date	prompt
Nov. 1, 1981	RECYCLING ALUMINUM One of the projects of the Hunger Task Force of Fincastle Presbytery involves the collection of aluminum. This is turned over to a recycling center and the funds generated are used to feed the hungry. With the approval of the Session, our congregation will participate. The Senior Youth Fellowship has taken this as one of their projects. They will coordinate the project, handle the publicity, and encourage the rest of us. Please begin now to save your scrap aluminum...drink cans, foil, pie plates, etc. We'll soon have a container somewhere in the church where you can deposit the aluminum. With this effort we'll help the environment, the country, and, most of all, those who are hungry.
Dec. 1, 1981	ALUMINUM RECYCLING GOES WELL Keep on bringing your foil, pie plates, your soft drink cans, and your neighbors' beer cans. We've filled that huge box about three times now. The money generated will feed the hungry. Check with a member of the Senior Youth Group if you have any questions. The collection box is in the Sunday School Superintendent's office.
Feb. 1, 1982	ALUMINUM RECYCLING Your response to our aluminum collection has been great! Keep those cans, etc., coming. Let us feed the hungry.
Mar. 1, 1982	WE'RE STILL RECYCLING We've been very pleased by your response to our aluminum recycling efforts. Barely a week goes by, even in terrible weather, when the huge box in the Superintendent's office is not filled with cans, pie plates, foil, etc. Keep up the good work. It helps the environment and the hungry!
Apr. 1, 1982	KEEP ON COLLECTING! A thrown-away beer can is an eyesore and a hazard. Picked up and turned in, a beer can can produce money to feed the hungry. According to the Rev. Charles W. Moore, the coordinator of our recycling efforts in Fincastle Presbytery, our church, in the two or three months we've been bringing in aluminum, has produced $80.74. Using the right channels, this can provide more than 664 pounds of food. And. . . the environment benefits. Keep up the good work!

Table 9 (continued)

date	prompt
May 1, 1982	ALUMINUM RECYCLING UPDATE The Rev. Charles W. Moore reports that, as of April 20, 1982, the aluminum collected by our church has provided $97.23 to feed the hungry. The total to date for the Presbytery (with 17 or so churches involved) is $577.02. Keep up the good work. Turn in your aluminum to the box located in the Sunday School Superintendent 's office.
June 1, 1982	ALUMINUM RECYCLING As of the end of May, our congregation has provided $131.62 worth of aluminum of the Presbytery total of $702.49. With hot weather upon us, we expect those cans to keep on coming!

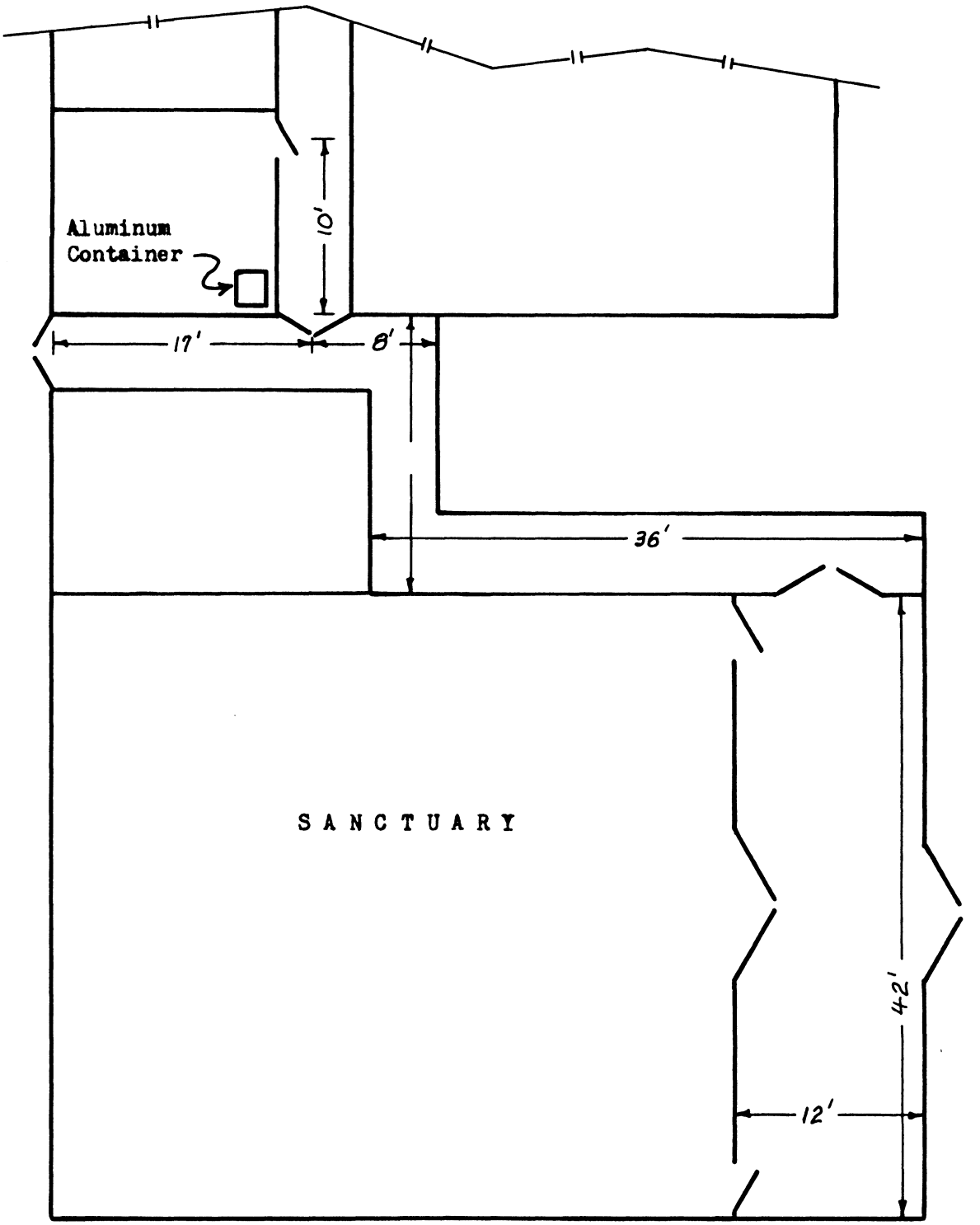

FIGURE 11
Location of Collection Container in Fairlawn Presbyterian Church

Feedback

Group feedback was included in the newsletter prompts for April 1, May 1, and June 1; and each notice gave the cumulative total to that date for the Fairlawn church, and the total for all churches together. Individual feedback was not offered to the Fairlawn congregation.

Demographics

Ages and occupations of the congregation are summarized in Table 10. Skilled, semi-skilled, or unskilled labor were the predominant occupations for men, with small business next; and women were employed first in secretarial jobs, then about equally in small businesses, and skilled, semi-skilled, or unskilled labor.

Results

The Fairlawn congregation collected and recycled 1209.4 pounds of aluminum during 37 weeks of participation, the largest quantity of aluminum recycled by a church in the study. Since the congregation had 276 members, the mean collection in pounds per member per week was .12. The dollar value of the recycled aluminum (i.e., the amount contributed to the Halt Hunger Fund) was $163.41.

Weekly collections of aluminum, in pounds per member, are shown in Figure 12, which also indicates the dates prompts were given and the weekly church attendance. The weekly aluminum collections had a marked tendency to fluctuate between relatively large amounts and relatively small amounts, with extremes sometimes appearing over a period

TABLE 10

Fairlawn Presbyterian Church
Ages and Occupations of Members

Membership: total 281 women 165

Ages: 12-20 18%
21-40 27%
41-65 30%
over 65 25%

Average family size: 4

Percentage of women working outside the home 75%

Occupations	Men	Women[1]
Professional	0%	0%
Teaching	2%	11%
Management (large companies)	4%	0%
Small business (owner, sales, etc.)	17%	16%
Military	5%	2%
Secretarial	0%	32%
Skilled Labor	30%	12%
Semi-skilled and unskilled labor	37%	18%
College student	5%	9%
Retired[2]	23%	26%

[1] Percentages of the total number of women working outside the home

[2] former occupations of retired persons are included in the occupational percentages

of several weeks and sometimes in a single week. In December, for example, the pounds per member of aluminum collected went from small to large and back to small again in four Sundays: the collection was small on December 6 (.02 lbs/mem), large on December 13 (.16 lbs/mem), not quite so large on December 20 (.14 lbs/mem), and small again on December 27 (.02 lbs/mem). By contrast, the fluctuation from one extreme to the other took place in one week in May, when the May 2 collection was quite large (.22 lbs/mem), the May 9 collection dropped to quite small (.02 lbs/mem), and the May 16 collection jumped to quite large again (.23 lbs/mem).

Each prompt was followed by an increase in pounds per member collected, but increases and decreases also occurred between prompts. For the week ending January 31, for example, the aluminum collection was .07 lbs/mem. On February 7, following the prompt on February 4, the collection was .12 lbs/mem, an increase of 67% over the previous week. For the next week the collection was .04 lbs/mem, a decrease of 65%; but for the following week (February 21), which was not a collection date preceeded by a prompt, the amount collected jumped to .18 lbs/mem, an increase of 341%. The two weeks showing the greatest quantity of aluminum collected were April 11 and 25, the second and fourth weeks after the first feedback. Two weeks later, however, on May 9, the collection was quite small again (.02 lbs/mem).

Results of the Questionnaire are summarized in Table 11. The reason given most often for recycling was "to feed the hungry" (71%). Support of the pastor and youth (who promoted the project) was more

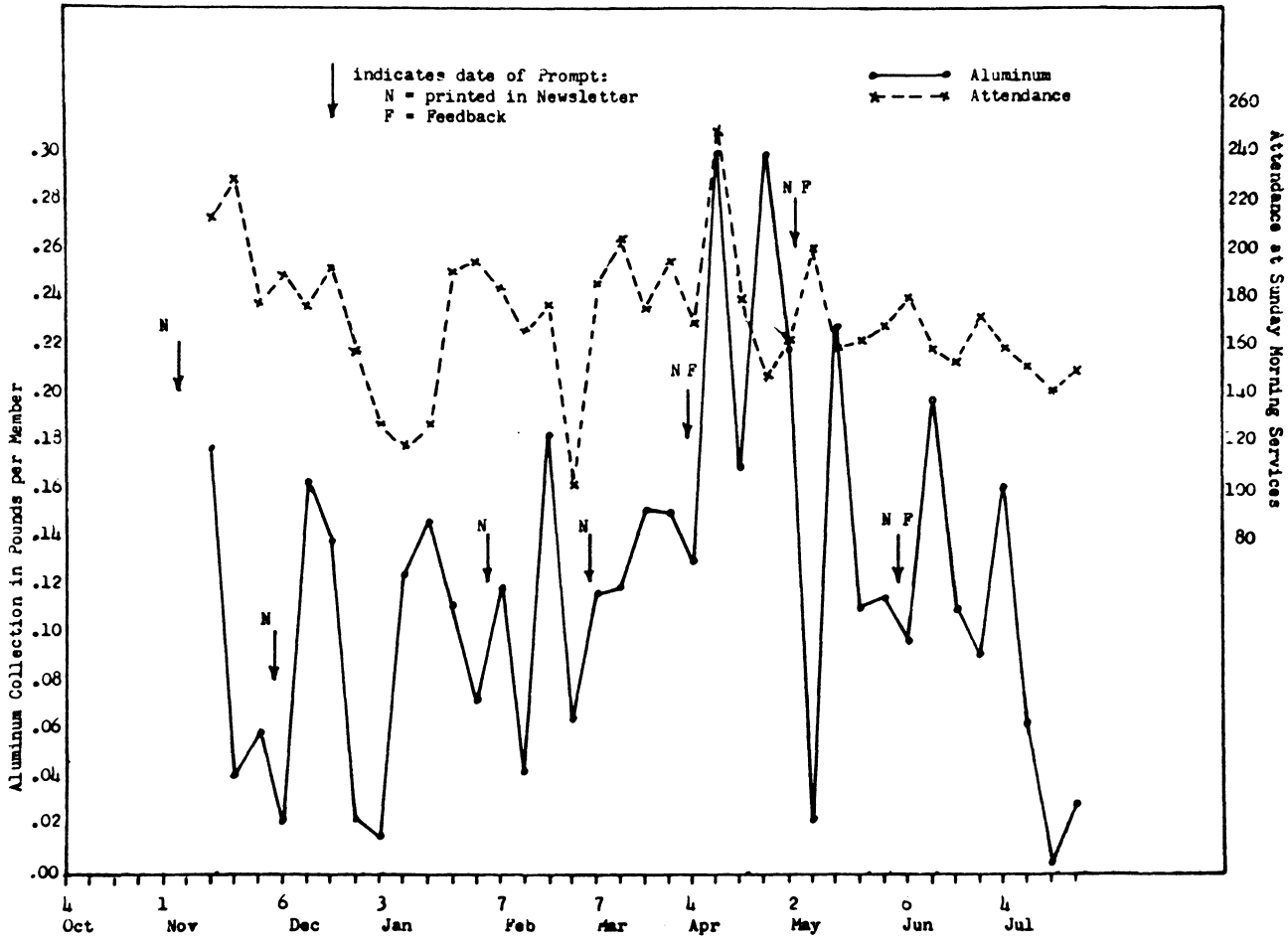

FIGURE 12

Fairlawn Presbyterian Church
Weekly Aluminum Collection and Church Attendance

often the reason for recycling (38%) than was waste reduction (30%). No objection was shown to the church's involvement in a recycling project, or to taking scrap to the church. The principal reason for not participating in the project was the perception that there was too little aluminum scrap available to make recycling it worthwhile.

No provision was made to monitor the aluminum collection container in order to record the number of different individuals bringing scrap, or the frequency with which the same individuals brought scrap. It was not possible to determine accurately the number of contributors by counting the number of individual containers found in the collection container when weekly pick-ups were made, because aluminum scrap was often dumped loose in the large container.

Anecdotal comments, however, suggested that a relatively small number of individuals regularly contributed a large percentage of the scrap. One retired member, for example, commented to the pastor that he enjoyed walking through the city park on Mondays and picking up drink cans discarded over the weekend. Another member who jogged regularly picked up discarded cans as she jogged. A third member made daily rounds of the wastebaskets by the drink machines in the office building in which she worked, and brought her weekly collection to the church each Sunday.

TABLE 11

Summary of Questionnaire
Fairlawn Presbyterian Church

1. Is your Church participating?	YES	93%
	NO	2%
	DON'T KNOW	2%
	Did not answer	3%
2. Are you participating?	REGULARLY	33%
	OCCASIONALLY	36%
	NOT AT ALL	26%
	Did not answer	5%
3. Why are you participating?	TO FEED THE HUNGRY	.71
	TO REDUCE WASTE	.30
	TO SUPPORT YOUTH PROGRAM	.23
	TO SUPPORT PASTOR	.15
	OTHER	.00
4. If you are <u>not</u> participating, why not?	NOT CONVENIENT	.00
	NOT ENOUGH ALUMINUM SCRAP	.29
	DON'T LIKE TAKING SCRAP TO CHURCH	.00
	CHURCH SHOULDN'T BE INVOLVED	.00
	DIDN'T KNOW ABOUT PROGRAM	.02
	OTHER	.00
5. Do you like regular reminders of the recycling program?	YES	64%
	NO	5%
	INDIFFERENT	29%
	Did not answer	2%
6. What type of reminder is most helpful?	CHURCH NEWSLETTER	.44
	SUNDAY BULLETIN	.25
	PASTOR'S ANNOUNCEMENT	.39
	WEEKLY REPORTS	.10
	NEWSPAPER ADS	.02
	OTHER	.00
7. Would you support recycling in your church if the proceeds went to you?	DEFINITELY YES	5%
	PROBABLY YES	19%
	PROBABLY NO	19%
	DEFINITELY NO	36%
	Did not answer	21%

CASE STUDY 4: OLD BRICK PRESBYTERIAN CHURCH

Interventions

Prompts

The Old Brick church had neither a Sunday bulletin nor a newsletter, and so all prompts were verbal. The pastor made brief announcements to the congregation during the service each Sunday. A typical prompt was: "Don't forget to bring your scrap aluminum to the church to be sold for recycling. All the money from it goes to the Halt Hunger work of the Presbytery."

Proximity

The aluminum collection container was placed in the vestibule of the church, immediately beside the steps to the sanctuary entrance. Figure 13 shows the location of the container.

Feedback

Group feedback was included in the verbal prompts each week after feedback was begun. The pastor read the weekly feedback information sent to the church by the project director.

Individual feedback was offered this congregation, but no member returned any aluminum scrap in a signed collection bag.

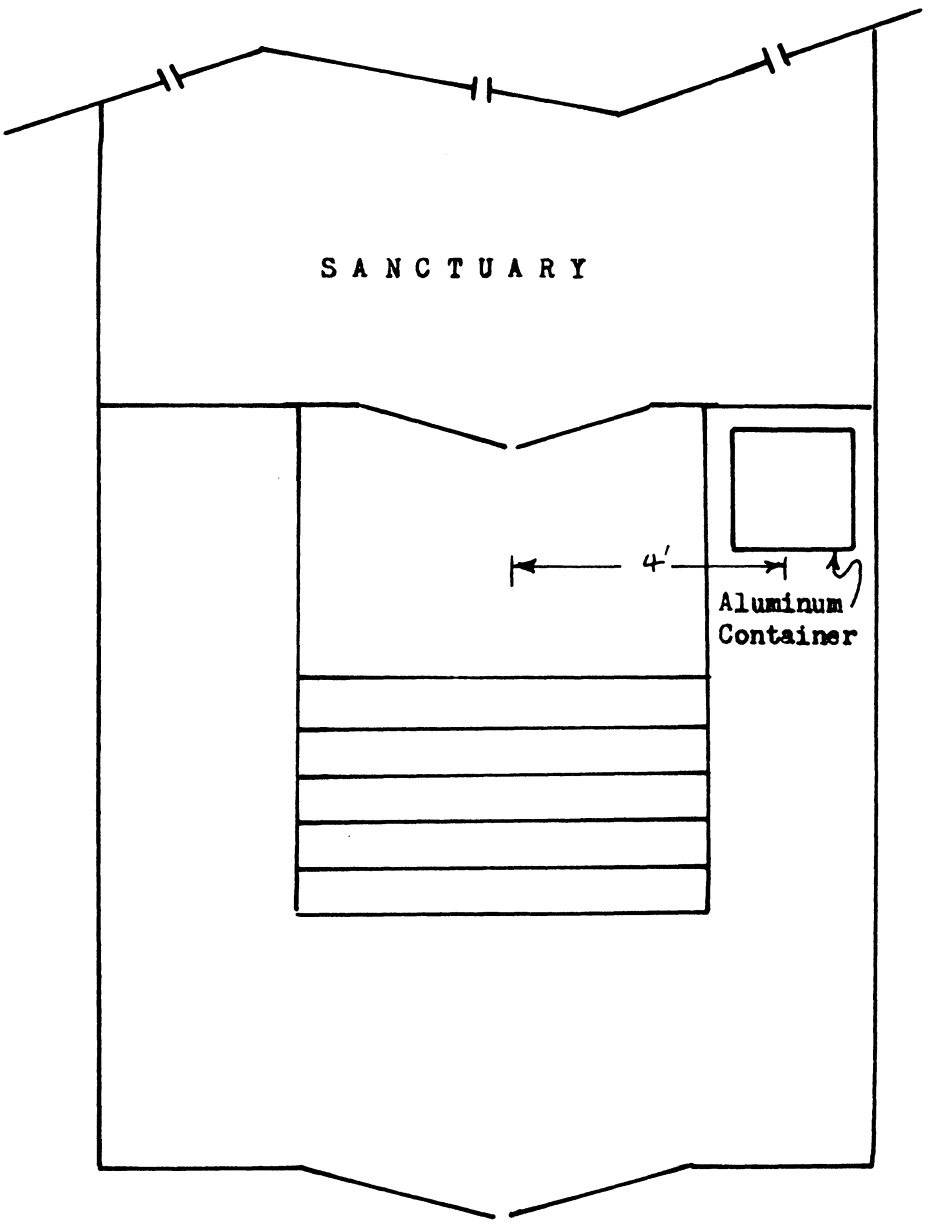

FIGURE 13

Old Brick Presbyterian Church
Location of Collection Container

Demographics

Ages and occupations of the congregation are shown in Table 12. Skilled labor and semi-skilled or unskilled labor were the principal occupations of the men, with farming third; women's occupations were predominantly secretarial, then skilled/semi-skilled/unskilled labor.

Results

In 33 weeks the Old Brick congregation collected 171.9 pounds of scrap aluminum, which sold to the recycling center for $62.98. The mean collection was .12 lbs/mem/week. The tendency for the amount of aluminum collected to fluctuate from large quantities to small is evident in Figure 14.

Table 13 summarizes the Questionnaires filled out by Old Brick members. No member reported participating regularly, and only 50% indicated occasional participation. Reasons for participating were to feed the hungry, reduce waste, and support the youth program, in that order. The principal reason for not participating was too little scrap.

TABLE 12

Old Brick Presbyterian Church :
Ages and Occupations of Members

Membership: total 45 women 29

Ages: 12-20 13%
21-40 22%
41-65 41%
over 65 24%

Average size of family: 2.5

Percentage of women working outside the home 38%

Occupations	Men	Women[1]
Professional	0%	0%
Teaching	6%	10%
Management (large companies)	0%	0%
Small business (owner, sales, etc.)	12%	0%
Military	0%	0%
Farmer	19%	0%
Secretarial	0%	36%
Skilled labor	38%	18%
Semi-skilled and unskilled labor	25%	18%
College student	0%	18%
Retired*	31%	14%

[1] Percentages of the total number of women working outside the home

[2] Former occupations of retired persons are included in the occupational percentages

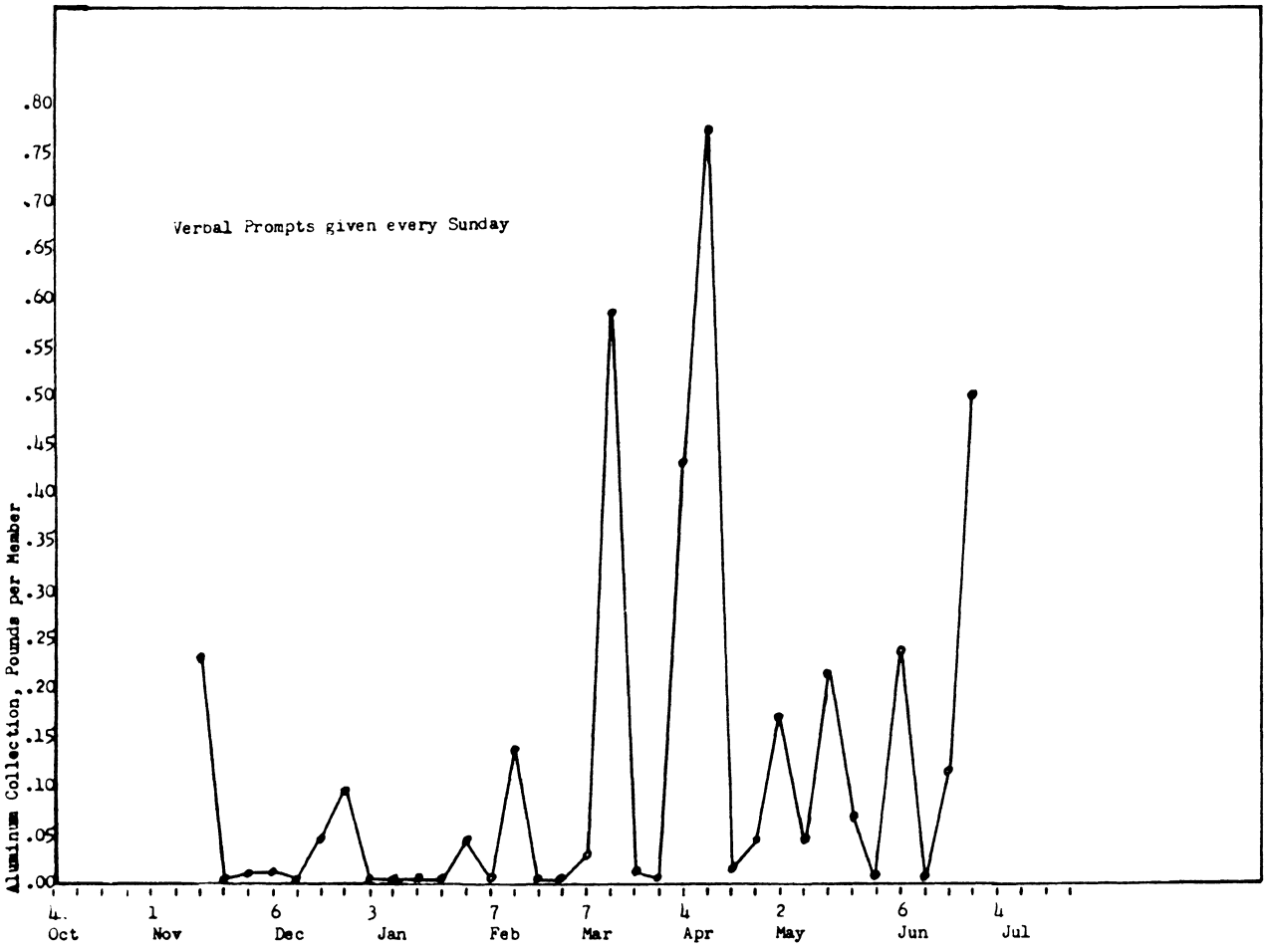

FIGURE 14

Old Brick Presbyterian Church
Weekly Aluminum Collection

TABLE 13

Summary of Questionnaire
Old Brick Presbyterian Church

1. Is your Church participating?	YES	100%
	NO.	0%
	DON'T KNOW.	0%
	Did not answer.	0%
2. Are you participating?	REGULARLY	0%
	OCCASIONALLY.	50%
	NOT AT ALL.	33%
	Did not answer.	17%
3. Why are you participating?	TO FEED THE HUNGRY	.70
	TO REDUCE WASTE.	.53
	TO SUPPORT YOUTH PROGRAM	.43
	TO SUPPORT PASTOR.	.17
	OTHER.	.00
4. If you are <u>not</u> participating, why not?	NOT CONVENIENT	.00
	NOT ENOUGH ALUMINUM SCRAP.	.17
	DON'T LIKE TAKING SCRAP TO CHURCH.	.00
	CHURCH SHOULDN'T BE INVOLVED	.00
	DIDN'T KNOW ABOUT PROGRAM.	.00
	OTHER	.17
5. Do you like regular reminders of the recycling program?	YES	83%
	NO.	0%
	INDIFFERENT	17%
	Did not answer.	
6. What type of reminder is most helpful?	CHURCH NEWSLETTER	.39
	SUNDAY BULLETIN.	.61
	PASTOR'S ANNOUNCEMENT.	.58
	WEEKLY REPORTS	.06
	NEWSPAPER ADS	.08
	OTHER	.00
7. Would you support recycling in your church if the proceeds went to you?	DEFINITELY YES	0%
	PROBABLY YES	17%
	PROBABLY NO.	83%
	DEFINITELY NO.	0%
	Did not answer	0%

CASE STUDY 5: BELMONT PRESBYTERIAN CHURCH

Interventions

Prompts

The first aluminum collection day in the Belmont church was Sunday, April 4. On the two preceeding Sundays (March 21 and 28) verbal prompts from the pulpit during the morning service announced the aluminum recycling project and enouraged members to participate. The prompts on each Sunday were very similar, and were worded approximately as follows: "Our Session has approved our participation in the 'Recyle aluminum to help halt hunger' project which has been begun by the Hunger Task Force of the Presbytery. There will be a collection box in the entrance hall of the Educational Building beginning April 4, and everyone is encouraged to bring all their household aluminum scrap to the box every Sunday morning. Aluminum foil, pie plates, and drink cans are examples of the kind of thing to bring. The aluminum will be collected every week and sold to a recycling center, and the money given to the Halt Hunger fund of the Presbytery."

Subsequently, written prompts were included in the church bulletin, and are shown in Table 14.

For the six Sundays beginning with June 6 and ending with July 11, the Belmont pastor distributed the set of intensive prompts com-

TABLE 14

Belmont Presbyterian Church: Written Prompts for Aluminum Recycling Project (in Sunday Bulletin)

date	announcement
May 1, 1982	The Belmont Church has contributed aluminum amounting to $8.56 thus far in the Presbytery's Recycle program. Total amount for the Presbytery (from all the Churches) is $605.08. Thanks for helping to halt hunger by giving aluminum. Please keep bringing it to the Church.
June 13, 1982	Many are helping to collect aluminum for recycling to "halt hunger." Please continue to bring your aluminum scrap to the church for collection. Boxes are in the hallway at the entrance to the Education Building on 9th Street.
July 18, 1982	Belmont Church has given $27.75 thus far in aluminum for recycling. The Presbytery total is now at $882.27. All money collected from this project is used to help feed the hungry in our world.

posed of six leaflets describing the aluminum recycling project and its benefits. One leaflet was inserted in the Sunday church bulletin each Sunday, and a brief notice in the bulletin drew attention to the leaflet. The leaflets and the notices are shown in Appendix F. The dates of all prompts and feedback are shown relative to the weekly aluminum collections in Figure 16.

Proximity

The location of the aluminum collection container is shown in Figure 15. The container was placed in the entrance hallway of the Educational Building, 174 feet from the entrance to the sanctuary. The container was not visible from the sanctuary entrance, nor was it in the line of travel from the church parking lot to the sanctuary entrance. Since the container sat in the entrance way to the Educational Building, however, it was clearly visible to all persons attending Sunday School who entered through the front door.

Feedback

Public feedback was given twice, included in the Sunday bulletin prompts for May 1 and July 18 (shown in Table 14 and Figure 16). Individual feedback was not offered to this congregation.

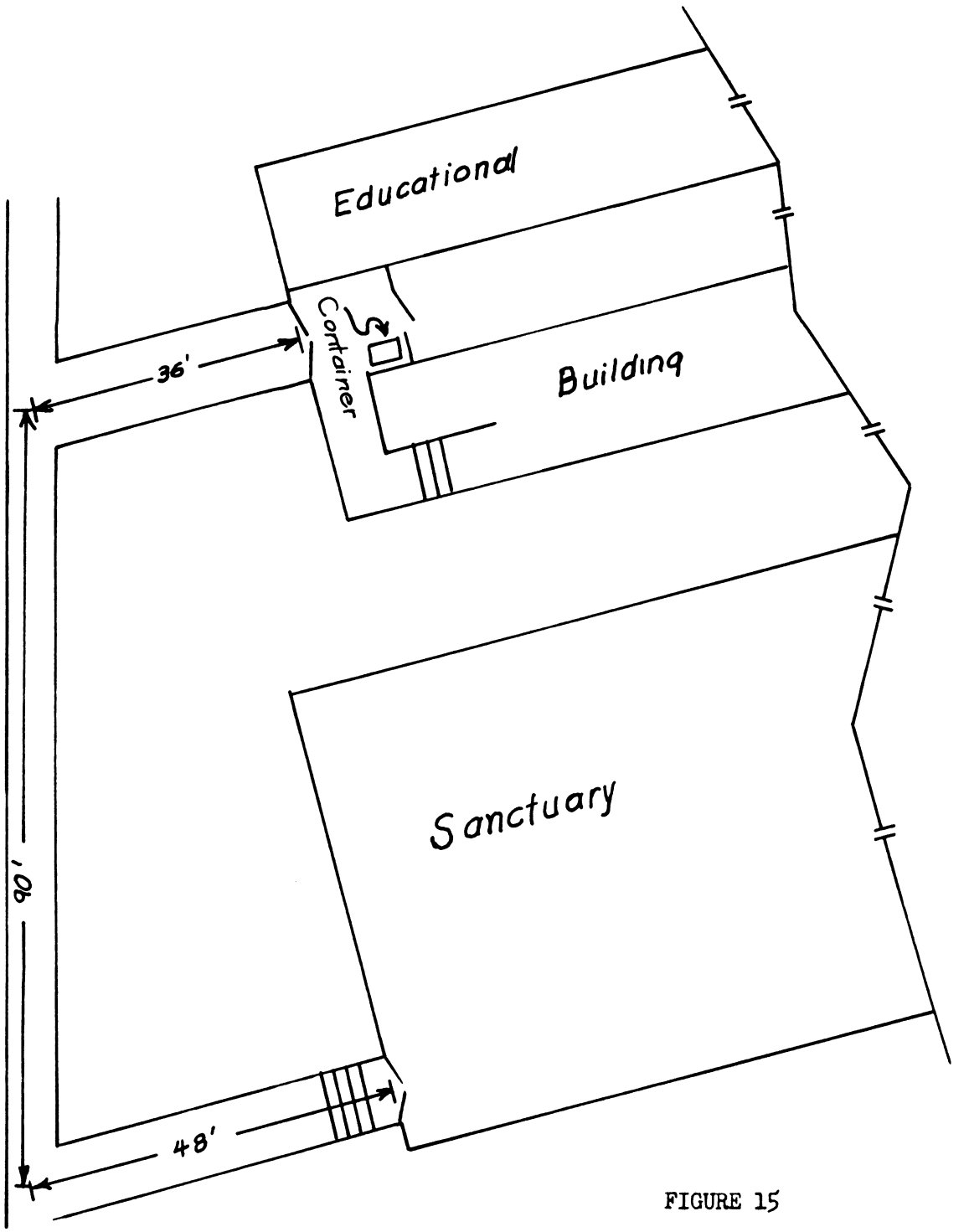

FIGURE 15

Belmont Presbyterian Church
Location of Collection Container

Demographics

The ages and occupations of the members of the congregation are shown in Table 15, which indicates that skilled and semi-skilled labor was the predominant occupational class in this congregation.

Results

The total collection during 17 weeks of participation was 224.7 pounds, worth $32.77. The mean collection was .07 lbs/mem/week. Figure 16 shows the weekly collections, the dates of prompts and the weekly attendance at morning services.

The weekly aluminum collections varied considerably in quantity. There was a large collection on the first Sunday of the program, for example, followed by a relatively small collection the following Sunday; and this pattern of fluctuation was generally repeated throughout the project. The first written prompt (on May 2) was followed by reduced collections on two subsequent Sundays, which in turn were followed by three Sundays of increasingly larger collections (.03 lbs/mem, .06 lbs/mem, and .10 lbs/mem) before another prompt appeared. The largest collection (.149 lbs/mem) occured on the fourth Sunday of the intensive prompts; that is, after three prompts were received by the congregation. The collection then decreased in size, but not consistently; twice a large decrease in the quantity collected was followed by a smaller increase.

TABLE 15

Belmont Presbyterian Church:
Ages and Occupations of Members

AGES: 12-20 13% 21-40 13% 41-65 25% over 65 49%

Average Family Size: 3

OCCUPATIONS: (percentages include occupations of women working outside the home, and former occupations of members now retired)

Professional	7%
Teaching	4%
Management (large companies)	0%
Small business	4%
Military	0%
Secretarial	8%
Skilled labor	29%
Semi-skilled labor	40%
College students	8%

Percentage of women working outside the home: 24%

Percentage of members retired: 49%

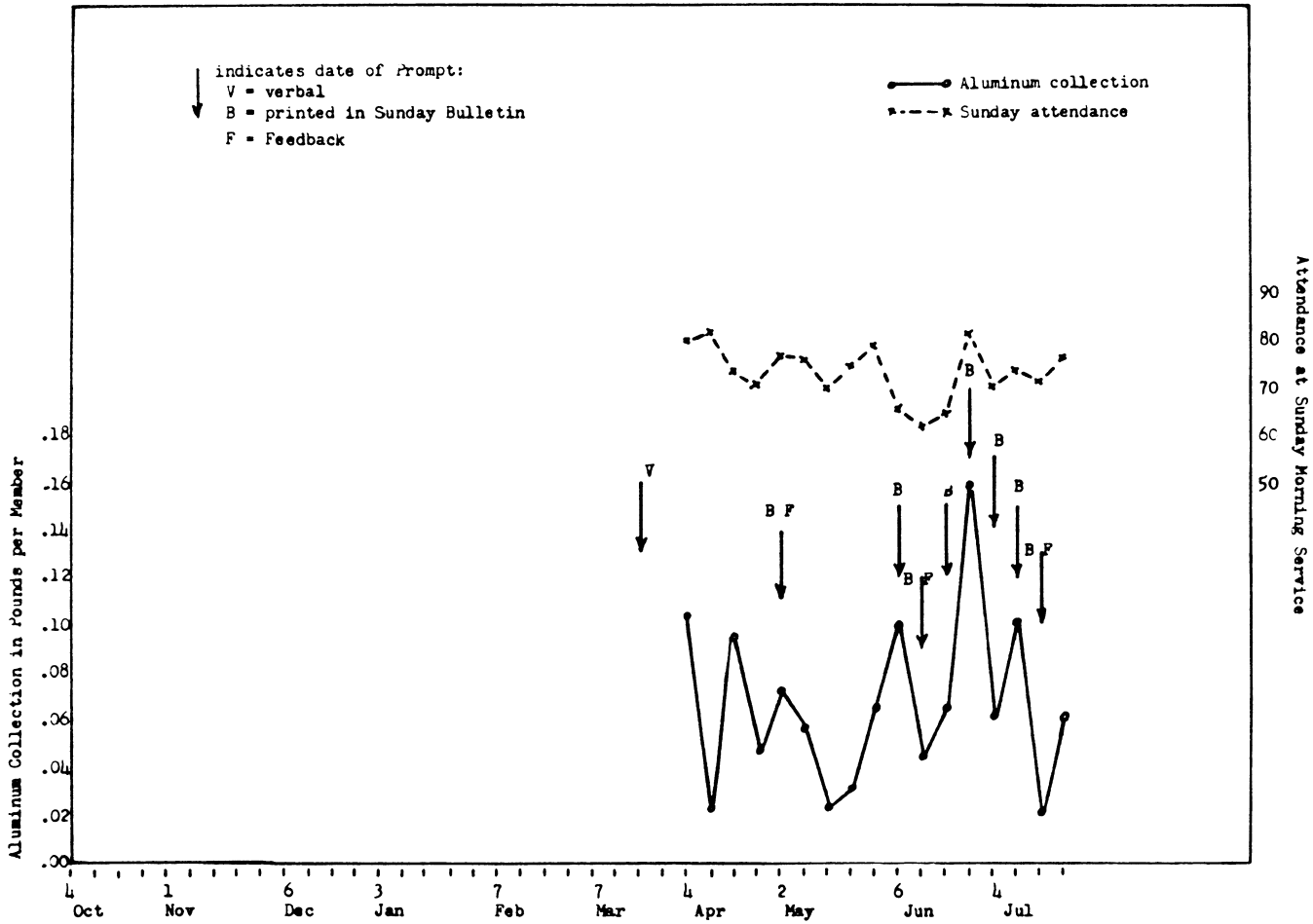

FIGURE 16

Belmont Presbyterian Church
Weekly Aluminum Collection and Church Attendance

CASE STUDY 6: NORTHMINSTER PRESBYTERIAN CHURCH

Interventions

Prompts

On December 6, the Sunday before the aluminum collection was to begin in the Northminster church, the pastor announced the project in the morning service. The content of this verbal prompt was practically identical with the printed prompt which appeared in the church bulletin the following Sunday. Subsequent printed prompts appeared in the church bulletin at intervals, and are compiled in Table 16.

Proximity

The aluminum collection container was placed in the hallway immediately adjacent to the entrance to the vestibule, 23 feet from the central entrance to the sanctuary. The container was visible from the sanctuary entrance, and was visible from the entrances to most Sunday School classrooms (these opened on one or another of the two hallways which converged at the vestibule entrance). The location of the container is shown in Figure 17.

TABLE 16

Northminster Presbyterian Church: Prompts for Aluminum Recycling Project Printed in Sunday Bulletin

Date	Prompt
Dec. 27, 1981	ALUMINUM-HUNGER PROJECT: You have seen the large collection container in the narthex where you are invited to discard all used aluminum - cans, pie plates and other disposables, any items that are worn out and you are no longer using. Weekly pick-ups are made by the Presbytery's Hunger Task Force and the proceeds go to the 2¢/Meal Fund. The project shows promise of making a significant contribution to the HUNGER PROGRAM by utilizing a resource heretofore wasted, at no cost and at minimal inconvenience to the individual contributor.
Feb. 14, 1982	NORTHMINSTER PRESBYTERIAN CHURCH contributed $11.42 to the Halt Hunger Fund through the collection of scrap aluminum in January. You contributed $298.50 in 2¢/Meal donations last Sunday.
Apr. 11, 1982	THE ALUMINUM COLLECTED by Northminster Church for the month of March totalled $40.87. Total for Presbytery churches was $497.32. Think about this every time you throw away scrap aluminum - every little bit adds up!
Apr. 18, 1982	REPORT OF RECENT CONTRIBUTIONS: April Receipts for 2¢/Meal: $341.34 One Great Hour of Sharing: 617.35 Aluminum Collection, 4/6/82 6.65 (Our total for aluminum to date is $47.52)
May 5, 1982	THE ALUMINUM PROGRAM: Mr. Kirk passed out evaluations of the aluminum program to members of his Sunday School class last week. For those who checked that they were participating, they answered the next question "Why?" "to help feed the hungry" and "to help reduce waste." For those who checked that they were not participating, the question "Why Not?" was answered in every case by "Don't feel I have enough aluminum scrap to bother." With only a very few of our members participating, we collect about 24 lb. per week. The only way we can collect more aluminum is to have more people bring in a little bit. No amount is too little.

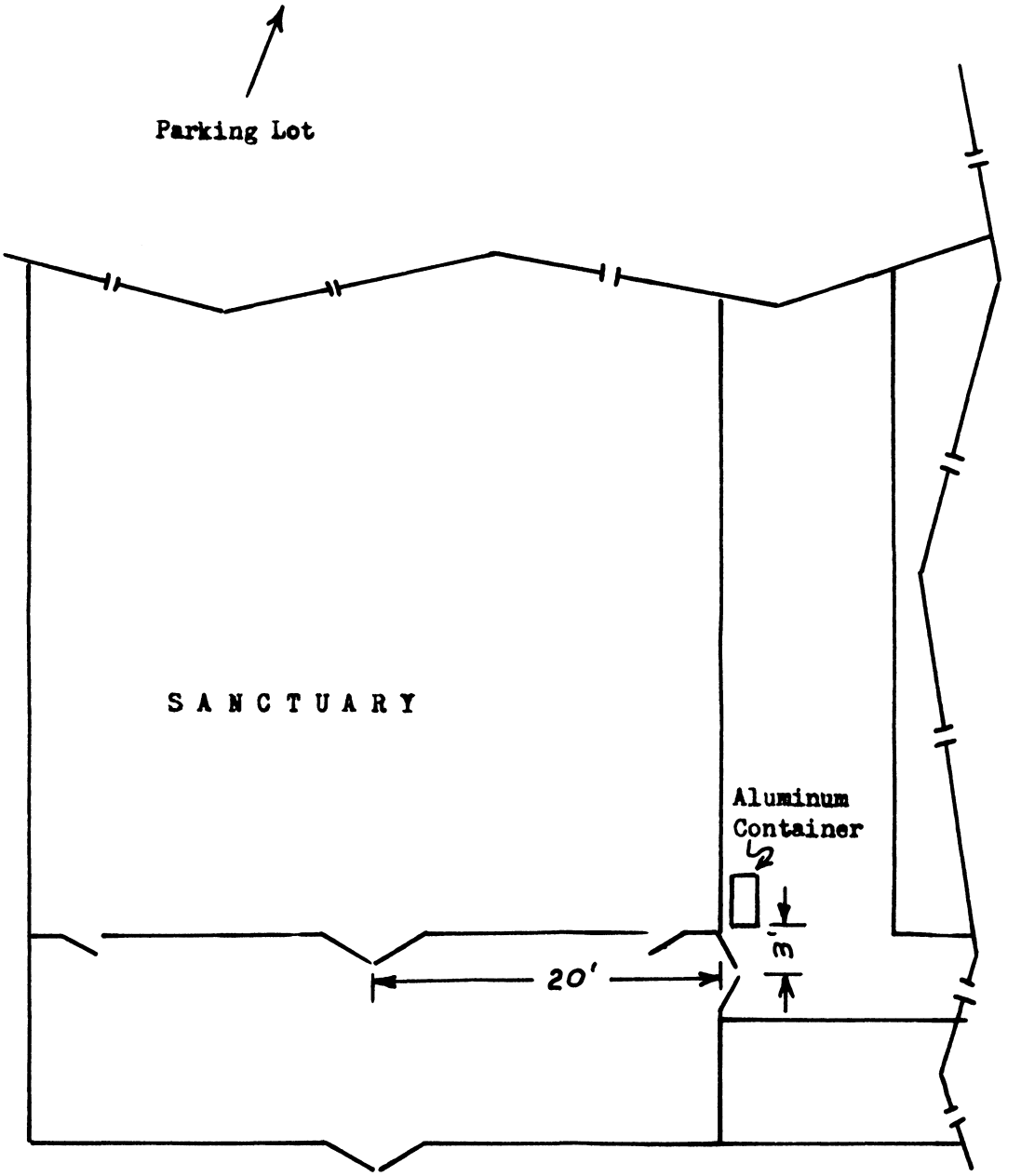

FIGURE 17

Northminster Presbyterian Church
Location of Collection Container

Feedback

Group feedback was incorporated into three of the printed prompts (Feb. 14, Apr. 11, Apr. 18) which appeared in the church bulletin. Individual feedback was offered to this congregation, but no member indicated (by signing a bag of collected aluminum) a desire to receive individual feedback.

Results

The aluminum collected each week is shown (in pounds per member) in Figure 18. The total collection over 29 weeks was 471.6 pounds, contributing $84.02 to the Halt Hunger fund. A pattern of alternating large and small collections is evident in Figure 18.

Prompts were not followed by an immediate increase (i.e., an increase on the following Sunday) in the quantity of aluminum collected except for the prompt on December 27, which was followed by a very slight increase in the collection on the following Sunday (.019 to.020 lbs/mem). Other prompts were followed by decreases in the next collection, in a pattern of almost weekly fluctuations. The very high collection on February 14 was due to an exceptional event; high winds blew the aluminum roofing off one member's carport, and he contributed the ruined roofing to the aluminum recycling project.

Table 17 summarizes responses to the Questionnaire. About a third of the congregation reported recycling regularly, a third occasionally, and a third not at all. To feed the hungry and to reduce waste were the principal reasons for recycling. Having too little scrap to make recycling worthwhile was the major reason for not particpating.

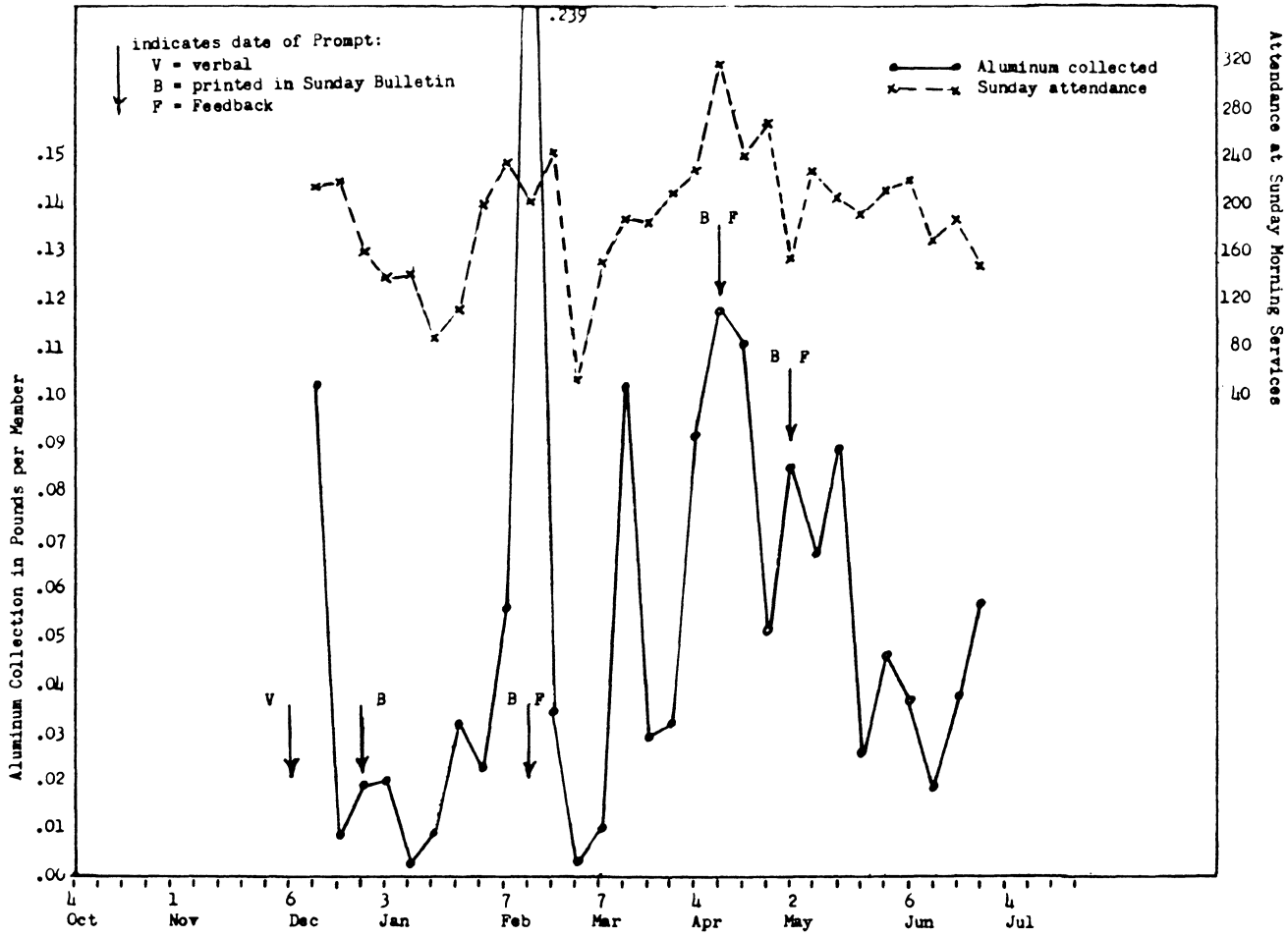

FIGURE 18

Northminster Presbyterian Church
Weekly Aluminum Collection and Church Attendance

TABLE 17

Summary of Questionnaire
Northminster Presbyterian Church

1. Is your Church participating?	YES	100%
	NO.	0%
	DON'T KNOW. . . .	0%
	Did not answer. .	0%
2. Are you participating?	REGULARLY	30%
	OCCASIONALLY. . . .	30%
	NOT AT ALL.	35%
	Did not answer. . .	5%
3. Why are you participating?	TO FEED THE HUNGRY	.40
	TO REDUCE WASTE.	.30
	TO SUPPORT YOUTH PROGRAM	.06
	TO SUPPORT PASTOR.	.16
	OTHER.	.00
4. If you are <u>not</u> participating, why not?	NOT CONVENIENT	.04
	NOT ENOUGH ALUMINUM SCRAP.	.35
	DON'T LIKE TAKING SCRAP TO CHURCH. . . .	.00
	CHURCH SHOULDN'T BE INVOLVED	.00
	DIDN'T KNOW ABOUT PROGRAM.	.00
	OTHER	.00
5. Do you like regular reminders of the recycling program?	YES	55%
	NO.	0%
	INDIFFERENT . . .	35%
	Did not answer. .	10%
6. What type of reminder is most helpful?	CHURCH NEWSLETTER	.26
	SUNDAY BULLETIN.	.13
	PASTOR'S ANNOUNCEMENT. . . .	.31
	WEEKLY REPORTS	.10
	NEWSPAPER ADS	.04
	OTHER	.00
7. Would you support recycling in your church if the proceeds went to you?	DEFINITELY YES	5%
	PROBABLY YES	10%
	PROBABLY NO.	10%
	DEFINITELY NO.	65%
	Did not answer	10%

CASE STUDY 7: WEST END PRESBYTERIAN CHURCH

Interventions

Prompts

The West End church was without a full-time pastor during the time of the aluminum recycling project (although services were held each Sunday by supply pastors); and the project was sponsored by the Youth Fellowship of the church. Prompts were printed from time to time in the form of announcements in the Sunday bulletin, and are compiled in Table 18.

Proximity

The aluminum collection container was placed on the ground floor of the Educational Unit, 144 feet from the entrance to the sanctuary. Figure 19 shows the location of the container. The container was not visible from the entrance to the sanctuary nor from any entrance to the building.

Feedback

Group feedback was sent each week to the Adult Advisor of the Youth Fellowship, and the Advisor reported verbally to the members of the Fellowship in their Sunday evening meetings. Feedback to the

TABLE 18

West End Presbyterian Church
Printed Prompts in Weekly Newsletter and Sunday Bulletin

Date	Prompt
Oct. 7, 1981 (Newsletter)	Fincastle Hunger Task Force is collecting household aluminum scrap for re-cycling. A canister will be in the Fellowship Hall for you to deposit your aluminum. Please bring it on Sundays. It will be picked up once a week.
Mar. 24, 1982 (Newsletter)	Thank you for recycling your scrap aluminum to help halt hunger. Presbytery total to date, $332.85. West End total to date $14.68. Keep up the good work.
May 12, 1982 (Newsletter)	Household aluminum scrap given by our congregation to help halt hunger totals $21.27.
May 26, 1982 (Newsletter)	SCRAP ALUMINUM: Whatever you have - cans, foil, it can be turned into money to be used in fighting hunger. Mrs. Marion Chittum asks that all of us cooperate and bring scrap aluminum to the box in the lower hall. Help fight hunger!!
June 2, 1982 (Newsletter)	Received for recycled aluminum May 25: $4.03 - used to fight hunger. Keep up the good work by bringing your scrap, placing it in the box in the lower hall.

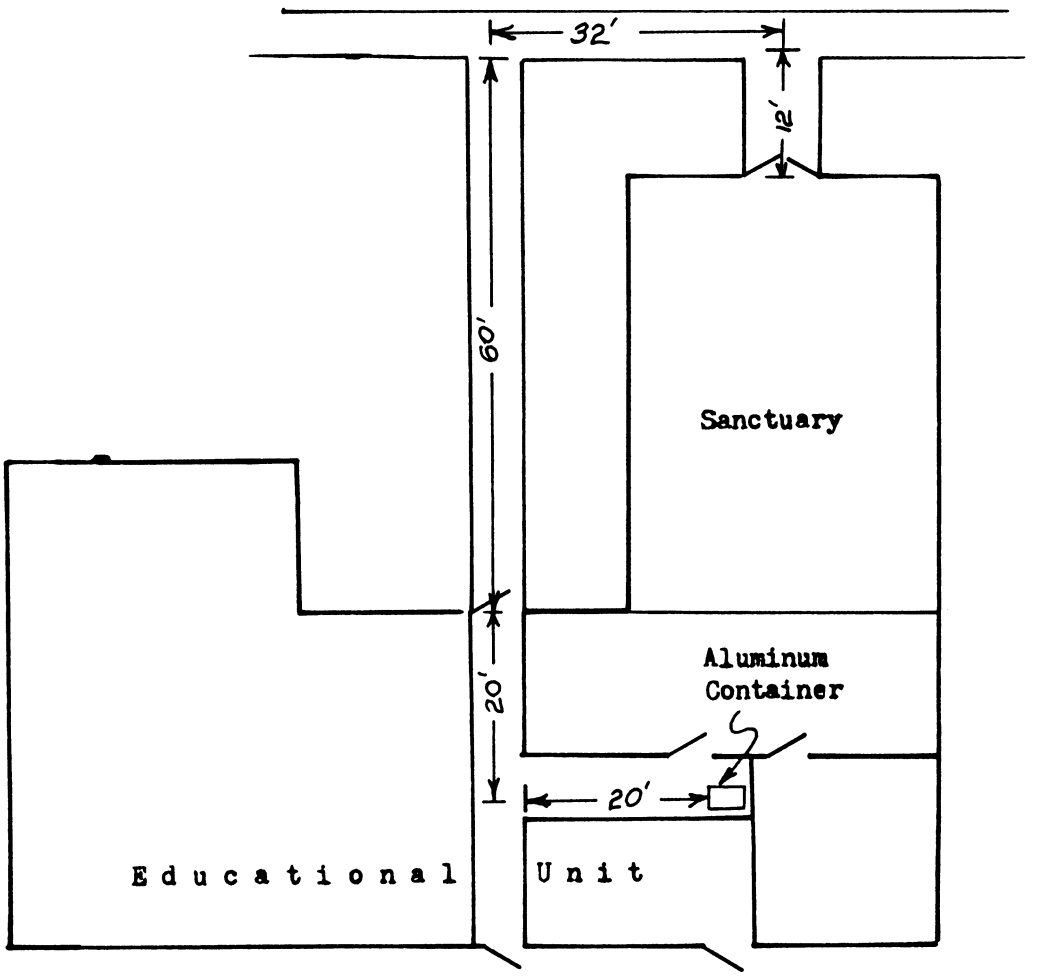

FIGURE 19

West End Presbyterian Church
Location of Collection Container

congregation as a whole was incorporated occasionally into the prompts appearing in the Sunday bulletin, as shown in Table 18. Individual feedback was not offered to this congregation.

Results

A total of 178 pounds of aluminum was collected, and sold for $32.98. Weekly collections are shown graphically in Figure 20, which illustrates the tendency for large collections to occur at four to six week intervals, with small collections between these peaks. The mean collection was .02 pounds per member per week. Table 19 summarizes responses to the Questionnaire. About a third of the congregation reported recycling regularly, about a third occasionally, and about a fourth not at all. The principal reason for recyling was to help feed the hungry.

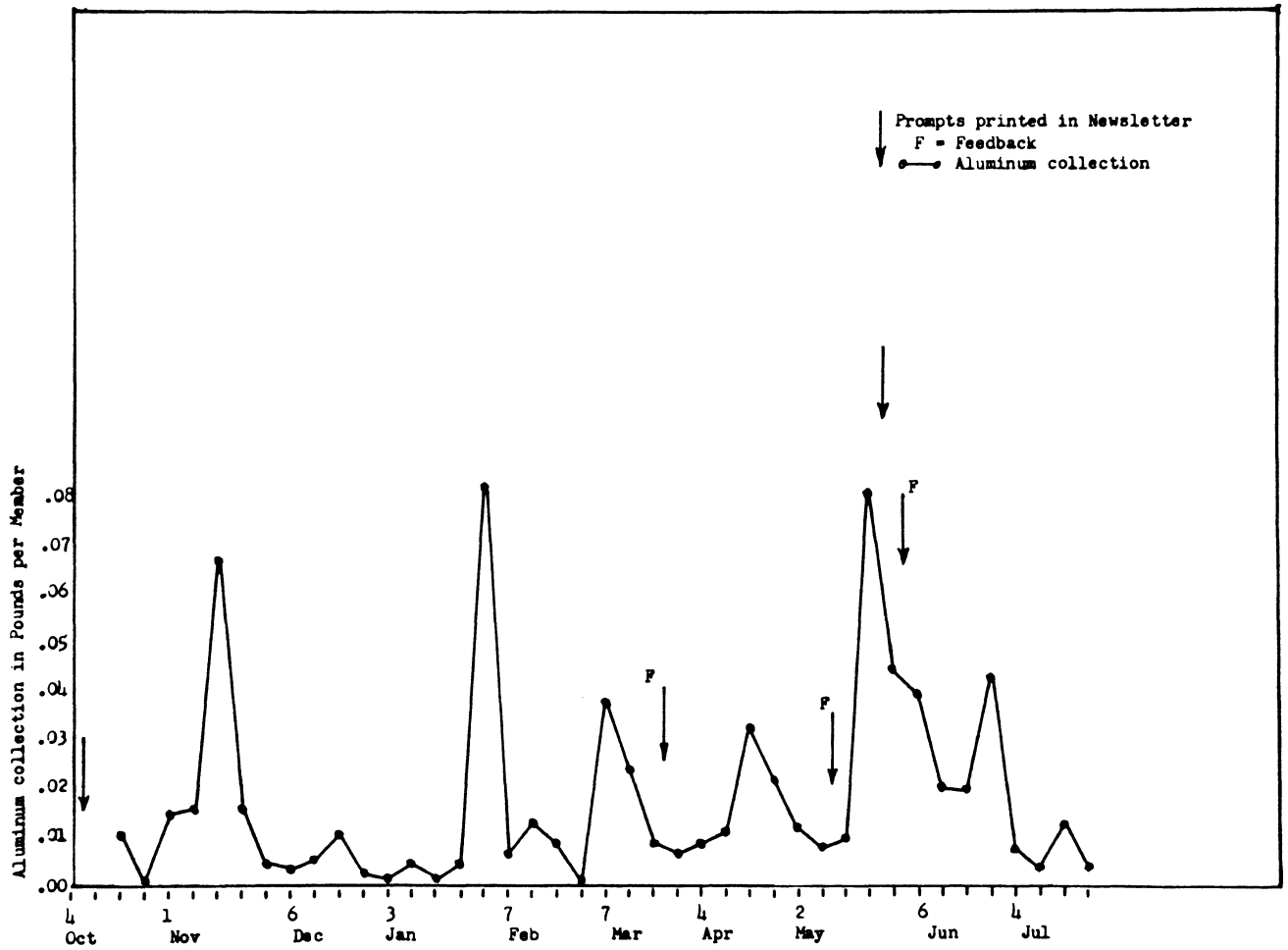

FIGURE 20

West End Presbyterian Church
Weekly Aluminum Collection

TABLE 19

Summary of Questionnaire
West End Presbyterian Church

1. Is your Church participating?	YES	100%
	NO.	0%
	DON'T KNOW. . . .	0%
	Did not answer. .	0%
2. Are you participating?	REGULARLY	33%
	OCCASIONALLY. . . .	37%
	NOT AT ALL.	23%
	Did not answer. . .	7%
3. Why are you participating?	TO FEED THE HUNGRY	.63
	TO REDUCE WASTE.	.24
	TO SUPPORT YOUTH PROGRAM	.25
	TO SUPPORT PASTOR.	.12
	OTHER.	.00
4. If you are <u>not</u> participating, why not?	NOT CONVENIENT	.03
	NOT ENOUGH ALUMINUM SCRAP.	.18
	DON'T LIKE TAKING SCRAP TO CHURCH. . . .	.00
	CHURCH SHOULDN'T BE INVOLVED	.02
	DIDN'T KNOW ABOUT PROGRAM.	.06
	OTHER	.00
5. Do you like regular reminders of the recycling program?	YES	67%
	NO.	7%
	INDIFFERENT . . .	10%
	Did not answer. .	16%
6. What type of reminder is most helpful?	CHURCH NEWSLETTER	.67
	SUNDAY BULLETIN.	.03
	PASTOR'S ANNOUNCEMENT. . . .	.02
	WEEKLY REPORTS	.09
	NEWSPAPER ADS	.00
	OTHER	.00
7. Would you support recycling in your church if the proceeds went to you?	DEFINITELY YES	3%
	PROBABLY YES	13%
	PROBABLY NO.	13%
	DEFINITELY NO.	40%
	Did not answer	31%

CASE STUDY 8: CHRISTIANSBURG PRESBYTERIAN CHURCH

Interventions

Prompts

The monthly church newsletter regularly included paragraphs explaining the project and encouraging church members to participate. The Sunday bulletin for February 14, and the newsletter for March 1, announced the opportunity for individual feedback. Prompts from both newsletter and bulletin are compiled in Table 20. No verbal prompts were given in the Sunday morning services. The series of written intensive prompts used for six weeks in the Sunday services (June 6 to July 11) are shown in Appendix F.

TABLE 20

Christiansburg Presbyterian Church: Written Prompts for Aluminum Recycling Project, in Church Newsletter and Sunday Bulletin

Date	Prompt
Oct. 1, 1981 (Newsletter)	SCRAP ALUMINUM COLLECTION TO BEGIN HUNGER TASK FORCE OFFERS ADDITIONAL OPPORTUNITY TO CONTRIBUTE TO RELIEF OF WORLD HUNGER Starting Sunday, October 11, 1981, there will be a collection container, in the basement hallway, just inside the door from the driveway. This container is for your Scrap aluminum. Scrap aluminum from your household includes: foil, pie plates, drink cans. Scrap aluminum is presently bringing about 25¢ per pound. As an example - a pound of scrap aluminum is made up of 19 soft drink cans. The aluminum will be collected periodically from our container, added to that collected from other Presbyterian Churches, sold to the recycling center and the funds contributed to the HUNGER RELIEF PROGRAM.
Jan. 1, 1982 (Newsletter)	JOIN THE FIGHT -- COMBAT HUNGER You are invited to join with your fellow Church Members in the following projects to help combat hunger. USED ALUMINUM - Collect used food tins, cans, etc. and turn them in by placing them in the Collection box at the downstairs back foor of the Church, of the driveway. Periodically this is collected, added to that from other churches and sold at the recycling center.
Feb. 14, 1982 (Bulletin)	THERE IS A NEW TWIST TO THE ALUMINUM COLLECTION TO FIGHT HUNGER. Individual collection bags are now available for family units to take home, collect used aluminum, and return to the collection center at the downstairs back door. Your family will be given an accounting of how much your aluminum contributed to the Hunger Program, each time you turn in a bag.
MAR. 1, 1982 (Newsletter)	THE LATEST WAY THAT YOU CAN HELP!!!! The aluminum recycling project has now been made even easier and more convenient. Next to the large collection box at the downstairs back door, is a smaller box containing large vinyl collection bags. Attached to the bags are name tags. Each family or participant in the recycling project is asked to take a bag, put family/individual name on it, collect your used aluminum. When the bag is full, place it in the collection box, take another bag, and the next time the collection is made, your first bag will be returned with

Table 20 (continued)

Date	Prompt
	the information about how much your collection meant to the HUNGER PROGRAM. It is a way of helping each collecting unit to discover how each "mite" contributes and how it will quickly grow. JOIN IN THE ALUMINUM RECYCLING!!!! FIGHT HUNGER
May 1, 1982 (Newsletter)	CHARLES MOORE - COORDINATOR OF THE ALUMINUM COLLECTION/ RECYCLING PROGRAM GIVES THE FOLLOWING REPORT: Christiansburg Presbyterian has contributed scrap aluminum to date which had been sold for $24.48. The Presbytery has collected and sold scrap aluminum to date valued at $597.02. REMEMBER THAT THERE IS A RECYCLING COLLECTION BOX AT THE BACK DOOR OF THE CHURCH (off the driveway). There are collection bags which you may pick up there and use to collect your aluminum and then turn it in when it is full.
June 1, 1982	ARE YOU REMEMBERING TO RECYCLE ALUMINUM? Coordinator for the Presbytery Project to raise money for HUNGER RELIEF through recycling aluminum reports that to date we have contributed $25.72 toward the Presbytery total of $677.96 which has been rasied this way. Remember any old aluminum products - foil, cans, siding, window frames, etc. Collection spot at the back door off the back driveway.
July 1, 1982	WE ARE SAVING ALUMINUM SCRAP Charles Moore has had to give up this project for the Presbytery due to new responsibilities, BUT THE PROJECT GOES ON. In our local church, Dr. Martin McMillion has agreed to pick up the aluminum put in the box at the downstairs back door, and to take it to the recycling center pick-up in Blacksburg. SO LET'S KEEP THOSE PIE PLATES, CANS, ETC., COMING!

Proximity

The aluminum collection container was located just inside the ground level entrance to Sunday School classrooms at the back of the church, just off the parking lot. The container was approximately 191 feet from the main entrance to the sanctuary, and was not visible from that entrance. Figure 21 shows the location of the container.

Feedback

The newsletter prompts for May, June and July incorporated the public feedback, which was sent to the minister each week from February 18 to the end of the study. Beginning on February 18 also, individual feedback was offered to individuals or families who desired it. All that was necessary to receive individual feedback was to sign the label attached to the plastic bags available from a dispenser placed beside the aluminum collection container.

Demographics

Ages and occupations of the members of the congregation are summarized in Table 21. A majority of both men (64%) and women (68%) are in white-collar positions. The categories of skilled, semi-skilled, and unskilled labor include 30% of the men and 25% of the women.

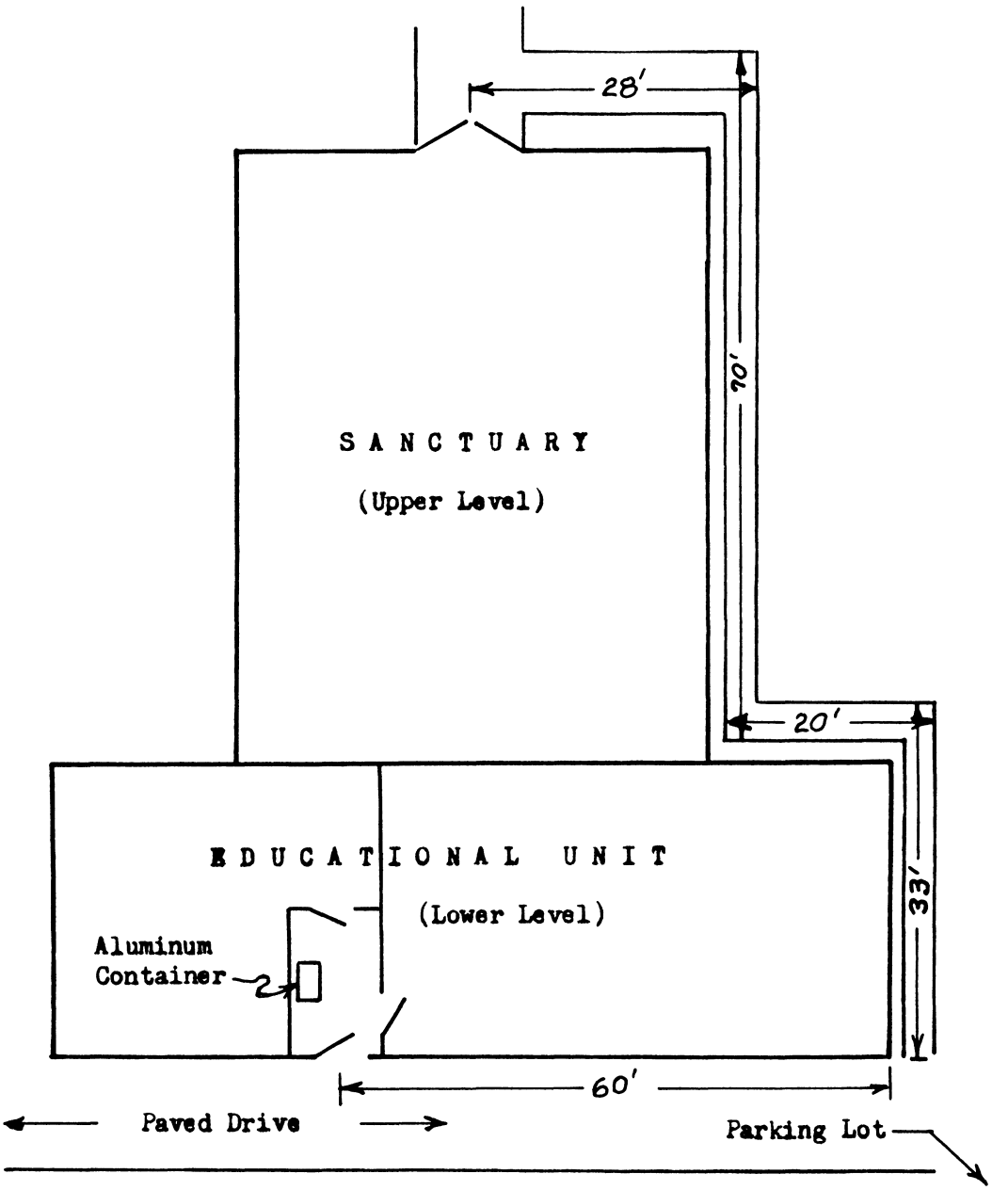

FIGURE 21

Christiansburg Presbyterian Church
Location of Collection Container

TABLE 21

Christiansburg Presbyterian Church: Membership, Contributions, Ages and Occupations of Members

Membership: total 464 women 273

Ages: 12-20 15%
21-40 25%
41-65 30%
over 65 30%

Average family size: 2.5

Percentage of women working outside the home 60%

Occupations	Men	Women[1]
Professional	25%	5%
Teaching	10%	25%
Management (large companies)	15%	3%
Small business (owner, sales, etc.)	14%	15%
Military	1%	0%
Secretarial	0%	20%
Skilled Labor	20%	10%
Semi-skilled and unskilled labor	10%	15%
College student	5%	7%
Retired[2]	30%	30%

[1]percentages of the total number of women working outside the home

[2]former occupations of retired persons are included in the occupational percentages

Results

Weekly aluminum collections, shown in Figure 22, varied from a high of .08 lbs/mem to a low of .0 lbs/mem. The total collection for the 41 weeks of the project was 281.8 pounds, worth $45.71. The mean collection for the entire period of the study was .015lbs/mem/week.

Prompts were sometimes, but not always, followed by increases in the amount of aluminum collected. The newsletter prompts for February, March, May, and June were followed by increases in the quantity of aluminum collected on the Sunday after the newsletter was received; prompts for January and July were followed by decreases.

Four of the weekly intensive prompts (distributed on six successive Sundays between June 6 and July 11) were followed by decreases in collections on the following Sunday, while two intensive prompts were followed by increases. The quantity of aluminum collected also increased on some Sundays which were not preceeded by the appearance of a prompt: Dec. 27, Jan. 31, Feb.7, Feb 21, Apr. 18, May 23 (the second largest collection of the project), June 20, and June 27. There were, in summary, six instances of increases preceeded by prompts; and 14 instances of increases not preceeded by prompts, or prompts followed by decreases. Therefore, prompts were not consistently followed by increases in the amount of aluminum collected.

Individual feedback was provided for three families which signed collection bags at least once. Two of the three signed their collection bag only once, but one family (Jones) signed the collection bag four times. None of the families, however, picked up their individual feed-

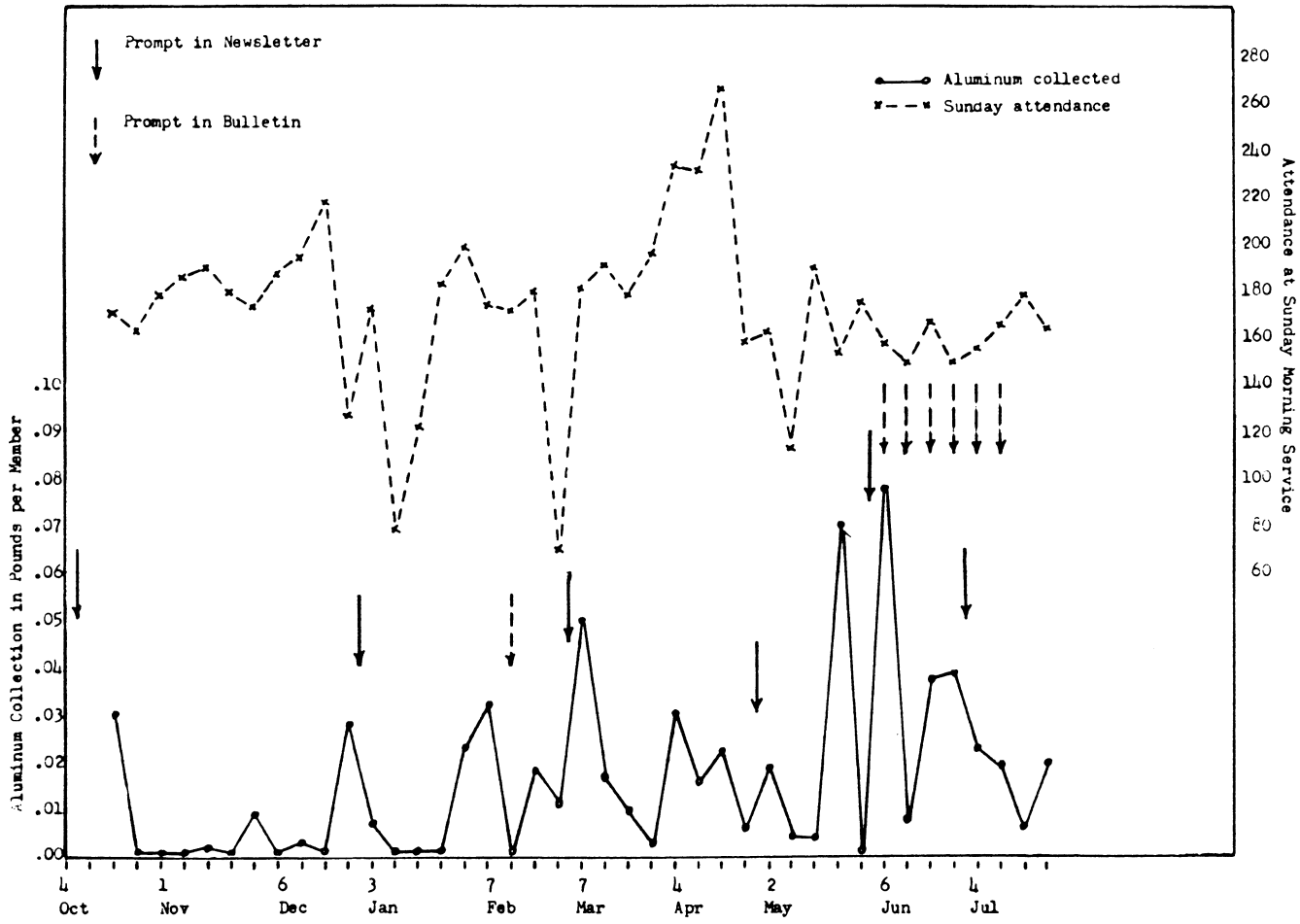

FIGURE 22

Christiansburg Presbyterian Church
Weekly Aluminum Collection and Church Attendance

back, which was attached to a new collection bag and placed on the shelf labelled with the family name. In each case, the new plastic bag with feedback attached remained on the shelf until the study ended. Jones, the one family which deposited more than one signed bag of aluminum, took a new bag from the dispenser for each collection, rather than taking the bag with feedback attached from the shelf labelled with the family name. The reception of individual feedback, therefore, cannot have influenced the quantity of aluminum collected, since no family in fact received individual feedback.

The total quantity of aluminum deposited in signed bags was 40.19 pounds. Table 22 shows that the aluminum deposited in signed bags was a high percentage of the total aluminum deposited in those weeks, suggesting that relatively few persons may have been responsible for collecting a major portion of the aluminum recycled during the study as a whole.

The prompts prepared by the pastor of this church and printed in the monthly church newsletter were more frequent and detailed than most reported in this study. The prompt in the March, 1982 newsletter was a clear and positive explanation of the procedure for receiving individual feedback, and this explanation had been given earlier in the church bulletin for February 14. It would seem probable, then, that members of this congregation were aware of the individual feedback contingency, but did not perceive it to be an incentive for recycling aluminum scrap. Observations were not made of individuals or families who did not sign their collection bags, and so it was not possible to tell

TABLE 22

Christiansburg Presbyterian Church
Aluminum Collection by Families Requesting Individual Feedback

Date	Pounds Collected by Families Requesting Individual Feedback: McDowell	Jones	Altizer	Total Pounds Collected by Congregation	Percentage Individual Is of Total
Mar 8	15.94	-	-	22.06	72
Mar 15	-	6.50	-	7.25	88
Mar 22	-	4.00	-	4.00	100
Mar 29	-	-	1.50	1.5	100
Apr 5	-	9.75	-	13.75	71
Apr 19	-	-	1.38	9.50	15
Apr 26	-	2.50	-	2.50	100

whether or not the families which did sign collection bags one or more times also brought aluminum in unsigned bags at other times.

Responses to the Questionnaire (summarized in Table 23) indicated that the principal reason perceived by church members for not participating in the aluminum collection was that they had too little aluminum scrap to make saving it worthwhile.

TABLE 23

Summary of Questionnaire
Christiansburg Presbyterian Church

1. Is your Church participating?	YES	100%
	NO	0%
	DON'T KNOW	0%
	Did not answer	0%
2. Are you participating?	REGULARLY	25%
	OCCASIONALLY	20%
	NOT AT ALL	55%
	Did not answer	0%
3. Why are you participating?	TO FEED THE HUNGRY	.54
	TO REDUCE WASTE	.21
	TO SUPPORT YOUTH PROGRAM	.03
	TO SUPPORT PASTOR	.11
	OTHER	.00
4. If you are <u>not</u> participating, why not?	NOT CONVENIENT	.00
	NOT ENOUGH ALUMINUM SCRAP	.25
	DON'T LIKE TAKING SCRAP TO CHURCH	.00
	CHURCH SHOULDN'T BE INVOLVED	.00
	DIDN'T KNOW ABOUT PROGRAM	.14
	OTHER	.19
5. Do you like regular reminders of the recycling program?	YES	47%
	NO	14%
	INDIFFERENT	28%
	Did not answer	11%
6. What type of reminder is most helpful?	CHURCH NEWSLETTER	.50
	SUNDAY BULLETIN	.19
	PASTOR'S ANNOUNCEMENT	.25
	WEEKLY REPORTS	.08
	NEWSPAPER ADS	.05
	OTHER	.04
7. Would you support recycling in your church if the proceeds went to you?	DEFINITELY YES	.19%
	PROBABLY YES	.14%
	PROBABLY NO	36%
	DEFINITELY NO	28%
	Did not answer	3%

CASE STUDY 9: RALEIGH COURT PRESBYTERIAN CHURCH

Interventions

Prompts

The aluminum recycling project in the Raleigh Court church was sponsored by the Women of the Church. This group, which had received the initial and follow-up letters describing the project, invited the author (in his capacity as a member of the Hunger Task Force of the Presbytery) to speak to the October General Meeting of the Women of the Church on the Halt Hunger work of the Presbytery. Approximately one hundred women attended this presentation, which reviewed the Halt Hunger work and described briefly the "recycle aluminum to help halt hunger" project. Soon after this meeting the Women of the Church became sponsors of the project in the Raleigh Court church. A hand-lettered poster 16 inches by 24 inches was put on the bulletin board in the fellowship hall, describing the aluminum recycling project and encouraging church members to participate. A facsimile of the poster is shown in Figure 23.

Subsequently, several prompts were printed in the church newsletter and bulletin; these are compiled in Table 24. There were no verbal prompts in Sunday morning services.

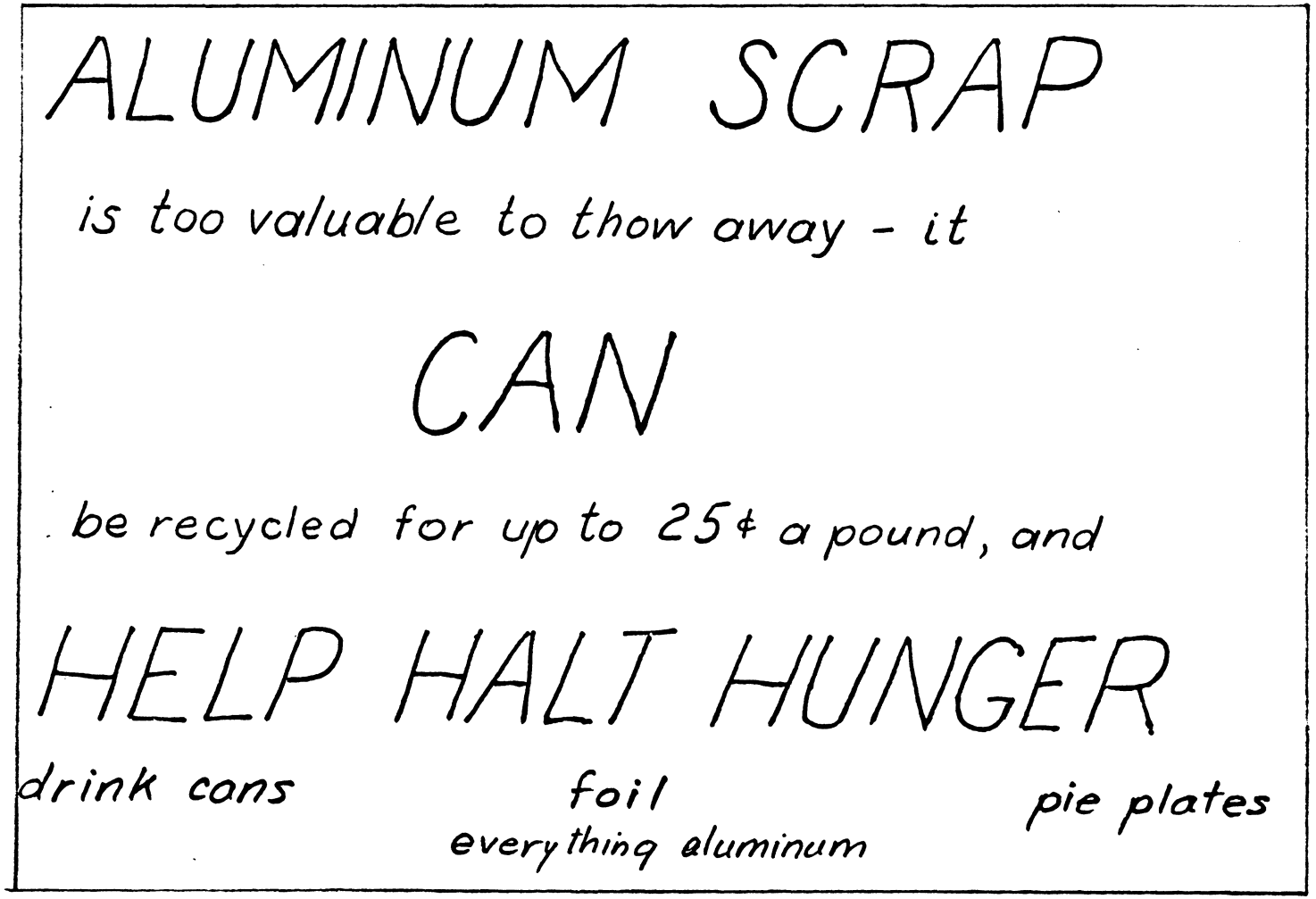

FIGURE 23

Raleigh Court Presbyterian Church : Typical Poster

TABLE 24

Raleigh Court Presbyterian Church: Written Prompts for Aluminum Recycling Project, in Church Newsletter and Sunday Bulletin

Date	Prompt
Feb. 15, 1982 (Newsletter)	JOIN THE FIGHT -- COMBAT HUNGER You are invited to join with your fellow Church members in the following projects to help combat hunger. USED ALUMINUM - Collect used food tins, cans, etc. and turn them in by placing them in the Collection box. Periodically this is collected, added to that from other churches and sold at the recycling center.
Apr. 26, 1982 (Bulletin)	SINCE THE BEGINNING Of the Presbytery's project to "recycle aluminum to help halt hunger," more than $500 has been contributed to the Hunger program from this source, according to Charles W. Moore, coordinator o f the project. At the present time there are 17 churches in Fincastle Presbytery participating in the project, among them Raleigh Court. If you are not remembering to save your foil, pie pans, aluminum drink cans, etc., to put in the container on the parking lot, won't you consider doing this? We can make a significant contribution by utilizing a resource which would otherwise be wasted, and at no cost and very little inconvenience. Think about it!
May 2, 1982 (Bulletin)	Recycled aluminum saves our resources and adds money to our Hunger Fund. Won't you join in this worthwhile project by bringing your aluminum foil, pie pans, drink cans, etc., to the container on our church parking lot.

Proximity

An outdoor aluminum collection container was placed at the edge of the church parking lot, directly in the line of pedestrian traffic from the parking lot to the educational building and sanctuary. The location of the container is shown in Figure 24, and the container in place is shown in Figure 3. The container was 193 feet from the entrance to the sanctuary, and was not visible from the entrance.

Feedback

Group feedback was sent each week to the church, but was never formally presented to the congregation in either written or verbal form. Individual feedback was not offered to this congregaton.

Results

The weekly aluminum collection is shown in Figure 25. The mean collection of .01 lbs/mem/week was next to lowest in the ten Case Studies, although the total amount of aluminum collected was the fourth largest: 356 pounds, which produced $63.45 for the Halt Hunger fund. There was less variation from week to week in the amount of aluminum collected than appeared in the majority of the Case Studies. The largest weekly collection occurred on May 23, three weeks after the last printed prompt (which appeared in the church bulletin for May 2); but this largest weekly collection was followed the next week by the smallest weekly collection (on May 30).

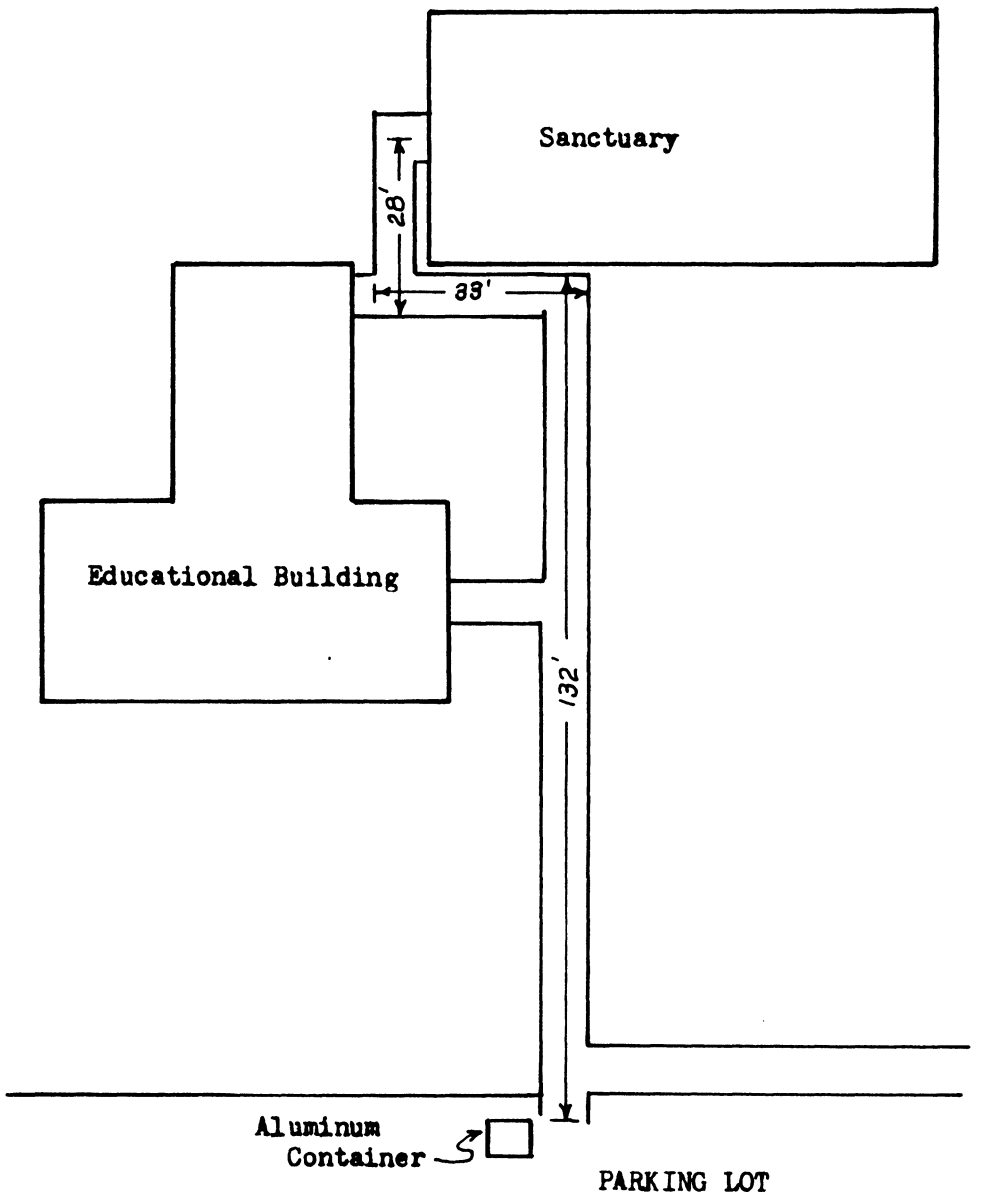

FIGURE 24

Raleigh Court Presbyterian Church
Location of Collection Container

Responses to the Questionnaire are summarized in Table 25. Reasons given for recycling were predominantly "to feed the hungry" and "to reduce waste", with very little weight given to other reasons. The principle reason given for not participating in the program was not having enough aluminum to make collecting it worthwhile.

TABLE 25

Summary of Questionnaire
Raleigh Court Presbyterian Church

1. Is your Church participating?	YES	100%
	NO.	0%
	DON'T KNOW. . . .	0%
	Did not answer. .	0%
2. Are you participating?	REGULARLY	50%
	OCCASIONALLY. . . .	27%
	NOT AT ALL.	18%
	Did not answer. . .	5%
3. Why are you participating?	TO FEED THE HUNGRY	.68
	TO REDUCE WASTE.	.35
	TO SUPPORT YOUTH PROGRAM	.04
	TO SUPPORT PASTOR.	.05
	OTHER.	.00
4. If you are <u>not</u> participating, why not?	NOT CONVENIENT	.00
	NOT ENOUGH ALUMINUM SCRAP.	.11
	DON'T LIKE TAKING SCRAP TO CHURCH. . . .	.00
	CHURCH SHOULDN'T BE INVOLVED	.00
	DIDN'T KNOW ABOUT PROGRAM.	.08
	OTHER	.00
5. Do you like regular reminders of the recycling program?	YES	59%
	NO.	9%
	INDIFFERENT . . .	27%
	Did not answer. .	5%
6. What type of reminder is most helpful?	CHURCH NEWSLETTER	.42
	SUNDAY BULLETIN.	.35
	PASTOR'S ANNOUNCEMENT. . . .	.05
	WEEKLY REPORTS	.13
	NEWSPAPER ADS	.04
	OTHER	.00
7. Would you support recycling in your church if the proceeds went to you?	DEFINITELY YES	0%
	PROBABLY YES	5%
	PROBABLY NO.	32%
	DEFINITELY NO.	45%
	Did not answer	18%

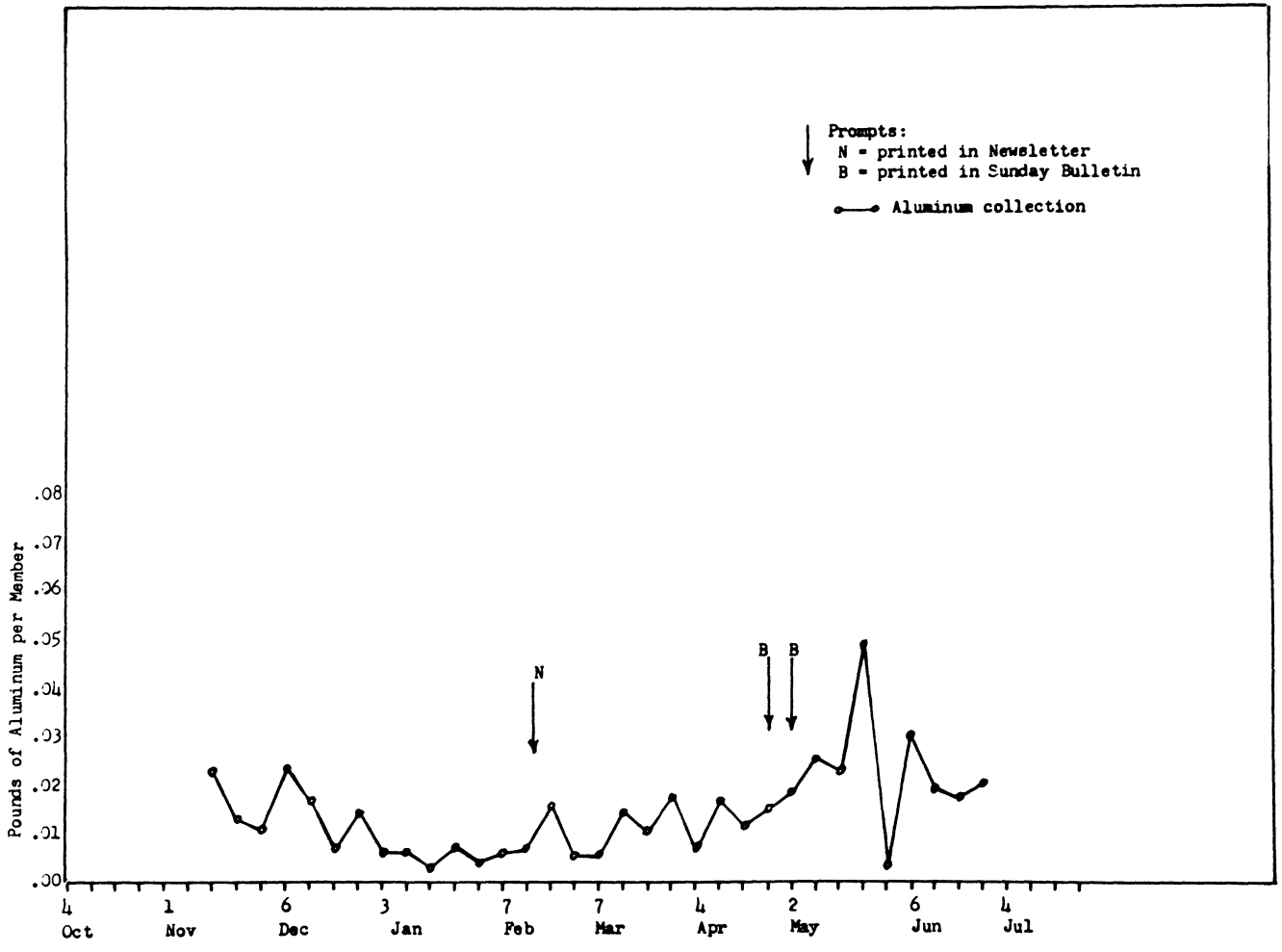

FIGURE 25

Raleigh Court Presbyterian Church
Weekly Aluminum Collection

CASE STUDY 10: BLACKSBURG PRESBYTERIAN CHURCH

Interventions

Prompts

The aluminum recycling project in the Blacksburg church, sponsored by the Middle High Youth Fellowship, used a minimum of prompts. Only one prompt was presented to the congregation during the entire period of the study, and that prompt was printed in the church newsletter the week before the project began. The prompt read:

> "The Middle High Fellowship has been given permission by the Session to sponsor the aluminum recycling project being conducted in the Presbytery by the Hunger Task Force. Members of the church are asked and encouraged to collect their household aluminum scrap and bring it every Sunday to the aluminum collection container (the large aluminum-colored barrel on the edge of the parking lot). The collected aluminum will be picked up every week and sold for recycling, and the proceeds contributed to the Halt Hunger funds of the Presbytery. All aluminum scrap is recyclable: drink cans, foil, pie plates, lawn chairs, ladders, roofing, and anything else made of aluminum. By recycling aluminum scrap we can not only help feed the hungry peoples of the world, but also conserve energy and reduce waste, all with very little trouble and no expense."

The congregation of the Blacksburg church received no additional reminder of the project, other than the presence of the aluminum collection container itself.

Proximity

The collection container was a large barrel, painted aluminum, and placed on the edge of the parking lot, within sight of the ground level entrance to the educational unit of the church. Figure 26 shows the location of the container, which was 272 feet from the entrance to the sanctuary and not visible from that entrance. The container was visible to all persons using the parking lot of the church, and was in the line of pedestrian traffic from the parking lot to the sanctuary entrance.

Feedback

Group feedback was sent weekly to the church, but was not passed on to the congregation. Members were invited to receive individual feedback by signing their aluminum collection bags.

Results

During 35 weeks of the project, the Blacksburg church recycled 215.7 pounds of aluminum, worth $43.36 to the Halt Hunger fund. Figure 27 shows the weekly collections. The mean pounds per member per week was .01 (shown in Table 5 in comparison with other church units). The one unsually large collection on November 15 resulted when the neighbor of a church member gave to the church more than 60 pounds of aluminum drink cans which he had been collecting over the previous year.

Four families (or individuals) signed their aluminum collection bag at least once, and in each case individual feedback was attached to a

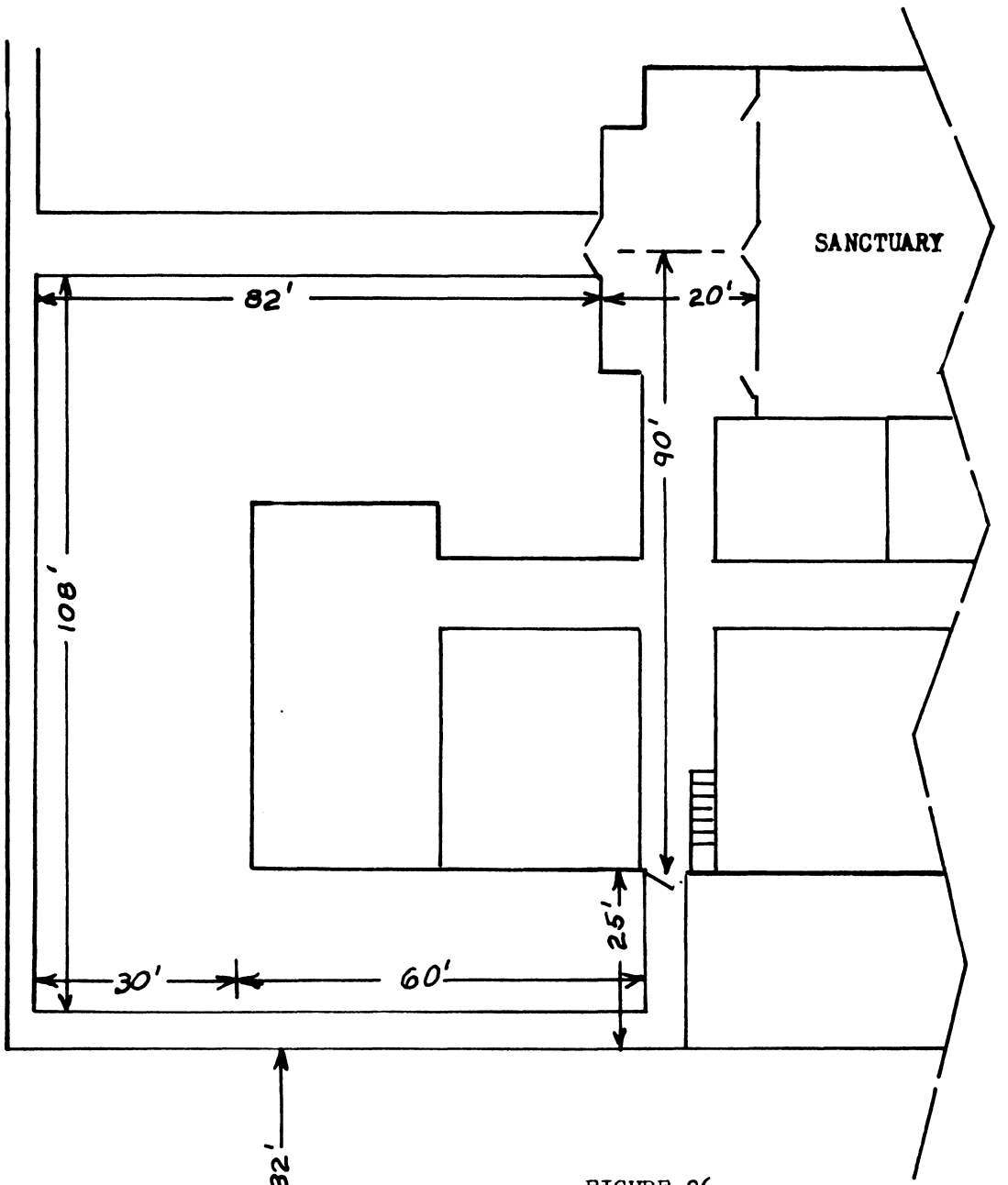

FIGURE 26

Blacksburg Presbyterian Church
Location of Collection Container

new plastic bag and placed on a shelf labelled with the name. Only one individual signed a collection bag more than once and picked up a new bag with feedback attached. This individual was Melvin Martin, who was not a member of the church but was employed full time as sexton. Martin deposited his aluminum collection in a signed bag, and picked up a new bag with feedback attached, for ten consecutive weeks, until the individual feedback program was terminated (March 1 through May 2). Table 26 shows the amount of aluminum collected by individuals receiving individual feedback, and its relation to the total quantity of aluminum collected during those weeks.

The responses to the Questionnaire are summarized in Table 27. More than half the respondents (59%) reported no participation in the project. The predominant reasons for not participating were not knowing about the project (.24) and perceiving that too little aluminum scrap was available to make recycling it worthwhile.

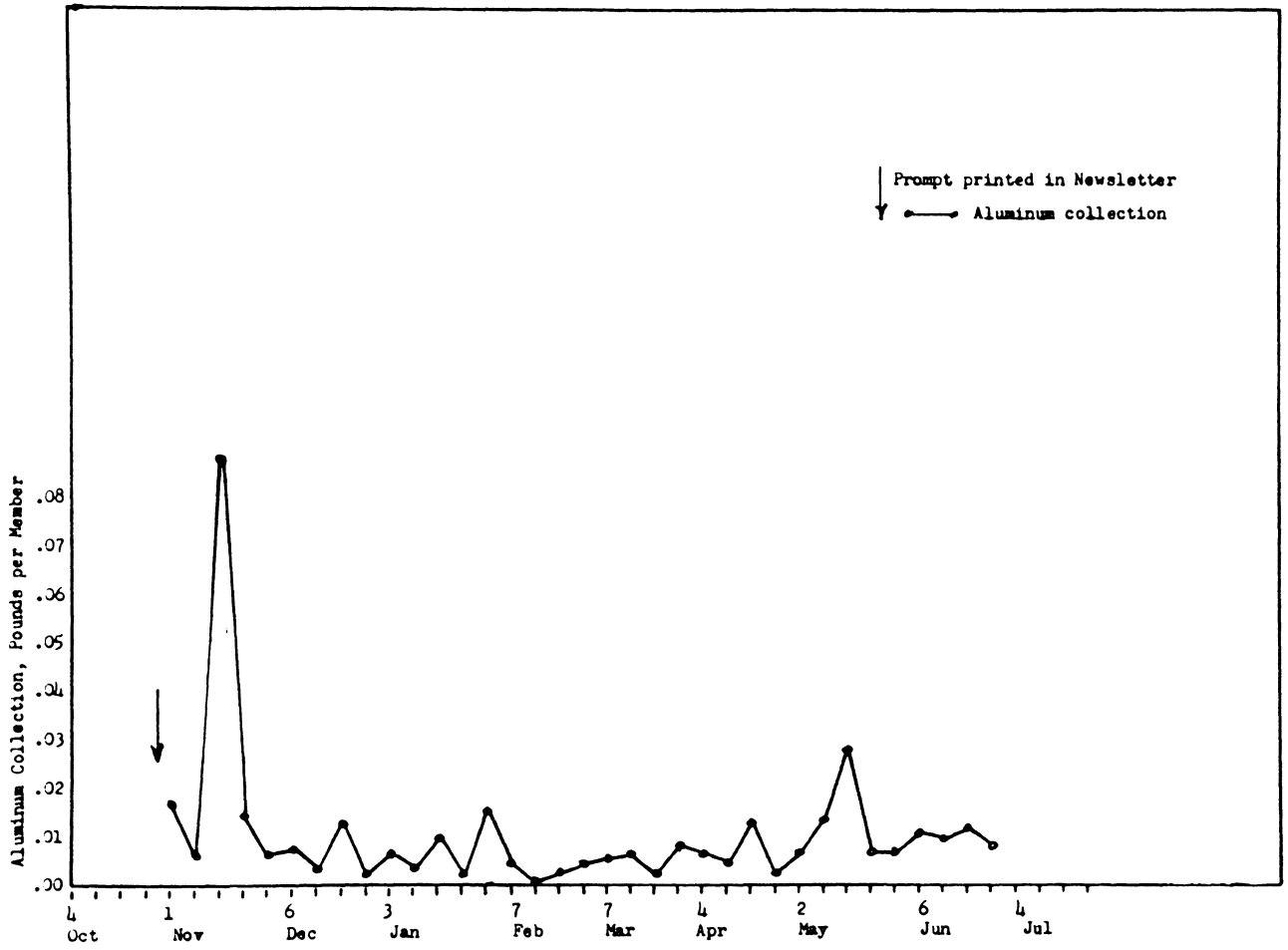

FIGURE 27

Blacksburg Presbyterian Church
Weekly Aluminum Collections

TABLE 26

Blacksburg Presbyterian Church
Aluminum Collection by Families Requesting Individual Feedback

Date	Pounds Collected by Families Requesting Individual Feedback: Martin	Jones	Gilbert	Ritter	Total Pounds Collected by Congregation	Percentage Individual Is of Total
Mar 1	1.50	-	-	-	3.25	46
Mar 8	1.38	-	-	-	3.13	44
Mar 15	1.63	0.31	0.69	-	4.00	66
Mar 22	1.50	-	-	-	1.50	100
Mar 29	1.00	-	-	1.00	4.25	47
Apr 5	1.25	-	-	-	3.75	33
Apr 12	1.25	-	-	-	2.75	45
Apr 19	1.69	-	-	-	7.50	23
Apr 26	0.63	-	-	-	1.00	63
May 2	1.00	-	-	-	3.25	31

TABLE 27

Summary of Questionnaire
Blacksburg Presbyterian Church

1. Is your Church participating?	YES	78%
	NO.	0%
	DON'T KNOW. . . .	22%
	Did not answer. .	0%
2. Are you participating?	REGULARLY	28%
	OCCASIONALLY. . . .	13%
	NOT AT ALL.	59%
	Did not answer. . .	
3. Why are you participating?	TO FEED THE HUNGRY	.29
	TO REDUCE WASTE.	.37
	TO SUPPORT YOUTH PROGRAM	.19
	TO SUPPORT PASTOR.	.01
	OTHER.	.00
4. If you are <u>not</u> participating, why not?	NOT CONVENIENT	.06
	NOT ENOUGH ALUMINUM SCRAP.	.33
	DON'T LIKE TAKING SCRAP TO CHURCH. . . .	.03
	CHURCH SHOULDN'T BE INVOLVED	.00
	DIDN'T KNOW ABOUT PROGRAM.	.24
	OTHER	.05
5. Do you like regular reminders of the recycling program?	YES	69%
	NO.	3%
	INDIFFERENT . . .	22%
	Did not answer. .	6%
6. What type of reminder is most helpful?	CHURCH NEWSLETTER	.86
	SUNDAY BULLETIN.	.22
	PASTOR'S ANNOUNCEMENT. . . .	.18
	WEEKLY REPORTS	.28
	NEWSPAPER ADS	.05
	OTHER	.03
7. Would you support recycling in your church if the proceeds went to you?	DEFINITELY YES	.6%
	PROBABLY YES	16%
	PROBABLY NO.	31%
	DEFINITELY NO.	28%
	Did not answer	19%

DISCUSSION OF RESULTS AND SUGGESTIONS FOR FURTHER RESEARCH

Table 28 summarizes the aluminum collection from each church and the attendant conditions of prompts, proximity, feedback, number of members, and occupation of members.

When the measure, pounds per member per week, was used as the basis for comparing the effectiveness of interventions used by the church units, the rank order of the churches is that order shown in Table 28. The churches which had the larger collections were: Roanoke Valley (.20 pounds per member per week), Stuart and Bouldin Memorial (.12), Fairlawn (.12), and Old Brick (.12). The correct order for the last three church units was determined by calculating the statistic to the third decimal place. Among these four churches, the location of the container varied from a position three feet from, and clearly visible from, the sanctuary entrance, to 102 feet from the sanctuary entrance and not visible from either the sanctuary entrance or any other entrance to the church building. The frequency of prompts also varied considerably among these four church units. Roanoke Valley, with the largest collection in pounds per member per week, used an average of one verbal prompt every two weeks; Stuart and Bouldin Memorial, one verbal and one written prompt every three and one-third weeks; Fairlawn, one written prompt every five weeks; and Old Brick, one verbal prompt every week.

TABLE 28

Summary of Collections, Prompts, and Proximity

Church	Total Pounds of Aluminum Collected	Weeks in Project	Pounds per Week	Number of Members	Mean Pounds per Member per Week	Total Dollar Value of Recycled Aluminum	Average Interval (Number of Weeks) Between Prompts: Written	Verbal	Proximity of Container@	Visibility of Container*
Roanoke Valley	292.7	33	8.9	44	.20	$ 62.35	-	2	31	B
Stuart and Bouldin Memorial	887.0	56	15.8	131	.12	190.07	3	3	45	C
Fairlawn	1209.4	37	32.7	276	.12	163.41	5	-	102	C
Old Brick	171.9	33	5.2	45	.12	62.98	-	1	3	A, B
Belmont	224.7	17	13.2	200	.07	32.77	2	2	174	C
Northminster	471.6	29	16.3	308	.05	84.02	6	6	23	B
West End	178.0	41	4.3	253	.02	32.98	10	-	144	C
Christiansburg	281.8	41	6.9	453	.02	45.71	3	-	211	C
Raleigh Court	356.0	33	10.8	807	.01	63.45	11	-	193	B
Blacksburg	215.7	35	6.2	645	.01	43.36	30	-	207	B
Totals	4289.0					$902.87				

@ distance in feet from entrance to sanctuary

* A = visible from entrance to sanctuary
B = visible from principal approaches to sanctuary
C = not visible from either entrance or principal approaches to sanctuary

In summary, among these four churches which had the higher collections (measured in pounds per member per week) there was considerable variation both in the frequency of prompts and in the proximity of the container, and thus no clear-cut relationship appeared between these interventions and the aluminum collection in pounds per member per week.

With one exception, these four churches were smaller churches. Roanoke Valley (44 members) and Old Brick (45 members) were quite small; Stuart and Bouldin Memorial, which participated as one unit, had 83 and 48 members respectively. Fairlawn was the largest church of this group of high mean collection churches, but with 276 members was still relatively small compared to Blacksburg (645) and Raleigh Court (807). These four churches shared another characteristic: they were small town or open-country churches. Fairlawn might seem to be an exception here, but even Fairlawn, although just across the river from the city of Radford, was bounded on three sides by open country and was more small town than city in character.

Two churches had mean collections intermediate in size between the four high collection church units and the four low collection churches. Belmont (.07 lbs/mem/week) and Northminster (.05 lbs/mem/week) both used written prompts accompanied by brief verbal prompts, Belmont on an average of once every two weeks and Northminster about one week in five. Again, container proximity was quite different for the two churches; Belmont's container was 174 feet from the sanctuary entrance and not visible; Northminster's container was only 23 feet from the cen-

tral sanctuary door, and quite visible from every approach. Belmont was a slightly smaller church with 200 members (Northminster, 308). Their location and characteristics were similar: in residential areas in different parts of the city of Roanoke, with a predominance of skilled and semi-skilled labor in the occupational analysis. (A formal analysis was not available from Northminster, but conversational reports indicated this status).

These two churches, then, had nearly equal aluminum collections, and were similar in size, location, and occupation of members; but differed in number of prompts and proximity of container. There is thus no basis for concluding that increasing the number of prompts and locating the container nearer the sanctury entrance resulted in an increase in the quantity of aluminum collected in these two churches.

The four remaining churches had much lower mean collections: West End .017, Christiansburg .015, Raleigh Court .013, and Blacksburg .009. The frequency of written prompts was low, with the exception of Christiansburg. Distance to the collection container was over 100 feet for each of these low pounds per member per week churches.

These comparisons suggest that greater pounds per member per week tended to result in smaller churches which used prompts more frequently, and that location of the collection container was not a critical aspect.

Feedback did not seem to be a decisive factor in increasing the quantity of aluminum collected. Two churches printed public feedback

more often than any others: Fairlawn, which had the third highest mean amount of aluminum colected; and Christiansburg, which had the third lowest. Individual feedback, though offered, was not received often enough to be a factor.

When a different measure, total pounds of aluminum colected, was used as the basis for rank-ordering the churches, a somewhat different order resulted. Fairlawn, which had the third largest collection in pounds per member per week, had the largest total collection, 1209.4 pounds. Stuart and Bouldin Memorial, with 887.0 pounds, had the second largest total collection, and also had the second largest collection in pounds per member per week. Northminster, which was sixth in pounds per member per week, had the third largest total collection, 471.6 pounds. Raleigh Court had the fourth largest total collection, 356.0 pounds, although it was ninth (next to last) in pounds per member per week. Roanoke Valley and Old Brick, which ranked first and fourth, respectively, on the basis of pounds per member per week, were fifth and tenth in total pounds collected.

Ordering the churches on the basis of their total collection did not result in a more decisive relationship between prompt frequency and proximity of container and the amount of aluminum collected. Raleigh Court, for example, with the fourth largest total collection, had a container 193 feet distant from, and not visible from, the sanctuary entrance; and used an average of only one written prompt every eleven weeks, and no verbal prompts.

The variation in number of members (i.e., potential individual participants) among the ten church units in the present study was considerable. Raleigh Court had 807 members, or 1,834% more members than Roanoke Valley (44 members). This variation in the number of potential participants was much greater than that reported in other studies which recorded the population of the units compared. In the study by Reid et al. (1976), for example, there were 48 residences in one apartment unit, 64 in the second, and 72 in the third, a variation of less than 50%. Classrooms in an elementary school were the units compared by Hamad et al. (1977), and these units were much more nearly the same size than were the churches compared in the present study.

The variation in the number of weeks of participation by the church units was also large in the present study. The longest period of participation was 56 weeks by the Stuart and Bouldin Memorial churches; the shortest period was 17 weeks, by the Belmont church. One unexamined assumption made at the beginning of the present study was that collecting aluminum over a longer period of time would result in a larger total collection for all participants, simply because more aluminum materials would be used and discarded, and therefore be available for collection, over a longer period of time. If this assumption were accurate, the time period over which aluminum was collected would influence the total amount collected, and the time period should therefore be taken into account in making comparisons between churches.

When the length of time during which collections were made was taken into account by using the measure, pounds per week, to compare

the collections made by church units, the results did not differ greatly from the comparison based on total pounds collected. Fairlawn was first in rank, with a collection of 32.69 pounds per week. Northminster ranked second, with 16.26 pounds per week; Stuart and Bouldin Memorial third (15.84); Belmont fourth (13.22); and Raleigh Court fifth (10.78).

The question of how much household aluminum scrap is actually available for recycling over a period of time is a question which should be addressed by future research. One possible way to approach the question would be to interview participants at the beginng of a study to emphasize the importance of collecting all household aluminum scrap, no matter how small the amount. Such an emphasis, which should be repeated in intervals throughout the study, should also help to counteract the tendency of participants to feel that they did not have enough aluminum scrap to make collecting it worthwhile.

Some preliminary indication of the amount of household aluminum material used and discarded (and therefore avaliable for recycling) by the average family was obtained in the present study from the one family which did turn in signed collection bags for ten consecutive weeks (Martin, Blacksburg). The Martins' average weekly collection for ten weeks was one pound, and there are five in the family, giving a figure of approximately .20 pounds per person per week. The Roanoke Valley congregation averaged this amount (.20 lbs/mem/week) although anecdotal reports indicated that much of the Roanoke Valley aluminum collection was composed not of aluminum used in the households of church

families, but of aluminum drink cans picked up from the roadside. Future research should seek to determine the quantity of aluminum which is used and discarded by families; i.e., the quantity of aluminum scrap available to families for recycling.

Future research should also seek to determine the number of individuals in each church unit who actualy participate in the recycling program. This data was not obtained in the present study, therefore leaving unanswered an important question: did a large number of people recycle small amounts of aluminum, or did small numbers of people recycle relatively large quantities of aluminum? Anecdotal reports suggest that the latter situation was the predominant situation in every church in the present study, but the data obtained was not adequate to decide the question. In future studies it would be important to have every individual collection marked with the collector's name, so that the number of individual participants could be determined.

However, anecdotal reports in the present study indicated some resistance on the part of participants to receiving public attention as aluminum recyclers. No resistance to a church-sponsored aluminum recycling program was expressed in answers given to the questionnaires, but there was some informal indication of such resistance. For example, many participants used paper bags, which conceal their contents; and aluminum was sometimes deposited on a weekday rather than on a Sunday. Furthermore, the unexpected lack of participation in the individual feedback intervention suggests a reulctance to be identified as a recycler. It would seem important in future research, therefore, for the

aluminum collection project to be presented to all potential participants as a socially acceptable, commendable activity. Probably visible participation and active encouragement by the pastor of the church would be the single most important aspect of this effort to make the project an acceptable activity.

One further consideration is relevant to the question of comparing the aluminum collections of the churches on the basis of the percentage of church members who participate, and on the percentage of available scrap which they recycle, rather than on the basis of total pounds of aluminum recycled by the church as a whole. Geller et al. (1982) distinguish between response-contingent and outcome-contingent consequences. In the case of the practical issue of resource recovery, the ideal goal would seem to be for every individual to recycle all available aluminum scrap, an objective which involves both individual responses (the consistent recycling behavior) and group outcomes (a maximum of available scrap recycled). The more nearly this ideal goal is approached, the more nearly the practical goals of resource and energy conservation, and litter and pollution reduction, will be met. The ideal unit for evaluating resource recovery, then, would seem to be the percentage of available scrap recycled by each participant. This unit is not adequately represented either by pounds per member per week, or by total pounds per church, because neither of these measures takes into account the quantity of scrap actually available to participants for recycling. However, since in the present study membership and weeks participated varied considerably among churches, the unit, pounds per

member per week, would seem to be a somewhat more accurate basis for comparing the recycling performance of individual participants and churches in the present study.

Smaller churches in the study regularly produced a markedly larger collection of aluminum per member per week. This result is consonant with the results of studies by Barker and Gump (1964) and Wicker (1968), who found that students enrolled in smaller high schools took part in more activities, held more positions of responsibility, and expressed a greater sense of satisfaction with their school experience than students in larger high schools. These findings were interpreted with regard to a concept of "manning": "dependent upon the number of people available to perform the essential functions, behavior settings may be undermanned, optionally manned, or overmanned." (Wicker, 1968, p. 255). In fact, Wicker (1969) found that these conditions of manning influenced the responses of members of large and small churches in very similar ways. Wicker analyzed the participation in church activities over a one-year period by members of five churches which varied in membership from 338 to 1599. Results indicated that "small church members participated in more different kinds of activities, had more leadership positions and spent more time in the activities, attended church more often, and contributed more money. Members of the small church were also more approving of high levels of support for church activities." (p. 278).

In terms of manning, three of the four church units having the larger quantities of aluminum recycled (in pounds per member per

week) may be described accurately as undermanned: Roanoke Valley, 44 members; Stuart and Bouldin Memorial, 131; and Old Brick, 45. The fourth church in the group with markedly higher pounds per member per week was Fairlawn, which was comparatively much larger (276 members), and was about the same size as three other churches which had much smaller pounds per member per week collections. The further question is thus raised: why should a comparatively large church, which is apparently optimally manned, perform as well as the smaller churches, which are clearly undermanned? Wicker (1968) suggested a possible answer: within the overall behavior setting, there may be smaller specialized behavior settings, some of which may be overmanned, some optimally manned, some undermanned. In the present study, those participating in the aluminum collection project may have perceived the project as undermanned, and increased their activity to compensate. Wicker, Kirmeyer, Hannon, & Alexander (1976), in a laboratory study of manning, suggested another possible answer: where the assigned task is of high intrinsic interest to the participants, the effects of manning are moderated. Anecdotal reports from participants in the aluminum recycling project at Fairlawn indicated that the project was of high intrinsic interest to a number of members.

The nature of the reward used in this study would seem to warrant further study. The "reward" which seems to have motivated all the recycling behavior observed was the awareness that the behavior of recycling aluminum contributed to the church's Halt Hunger work. Awareness of having made an altruistic contribution does not seem to be a

"reward" in the usual sense; nothing like it was noted in the studies reviewed in this paper. The results of this study, however, would seem to suggest that participants did perceive such awareness as a reward. Geller et al (1982) suggested briefly (p. 31) that it may be possible that "perceptions can determine relative acceptance or resistance to attempts at controlling behavior", even though "behavior scientists have not typically concerned themselves with perceptions and interpretations by the individuals targeted." The results of this paper tend to suggest that it is possible for an individual to perceive as a reward something as intangible and remote as the knowledge that a hungry child on the other side of the world will have something to eat. If such perceptions, rather than immediate personal gratification, can serve as rewards for some individuals, perhaps it would be worthwhile for some future research to investigate the conditions under which such perceptions become rewarding. What conditions prompted some churches, and some individuals in those churches, to collect aluminum scrap on the basis of a contingency which offered as a reward only the assurance that some unknown persons at some future time would have food to eat which they would not otherwise have?

The conclusion that the Halt Hunger work was the principal motivating factor for recycling aluminum is supported by the answers to the last question on the Questionnaire, "Would you recycle aluminum in a church project if the proceeds went to you?" The answers to this question were predominantly "No" (32.1% said "Probably not" and 37.4% said "Definitely not"), which indicates that immediate personal monetary

reward would not have been sufficient reason for participating in the recyling project.

These considerations suggest that recycling aluminum for the purpose of supporting the Halt Hunger work of the church was the way church members perceived the project and the basis on which they supported it. Whether other benefits of recycling aluminum (resource conservation, energy conservation, litter and waste reduction) would make acceptable reasons for recycling programs in churches if the Halt Hunger motive were not present, is another worthwhile question for future research.

The project as conducted was cost efficient. Expenses, including gasoline for making the weekly pick-ups of aluminum, totalled $318.43. The market value of the recycled aluminum was $902.87, all contributed to the Halt Hunger program of Fincastle Presbytery. There were additional benefits, however. Hamad et al., (1977) considered, in addition to proceeds from the sale of recyclable materials, the savings in handling solid waste ($22 per ton), energy saved by reusing materials, and savings in natural resources. Applied to the present study, the savings in handling solid waste amounted to $44.00. Probably the monetary savings in energy and raw material achieved by using recycled materials were reflected in the price paid by industry for the recycled aluminum (Moore, 1982), and therefore should not be counted a second time as saving. Other less tangible benefits from the conservation of energy and material resources, and the reduction of litter and environmental pollution, are difficult to evaluate in monetary terms.

Expenses can be kept quite low in church programs. Five churches reported, two months after weekly pick-ups by this author were terminated, that they were continuing to collect and recycle aluminum on their own initiative. Pick-ups and transportation were being provided in each church by volunteers from that church, so that no expenses were being charged to the project, and the full market value of the recycled aluminum was continuing to go to the Halt Hunger work of the Presbytery.

The present study has shown that local churches can become effective centers for cost-efficient recycling projects if the proceeds support an established program of the church. Smaller churches which issued frequent prompts received the best response from their members, who appeared willing to take their aluminum to a container located almost anywhere in the church or on the grounds.

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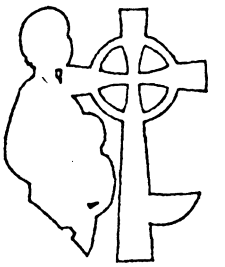
Appendix A

INITIAL LETTER TO CHURCHES

The Hunger Task Force
Fincastle Presbytery
P. O. Box 230
Salem, Virginia 24153
703-387-0107



April 2, 1981

TO: Pastors and Hunger Coordinators

Dear Friends:

Several innovative programs which encourage participation in the Hunger Program of our Presbyterian Church U.S. have been offered to the churches of Fincastle Presbytery by the Hunger Task Force in recent months. These programs have included Hunger Workshops, the monthly Hunger Reminders for the 2¢/Meal Program, and the Hunger Filmstrip project for Youth Groups.

With this letter we offer another project which might prove interesting and worthwhile for a Youth Group, Sunday School Class, or other group in your congregation.

Very briefly, the project is collecting household aluminum scrap, selling it for recycling, and giving the proceeds to the 2¢/Meal Program.

Group members would simply collect household aluminum scrap (foil, pie plates, drink cans, etc.) in a convenient container provided by us; and bring their aluminum collection to their weekly meeting. We would make weekly pick-ups of the collected aluminum, sell it to a recycling center, contribute the proceeds in the name of your group to the 2¢/Meal Program, and make weekly reports to your group.

A pound of recyclable aluminum (about nineteen drink cans) is currently worth 23¢ at an aluminum recycling center. Thus, a participant in this program could make, over a period of a few weeks or months, a significant contribution to the 2¢/Meal Program at no more cost or effort than that of throwing scrap aluminum into a separate container instead of into the wastebasket.

In addition to this benefit, recycling aluminum is a significant way to contribute to energy conservation, and so is related to another concern recently expressed by our denomination. The General Assembly last year (May 1980) heard, and recommended to the churches for study, a report on the Energy Crisis. The report concluded that the energy crisis is real and will get worse; and that Christian stewardship calls for concern and action by church members to conserve scarce resources.

The aluminum-recycling-for-hunger-funds we propose is one small but very possible and very positive way for a group in your church to act on these two significant concerns: hunger, and the increasing scarcity of resources.

I am personally interested in this project because some aspects of it are directly related to a study I am making for a course at VPI&SU; and I would count it a privilege to meet with any interested group in your church to work out the details of getting the project underway in your church. Please let me meet with you if you are interested - and thanks for thinking about it!

Charles W. Moore, member of the
Hunger Task Force, Fincastle Presbytery

Appendix B

FOLLOW-UP LETTER TO CHURCHES

403 Airport Road
Blacksburg, VA 24060
September 23, 1981

TO: Ministers and Hunger Coordinators of the Churches of Fincastle Presbytery

At the beginning of the summer, the Hunger Task Force offered to the churches of Fincastle Presbytery a program which would encourage additional support of the Presbytery's Halt Hunger program through collecting household aluminum scrap, recycling it (currently brings 25¢/lb) and contributing the proceeds to the 2¢/meal fund.

This letter is to encourage you and your congregation (or some group in the congregation) to try this program for several months this fall and winter. The program would simply ask persons who participate to collect their household aluminum scrap through the week and bring it to a container at the Church on Sunday. I would, in consultation with you, provide a suitable container at your church and arrange for weekly pick-ups of the aluminum.

Three churches of the Presbytery (Stuart, Bouldin Memorial, Old Brick) participated in the program through the summer, and to date have collected and recycled enough aluminum to contribute $63.67 to the Presbytery's 2¢/meal fund. This is not a great amount, but it is a significant contribution, and it is just a hint of what is possible. And in addition to the money there are, I believe, several valuable "fringe benefits" which accrue automatically:

- Contributions come from materials which previously have been discarded,
- therefore the contribution is made at no money cost to the contributor.
- Little effort or inconvenience is required; simply depositing aluminum scrap in a separate container.
- The program involves, and so may encourage the habit of, regular giving;
- it may serve to increase the participants' awareness of world hunger;
- may help educate participants in the growing concern over resource shortages;
- and does in fact conserve energy (processing recycled aluminum uses just 5% of the energy required to process aluminum from bauxite originally).
- And incidentally (but not insignificantly), the recycling center of the Clean Valley Committee in Roanoke, which we use, employs several handicapped and disadvantaged persons.

Could you confer informally this Sunday with responsible persons, and let me call you about the middle of next week to ask your thoughts on this program? Many thanks for your consideration.

Yours,

Charles W. Moore
(member of Presbytery's
Hunger Task Force)

CWM:cb

Appendix C

FORM FOR WEEKLY GROUP FEEDBACK

403 Airport Road
Blacksburg, VA 24060

TO:

WEEKLY REPORT, "Recycle Aluminum to Help Halt Hunger"

Many thanks to all the congregation for their sustained and significant support of this effort to turn wasted resources into help for the hungry.

THIS CONGREGATION, for week ending _____ (collection date): $___.___.

THIS CONGREGATION, TOTAL through same date: $___.___.

PRESBYTERY TOTAL to date: $___.___.

Appreciatively,

Charles W. Moore

Appendix D

INSTRUCTIONS FOR RECEIVING INDIVIDUAL WEEKLY FEEDBACK

THANK YOU! for collecting your scrap aluminum to help halt hunger!

TO MAKE IT MORE CONVENIENT, and perhaps more interesting, for you to recycle your scrap aluminum each week, the project begins today to provide you with a plastic bag for collecting aluminum; and after next week will report to you each week the amount of aluminum you recycled the previous week.

To begin receiving a weekly report of your recycling, simply
- put your scrap aluminum in this bag this week;
- put your name on the label on the bag;
- leave the bag in the church's aluminum collection box next Sunday.

Sunday after next there will be a shelf in a cabinet labeled for you, a bag in the slot for your collection that week, and a report of the amount you recycled the previous week.

Appendix E

WEEKLY INDIVIDUAL FEEDBACK FORM

"RECYCLE ALUMINUM TO HELP HALT HUNGER"
Fincastle Presbytery : Hunger Task Force

INDIVIDUAL WEEKLY COLLECTION REPORT

- - - - - - - - - - - - -   - - - - - - - - - - -

THANK YOU for recycling ____lb _____oz of aluminum scrap last week.

It contributed $_____._____ to Presbytery's "help halt hunger" work.

Your total to date (including this report) is _____lb _____oz,

worth $_____._____.

Appendix F

SIX INTENSIVE PROMPTS

"RECYCLE ALUMINUM TO HELP HALT HUNGER"

A project of the Hunger Task Force of Fincastle Presbytery which to date has contributed more than $700 to "Halt Hunger" programs.

WHAT ITEMS CAN BE RECYCLED?

Almost all aluminum articles are recyclable; more plentiful ones include:

- drink cans (both beer and soft drink). (Some drink cans have a steel body and aluminum top these cans are recyclable).

- aluminum foil (practically all household foil is aluminum).

- many common household items are now made of aluminum and can be recycled when they break or wear out; for example:

pots and pans	ladders
electric skillets	lawn mowers
lawn chair frames	license plates
metal roofing	gutters
window screens	TV antennas

HOW CAN ALUMINUM BE DISTINGUISHED?

Aluminum items weigh less than their steel equivalents; aluminum does not rust, and new unpainted aluminum usually has a characteristic sheen. Testing with a small magnet (most hardware stores sell them) is the surest way to tell aluminum: a magnet will NOT "stick to" aluminum.

HOW MUCH IS RECYCLED ALUMINUM WORTH?

Prices vary with market conditions, but currently:

- all-aluminum drink cans . . . . . 23¢/pound
- aluminum-topped steel drink cans . . 5¢/pound
- foil . . . . . 10¢/pound
- larger items (ladders, skillets,etc.) 16¢/pound

"RECYCLE ALUMINUM TO HELP HALT HUNGER"
A project of the Hunger Task Force of Fincastle Presbytery to supplement support of "Halt Hunger" programs through recycling household aluminum.

The "Recycle Aluminum to Help Halt Hunger" program achieves a number of worthwhile ends -

- UTILIZES RESOURCES OTHERWISE WASTED.
Household aluminum scrap, which ordinarily goes out with the garbage, is turned into dimes and dollars to "help halt hunger."

- GETS A LOT FROM A LITTLE.
At current prices, aluminum drink cans are worth about a penny apiece, so that just two drink cans are worth the "two cents" of the "Two Cents per Meal" program which provides most of our Presbytery's "Halt Hunger" funds. Even one aluminum pie plate, or one piece of aluminum foil, is worth recycling - every little bit helps to make a lot.

- COSTS VERY LITTLE.
Volunteer labor and transportation get the collected aluminum to the recycling center.
The only other cost is the inconvenience to the individual of providing a separate container in the house for aluminum scrap, and taking the container to the Church collection box every Sunday.

- REDUCES WASTE.
It has been estimated that Americans spend a total of $4 billion a year to collect and dispose of waste. Recycling helps turn part of that expense into income, and helps reduce the need for landfills, incinerators, and other "wasteful" methods of waste disposal.

- SAVES ENERGY.
One estimate of the amount of energy required to manufacture one ton of aluminum from raw bauxite (aluminum ore) is 10,000 to 14,000 kilowatts of electricity. Recycling aluminum saves 95% of that energy, and also saves 4 tons of bauxite needed for each ton of new aluminum.

"RECYCLE ALUMINUM TO HELP HALT HUNGER"

World Hunger has been a high-priority concern of the Presbyterian Church U.S. since 1969, when we were among the leaders in denominational efforts in this country to develop programs which would encourage and enable every church member to help in the battle against hunger and its causes.

The "Recycle Aluminum to Help Halt Hunger" project provides supplemental funds for Halt Hunger programs by selling scrap aluminum for recycling instead of discarding it as waste. Besides adding to Halt Hunger funds, this recycling project is making a beginning in implementing another concern recently expressed by our Church.

In 1980 the General Assembly approved for study by the churches a report which examined the question of the supposed shortage of energy and raw material as it relates to Christian faith. The report:
- found that both energy sources and raw materials are being used up with increasing rapidity;
- reminded the Church that God's people are called to be good stewards of the earth's resources;
- concluded that the Church ought therefore to

"rationally and ethically decide, personally and corporately, to conserve matter and energy resources, to recycle matter resources (energy cannot be recycled) and to slow the rates of world-wide flow of energy and matter." (emphasis added).

This concern for conserving and recycling resources has received relatively little attention in denominational programs, even though there is some evidence that the increasing scarcity of inexpensive energy sources and raw materials is one probable cause of increasing hunger.

The "Recycle Aluminum to Help Halt Hunger" project demonstrates that it is possible to conserve energy and raw materials in ways that will not "lower our standard of living" but will help raise the level of nutrition and of hope for many people now hungry and almost hopeless.

"RECYCLE ALUMINUM TO HELP HALT HUNGER"

The report of our Presbyterian U.S. World Service/ World Hunger Staff to the 1981 General Assembly began this way:

"'Lord, when did we see you hungry. . .thirsty. . . homeless. . .naked. . .sick. . .imprisoned?' These words from Jesus' parable of the Last Judgment ring down through the centuries. He who is the final judge of individuals and nations identifies Himself with those in the extremity of human need and suffering. Our compassion to them is compassion to Him. . .

It is the calling of every Christian to respond to the critical need of fellow human beings whom they encounter along life's way, through whatever means God makes available to them. . .

Through the World Service and World Hunger program, members of the Presbyterian Church in the United States reach out in a wide range of ministries to meet critical human need and suffering in the name of Christ."

Stretching limited resources over almost unimaginable need, our World Service/World Hunger Staff works to feed the starving now and to enable them to feed themselves again as soon as possible. In 1980 we (Presbyterian U.S.) gave $2,423,560 for that work - approximately the price of one fast food meal for each of our 844,116 members.

About the same time this report was presented to our General Assembly, the World Hunger ActionLetter of the American Friends Service Committee (April 1981) reported this estimate:

"The money required to provide adequate food, water, education, health and housing for everyone in the world has been estimated as $17 billion a year. It is a huge sum of money. . . about as much as the world spends on arms every two weeks."

Recycling scrap aluminum can add a little - at no money cost to the contributor - to the resources available for feeding the hungry.

"RECYCLE ALUMINUM TO HELP HALT HUNGER"

Churches and private charitable organizations are not the only groups in this country concerned with hunger in the world. In 1980 the Presidential Commission on World Hunger recommended that "the United States government make the elimination of hunger the primary focus of its relationships with the developing countries."

The Commission emphasized several reasons for such a focus on eliminating hunger; the first reason is moral obligation. "Moral obligation alone would justify giving highest priority to the task of overcoming hunger. Even now, millions of human beings live on the edge of starvation. . . At least one of every eight men, women, and children on earth suffer malnutrition severe enough to shorten life, stunt growth, and dull mental ability."

A second reason is the relation of world hunger to national security.". . . the Commission is firmly convinced that a major worldwide effort to conquer hunger and poverty, far from being a gesture of charity. . .holds the key to both global and national security. The most potentially explosive force in the world today is the frustrated desire of poor people to obtain a decent standard of living."

A third reason advanced by the Presidential Commission is our country's own economic interest: "The United States can maintain its own economic vitality only within a healthy international economy . . . To sustain a healthy economy, the purchasing power of today's poor people must rise substantially."

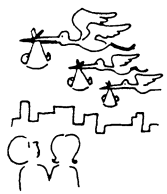
Our Church has had a leading part in this country since 1969 in developing effective programs to overcome world hunger. Much has been done -- even more remains to be done. Our Presbytery's "Two Cents per Meal" program has raised thousands of dollars from penny contributions. The "Recycle Aluminum to Help Halt Hunger" project can raise thousands more without asking even for pennies.

Our earth has

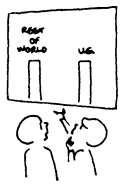
LIMITED RESOURCES

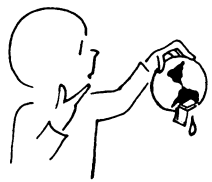
AND... in the UNITED STATES--

with only about 7% of the earth's population--



we use nearly 50% of the earth's industrial raw materials.





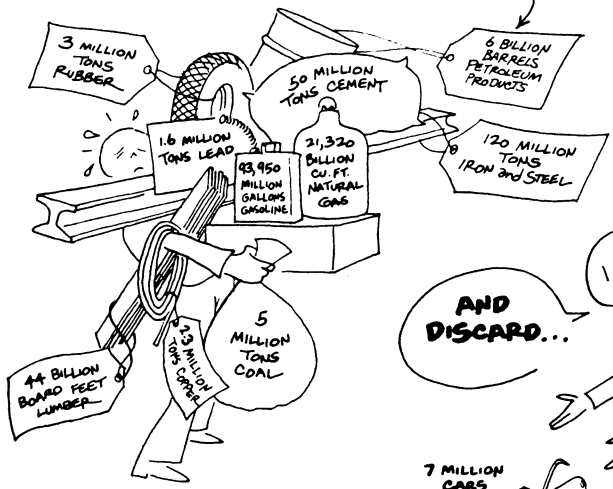
CONSUMPTION IN THE U.S. HAS INCREASED 100% PER YEAR FOR THE PAST 10 YEARS

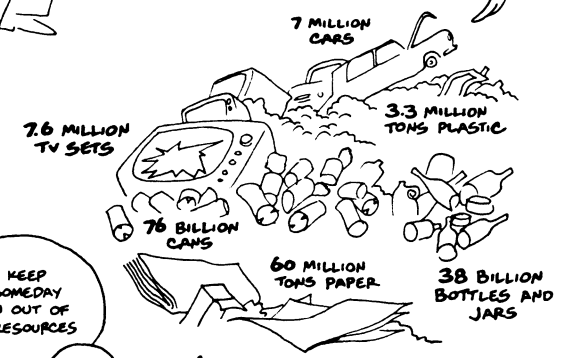
A SCRIPTOGRAPHIC BOOKLET by CHANNING L. BETE CO., INC., Greenfield, Mass. U.S.A.

1978 EDITION
18408-E-78

IN FACT--

IT'S ESTIMATED THAT IN ONE YEAR U.S. CONSUMERS USE

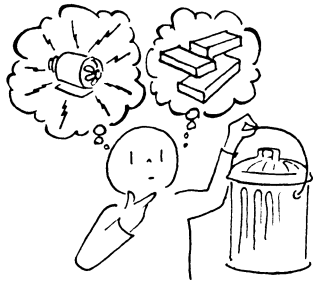




THAT'S MORE THAN 3½ LBS. OF WASTE PER PERSON PER DAY!

FACT: Almost nothing is salvaged once it is in the garbage can.

We can **REPROCESS** garbage, by-products through modern methods



ENERGY RECOVERY from incineration of municipal refuse; paper, garbage, plastics and other wastes produce electricity. The ash which remains can be used to make bricks.

SEWAGE TREATMENT can generate fuels such as methane gas (to replace natural gas), and old tires can yield both oil and combustible gases.

COMPOSTING of vegetable and animal wastes produces a soil-enriching humus.

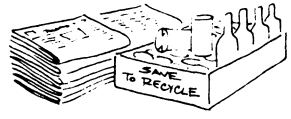
We can **REUSE** containers more than once to save resources

GLASS returnable bottles can be reused, after being washed and refilled, for resale of the same product.

PLASTIC containers can be used instead of aluminum foil and plastic wrap for storing food.

PAPER bags can be brought to the store and reused.

We can **RECYCLE** containers, waste materials into usable products



PAPER can be recycled and made into newspaper, boxes, etc.

GLASS non-returnable bottles and jars can be melted and the glass reused to make new containers.

ALUMINUM CANS can be melted and reformed again and again.

STEEL CANS can be de-tinned and used again in steel production.

Every year, the U.S. consumes 125 MILLION TONS of major metals, paper, glass, rubber and textiles -- only about 1/4 of which are acquired by recycling operations.

FACT: The United States today recycles a lower percentage of its resources than ever before in its history.

❶ PEOPLE REFUSE TO BELIEVE THE FACTS

FACT NO. 1 We are running out of natural resources at an accelerating rate.

FACT NO. 2 We are throwing away reusable resources more and more daily.

❷ COSTS OF CHANGING

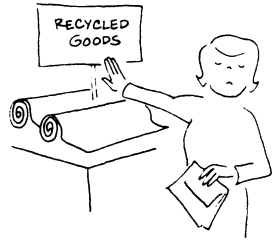
It will take time and money to find and study new methods, to convert old machinery and to pay for sorting, recycling and redistributing the recovered materials.

American industry is now most efficient at processing virgin raw materials.

Most of the wastes that are salvaged today come from businesses and manufacturers, where a single type of waste can be found in large amounts and in relatively clean condition.

❸ LACK OF DEMAND

The cost of producing from virgin materials is often less but as these materials become more scarce and as the cost of reuse drops, this will change. Also attitudes of people must change to accept goods made from recovered and recycled materials.

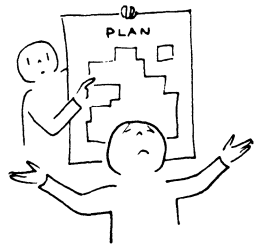


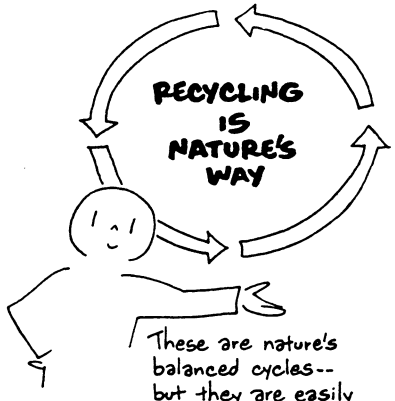
❹ IT'S A LITTLE MORE WORK

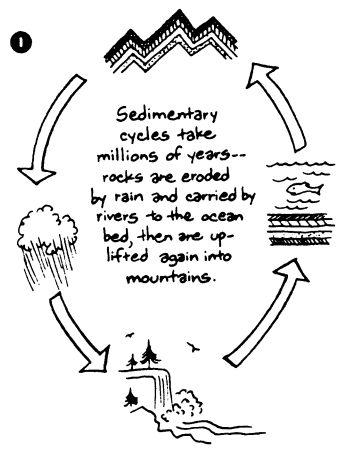
The main problem is sorting -- paper, glass, ferrous metals, aluminum, etc., must all be separated. One place to attack the problem might be in the home . . . by separating trash. Would it be worth a little extra work?

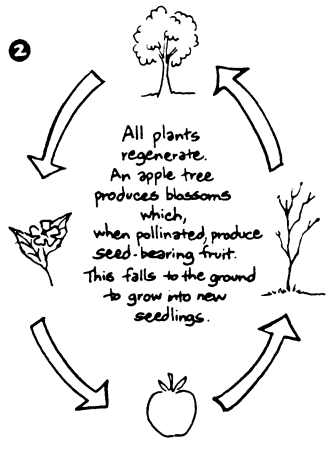
❺ CHANGEOVER IS A BIG JOB

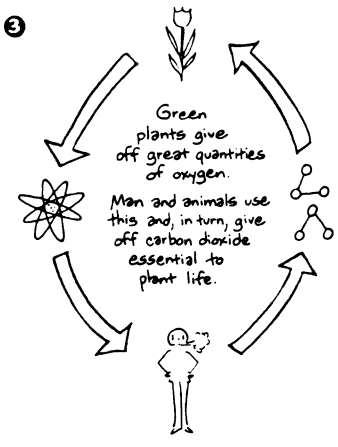
It may mean a new system of collection, new machinery, new conditions that encourage recycling and more expense at first. Some people would rather ignore the whole problem. But if they do, we all could be in big trouble.

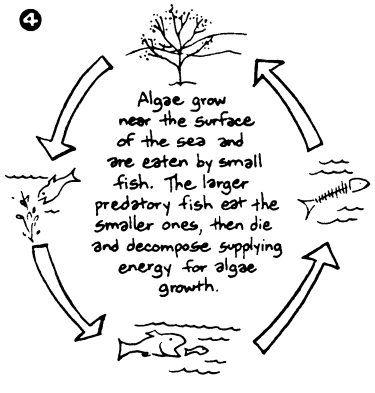


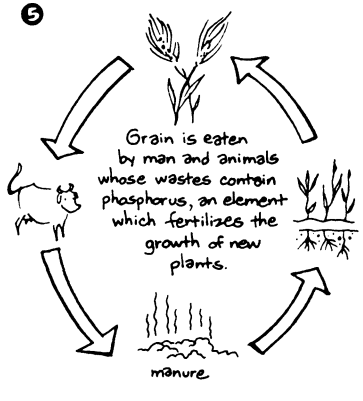


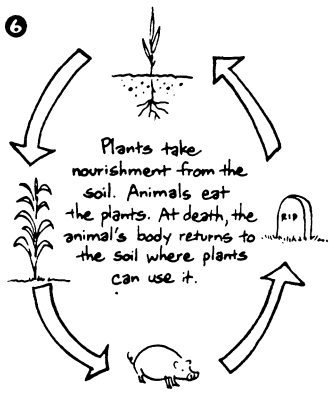


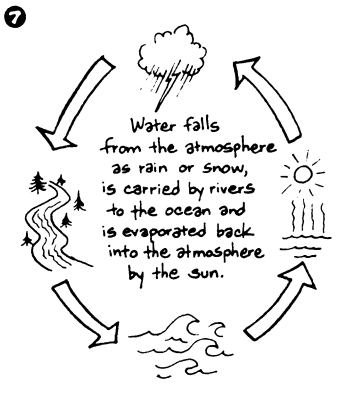




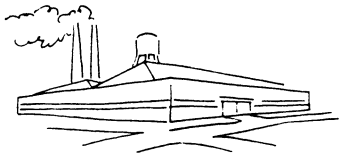








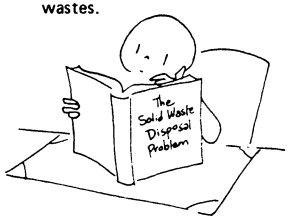
AND-- if we look at all the steps involved -- extracting, harvesting, processing, manufacturing, transporting and disposing -- we find it generally causes less air and water pollution, generates less solid waste and consumes less energy to use recycled materials than to use virgin materials.



WHAT CAN INDUSTRY DO?

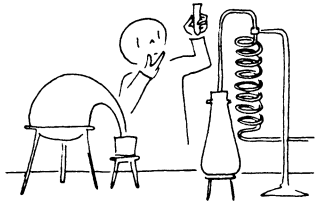
❶ RECOGNIZE

the need for recycling to preserve our resources and to reduce the problem of managing solid wastes.



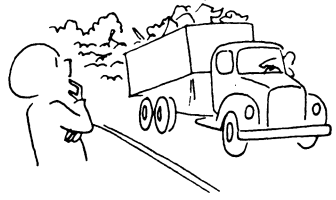
❷ DEVELOP,

through science and technology, solutions to the recycling question in order to recover more resources.



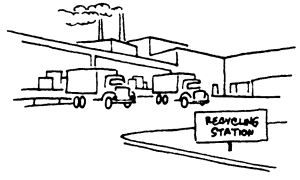
❸ FIND WAYS TO USE WASTES

that are being thrown away or dumped now, through new technology, research and development.



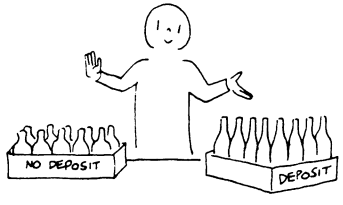
❹ USE RECYCLED MATERIALS

Establish collection depots or build new plants and equipment closer to the location of recycled materials.



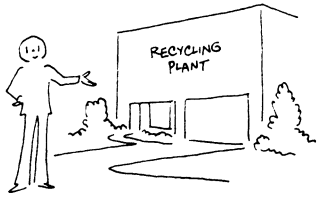
❺ INCLUDE SAVINGS

when they occur from recycling and reuse in the purchase price of products. Make resource recovery economically attractive.



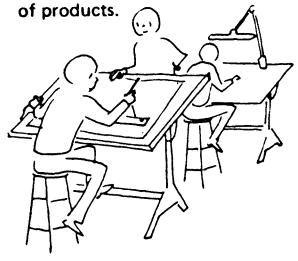
❻ SUPPORT

and promote local recycling programs, and back them with money, time and organization.



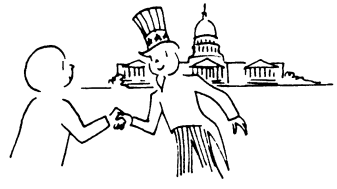
❼ DESIGN

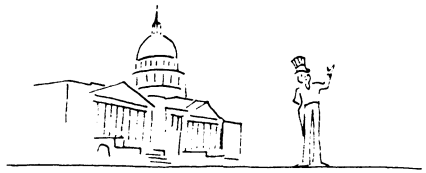
products for reuse, products to take advantage of recycled materials. Avoid overpackaging of products.



❽ JOIN

with local, state and federal agencies and private organizations attempting to find means of resource recovery that work.





WHAT CAN GOVERNMENT DO?

❶ SUPPORT POLICY STUDIES

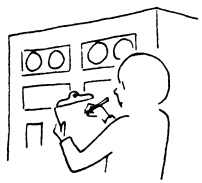
by industry, universities, research centers and government agencies on the state, local and federal levels to implement recovery and reuse systems.

❷ ENFORCE POLLUTION CONTROL LAWS

concerning air and water protection. Since the extracting and processing of raw materials usually pollutes more than processing of waste materials, costs will shift in favor of recycled materials.

❸ PROVIDE RESEARCH AND DEVELOPMENT

grants and contracts to find and study new systems of collection, transportation, storage, reduction and processing; and to insure their feasibility and practicality.



FEDERAL GOVERNMENT takes the lead in areas of RESEARCH, DEVELOPMENT, DEMONSTRATIONS, PLANNING and TEACHING.

EXECUTIVE BRANCH | **LEGISLATIVE BRANCH** | **JUDICIAL BRANCH**

Agencies, departments and advisory groups administer laws made by Congress – recommend measures to Congress.

Studies reports, bills, proposals and enacts legislation and appropriates money for matters concerning the management of solid waste.

Interprets laws passed by Congress and hands down decisions on cases related to the management of solid waste.

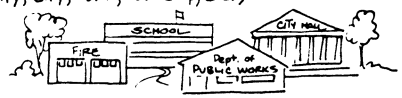
50 STATE GOVERNMENTS

Various regions experience different aspects of the problem of managing solid waste.

Individual states create special regulations and incentives to meet localized needs.

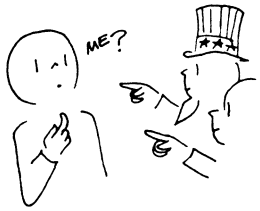
LOCAL GOVERNMENTS (county, city, town, township, etc.)

One of the most serious problems facing local governments today is the disposal of solid waste. The more resources that are recovered the less the disposal problem.



So government at all levels has the opportunity to provide LEADERSHIP in the management of solid waste.

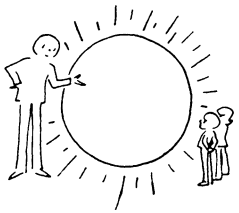
WHAT CAN YOU DO?



Government and industry are working together to conserve our resources and **YOU** can help!

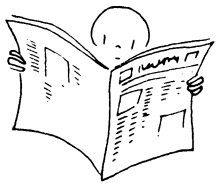
❶ ACCEPT THE CHALLENGE

Some of our efforts and expense will not be of direct benefit to us. What are you willing to do for your grandchildren?



❷ FIND OUT

Know the facts about resource recovery in your community and state. Know what's being done and what you can do to help out.



❸ BEGIN AT HOME

Learn to conserve our resources. Cut down on your solid wastes and take the time to separate your trash.

❹ VOLUNTEER

in your community by collecting papers, separating bottles, etc. Encourage local industry to recycle, and tell others why it's so important.

❺ ORGANIZE

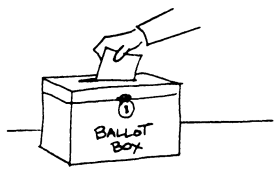
Your own group can work on glass and paper pick-up programs and advertising campaigns, and can support governmental activities.

❻ SHOP WISELY

Avoid over-packaged foods. Choose returnable bottles when possible. Buy products made from recycled material.

❼ TAKE POLITICAL ACTION

Let your government representatives know of your concern through letters, phone calls and, most importantly, your vote.



LET'S DO IT!

GET INVOLVED NOW!

Appendix G

BULLETIN ANNOUNCEMENTS OF INTENSIVE PROMPTS

June 6, 1982 — MANY THANKS for recycling enough aluminum to contribute a total to date of $727.28 ($13.98 from this congregation) to Presbytery's "Halt Hunger" programs. Some requests have been made for more information on the recycling program, and the first of several leaflets is available this morning.

June 13, 1982 — GOOD STEWARDSHIP of the earth's resources has long been a concern of the Church. The "recycle aluminum to help halt hunger" project suggests one small additional way to make good use of every resource. Some related details are summarizes in a second leaflet available this morning.

June 20, 1982 — THE "Recycle Aluminum to Help Halt Hunger" project achieves several worthwhile ends with one simple action. See why in the leaflet available for your information this morning.

June 27, 1982 — THE "Recycle Aluminum to Help Halt Hunger" project is one very small part of our Church's World Service/World Hunger program. Some figures from that program are presented briefly in the leaflet available to anyone interested this morning.

July 4, 1982 — WORLD HUNGER has been a priority concern of our Presbyterian U.S. Church since 1969. Other bodies have since shared that concern, including one governmental study commission whose 1980 report is excerpted briefly in a leaflet available for your interest this morning.

July 11, 1982 — THE "Recycle Aluminum to Help Halt Hunger" project is one infinitesimal attempt to approach the much larger, and growing, problem of limited world resources. The problem, and some possible solutions, are outlined in an interesting little booklet, Resource Recovery and You, which is available in very limited quantity this morning. Please take one (just one per family, please) only if you are deeply concerned.

Appendix H

QUESTIONNAIRE

"RECYCLE ALUMINUM TO HELP HALT HUNGER"
A Project of the Hunger Task Force of Fincastle Presbytery

E V A L U A T I O N

The Hunger Task Force project, "Recycle Aluminum to Help Halt Hunger," has been underway for about nine months. Seventeen churches are participating and almost $600.00 has been contributed to the Presbytery's "Halt Hunger" programs; but it appears thus far that relatively few families regularly recycle their household aluminum scrap. An evaluation of the project is needed to help decide if it should be continued.

A few minutes of your time to complete this brief Questionnaire will be most helpful and very much appreciated. Thank you!

* * * * * * * * *

1. Is your Church participating in this project?

___YES ___NO ___DON'T KNOW

2. Are you bringing your household aluminum scrap to your Church's collection box?

___REGULARLY ___OCCASIONALLY ___NOT AT ALL

3. If you ARE recycling your scrap aluminum through this project, WHY are you? (Check all answers which apply, please; if more than one, mark the most important reason "1", the next most important "2", and so on.)

___ TO HELP FEED THE HUNGRY

___ TO HELP REDUCE WASTE AND SAVE ENERGY

___ TO SUPPORT OUR YOUNG PEOPLE WHO ARE SPONSORING THE PROJECT

___ TO SUPPORT OUR PASTOR WHO ASKED US TO PARTICIPATE

___ OTHER: _____

4. If you ARE NOT recycling your scrap aluminum in this project, WHY NOT? (Check all answers which apply, please; if more than one, mark the most important reason "1", the next most important "2", and so on.)

___NOT CONVENIENT TO SEPARATE ALUMINUM SCRAP

___DON'T FEEL I HAVE ENOUGH ALUMINUM SCRAP TO MAKE COLLECTING IT WORTHWHILE

___DON'T LIKE CARRYING SCRAP TO CHURCH

___DON'T THINK CHURCHES SHOULD BE INVOLVED IN A RECYCLING PROGRAM

___DIDN'T KNOW ABOUT THE PROGRAM

___OTHER: _____

5. Do you like to have regular reminders of the recycling project?

___ YES ___ NO ___ MAKES NO DIFFERENCE

6. If regular reminders are helpful to you, what types are most helpful? (Please mark the most helpful "1", the next most helpful "2", and so on.)

___ CHURCH NEWSLETTER

___ SUNDAY CHURCH BULLETIN

___ PASTOR'S ANNOUNCEMENT

___ WEEKLY REPORTS OF AMOUNT COLLECTED

___ ADS FOR RECYCLING APPEARING IN OTHER MEDIA: NEWSPAPERS, TV, ETC.

___ OTHER: _____

7. Would you support this aluminum recycling project in your church if the proceeds were paid to you instead of going to "Halt Hunger" programs of the Presbytery?

___ DEFINITELY YES ___ PROBABLY YES ___PROBABLY NO ___DEFINITELY NO

8. Please make any comments or suggestions you have about this "recycle aluminum to help halt hunger" project. Should it be continued? How could it be improved?

_____

Appendix I

COVER LETTER FOR QUESTIONNAIRE

"RECYCLE ALUMINUM TO HELP HALT HUNGER"
A Project of the Hunger Task Force of Fincastle Presbytery

April 28, 1982

TO: Pastors OR Clerks of Sessions OR Hunger Coordinators

FROM: The "RECYCLE ALUMINUM TO HELP HALT HUNGER" Project

RE: Project Evaluation

Dear Friends:

Would you do us the valuable service of filling out and returning the enclosed Questionnaire within the week? It should take no more than five minutes.

Your response will be a very helpful and significant factor in the evaluation of the "Recycle Aluminum to Help Halt Hunger" project.

A self-addressed envelope is enclosed for your convenience.

Thanks very much.

Yours,

Charles W. Moore, Coordinator
"HUNGER/ALUMINUM" Project

Appendix J

INITIAL NOTICE OF PROJECT TERMINATION

"ALUMINUM/HUNGER"
403 Airport Road
Blacksburg, VA 24060
June 3, 1982

TO: Churches in the "RECYCLE ALUMINUM TO HELP HALT HUNGER" program

RE: some necessary changes

Dear Friends:

The "Recycle Aluminum to Help Halt Hunger" program has shown that discarded aluminum can be turned into dollars to help feed the hungry at very little cost and inconvenience. Many, many thanks for your participation and support in this novel approach to making the most of what we have.

Regrettably, the weekly pick-ups of aluminum by the Hunger Task Force will have to terminate this month, as my own situation will be changing this summer, and it is not feasible for anyone else on the Task Force to continue the collections. Tuesday, June 29th, will be date of the last pick-up I will make.

We would hope that your congregation might be able to continue the program on its own (as several churches have done from the beginning); perhaps there are in your congregation retired persons who would have the time and interest to continue regular pick-ups.

I will send you next week a list of the Recycling Centers which have been buying our aluminum, and a description of the sorting process I have been using.

Again, many thanks -

Yours,

Charles W. Moore

Appendix K

INSTRUCTIONS FOR RECYCLING ALUMINUM

A BRIEF GUIDE to RECYCLING ALUMINUM

SORTING ALUMINUM SCRAP

Aluminum scrap must be sorted before it can be sold, because recycling centers pay varying prices for different types of scrap, and some centers can handle only certain types.

Sort aluminum scrap into FOUR categories:	Prices currently paid per pound:
ALL-ALUMINUM DRINK CANS	23¢
FOIL	10¢
STEEL DRINK CANS WITH ALUMINUM TOPS	5¢
"HEAVY" ALUMINUM PRODUCTS: skillets, pans, ladders, lawn-chair frames, etc.	18¢

ALUMINUM RECYCLING/COLLECTION POINTS in ROANOKE:

CLEAN VALLEY COMMITTEE and Center for Human Development - 4215 Melrose Ave.,NW
(across Melrose Ave. from Salem-Roanoke Valley Plaza)
: CHD takes only all-aluminum cans; has machine (the "Goat") to separate steel cans from all-aluminum cans.

CYCLE SYSTEMS - off Wonju Street, just before intersection with Franklin Road
(right behind Fulton Motor. Co.)
: Cycle Systems will take all types of aluminum scrap, but it must be sorted. (Cycle Systems will also take all-steel (common "tin") cans, paying 1¢ per pound.)

REYNOLDS ALUMINUM COLLECTION POINT - Brandon Avenue at 23rd Street
(just below Towers Mall)
: Reynolds will take all-aluminum cans and foil; also has "Goat".

The surest way to sort cans is to check them with a small magnet (most hardware stores carry them); a magnet will NOT "stick to" aluminum.

Charles W. Moore, 403 Airport Road, Blacksburg, VA 24060
Tel. (703) 951-4930
will be glad to be of any help he can.

Appendix L

SECOND NOTICE OF PROJECT TERMINATION

"ALUMINUM/HUNGER"
403 Airport Road
Blacksburg, VA 24060
July 2, 1982

TO: Churches in the "RECYCLE ALUMINUM TO HELP HALT HUNGER" project

Dear Friends:

Just a note to remind you that the weekly pick-up of your aluminum scrap this week (report enclosed) was the last one I will be making; and to tahnk you again for your consistent and effective support of the project.

I hope it has been found possible for some person or group in your congregation to continue the project.

There is a little information (publicity, weekly attendance, etc.) which would be very helpful in evaluating the project to this point; and I will call you within the next couple of weeks to ask if some of this might be available.

Again, many thanks -

Yours,

Charles W. Moore

CWM:cb

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