[illegible]	PN-AAJ-267	PCOD-0000-G355

3. TITLE AND SUBTITLE (240)

Consultant report on the contraceptive vending machine project in El Salvador

4. PERSONAL AUTHORS (100)

Seims, T. S.

5. CORPORATE AUTHORS (101)

Am. Public Health Assn.

6. DOCUMENT DATE (110)	7. NUMBER OF PAGES (120)	8. ARC NUMBER (170)
1977	10p.	ES658.809615766.S461

9. REFERENCE ORGANIZATION (130)

APHA

10. SUPPLEMENTARY NOTES (500)

11. ABSTRACT (950)

12. DESCRIPTORS (920)

Contraceptives
Family planning
El Salvador
Marketing
Distribution systems
Promoting
Birth control

17. PROJECT NUMBER (150)	
932087700	
14. CONTRACT NO. (140)	15. CONTRACT TYPE (140)
AID/pha-C-1100	
16. TYPE OF DOCUMENT (160)	

[illegible] (10-79)

ES
658.809615766
S461

CONSULTANT REPORT ON THE CONTRACEPTIVE VENDING MACHINE PROJECT IN EL SALVADOR

A Report Prepared By:

TIMOTHY S. SEIMS, M.B.S.

During The Period:

OCTOBER 16 THROUGH 28, 1977

Under The Auspices Of The:

AMERICAN PUBLIC HEALTH ASSOCIATION

Supported By The:

U. S. AGENCY FOR INTERNATIONAL DEVELOPMENT
OFFICE OF POPULATION, AID/pha/C-1100

AUTHORIZATION:
Ltr. POP/PPSD: 10/14/77
Assgn. No.: 1100-078

CONSULTANT REPORT ON THE CONTRACEPTIVE VENDING MACHINE PROJECT IN EL SALVADOR

I. GENERAL BACKGROUND

El Salvador and Bangladesh have more experience than any other developing country in the operation of contraceptive vending machine projects. The Bangladesh program is discussed in detail in my report of October, 1977 entitled "Contraceptive Vending by Machine - Europe and Bangladesh." The El Salvador program is older than the Bangladesh program and is different, mostly because it preceded tha subsidized commerical retail sales of contraceptives (CRS) project.

The Association Demografica Salvadorena (ADS) operates 10 condom vending machines donated by the Population Council in 1974 and 50 additional machines donated by AID and installed in early 1976. There are also eight oral contraceptive vending machines installed. Sales for the last two years have averaged 47 per month per machine with the less successful machines averaging 10 sales per month and the best 250 sales per month.

For the last few months ADS has employed a full time person to fill and maintain the machines, and also to give motivational talks to workers in the establishment in which the machine is located - a peculiarity of the El Salvador program. This person is responsible to Senora A.J.M. de Mendoza of ADS.

II. HISTORY OF PROGRAM

The ADS has felt, and still feels, that its fundamental operating problem in this program, if not in general, is to push the concept of contraception strongly enough to get results, but not so strongly that it offends sensibilities and brings down the wrath of the "powers that be." In addition to the obvious benefit of improving contraceptive distribution, the vending machines have been an important and flexible tool for the promotion of the concept that contraception, and particularly condoms, is a subject that can be discussed openly. The machines can be placed in an increasingly visible site, but quickly removed whenever complaints become too strong, thus vending machines constantly lead public opinion. This function was not performed by vending machines in Bangladesh because the problem had been largely solved by the CRS project before the machines were installed.

As the machines in El Salvador become more common, they reinforce the impression that society sanctions the use of contraception. For example, a machine was placed in the general post office in San Salvador where, within an hour it generated complaints, mostly from older female clerks at the post office. ADS agreed to remove it, but did not do so quickly. Meanwhile the

machine generated a great deal of publicity and controversial editorials which pleased ADS, and to this day the machine remains in the post office.

The decision about how visible the machines should be requires a good geasp of local sensibilities. Heresay indicated that the vending machine program in Colombia may have failed because the machines were placed at sites where their presence was too much of a challenge to public opinion.

III. PLACEMENT OF MACHINES

Despite the skillful placement of machines so that they would just skirt inside the edge of public acceptability, the vending machines are not currently in optimum locations, even when considering the present public attitudes towards condom promotion. Machines are placed in a wide variety of sites in El Salvador, but a disproportionate number are located in factories - factories when the management is favorably disposed towards family planning. These locations provide a very benign environment in the sense that the management has made good when slugs are passed and provides a captive audience for the educational messages which ADS has felt were essential. However, these machines are not as productive of sales as those at more highly trafficked sites. The experience in El Salvador has confirmed the experience in Bangladesh and Europe that the most productive sites tend to be those with the most people walking by.

The machines are in the following types of locations in El Salvador:

	Number of Machines	Range of Typical Sales per Machine
Post Office	1	55
Parking Lots (Testing)	1	19
Bus Terminals	9	11-232
Gas Stations (Testing)	2	NA
Restaurant (Testing)	2	121-157
Family Planning Clinic	1	249
Penetentiary	1	NA
Military Bases	5	38
Factories	38	9-42

Fifteen machines are located outside San Salvador. Their sales are somewhat less than those in town, and they are certainly less cost effective than machines in town. However, rural or secondary urban machine locations may be comparatively more cost effective than manual sales points. That remains for the CRS project to establish.

The placement of machines in factories was reasonable at the time, and

Sena de Mendoza of ADS agrees that the time is now ripe for the machines to be moved to more productive sites. The reason given by ADS for the machines not having been moved yet is that they feel a responsibility to provide continuous service to users in the factories, no matter how few there are. ADS also probably does not wish to annoy their businessmen supporters who own the factories, and ADS also may simply not have thought in terms of managing the project so aggressively. Presumably the objection that ADS is responsible for continuity of supply will be overcome in early 1978 when the CRS project project establishes manual distribution points near all the factories. However, the reluctance to redistribute machines is clearly a serious problem whenever the project is not handled as a commercial enterprise.

In addition to the relatively less productive factory sites, the actual location of machines at a specific site is often not very visible or readily accessible, nor are these enough machines at very productive sites such as bus terminals. This is a different level of management problem; probably caused by the fact that the only person visiting the sites regualrly is a relatively recent hire who apparently does not yet feel that he is expected to make recommendations regarding machine siting.

Another potential resistance to efficient siting of machines, though not expressed explicitly in El Salvador, is the classic problem with AID programs that the recipient of hitherto unavailable equipment considers the equipment too precious to dare risk its use. Everyone must understand that the effective use of vending machines accepts some losses to vandalism and false coins.

IV. OPERATIONS

As in Bangladesh, in El Salvador no commission is paid the site owner. They can get away with it because there isno competition, no tradition, the product has a social welfare nature, and because they still have relatively few machines sited. Unfortunately, as a consequence, no one nearby takes any special interest in the machine, and generally no one calls to inform ADS if the machine is out-of-order.

The person employed to maintain and fill the machines has had to rely on the occasional availability of a car to visit the machines. Therefore they are not visited on a regular schedule. Several machines are located some distance outside San Salvador, and these machines are visited even less often.

The full-time employee reportedly spends about 75 percent of his time filling machines, 25 percent on maintenance and repair, 25 percent on "motivation," and the rest in excess. He feels that he could handle 160 machines if transportation were readily available. Presumably he could handle even more when the motivational load is removed as it will have to be as machines are moved from factories - the only place where an audience

is available for a motivational/educational talk.

V. MAINTENANCE

Any machine can be expected to break down occasionally, and it is very difficult to determine whether a machine is breaking down too much. Gripes about machine breakdowns are heard by everybody in any business involving machines. Unfortunately, many of the complaints about the Oak Manufacturing Co. machine's relate not so much to the machine as to communications difficulties with Oak Manufacturing which will be discussed in more detail in a separate section of this report.

One thing is clear - the specific repair problems encountered in El Salvador are completely different from those encountered in Bangladesh. This fact suggests that the problems are spurious and not associated with basically poor quality machines. It also points out the need to have someone very comfortable with machinery to look after the machines. This skill is not unavailable in developing countries, since both the operations in Bangladesh and El Salvador have found such a person, but it not necessarily easy to find. El Salvador tried at first to turn the maintenance over to a private equipment maintenance company, but they were not able to do the job.

The most serious problem encountered in El Salvador was a design flow which kept the 50 new machines out of commission until the current service manager figured out a simple improvisation that solved the problem. The problems now are simple wear and jamming problems which have to be handled on an ad hoc basis. Fortunately vandalism is not a serious problem, although once an entire machine was stolen. Slugs have been controlled very well by the managers of the factories where the machines are located.

The pill machines were originally designed for the vending of baseball cards and do not dispense the pill cards very well. The problem is one of packaging and will require an experimental approach to solve. Basically the machine should be tested with some blocks of wood whittled into the dimensions of a box which would hold a cycle of pills. Of course, ADS will have to decide that it would be worth the expense to package the pills for the machine.

It is also very easy to milk the pill vending machine simply by pulling out the cardw tith a wire. Putting the pills in a box would only make it more difficult. However, I don't thank this need be a serious problem if the machines are public enough.

VI. PRICE

Of the 60 machines installed 10 are set for 10 centavos (US-4¢) and the rest for 20 centavos. Figures from the Spanish language paper, "Two Years of Experience in the Distribution of Condoms by Machines" written

by the ADS, would imply that the 10 centavos price is more appropriate since it seems to be selling an average of 95 per month vs 35 per month for the 20 centavos machines. However many of the 20 centavos machines are in unproductive locations, and where the locations are comparable the sales are comparable. The 20 centavos machines also had experienced more jamming problems due to a defect, independent of price.

The price question should soon become academic since the forthcoming CRS project will set a floor on the price, though one might get away with lower price so long as the Tahiti brand is used. ADS will have to make arrangements to get from the Oak Manufacturing Co. the single part required to make all machines accept the same coins.

It should be noted that the 20 centavos price is reached by the insertion of two ten centavos coins which does not seem to cause any difficulty. In Bangladesh the program managers felt that the insertion of two coins was simply beyond what could reasonably be expected of the customer. Perhaps the key lies in the fact that two coins are inserted one after the other, and the knob is turned rather than turning the knob twice which would be difficult to communicate to an illiterate user.

VII. COST EFFECTIVENESS

The cost effectiveness of an optimum program can be estimated only from the results of the present project. Accordingly, I have constructed income statements based on actual recent performance and projected optimum performance. The optimum performance projection assumes that one man will operate 160 machines which will be relocated so that they sell an average 100 condoms per month at 20 centavos each.

	1975	Projected Optimum Numbers and Locations
Sales	US$ 1772	US$ 15360
*Cost of Goods (2.5¢@)	688	4800
*Loss Due to Slugs	14	96
Gross Margin	1070	10464
*Depreciation ($9/machine-year)	540	1440
Maintenance ($1.25/machine-year)	75	200
Transportation	500	1100
Administration & Salaries	2025	3000
Expenses	3140	5740
Profit/(Loss)	US$ (2070)	US$ 2724
Profit/(Loss) from ADS viewpoint	(828)	9060

*Excluded from ADS viewpoint if commodities and machines are supplied free.

Actually ADS does not have readily available financial data and is rather vague about how administration and transportation are allocated. Neverless, these figures give an indication of the order or magnitude of costs.

VIII. RECOMMENDATIONS

The following suggestions were made to Senora de Mendoza of ADS:

1. Upgrade the locations of machines as soon as possible. The process certainly should be begun at least at the time the CRS project introduces condoms.

2. A card for each machine showing its maintenance history and location.

3. Clearly record by locations slugs encountered, extra money found, and money returned, if any.

4. Paint the machines a color other than white since most walls they are situated on are white.

5. Eventually ADS must start to spot check some machines as a cash control procedure. The stock and coins present should add up to to the machine's capacity. It is unfair to rely entirely on the operator's honesty.

6. A regular route should be drawn up as soon as tranportation is regularly available.

Additionally, in this report I have suggested that ADS experiment with a packaging solution to their pill vending problem, and ADS should be informed of the results.

I would also have the following suggestions for AID based on the Salvadorian experience:

1. A condition of supply for the machines and commodities should be the provision of a minimum amount of information concerning machine project performance and cost. That means sufficiently detailed sales by location and managerial cost data so that project performance can be evaluated at least once a year. AID should develop the basic report form for that purpose.

2. AID should regard vending machines as a flexible tool for increasing the visibility of contraception, a tool which must be used both aggressively, and with restraint.

IX. THE OAK MANUFACUTRING COMPANY

The condom and pill vending machines now in the field in several countries have been supplied by Oak Manufacturing Co., Los Angeles, managed by Mr. Lane Weitzman. I visited with Oak officials after I had reviewed the mechanical and operating problems encountered by the vending machine projects in Bangladesh and El Salvador in order to determine what their advice on these problems would be, and to advise whether AID should continue with Oak.

A. PROBLEMS WITH OAK

The problems with Oak seem to resolve basically into problems of perspective and communication. Oak operates in a competitive environment in which they manufacture a simple, unadorned product which sell at a relatively low price and for which they do not provide many after-sale services- either repair or marketing services. Oak admits that they are weak in communication and that they have no skill in government business. However, provided AID takes these limitations into account when evaluating Oak's bids, the company can still be dealt with. Of course, the obvious question is, what is the alternative - to which I do not have the answer.

For example, specific problems with Oak have arisen over the following explicit or implied issues:

1. Does the Oak machine have too many design problems? As I discussed in my El Salvador vending machine report, it is very difficult to determine whether a piece of machinery is wearing excessively or normally because from the point of view of a new operator any problem is a gripe. The fact that the mechanical problems are very different one country from another suggests that they are probably spurious, and maintenance in El Salvador is no longer an operation bottleneck.

The Oak machine does have a specific problem that one should be aware of. Coins about the size of a dime or smaller miss the coin ejector. Normally they will fall out anyway, but if they are stuck on with glue or even gum the coin would stay in the mechanism and the machine could be easily milked. Solving that problem would be expensive.

2. Oak will not help with problems in the field. For example, they did not answer the letter ro them from El Salvador requesting help on a design problem which was jamming machines, thus resulting in substantial delay there. Actually Lane Weitzman claims he did answer the letter, and that he also relayed the letter verbally to "someone" from Washington who eventually called him about it. His answer basically was that he can not diagnose the problem long distance, and that he would try to solve it if El Salvador would send him the mechanism and coins causing the problem. Since I now understand both the mechanical problem and the improvised solution, and since I have read the letter, I believe Oak's position is reasonable. Unfortunately Oak's position was never communicated to El Salvador.

3. Oak does not seem cooperative about machine modifications! Oak claims to have dealt with the government as though the government were a private customer; i.e., they claim to have invested substantial unreimbursed sums in development work in the past and rather than having received the quid pro quo of prompt consideration as an exclusive supplier, they have been, from their point of view, faced with interminable discussions and competitive bidding.

4. Oak provides no training or documentation. This is true, but is somewhat compensated for by the fact that the mechanism is fairly simple and can be understood by anyone with above average mechanical aptitude after a few hours of tinkering.

Recommendation: AID should make clear to Oak that it expects to pay for any further development activity or for any repairs not due to defects.

Recommendation: AID should communicate between the field and Oak regarding service and supply problems through one channel only, presumably the Washington program office.

Recommendation: AID should make clear to prospective recipients of machines that they must employ someone with sufficient mechanical skills; and that the manufacturer cannot provide documentation or long-distance diagnosis.

Recommendation: Lots of machines be purchased with 5 percent extra units which can be cannibalized for spare parts until a service experience is generated in the country of use.

B. MACHINE LIMITATIONS

The most serious limitation of any vending machine is that the package to be vended must be of standardized size, clean of ragged edges, and rigid. Most vending machines are designed to vend a specific package and cannot handle one very different from it. Oak cannot give package specifications for their machines and suggests that any alternative package simply be tested, perhaps first with a block of wood cut to the appropriate dimensions.

The currently vended package is covered with cellophane, but Lane Weitzman points out that the cellophane is there to hold the box together and not to reduce the coefficient of friction between the boxes. The box is so loosely held together because it is designed to be packed by machine. If a tightly wrapped, hand packed box of the same glossy cardboard material were used, it would vend properly without a cellophane outer wrapping.

The package obviously must also not swell or stick by absorbing moisture. This is a technical packaging problem that will have to be resolved for high humidity, outdoor locations. It is a problem in

Bangladesh, but not El Salvador. The answer may lie in sprinkling talcum powder between packs or placing a moisture absorbing material in the machine. Oak is not able to do development work on a package since they feel that they don't have that skill.

It is also possible that one could vend a box big enough to contain more than one condom from the present machine. The limitations would simply be that the box be the same width, it may be slightly longer as space allows, and it can be as high as necessary just so long as the package fits through the mouth of the machine. Since AID does not want to purchase pinched condoms, probably one could not fit three condoms in a box vendable from the current machine, but that would have to be determined experimentally.

Given a package, Oak would be glad to design a machine that would vend it. However, the estimated development costs for a new machine would run on the order of $100,000 according to Lane Weitzman. It would be a mistake to include the development costs in a procurement for machines because then the manufacturer would own the dyes and would continue to charge the higher price which included development costs in any subsequent procurements.

It is possible that a machine exists somewhere which has been designed for a totally different purpose, but which could dispense three or four condoms effectively. For example, there is a novelties vending machine manufactured by Oak that dispenses plastic bubbles big enough to hold three condoms. The problem is that the bubbles currently cost on the order of 1.5¢ - 2¢ each, the price is unlikely to fall, and the bubble would probably attract substantial duty in a developing country.

Recommendation: AID attempt to ferret out alternative vending machines by the publication of the current PIOC which should be rephrased so that it specifies the desire to vend three or four unpinched condoms, but leaves the precise packaging and mechanism open.

Recommendation: AID encourage, through persuasion or funding, PSI and Development Associates to experiment with alternative locally manufactured solutions to the packaging problems in Bangladesh and El Salvador, including in El Salvador the pill vending machine.

Recommendation: If a machine must be specifically designed for the AID condoms, a contract should be let for development which should be separate from the contract for procurement.