



# METROPOLITAN SERVICE DISTRICT

1220 S.W. MORRISON, ROOM 300, PORTLAND, OREGON 97205

(503) 222-3671

## MSD BOARD OF DIRECTORS

### MINUTES OF DECEMBER 9, 1977 MEETING

#### BOARD MEMBERS IN ATTENDANCE

Ray Miller, Chairman  
Connie McCready, Vice Chairman  
Sidney Bartels  
Lyle Salquist  
James Robnett  
Mel Gordon

#### BOARD MEMBERS NOT IN ATTENDANCE

Robert Schumacher

#### GUESTS IN ATTENDANCE

List attached.

#### ADVISORS & STAFF IN ATTENDANCE

Dean Gisvold, Attorney  
Bob Brown, DEQ  
Charles C. Kemper, Staff  
Cordell Ketterling, Staff  
Warren Iliff, Staff  
A. McKay Rich, Staff  
Charles Estes, Staff  
Paul Norr, Staff  
Jean Woodman, Staff

METROPOLITAN SERVICE DISTRICT  
BOARD ACTION

NO. 78-969 DATE 1-13-78

	YES	NO	ABST.
BARTELS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GORDON	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MCCREADY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ROBNETT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SALQUIST	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCHUMACHER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MILLER, CHAIRMAN	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Jean Woodman*  
Clerk of the Board

The clerk called the roll and there being a quorum present, the Board considered the following items of business:

#### 77-955 MINUTES

Councilman Bartels moved to approve the minutes of the November 10, 1977, meeting as submitted. Commissioner McCready seconded the motion. The motion carried unanimously by roll call vote. (Mayor Robnett and Commissioner Gordon were not present during this agenda item.)

77-956 PUBLIC COMMUNICATIONS

Commissioner Miller asked if there was anyone in the audience that wished to address the Board on matters not listed on the meeting agenda. There was no response.

77-957 CASH DISBURSEMENTS

Commissioner McCready moved to approve payment of Checks No. 4802 through 4834 for the last half of the month of November 1977, and in the total amount of \$53,085.09; to approve payment of checks shown on the Expense Register dated December 9, 1977, in the total amount of \$49,629.86; and due to cancellation of the December 23, 1977, Board meeting, approve payment of checks as required through the balance of the month of December with a report coming before the Board on January 13, 1978. Councilman Bartels seconded the motion. The motion carried unanimously by roll call vote. (Commissioner Gordon was not present during this agenda item.)

77-958 CONTRACT 77-122 - PUROLATOR COURIER SERVICE

Mr. Estes reviewed the staff report stating that staff was having difficulties transporting mail from the downtown office to the Zoo. He felt that contracting with an outside courier service would eliminate the problems of scheduling staff as couriers and eliminate the liability held by MSD of staff members using their own vehicles on MSD business.

Commissioner McCready suggested that staff consider using the City/County courier system, and that the staff report be approved with this contingency.

Commissioner McCready moved to approve Contract 77-122 with Purolator Courier Corporation at a monthly cost not to exceed \$125.66, subject to legal counsel review, and subject to staff researching the use of the City/County Courier system as a better alternative. Councilman Bartels seconded the motion. The motion carried unanimously by roll call vote. (Commissioner Gordon was not present during this agenda item.)

77-959 PAYROLL BANK ACCOUNT

Councilman Salquist moved to approve: 1) the creation of a public agency checking account at the First National Bank, 14th and Morrison Branch, to be used solely for the MSD payroll; 2) the Clerk of the Board to execute the agency form for both regular and facsimile signatures, together with the appropriate signature cards; and 3) the use of any two of the following names to sign checks on this account: Raymond L. Miller, Charles C. Kemper, or Charles Estes. Commissioner McCready seconded the motion. The motion carried unanimously by roll call vote. (Commissioner Gordon was not present during this agenda item.)

77-960 BOND COUNSEL SELECTION

Rescheduled for January 13, 1978.

77-961 SOUTH PROCESSING STATION ASSESSMENT OF AIR QUALITY IMPACTS - CONSULTANT PROPOSAL

Mr. Ketterling addressed the Board stating that while the Phase I Engineering Design Agreement with Publishers Paper Company allows for analysis of air quality standards for the South Processing Center, it has become apparent that due to Environmental Protection Agency guidelines, that quantitative air quality information beyond this scope was necessary. Predictive atmospheric modelling will be required as a basis for the construction permits for the plant's boiler. Mayor Robnett clarified the report by stating that the study was necessary for determining the height of the boiler's stack. The additional study will be paid for out of the contingency listed in the contract with Publishers Paper Company.

This was an information item and no action was taken. (Commissioner Gordon was not present.)

77-962 SOUTH PROCESSING STATION STATUS REPORT - PHASE I ENGINEERING DESIGN - BECHTEL

Mr. Roy Ruel and Bill Lesh were present representing Publishers Paper Company with Jim Arcate of Bechtel. Mr. Arcate presented two artistic versions of the completed processing station. The drawings and a report were presented to the Oregon City Planning Commission on December 6, 1977, by Publishers Paper Company, at which time the Commission approved a conditional use permit for construction of the facility. Bechtel is reportedly on schedule and economic calculations will be available

by the Board's January 13, 1978, meeting.

No action was required. (Commissioner Gordon was not present.)

77-963 SOLID WASTE CODE VARIANCE REQUEST - HOWARD S. WRIGHT  
DEVELOPMENT COMPANY

Mr. Paul Norr addressed the Board reporting on a request received from Howard S. Wright Development Company for a variance to Section 12.2.060(1)(f) of the MSD Code to allow disposal of concrete rubble generated from the demolition of the Congress Hotel at the Porter-Yett Gravel Pit. Staff requested denial of the request citing the adopted MSD Non-processible Solid Waste Disposal Program report which directs that only authorized demolition sites be used in order to encourage the filling of these existing sites. Porter Yett Gravel Pit on NE Columbia Boulevard is not a MSD certified demolition site. As an alternative dumping site for Howard S. Wright, the staff recommended a variance allowing them to dump at Portland Road and Driveway and that Portland Road and Driveway be allowed a variance to accept the concrete for disposal in their pond.

Commissioner McCready questioned whether MSD or DEQ held enforcement had improved over the landfills and whether DEQ had adopted the past recommendations made by MSD. Mr. Kemper stated that DEQ's enforcement had improved since adoption of the MSD ordinances, and that MSD and DEQ were and would continue to work closely together. He also stated that the difference in regulations was that MSD had regulatory control over people bringing wastes into the site and DEQ did not.

Commissioner McCready moved to deny the request by Howard S. Wright Development Company for variance to the MSD Code Section 12.02.060(1)(f) to allow them to dispose of concrete rubble at the Porter-Yett Gravel Pit; to grant as an alternative a variance to MSD Code Section 12.02.060(1)(f) for disposal of concrete rubble from the Congress Hotel at the Portland Road & Driveway site; to grant Portland Road & Driveway a variance to MSD Code Section 12.02.060(1)(a) to accept concrete for disposal in the pond; and to approve the staff's findings as contained in the December 9, 1977, staff report. Councilman Bartels seconded the motion. The motion carried unanimously by roll call vote. (Commissioner Gordon was not present during.)

77-964 CONTRACT 77-110 - PORTLAND RECYCLING TEAM BOTTLE WASHING FACILITY - CONTRACT REVISIONS

Mr. Gisvold stated that the Portland Recycling Team contract was again before the Board due to some wording changes that the PRT Board requested. He indicated that the only major change was to increase the payback schedule from 36 to 45 months. The purpose for this change was the delay in completing the contract, which on a 36-month schedule required that payback begin before the project was operational. Mr. Gisvold requested approval of the rewritten contract.

Councilman Bartels moved to approve the modified Contract 77-110 between Portland Recycling Team and MSD for the operation of a bottle washing facility. Councilman Salquist seconded the motion. The motion carried unanimously by roll call vote. (Commissioner Gordon was not present.)

77-965 EXECUTIVE SESSION - TIREGON LITIGATION

Commissioner McCready moved to consider Tiregon litigation under Executive Session. Councilman Bartels seconded the motion. The motion carried unanimously by roll call vote. (Commissioner Gordon was not present.)

The Board adjourned to Executive Session at 5:53 P.M., and reconvened at 6:25 P.M. in public session to take the following action:

Commissioner McCready moved to direct staff to discontinue legal action against Tiregon, and to revise the MSD Code to eliminate collection of scrap tires in accordance with the revised ORS 268. Councilman Bartels seconded the motion. The motion carried unanimously by roll call vote.

77-966 BEHAVIORAL ENGINEERING PROGRAM - PUBLIC HEARING

Commissioner Miller opened the public hearing to receive testimony on the merits of the behavioral engineering program at the Washington Park Zoo.

Commissioner Miller announced that Commissioner Schumacher would not be present at the hearing and had requested a postponement of any decision until the next Board meeting. Commissioner Schumacher had indicated his intention of listening to the testimony as recorded on the hearing tapes.

Commissioner Miller made the following statement outlining the method to be used by the Board in receiving testimony on the behavioral engineering program: "This is not a quasi-judicial matter and neither are we a court of law. Inasmuch as the matter was brought to our attention by a letter in favor of behavioral engineering, they will present their information first. The opposite side will then present theirs. There will be a limit of one hour to each side. There will be no cross examination except by the Board members. There will be no rebuttal. We will discuss behavioral engineering only. Those wishing to testify, please sign a card. Names will be called in the order that the cards are received."

Commissioner McCready made the following statement: "My feelings after reading much of the material that has been submitted to the Board is that the controversy excluding personnel problems, is an issue of how much emphasis should be placed on research and behavioral engineering, and not whether we should eliminate these activities. I think that the Zoo Director has given us his outline of the kind of program we can have at the Zoo. In that outline, first we would be looking at developing or improving several exhibits such as the cascade exhibit and improvement to the elephants, chimps, penguins and muskoxen exhibits. The selection of the exhibits to be constructed or improved and the timing of those improvements will be decided by the Board early next year keeping in mind our financial limitations. I think all of us realize that we do not have the space or the money to do everything we would like to do at the Washington Park Zoo. I thought many aspects of the Research Program mentioned in the Director's memo were being done today, such as: 1) an involvement of college students in observational projects, 2) efforts to improve diets, 3) identifying and controlling parasites, 4) establishing new diagnostic techniques, 5) developing better exhibit habitats, and 6) coordinate assistants from local universities in the scientific community. Now what we need from our

Zoo Director is the specific information on the personnel and other cost of the research program he has proposed. That is not included in the recommendation. In his memo, Mr. Iliff has stated that behavioral engineering has been in response to the naked cage and that it has addressed the problem of inactivity and the feeding of the animals. This seems to be appropriate particularly in light of some of the existing facilities at the Zoo that may take years to replace or to refurbish. I do not think the Board should preclude the use of mechanical or electrical devices that assist in better feeding or exercise of animals where appropriate. Neither do I think that these devices should be a major emphasis at our Zoo. I do not see the need for the Board to take any official action at this time. But I would expect the Director to notify all employees and the Board, the changes that may be necessary to implement the research program he has proposed when and if it is adopted by the Board. Our budget sessions, incidentally, are open meetings, and I would expect many of the people who are so interested in this aspect of the Zoo to appear at that time and voice their opinions when we have the specifics of the program before us. I personally do not have any opinion as to whether all or parts of the research should be dealt with inhouse or with outside consultants. I do think we can keep grant funds as long as the grant projects are consistent with the needs of our Research Program. I think that our Research Program should be aimed at the needs of our animals in the particular facilities that we have and I also think research should be a relatively small program and should be limited to less 10% of our operating costs. This is where I am coming from at this time having read all of the information I received and having heard from a number of people. I would be interested in any kinds of comments that may make me change this recommendation."

There were no further statements from members of the Board.

The following people testified in favor of behavioral engineering:

1. Ann Littlewood, 3717 SE Alder, Portland.

(Statement attached).

Commissioner McCready requested that the speakers attempt to distinguish between behavioral engineering and animal research. She also indicated requested testimony as to the harm or benefit to the animals of specific behavioral engineering tools.

2. Steven Rosenbaum, 7710 SW 4th, Portland

Mr. Rosenbaum read a statement (attached) and submitted a petition of 475 signatures obtained in support of behavioral engineering. He stated that he represented the Citizens in Support of Behavioral Engineering, and that this organization sponsored a demonstration on December 3 at the Zoo and collected 100 signatures which he felt represented approximately 71% of the zoo visitation that day. Mr. Rosenbaum stated that both sides of the issue had been represented in soliciting signatures, explaining to the public that management wished to take out the behavioral engineering apparatus and provide the animals with unknown methods, and that management was against lights and levers. He stated that it was also explained that management intended future alternatives to behavioral engineering, but that these devices were needed now and would not preclude future planning. Mr. Rosenbaum concluded stating that the decision made by the Board on this day would affect the lives of all the animals at the Zoo and he hoped that the Board would not allow behavioral engineering to become a battleground for correcting managerial problems.

Commissioner McCready questioned the use of petitions gathered by the use of one-sided explanations, stating that Mr. Rosenbaum's statements to the public were all arguments in favor of behavioral engineering.

3. Dr. Kirk McNeil, 6316 SW Garden Home Rd., Portland

Dr. McNeil stated that he was a Board member of the Portland Zoological Society and a consulting veterinarian at the Washington Park Zoo. Dr. McNeil made the following statement:

"Mr. Chairman and members of the MSD Board, I would like to speak briefly on the question of whether behavioral engineering is an asset to animal health at the Washington Park Zoo. It amazes me that our Zoo Director has given the experience and observation of diagnosis in diseases in animals as he has stated in some of his papers to you. He has stated that wild animals can not conceal an illness or injury. I can only say, not in scientific data but practical data, that after seven years of practice I have seen exotic pets and domestic animals whose owners have been totally unaware of illness until its final stages of the disease. Animals, especially cats, have an uncanny ability to cover up diseases, ranging from leukemia to blindness until they are in the final stages of the disease. Behavioral engineering, or in the case of the family pet, exercise and playing games



often help pick up these diseases. It has also been stated that animals do not inhibit behavior in the presence of the staff veterinarian. I have personally been with Dr. Schmidt on many occasions with animals, especially lions, that totally over-react due to his mere presence. Believe it or not, many animals have the ability of doing this in my own office. You all have had an experience with a veterinarian where your dog is lame but in the presence of the veterinarian there was no sign of lameness. In these conditions it is very hard, if not impossible, to observe the true status of the animal. I could go on with many more examples to repudiate most of the statements made by the Director on behavioral engineering versus animal health, but I will not bore you. In summary, it is my belief that these animals cannot tell us their aches and pains. Indeed it is a natural part of their defense to hide them. The veterinary staff of the Washington Park Zoo should have at their disposal every possible tool. This includes, not only good keepers, and a good curator, which in my opinion we have, and I praise them for their outstanding work, but also behavioral engineering if it can aid in the health of the animal. I and my fellow colleagues feel that it is a real aid and is behind this endeavor 100%. This tool can be used for not only diagnosis but prognosis and all that responds to treatment. After all, if we do not have healthy animals we will not have a zoo."

Commissioner McCready requested more specifics in the area of animal health citing an incident where an animal had ceased to play tic-tac-toe and Mr. Iliff's explanation that the keeper knew the animal was ill because of diaherria in the cage. Dr. McNeil responded that in itself diaherria was not a serious indication of illness, but that in this particular case the animal had ceased to play its game alerting the staff to its illness. He felt the interesting thing was that the animal responded to treatment and started to pick up in playing his games. Dr. McNeil also cited a case he had of a cougar dying of a liver disease, and he felt that if there had been some means of determining change in his behavior patterns he might have been helped in time.

Councilman Bartels questioned whether behavioral engineering might not hinder early diagnosis due to the animals being conditioned to behave in a certain way. Dr. McNeil answered that in small non-exotic animals this might be true to a certain extent because of more owner control, however, even then the animal will begin to slow down in their games notifying the owner of possible illness.

4. Dr. Michael J. Schmidt, Rt. 2, Box 109, Portland  
Veterinarian at the Washington Park Zoo

Dr. Schmidt stated that as a veterinarian, he strongly favored behavioral engineering apparatus at the Zoo as a means to indicate possible animal illnesses. He stated that one of the major problems in dealing with Zoo animals is their inclination to hide illnesses, and that early diagnosis, which he felt could be made through the animals disinterest in such apparatus, is essential. Dr. Schmidt gave the following example: "A female jaguar, 13 years, which is older than most jaguars become in the wild, five days before she died she went off feed by about 50%. This happens to zoo animals off and on and we keep an eye on them. Usually if they go off their food for a couple of days they may come back, and this is a sporadic kind of thing. The day she died she showed some difficulty breathing and I administered antibiotics, and she died. When I performed a postmortem on her I found that she had breast cancer that had spread to every major organ in her body, including her liver, her kidneys, her lungs, her bladder and the tiny adrenal glands. Her lungs were so infiltrated with these neo plastic cancer tissue that she finally had difficulty in breathing and died."

Dr. Schmidt stated that terminal cancer was an extremely painful way to die, and that there had to be a better way of determining such illnesses. He felt that if behavioral engineering apparatus had been available in the jaguar's cage, her illness could have been detected earlier and the cat could have been put to sleep. Dr. Schmidt stated that every means must continuously be explored to give the animals the best possible care and that the behavioral engineering program at the Washington Park Zoo was such a means and had made the Zoo a leader in improving animal care. He also stated that behavioral engineering provided unlimited potential to meet these challenges now and in the future and could do so by blending in beautifully with the new more natural exhibits that are being planned for the Zoo. Dr. Schmidt urged the Board to continue and encourage the behavioral engineering program at the Zoo.

Commissioner McCready requested some examples of how the program has benefited the Zoo animals. Dr. Schmidt cited a male servil that had stopped leaping for his food, which was provided by behavioral engineering. A week later the servil died and upon examination was found to have a cronic congenital type of hernia, and his intestines had shifted into his chest cavity pressing on his lungs and causing death.

Dr. Schmidt also gave an example of the male polar bear, who, before the behavioral engineering apparatus was installed in his cage, continuously paced back and forth and became quite thin. After the installation of the apparatus, he filled out and took on a more normal appearance, even though he was still exercising by diving into the pool for food. There was also an incident where some monkeys almost died of starvation, which is difficult to determine unless they are watched constantly. With animals in cages containing behavioral engineering apparatus, he is notified the first day their behavior is off.

Commissioner Gordon referred to a memo written by Warren Iliff which disputed the assumption noted in two papers prepared by Dr. Markowitz, that it was almost impossible for the keepers to detect illnesses in the animals. Commissioner Gordon also quoted Mr. Iliff's memo which stated that the theory that animals try to conceal illness is not substantiated by scientific data. Dr. Schmidt felt that the keepers were doing a good job, however, improved methods should constantly be researched. He stated that the scientific data referred to was available and could be obtained for the Board. Commissioner Gordon further quoted from Mr. Iliff's memo that "Zoos all over the world are increasingly proficient in detecting illnesses in their animals, and despite the contentions in these papers, keepers get to know their individual animals extremely well. All of this is possible without the least assistance from behavioral engineering." Dr. Schmidt stated that this was not correct, that any keeper would agree that they do not get to know the animals in the east paddock well, due to personnel and other things. Commissioner Miller asked Dr. Schmidt if the animals in the Washington Park Zoo were better off and healthier than animals in other zoos because of our behavioral engineering program. Dr. Schmidt replied that he was not in a position to make a statement that they were, but that the program provided him with a tool for early detection of disease.

5. Jill D. Mellen, 13680 SW Linda Lane, Beaverton  
Research Coordinator, Washington Park Zoo

Ms. Mellen discussed the benefits received by animals with behavioral engineering in their enclosures. She stated that these animals were given closer observation resulting in their improved health and wellbeing. She also stated that animals in the wild were not protected, were not confined, food was not delivered and they did not receive medical attention; however they were free to choose what and when they would eat.

She felt that the behavioral engineering apparatus in these cages provided the animals with that freedom of choice to eat when they chose. Commissioner McCready referred to Mr. Iliff's memo which stated that foraging in straw for food was preferable as being more natural than reacting to bells and lights, and Ms. Mellen stated that this type of random feeding was very good, the animal enjoyed it and it could be done by computer. She also stated that this was behavioral engineering, and that it did not have to be done with lights and levers.

6. Mike Keele, 6306 SE 52nd, Portland  
American Association of Zoo Keepers

Mr. Keele reported that at the last meeting of the American Association of Zoo Keepers it was agreed to give support to Dr. Markowitz and the behavioral engineering program. The AAZK members felt that the program provided them with a means of early detection of health problems in the animals. Mr. Keele also stated that any suggestion of pressures placed upon the animal keepers to support behavioral engineering was not true.

There were no questions from the Board.

7. Roger L. Henneous, 6324 SE 58th Avenue, Portland  
Washington Park Zoo animal keeper

Mr. Henneous stated that with the aid of behavioral engineering conditioning, blindness that he had not been aware of was detected in an elephant in his care. He did not feel that keepers had the time to give individual attention to all of the animals in his care and that behavioral engineering would help. In answer to Mayor Robnett's question on whether the increase in zoo attendance was due to the games in the cages, Mr. Henneous stated that he would contribute the increase to the public's increased awareness of ecology, the public relations program, and to behavioral engineering.

8. Dr. Larry I. Crawshaw, 5272 SW Tualatin Lane, Lake Oswego  
Department of Biology, Portland State University

Dr. Crawshaw wished to emphasize the value of the association between the Biology Department and behavioral engineering, and that the program is very powerful and has been very helpful to the field of Biology. He felt that behavioral engineering made the animal aware of his environment and caused it to be more active.

There were no questions by the Board.

9. Victor Stevens, 3623 SE Ogden, Portland  
Washington Park Zoo Research Center

Mr. Stevens stated that under Dr. Markowitz' guidance he had submitted a grant proposal to the Department of Health, Education and Welfare for funding of the Improvement of Post Secondary Education program, which was approved and that he had received \$185,000 over a three-year period. Mr. Stevens also stated that HEW only funded 2% of the proposals received and had never funded a zoo project. The reasons he gave for the Washington Park Zoo's selection for funding were: 1) HEW was already aware of the behavioral engineering research at the Portland Zoo; 2) the Zoo had a long history of student involvement; and 3) they were convinced that staff members involved could carry out the program.

No questions by the Board members.

10. Mrs. John R. Schleuning, 2208 SW 18th, Portland

Mrs. Schleuning is a member of the Zoological Society, however, was not representing that organization. She was also a Zoo volunteer, working mostly with children. She stated that as a volunteer since 1969, prior to behavioral engineering, she toured children through the Zoo and the animals were inactive. After the installation of behavioral engineering equipment, however, the animals became much more active. She felt the program should continue, but that some camouflage would be preferable to make the setting more natural.

There were no questions from the Board.

11. William M. Wiest, Health Services Research Center, Portland  
Consultant to World Health Organization on contraceptives

Mr. Wiest spoke to the Board on the subject of animal health, stating the overall results of the program was to promote the health of the animals. Mr. Wiest stated that in cases where animals are not able to control their environment they develop the phenomenon of learned helplessness. They become lethargic and depressed, with pacing a symptom of neurotic behavior. Mr. Wiest also discussed the criticism that operative behavior is unnatural, stating that it was in fact most natural. He felt that it was important for an animal to have a functional relationship with his existence, to control to some degree his own environment. He also felt, however, that it would be preferable if the behavioral engineering equipment could be presented in a more natural setting. Mr. Wiest cited the comment that baboons pushing buttons was not natural to baboons in the wilds. He felt

that this was true, however, stated that baboons and other primates exhibit a great deal of flexibility in adapting to changes in environment and that a change of this sort would be natural to them, and exhibits their intelligence.

12. Mrs. Allen Hermann, 7645 SW Copel, Portland

Mrs. Hermann questioned the possibility of eliminating a program that is considered outstanding by the professional zoo world and that provides the Washington Park Zoo with their reputation. She felt that behavioral engineering provided a good learning experience for the children, and that the Zoo's reputation brought visitors to the Portland area providing an economic benefit.

13. Dr. Allen Neuringer, Star Route Box 1375H, Glenwood, Oregon  
Teacher of Phsycology at Reed College

Dr. Neuringer wished to speak on behavioral engineering as a means for providing the animals with an opportunity for choice. He indicated that phsycologists throughtout the country felt this type of behavioral engineering program was important and beneficial to students and the general public. Dr. Neuringer was in agreement that a natural, unsterile cage was desirable but that the question was whether allowing an animal to perform for a food reward was natural. He felt the animals should be allowed this choice, that the animal would prefer this occupation, and that the program should not be eliminated in the name of increasing naturalness and wellbeing of the animal when the program provides just these benefits.

14. Mr. Dale M. Herman, 121 SW Salmon, Portland

Mr. Herman did not wish to testify.

15. Dr. Peter Davis, Rt. 1, Box 307, Portland  
Private citizen, past member of the Animal Health Committee,  
past consultant to the Zoo Veterinarian, and member of the  
Veterinary Medical Association

Dr. Davis stated that Dr. Markowitz' program of behavioral engineering is being received nationally and internationally with the highest regards. He also stated that the Portland Veterinary Medical Association unanimously voted to support the program after full discussion and explanation of the question, and by unanimous vote. Dr. Davis felt that behavioral engineering was a great value in determining whether or not the animals were healthy.

Commissioner Miller stated that the time limit for receiving arguments in favor of behavioral engineering was completed and requested arguments opposed to behavioral engineering.

1. Dr. Matthew B. Mayberry, 17340 SW Augusta Lane, Beaverton

Dr. Mayberry stated that he had served as the Zoo's Veterinarian for 15 years and felt qualified to speak on behavioral engineering. He addressed the Board as a citizen and taxpayer, stating that he did not feel the Zoo should be run by researchers and he did not feel that the taxpayer should provide for behavioral engineering research. Dr. Mayberry was in agreement that research was necessary in veterinary sciences, but in its place. He did not feel behavioral engineering was a requirement for determining illnesses in animals, and that veterinarians were trained to make these determinations using their learned skills and their senses and observations. He questioned also the usefulness of the research derived from an environment unnatural to the animals, in that animals in the wild were subject to hierarchies and dominance of strength not pronounced in captivity and were not force fed as they are in zoos. Dr. Mayberry stated that research should be conducted in controlled areas which the Zoo was not. He also felt that better education for keepers was warranted, and that through keeper observation, differences in behavior relating to illnesses could be detected.

Commissioner McCready questioned the amount of research Dr. Mayberry felt should be conducted at the Zoo. Dr. Mayberry was not aware of the operating budget of the Zoo, however, felt that 10% might be a reasonable figure. He also felt that a heavier emphasis should be placed on developing a rapport with the animals, that research should be conducted elsewhere in an institute better qualified.

2. Loren D. McKinley, 4015 SW Canyon Road, Portland

Mr. McKinley stated he had been observing the Zoo since 1962, and that it had steadily gone downhill, and that without Warren Iliff, the Zoo probably would not be in existence. He did not feel that research was bad, but also did not feel that mechanical devices and flashing buttons were responsible for saving the Zoo. He stated that Warren Iliff had been placed in the position of solving problems that other directors had created and left without completing.

In response to Commissioner Gordon's question on how he felt about behavioral engineering, Mr. McKinley stated that he did not know what behavioral engineering was and doubted that it could be defined by anyone.

3. Dorris Singer, 6265 SW Arrowwood Ln., Portland

Ms. Singer did not testify but stated that she agreed with the two previous statements.

4. Colleen Powell, 6260 SW Arrowwood Ln., Portland

Ms. Powell did not wish to testify, but also agreed with both Dr. Mayberry and Mr. McKinley.

5. William Montagna, 6545 Canyon Ct., Portland  
Director of the Primate Center

Dr. Montagna was present representing himself. He stated that the testimony given in favor of behavioral engineering he found to be embarrassing in its redundancy, in its lack of thought and embarrassed for the veterinarians that testified that seem to know so little about their art and about animals. Dr. Montagna cited his qualifications as being a scientist of many years, as publishing about 500 original papers and 30 books, has a penchant for field work, has gone practically every year to Africa and knows animals in the wild. He stated that behavioral engineering was a gimmick to make animals do what they might not otherwise do and that it is at odds with the philosophy of zoological gardens where animals should be contained in as natural a setting as possible. He felt that mandrills pushing buttons to beat the computer teaches us very little, and orangutans sleeping in the corner teaches more because animals sleep a good deal, that behavioral engineering places the zoo in the area of a carnival and if this is what we want let's hire some animal trainers. Dr. Montagna concluded with the statement that zoos should be a haven for animals, where they might behave, under the circumstances, as they know how to behave.

Commissioner McCreedy asked Dr. Montagna for examples on how he felt a zoological gardens should be and how he felt behavioral engineering hurt or helped the zoo. Dr. Montagna replied that he would study zoos that have already accomplished natural settings such as the zoo in Switzerland, considered one of the best in the world. As to behavioral engineering Dr. Montagna stated that why it is being used should be questioned. He did not feel it was teaching anything at all, and did not feel it was the way to teach children about animals, using an unnatural habit of pushing buttons.



6. Mrs. Bert V. Avila, 608 Lake Bay Ct., Lake Oswego

Mrs. Avila apparently felt that animals pushing buttons in the zoo would one day lead to children pushing buttons in the classrooms.

7. Dr. Ted Grand, Oregon Primate Center, Beaverton

Dr. Grand stated that he has been the resident Anthropologist/Primatologist at the Primate Center since 1963, and has been involved with zoos since then. His research basis has been with trips abroad with trips to Madagascar, Ceylon, Central America, and Venezuela, and has had extensive field and laboratory research. Dr. Grand stated that the laboratory technician recognized the need for observation and the field worker recognized the need for activity, and it was this integration of captive and wild that he wished to discuss. He felt that many projects could be initiated in the zoo setting that arrived out of the problems seen in nature, but that because of the natural setting it was difficult to bring mechanical devices into the setting. Dr. Grand cited the following case of behavioral engineering that is being conducted in Hilo, Hawaii, with the feeding of the tigers: "The tiger wishes to feed and signals so by scratching at a post; a plastic mouse runs across the ground and the tiger chases it; after capture, the tiger releases it and goes somewhere else and gets something to eat." Dr. Grand stated this example as being totally outside events in nature, that tigers were nocturnal and that in the wilds, about 70% of the tigers attempts at kills fail causing the tiger to go one or two days between feedings. In summary, Dr. Grand stated that it was possible to study the zoo animals in ways that would increase our understanding, and that research should be tailored to fit individual animals. Also, he felt students should be encouraged to combine their experiences with zoo animals with observations in the wilds, and continue to work with keepers to learn husbandry and care. Dr. Grand concluded that zoos should be a repository of animals that have not been subjected to gadgets, and that there is a genuine fear that our zoos might turn into an entertainment industry such as Daktari.

Commissioner Gordon stated that the difference in animals in the wilds and animals in zoos had to be recognized and that research to improve their environment was probably necessary. Dr. Grand agreed that this was true but felt there were ways within the natural perspective to enhance their life.

8. Mike Uhtoff, 5151 NW Cornell, Portland

Mr. Uhtoff did not feel that zoos should display all exotic animals, but should be a display of animals native to the region. He also was against behavioral engineering, in that he felt we had done enough to the animal by capturing it and shutting it up in cages.

Commissioner McCreedy asked Mr. Uhtoff if he felt any portion of the budget should be spent on research. Mr. Uhtoff replied that if given a certain amount of money and a choice the money should be spent on exhibiting local animals in a natural state.

9. Richard Werner, DVM, 4905 SW 77, Portland

Dr. Werner stated that when the use of behavioral engineering techniques were suggested for the zoo it had seemed like a good idea. However, as it was used more and more Dr. Werner became less impressed. Dr. Werner questioned the advisability of placing animals in a strange environment and then stressing them with mechanical gadgets expecting them to react in a certain way. He also questioned whether these gadgets would enhance conditional stress and delay diagnosis of diseases. Dr. Werner felt the keepers were the main key to observing changes in the animal's behavior and signs of illness.

10. John Piacentini, 6905 SW Laber Rd., Portland

Mr. Piacentini stated that he was not an expert in running a zoo, however, he did know what he expected and wanted the zoo to be. He felt the purpose of a zoo was to collect and exhibit animals, and that it should be done in as natural a habitate as possible. He stated that mechanical devices, causing an animal to react in a certain way misrepresented the natural reactions of an animal, and visiting children were being educated to believe that was the way animals were suppose to behave. Mr. Piacentini cited an experience he had at the zoo with the Mandrill. He stated the game was amusing at first but then the animal appeared to become annoyed when he did not deposit another coin. Mr. Piacentini also questioned why other zoos did not do this type of research and did not feel it was the taxpayers responsibility.

11. Judith Bieberle, 7150 SW 8th Ave., Portand

Ms. Bieberle was not present, however, left a written statement which the Chairman read (statement attached).

12. Stu Mechlin, 400 SW Kingston, Portland  
Curator, International Rose Test Garden

Mr. Mechlin stated that as a taxpayer he felt that the present administration at the Zoo was providing the taxpayer with a return on their investment. He felt the money spent on behavioral engineering only benefited a small amount of animals and a small amount of people.

13. John L. Blackwell, 4033 SW Canyon Rd., Portland  
Director of the Forestry Center

Mr. Blackwell stated that during the last few years, attendance at the Zoo had increased and this increase benefited the Forestry Center. He attributed the increase in attendance to Warren Iliff. He was concerned that the improving trend continue. Mr. Blackwell was also concerned that Mr. Iliff's position was being jeopardized by calling his own staff to a public meeting to question his guidance. He urged the Board to allow Mr. Iliff to carry out his job.

Commissioner Gordon stated that Mr. Blackwell's feelings were appropriate for the private sector, however, in the public sector the public was better served by the Board receiving all of the input possible. Councilman Bartels stated that a determination on how public money will be spent is not the authority of the administrator but the authority of the public board and is determined through a budgetary process, and that the decision on whether behavioral engineering should exist or not exist is a decision to be made by the board and not by the administrator. Commissioner McCreedy stated that this was a policy decision and would be made by the Board, that the administrator only made the recommendation. Mayor Robnett stated that through the budget process behavioral engineering had been budgeted, and once budgeted it was the director's authority to carry out the program. He felt that the staff at that point should discuss the program with the director and not by-pass the director and go straight to the Board.

14. Warren Iliff, Director, Zoo Division, Metropolitan Service  
District

Mr. Iliff made a statement on policy adopted by the Board on February 11, 1977, and the effect that behavioral engineering had on this policy (statement attached). Mr. Iliff also presented a breakdown of the present budget allocations for behavioral engineering research (attached).

Commissioner McCready requested that figures be obtained outlining the amount spent on behavioral engineering and in relation to the total budget. She questioned Mr. Iliff's strong comments against behavioral engineering after his recommendation that the Board adopt a budget including this research. Mr. Iliff stated that the research portion of the budget had been reduced from previous years and combined with education. He also stated that his recommendation had been a mistake and the issue of behavioral engineering should have been addressed at budget time.

Dr. Robert Grimm presented the Zoological Society's official position on behavioral engineering as follows:

1. The Society has not taken a position on the behavioral engineering programs at the Zoo;
2. That any member of the Society Board or membership who testifies does so as an individual and not as a member of the Society; and
3. That the Society is at the disposal of the MSD to help study and resolve the matter.

Commissioner Miller declared the public hearing closed.

During Board discussion, Commissioner McCready stated that her concerns as to whether or not any portion of the budget should go for researching behavioral engineering had not been satisfactorily addressed, and she did not feel the Board should make a decision at the present time. She felt the proper time for determining the existence of the program was at the next fiscal year budget sessions. Commissioner McCready also felt the Board needed further information on costs of personnel and operation of the program. She stated that at present she felt research should be kept minimal and in the interest of the animals. Councilman Bartels agreed that a decision should not be made that day, and considering Commissioner Schumacher's request for a delay. He did, however, feel that a decision should be made as soon as possible. Commissioner Gordon agreed that a decision should be made in the very near future.

The January 13, 1978, Board meeting was scheduled for continuation of discussion and decision on the behavioral engineering program. Mr. Iliff will present the Board with budgetary information on operation of the program.

OTHER BUSINESS

Commissioner McCreedy moved to consider agenda item 77-967 under Other Business. Councilman Bartels seconded the motion. The motion carried unanimously by roll call vote (Commissioner Gordon was not present).

77-967 CONTRACT 77-123 - MARINE DROPBOX CORPORATION

Mr. Norr reviewed the proposed contract between Marine Dropbox Corporation and MSD to allow Marine to accept wood and wire cables as a processing facility as outlined in MSD Code Section 12.02.030(13). Mr. Gisvold stated that the limited agreement is similar to those already approved for Metropolitan Disposal Corporation and Resource Recovery Byproducts. Mr. Norr stated that Marine Dropbox does not accept material other than wood and cables and does not accept materials from any other commercial hauler or the public.

Mayor Robnett moved to approve the limited agreement, Contract 77-123, allowing Marine Dropbox Corporation to operate as a processing center. Commissioner McCreedy seconded the motion. The motion carried unanimously by roll call vote. (Commissioner Gordon was not present.)

There being no further business to come before the Board, the meeting adjourned at approximately 6:30 P.M.