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SCIENCE FOR THE BLIND.

SCIENCE FOR THE BLIND, BALA CYNWYD, PA.

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THE REPORT ON SCIENCE FOR THE BLIND, A NONPROFIT ORGANIZATION, DETAILS PAST AND PLANNED GROWTH. THE ORGANIZATION HAS BEEN PROVIDING SCIENTIFIC INFORMATION ON TAPE SINCE 1955. OVER 2,000 TAPES ARE CURRENTLY CIRCULATED MONTHLY, WITH SELECTIONS FROM SCIENTIFIC PERIODICALS, LECTURES, AND BOOKS. IN 1964 THE INSTRUMENTS AND AIDS PROJECT WAS BEGUN TO PROVIDE SPECIAL GADGETS OR INSTRUMENTS TO THE BLIND WORKING IN SCIENTIFIC AND TECHNICAL FIELDS SO THAT THEY CAN COMPETE ON A MORE EQUAL BASIS WITH THEIR SIGHTED COWORKERS. THE PROJECT ALSO AIMS TO ASSIST ANY BLIND PERSON WHO NEEDS INSTRUMENTS TO PERFORM TASKS CONNECTED WITH HIS HOBBY OR HIS EVERYDAY LIFE AS WELL AS HIS WORK. INCLUDED IN THE REPORT ARE THE ORGANIZATION'S FINANCIAL REQUIREMENTS AND DESCRIPTIONS OF THE JOBS WITHIN IT. CURRENT AND FUTURE PROJECTS AND EQUIPMENT ARE DETAILED. (AUTHOR/JD)

SCIENCE FOR THE BLIND

Summer 1967

Instruments and Aids
221 Rock Hill Road
Bala Cynwyd, Pa. 19004

Tape Circulation
Box 238
Haverford, Pa. 19041

Offices
Bala Cynwyd

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SUMMER 1967

INTRODUCTION

For ten years Science for the Blind operated as a small organization serving a relatively few blind people interested in science. During this time, with no real intent on our part, we have gradually taken on additional projects, and more people have turned to us for answers to questions and problems involving careers and curricula in technical fields. Our small staff has struggled to keep up with increased quantities of correspondence, paperwork, technical services and recorded material. Because our goal has consistently been to keep the cost of operation down, we have resisted the addition of personnel and rented space.

In the past two years, however, it has become increasingly clear that Science for the Blind has a valuable part to play in service to the blind -- too valuable to be hindered by inadequate staff and inadequate facilities. We have, therefore, concluded that 1967 should be our year of commitment - commitment to establishing Science for the Blind as an independent* non-profit organization of firm significance in serving the blind - commitment to obtaining staff

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* Science for the Blind has been a division of The Working Blind, Philadelphia, and will shortly be incorporated, with its own Board of Managers. We will continue to operate as a subsidiary of The Working Blind, sharing some of the facilities which are applicable to our needs, such as public relations and fund raising, and cooperating in every way possible to improve services to the blind, both locally and nationally.

and facilities of sufficient scope to provide the services which are being asked of us and to plan for those which will be asked of us in the future. Some steps have already been taken, others are planned. The report which follows details many of them.

HISTORY

Science for the Blind really began almost thirty-five years ago, when T. A. Benham, blind since the age of two, decided to become an engineer. Throughout his academic years he was completely dependent on his father, sister, friends and paid student readers for all of his course material. Because time and readers were lacking, he had virtually no opportunity to explore current literature in his field. When he began teaching physics at Haverford College a few years after graduation, his need for up-to-date articles and books became paramount. For over ten years his wife and loyal friends kept him abreast of developments in his field. He thought often, though, of the many blind people interested in science who might not be so fortunate as he in securing help.

In 1955, after several years of searching for necessary funds, Professor Benham established Science for the Blind on a grant of $2,000.00 plus a number of small donations, with which he built a six-stage duplicator of his own design and purchased enough tape to get things started. Haverford College furnished space for the operation.

With information provided by organizations serving the blind, and through his own contacts, Professor Benham located some 60 blind people in the United States interested in receiving current scientific material on tape. Some were science hobbyists who had never completed a formal education, others were Ph.D.'s in various scientific fields. Mr. Benham's own readers formed the nucleus of the volunteer group transferring articles to tape.

For the first five years Science for the Blind was run by volunteers under Mr. Benham's direction, with only one paid employee: the secretary. Two periodicals were duplicated and circulated monthly: Science Recorded, containing material of a technical nature from current literature, and Timely Topics, covering general, science-in-the-news type articles from Time and the New York Times. In addition, material too long or technical for circulation in Science Recorded was collected on tapes available on request and called Extras. A few technical books were also duplicated. Financial support came from charitable organizations in the area, from individual donations, and from the small fee ($10.00/year) charged to Listeners. The small fee was possible only because tapes are returned, erased and reused.

In 1960 Lee Fuller, present Business Manager, became secretary to the organization and two other part-time employees were hired: a blind duplicator operator (Dolores Coombs), and a girl to handle tape circulation. The addition of a number of volunteer readers throughout the country sparked a new influx of material. Consumer Reports became a monthly, followed in a short time by Radio Digest and Popular Science; children's science books were recorded and collected into a Children's Science Series. More technical books were obtained. The list of Extras grew. The General Science Monthly, non-technical and aimed at high school students and adults with only general science background was added. Plans are currently being made to increase the number of periodicals still further.

Today Science for the Blind circulates almost 2000 tapes monthly to a mailing list numbering over 250.

Since many people share their tapes with others and some of the tapes go to schools and libraries, it is estimated that Science for the Blind reaches close to 1000 blind people in the U.S., Canada, and several foreign countries. Tapes are duplicated on a new nine-stage, high speed duplicator. Five blind people (including Mr. Benham) and several sighted people are employed, most part-time, to handle duplication, circulation, editing and correspondence. Because of increased support, sales of blank tape and duplicating service, and the increased rent-free space provided by Haverford College, the fee paid by the blind for borrowing any (or all) Science for the Blind tapes remains the same: $10.00/year.

This growth in Science for the Blind readership is not surprising, since moreand more blind people each year are entering the scientific and technical fields. Those fortunate enough to find means of compensating for their handicap make a success of it. Those not so fortunate have heretofore been forced to seek a livelihood in another direction. Now, however, these people, too, can look forward to some assistance.

Computer training programs for the blind available in several locations throughout the country are one aspect of the progress of the blind in scientific fields. Recently Science for the Blind was designated as the central depository for taped material on computer science. Through the years Science for the Blind has tried to provide information on job and training opportunities in all technical fields. Extras have included material on aids for the blind, and on opportunities for the blind in specialized areas.

But information alone is not adequate.

From many inquiries and requests for help emerged the Science for the Blind Instruments and Aids Project. Professor Benham recalled his own problems with electronic equipment throughout his student days and in his experience as an employee and consultant in the engineering field. He, fortunately, had the knack for "making do", for contriving some tangle of wires and gadgets that would convey information from a meter to his finger tips or ears. Many blind would-be scientists or technicians lack this particular capability. The instruments they need are not available from well established organizations, which supply a number of gadget-aids for the blind but aim only for the general blind market and not for the specialized, seldom-frequented fields.

Occasionally, when a blind person wrote to Science for the Blind detailing need for some particular instrumentation, an old transistor radio, a few paper clips, a noise maker, some nuts and bolts, and a wad of chewing gum were united into an aural indicator or a tactile meter by a technician stolen from another company for a few precious hours. These aids, though simple and unadorned, were welcomed by the recipient, since such an instrument often meant the difference between his getting or keeping the job of his choice, and being unemployed.

Too often, however, because funds were lacking, the request had to be refused. The struggling young scientist had to be satisfied with information.

In 1964, armed with requests which proved the need, Mr. Benham set out to acquire $20,000.00 a year for three years for establishment of the Science for the Blind Instruments and Aids Project. The first two and one-half

years were lean indeed, but in spite of the always present handicaps of inadequate technical personnel and shoe string financing, the Instruments and Aids Project became a reality.

Grants from the Widener Foundation and The Seeing Eye gave the project its start but they were insufficient for full scale operation. As a Division of the Pennsylvania Working Home and Philadelphia Association for the Blind, SFB was unable to launch a fund raising campaign of its own of sufficient scope to fulfill the need. Because of serious understaffing and lack of funds to guarantee salaries for adequate staff, maintenance of the Instruments and Aids Project in addition to the Tape Circulation Department created a scramble which rarely allowed the staff to see daylight. Funds secured were used for part-time technical help and for purchase of instruments and parts. James Swail of the Canadian National Research Council, Ottawa, provided completed instruments for resale at cost. Inventory was built up and stock instruments were sold. A few inexpensive special projects were undertaken. The number of blind scientists assisted by the Project grew. In the Spring of 1966 much needed space was rented to house offices and laboratories.

Early in 1967, Mr. Benham and his associates reviewed the entire Science for the Blind program and came to a conclusion which is stated in the preamble to this report. Both aspects of Science for the Blind, Information and Instrumentation, had proved themselves. Both were necessary to the progress of the blind in this ever more technically oriented world of the twentieth century. The time for a do-or-die commitment had come. The staff

could no longer cope with the demands being placed on SFB. There was no money available to guarantee salaries for additional full-time staff.

The only course open was to hire part-time people who would not be left without means of support if Science for the Blind failed. We hired them with the intention of doing our best to meet the demands of our blind clients until our funds were exhausted -- or until additional funds became available to do the job right. We also began making concerted efforts to insure our survival. The Working Blind was informed of our very serious financial problems with a request that they release us so that we might proceed with fund raising on our own. Our request was tabled for over four months, and with each month that passed, our six-month supply of operating funds became smaller. In the meantime, The Seeing Eye Foundation took a greater interest in the work that our Instruments and Aids Project had accomplished and in the potential for the future. In late April 1967 Science for the Blind, with both of its departments, was boosted into the realm of permanent reality by a grant of $13,000. from The Seeing Eye Foundation.

Shortly after receipt of this grant The Working Blind pledged support of Science for the Blind through guaranteed budget allotments and fund raising campaigns. SFB will become an independently incorporated subsidiary of The Working Blind with its own charter and Board of Directors. Its scope will continue to be international with emphasis on assisting blind persons in the United States and Canada to obtain and keep employment in technical fields.

The real work of Science for the Blind is only just beginning. The responsibility to those supporting us and to the blind depending on us have been increased astronomically in the past few months. We have an obligation to turn a struggling little service agency into an efficient, purposeful, and significant organization. The task will not be easy. It will take time for recently acquired staff to become thoroughly familiar with the massive detail which Science for the Blind presents and to take over some of the responsibility currently handled by the Director. Special projects and production runs will require time for organization and progress to efficiency. The staff is still quite incomplete, and finding the right people to fill the jobs will require time and diligence.

Building Science for the Blind to its full scope will not be a simple job, but it is one full of challenge and interest. The following notes include comments on the people, projects and plans which currently make up Science for the Blind. It should be realized that during the next two to three years Science for the Blind will be experiencing a time of even more rapid growth than heretofore, and that what seems far-reaching today may be obsolete tomorrow.

ADMINISTRATION

Board of Managers: As a Division of The Working Blind, Science for the Blind has functioned to date without the benefit of advice and counsel from a qualified and interested Board of Managers. The formation of such a Board will be one of the major factors contributing to the rapid and significant growth of Science for the Blind in the near future. With our incorporation as an independent subsidiary of The Working Blind, a Board of Managers will be chosen to work in close cooperation with the SFB staff. Three Board members with particular interest in Science for the Blind will be selected from The Working Blind Board; five others from the community. All will be selected on the basis of their willingness to devote considerable time and effort to building Science for the Blind.

Board Members will be asked to assist in accomplishing SFB objectives both through their own efforts and through the help of members of Advisory Councils, which they will be asked to establish both for particular projects and for continuing assistance. We therefore require people in a position to secure the services of others in specialized fields on a voluntary basis. We will seek help in such areas as fund raising, technical projects, and all aspects of business management. Because of our scientific orientation, emphasis will be placed on scientific fields and background in choosing Board Members.

Board meetings will be frequent (monthly), some combined with informal staff meetings so that staff and Board Members will have the opportunity to become acquainted and to communicate. Advisory Councils will meet less frequently (perhaps two to four times a year) as scheduled by the responsible Board Member. When feasible, Council Meetings will coincide with Board Meetings.

Personnel: Because of increased activity, new employees have been added to the Science for the Blind staff in the past six months, all part time and all employed at our lab-office facility at 221 Rock Hill Road. A full time secretary hired in March of 1966 left in September and it was decided at that time to use part time people with specialized skills who might later be interested in full time employment as their situations change and Science for the Blind grows, and who would not require long term job commitments (our budget prevented long-term guarantees).

The following job descriptions and organizational chart indicate presently filled positions and positions which will be filled in the next year to 18 months. At the moment some individuals are covering more than one job. In the near future some full time jobs may be held by a part time person with an assistant. Science for the Blind lends itself well to part-time workers since most jobs can be done simultaneously by several people and it is not necessary to have the offices fully staffed from 9 to 5. We have found that we can hire talented people at a more reasonable fee on a flexible part time basis. While no new part-time people will be added to the salaried staff, we will continue to use part time people with SFB experience in these positions.

(In the financial charts, anything over 30 hours a week is listed as full time; salary is based on the number of hours worked.)

SCIENCE FOR THE BLIND
ORGANIZATIONAL CHART

- Technical Advisory Council
- Board of Managers
- General Advisory Council
- Engineering Consultants
- Director
- Associate Director
- Public Relations
- Technical Scientific Editing
- Engineer
- Business Manager
- Volunteer Scientists
- Senior Technician
- Machinist
- Services Coordinator
- Services Secretary
- Accounting Sales-Bkkp.
- Volunteer Reader's
- Clerical Assistant
- Assistant Technician
- Sr.Dupl'tor Operator
- Senior Clerk
- Volunteer Workers
- Non-tech Editing
- Duplicator Assistants
- Mailing Clerks
- Technical Assistants
- Technical Assistants
- Shipping Clerk

DIRECTOR $15,000 to $20,000

Directs all phases of organizational activity.

Primary responsibilities include direct work with, or supervision of technical aspects of both Tape Circulation and Instruments and Aids Program, including editing of material for circulation; production of stock instruments; research and development work for new instruments; special instrument projects.

Works with Associate Director and Board of Managers to make policy decisions and long range plans. Works with Chief Engineer.

Requirements: College degree and technical or scientific background.

DIRECTOR: T. A. Benham

B.S. Haverford College 1938
M.S. Haverford College 1945
Field: Physics. Graduate work also done at University of Pennsylvania
Fellow Institute of Electronic and Electrical Engineers.

Experience: Associate Professor of Engineering, Haverford College 1942 - date
Background in Teaching, Engineering, Consulting, Development of Guidance Device for the Blind, Service to Boards of organizations serving the Blind.
Founder, Science for the Blind 1955
Editor, Science for the Blind 1955-1966
Director, Science for the Blind 1966 - date

Blind since age 2
Married, 3 children
Age 52

The organizational chart and job descriptions are set up to indicate that the Director is mainly concerned with the technical aspects of Science for the Blind and the Associate Director with the non-technical aspects. This may be reversed but one of the Directors should have scientific background, preferably in electronics.

One or the other of the Directors may be blind.

ENGINEERING CONSULTANTS

Modest Retainer
(Not to exceed $200./mo. average)

Act as technical advisors to assist Director and Engineer in all aspects of SFB Instruments and Aids research, development and construction.

Undertake independent investigation of assigned or self-appointed projects.

Attend SFB Technical Conferences on request (two to five times a year).

Requirements: Demonstrated ability and interest in the field.

CONSULTANT: James C. Swail

B.S.C. McGill University 1946
Field: Electronics

Experience: Engineer, Canadian National Research Council, 1946 to date.
Background in development of Aids for the Blind.
Service to organizations for the Blind.
Consultant, Science for the Blind 1964 to date

Blind since age 4.
Married, 4 children
Age 42.

TECHNICAL AND SCIENTIFIC TAPE EDITORS Piece Rate

Work with Director to compile and edit tape recorded material for inclusion in Science for the Blind publications. Must organize materials and make announcements on tape. Must work with minimal supervision.

Assist with any technical or difficult contract editing.

May be blind.

Requirements: Some scientific background and exceptional skill in handling tape recording equipment. Must write braille and have an acceptable microphone voice.

Not yet filled. (Currently handled by Director.)

ENGINEER $8,000 to $14,000

Supervise Instruments and Aids Project including production work. Work with Director and Associate Director to expand and improve Instruments and Aids Project including development of special instruments. Travel to other agencies working in similar fields to coordinate SFB activities with theirs; travel to assist individuals to solve special problems connected with their employment. Assist Director with the coordination of activities of the Engineering Consultants and Volunteer Scientists working on special projects for the Blind.

Requirements: Engineering degree or comparable experience.

Not yet filled.

VOLUNTEER SCIENTISTS

Assist with projects in specialized fields in Instruments and Aids project. Assist blind persons in own locality by helping them to use SFB instruments or by helping SFB to develop instruments needed.

Pursue with SFB help any projects of possible benefit to blind clients in technical fields. These may be projects instigated by SFB or projects with SFB approval which other organizations, the Volunteer Scientist, himself, or anyone else may instigate. Volunteer Scientists will be encouraged to develop and pursue original ideas.

SFB will, at the discretion of the Director and the Engineer, support certain projects by providing grants to cover out-of-pocket expenses.

Professor Thomas Carver of Princeton University has recently been assisting with the development of a light probe of his own design.

SENIOR TECHNICIAN $6,000 to $10,000

Work under direction of Chief Engineer to accomplish projects outlined; handle production of Instruments, repairs, adaptations, etc.; delegate appropriate portions of work load to technical assistants and supervise their work; maintain shop and production inventory (parts and incomplete projects) in cooperation with Services Coordinator.

Requirements: Ability to get along well with and help others; completion of 2-yr. electronics course or equivalent and ability with mechanics of small instruments and equipment.

SR. TECHNICIAN: Natt Emery

B.S. Haverford College, 1967

Experience: 3 years as Technician in Research Dept. Bethlehem Steel Company.
U.S.Navy - Electronics Technician on Geodetic Survey Ship out of Brooklyn, N.Y.

Married, one child.
Age 28.

ASSISTANT TECHNICIAN $4,000 to $7,000

Assist Senior Technician with any tasks outlined.

Requirements: Good electronics and mechanical aptitude with some training or experience.

ASST. TECHNICIAN: Gino Cucchiara

Attended Temple University, Phila.

Experience: 8 years with U.S.Marine Corps.
Sgt. Major in the Signal Corps.

Construction Company supervisor for 25 years.
Technician in television industry and G. E.
Space and Electronics Center.

Married, two sons.
Age 47.

MACHINIST $5,000 to $10,000

Same as Technician

Requirements: Experience with all types of model shop machines and ability to get along well with and help others.

MACHINIST: Thomas Nitterour

Dobbins Technical High School
Dobbins Evening School - Advanced Courses

Experience: U. S. Army Signal Corps - Korea
Technical Assistant with Bionics Instruments

Single
Age 33.

TECHNICAL ASSISTANTS $1.50 to $2.50 an hour

Work under supervision of technician or machinist; prepare instruments for shipment to blind clients. May be blind.

Requirements: Electronics aptitude and/or good manual dexterity.

TECHNICAL ASSISTANT: Charles Damico

Graduate of Overbrook School for the Blind.

Experience: Clerk and Technical Assistant at Phila. Assn. for the Blind and The Working Blind.
Radio Amateur, holds General Class License.

Blinded at age 15 by accident.
Married, 2 children.
Age 33

ASSOCIATE DIRECTOR $10,000 to $15,000

Assists Director in all phases of work.

Primary responsibilities include: coordination of SFB activities both internally and with other organizations; publicity and public relations.

Works with Director and Board of Managers on one hand and with Business Manager on the other to insure smooth operation of business and service functions.

Requirements: College degree or college background with demonstrated ability and significant experience.

ASSOCIATE DIRECTOR: Lenore M. Fuller

B.A. University of Cincinnati 1954
Fulbright Fellow, Univ. of Durham, England 1954-55
Teaching Fellow, Univ. of Brit. Col. 1955-56
Fellow in Greek, Bryn Mawr College 1956-57
Field: Classics (Greek, Latin, Ancient History)

Experience: Background in Teaching, Business, Writing.
Secretary, Science for the Blind 1960-64
Business Manager, Science for the Blind 1964 - Date
Will become Associate Director, Science for the Blind, October 1, 1967.

Married, 2 children
Age 34

The organizational chart and job descriptions are set up to indicate that the Director is mainly concerned with the technical aspects of Science for the Blind and the Associate Director with the non-technical aspects. This may be reversed if background and training of directors are reversed, but one of the Directors should have scientific background, preferably in electronics.

One or the other of the Directors may be blind.

PUBLIC RELATIONS — Retainer

Assist with publicity for the purpose of fund raising. Educate the sighted public to the needs and capabilities of blind scientists for the purpose of improving employment possibilities and stimulating interest in improving and advancing the state of the art of instrumentation for the blind.

PUBLIC RELATIONS CONSULTANTS: Thomas Bright), Roberta Cantz) of Kampmann and Bright

With the assistance of: Paul B.Hartenstein, Director of Development, The Working Blind.

BUSINESS MANAGER $6,000 to $10,000

Work with Associate Director to ensure efficient function of business operations; handle personnel; keep track of business operations and report to Associate Director any project which does not seem to be running well; supervise all office and tape circulation department staff; coordinate departments; schedule work, vacations, etc.; handle business correspondence; work with Services Coordinator to keep up inventory records and coordinate such records with the accounting and sales departments.

Requirements: Some college background and complete familiarity with SFB activities and philosophy.

BUSINESS MANAGER: Position currently filled by L. Fuller (see Associate Director) will be vacated October 1, 1967. Will remain vacant until some staff member displays capability for handling this key position. It is anticipated that at least a year of experience with SFB will be required for satisfactory handling of responsibilities.

SERVICES COORDINATOR $5,000 to $8,000

Work with Business Manager to coordinate activities of Tape Circulation Department (located at Haverford College) with business office and Instruments and Aids Department (located in Bala Cynwyd).

Supervise and coordinate non-technical editing; schedule work in Tape Circulation Department; maintain mailing list and supervise mass mailing to inform the blind community of the activities of Science for the Blind in both Instruments and Aids and Tape Circulation Departments.

Work with Business Manager and Associate Director to plan publicity needs and schedule mailings in keeping with requirements of Instruments and Aids and Tape Circulation Departments.

Supervise work of mailing clerks, duplicator operators, and volunteer workers; supervise keeping of all inventories and work with Business Manager and Bookkeeper to incorporate this information in the over-all business picture; work with technician and machinist to coordinate instrument production with sales requirements.

Work with Services Secretary to coordinate Volunteer Readers activities with Tape Circulation Department needs.

Requirements: Ability to organize and to work well with and help others. Must be able to type.

SERVICES COORDINATOR: Sue Pittenger

Penn State University

Experience: Girard Trust-Corn Exchange Bank, Trust Department; monitored radio station by tape for private survey firm; Science for the Blind, April 1967 to date.

Extensive organizational experience; particularly political organizations.

Married, three children.
Age 36.

SENIOR DUPLICATOR OPERATOR $1.50 to $3.00 an hour

Duplicate any tapes handled by Science for the Blind, either for Listeners or for outside contract; supervise or do the following: label tapes, splice tapes, maintain close quality control to prevent distribution of poorly recorded tapes.

Work with Senior Clerk to keep Tape Circulation Department running in a neat and orderly fashion; assist Senior Clerk whenever possible; supervise work of Duplicator Assistants. May be blind.

Requirements: Good manual dexterity, sense of orderliness, ability to help others.

SENIOR DUPLICATOR OPERATOR: Dolores Coombs

Overbrook School for the Blind
B.S. Ed. Univ. of Pa. 1955
Graduate work at Syracuse University
Field: Education

Experience: Home Teacher of the Adult Blind
Supervisor, Home Teachers, Pa. Dept. of Welfare
Extensive volunteer work with Council of International Visitors at Philadelphia Civic Center.
Duplicator Operator, Science for the Blind, 1960 - date

Blind since age 8, uses guide dog.
Married, no children

ASSISTANT DUPLICATOR OPERATORS $1.25 to $2.50 an hour

Responsible to Services Coordinator but under direct supervisior of Senior Duplicator Operator; assist Senior Duplicator Operator or Senior Clerk in any way possible. May be blind.

Requirements: Good manual dexterity

ASSISTANT DUPLICATOR OPERATOR: Claire Lawson

Karlton Beauty College

Experience: Beautician;
3 years National American Insurance Company,
Science for the Blind, 1961 to date.

Married, four children.
Age 39.

SENIOR CLERK $3,000 to $6,000

Handle circulation of tape to Science for the Blind Listeners; check tapes in and out; supervise or do the following: package and open tapes; check all returned tapes which will be reused without erasure; assist with quality control on all tapes sent out from Science for the Blind; maintain tape circulation department in neat and orderly fashion.

Work with and assist duplicator operators when necessary.

Assist Services Coordinator with maintenance of inventory in tape circulation department.

Requirements: Some supervisory ability. Must get along well with and be able to help others. Typing ability helpful.

SENIOR CLERK: Dede Duncan

Mater Misericordia Academy
Miss Sayard's School
Field: English Literature

Experience: Independent Contractor in Marketing Research; Security Work, Security Shopper, Comparison Shopping, etc.
7 years

Married, 4 children
Age 49.

MAILING CLERKS $1.25 to $2.50 an hour

Assist with any shipping or mailing procedures for Instruments and Aids or Tape Circulation Departments; package instruments; prepare mass mailings; package or open subscriber tapes.

Responsible to Services Coordinator but will work mostly under supervision of Senior Clerk in Tape Circulation Department. May occasionally work under direct supervision of technician, Services Secretary or Bookkeeper. May be blind.

Requirements: Reasonable manual dexterity.

MAILING CLERK: Marge McDonald

Fairhill Sight Saving School
Overbrook School for the Blind

6 years experience in packaging for various Paper Box companies.

Partially sighted.
Married, seven children.
Age 41.

VOLUNTEER WORKERS — Reimbursement for expenses incurred.

Responsibile to Services Coordinator but under direct supervision of Tape Circulation or Instruments and Aids Project Departments. Assist with any phase f tape circulation department or instruments and aids department in any way possible; for example, wrap and open packages, deliver and demonstrate instruments, transport blind Science for the blind employees.

Volunteer workers have not been used in the recent past since no supervisor was available to organize their activities. It is hoped, however, that the Senior Clerk now being trained will be able to handle such supervision.

NON TECHNICAL TAPE EDITORS — Piece Rate

Edit non-critical Science for the Blind or contract material which does not require knowledge of the subject matter.

Requirements: Excellent skill in handling tape recording equipment.

TAPE EDITOR: Henry Furtak

Sight conservation classes and Overbrook School for the Blind.

Experience: Lester Piano Company, piano tuner; Darkroom technician. Science for the Blind 1963 to date.

Partially sighted until 1948; gradual loss of vision, blind since 1965.

Unmarried.

SERVICES SECRETARY $4,500 to $6,000

Take responsibility for activities of Volunteer Readers, reporting to Services Coordinator; assist Business Manager and, if necessary, Services Coordinator; type letters, handle routine correspondence; maintain files; assist Services Coordinator with mass mailings; assist Director and Associate Director whenever necessary.

Requirements: Excellent secretarial skills and ability to assume responsibility and work with minimal supervision.

SERVICES SECRETARY: Eleanore G. Besser

University of Chicago, Ph.B. program
Evening courses at Roosevelt College, Chicago.
Field: Social Sciences and Psychology

Experience: Executive Secretary, Maling Bros. Shoe Company; 8 years legal secretarial experience in Chicago; 2-1/2 years medical (Samuel Bellet, M.D.) and legal (Silver and Barsky, Esqs.) experience in Philadelphia. SFB - Jan., 1967 -date
Extensive organizational experience.

Married, 3 children.
Age 40.

VOLUNTEER READERS

Read scientific material onto tape. Material may be designated by Science for the Blind or chosen (with SFB approval) by the individual reader. A sample must be submitted to SFB before a reader is accepted. Readers use personal recording equipment except for those in a position to read at the SFB facilities in Haverford. At the discretion of the directors, a tape recorder may be provided on loan to a volunteer reader whose monthly contributions to the SFB tape circulation department and/or other organizations serving the blind or blind individuals seems to warrant such an investment.

Instructions for recording material for SFB and the tape on which recordings are to be made will be supplied. Reimbursement for any expenses incurred by volunteer readers on behalf of SFB will be made on request from the reader. It is expected that such expenses will be minimal and any expenditure over $5.00 should have prior approval.

Currently we have about forty volunteers who read articles and selections as their time permits for Extras and occasional insertions in other periodicals. The following record an entire periodical (1½ to 3 hours of listening time) each month.

Grace Burkett, Bryn Mawr, Pa.
TIMELY TOPICS

Thomas Everist, Yardley, Pa.
POPULAR SCIENCE

Henry Kuhn, Williamsville, N.Y.
RADIO DIGEST

Dr. Frank Levy, Vestal, N. Y.
CONSUMER REPORTS

Edwin Randall, Wallingford, Pa.
GENERAL SCIENCE MONTHLY

Alan Warren, Philadelphia, Pa.
SCIENCE RECORDED

Plans are in progress for two new periodicals:

COMMUNICATIONS of the ACM
Recorded by J. L. Carr and Computer Sciences

COMPUTING REVIEWS
Recorded by Princeton Unit, Recording for the Blind with assistance for back issues from John Walters and staff members of I.B.M., California.

ACCOUNTING AND SALES - BOOKKEEPER $5,000 to $7,000

Keep the books of the organization and prepare statements whenever necessary; keep cost analysis records on individual projects designated by Directors.

Work with the Business Manager to determine the relative success of the various projects and find the solution to any problems involving the financial aspects of Science for the Blind; handle all invoicing and preparation of orders; supervise shipment of orders through Technical Assistants or Shipping Clerks with the help of the Services Coordinator.

Requirements: Training and experience in full charge bookkeeping.

BOOKKEEPER: Pearl Kramer

Boston University, Evening College of Business Administration; Harvard University - Evening Extension Courses.
Field: Business Administration.

Experience: Assistant Bookkeeper, Beth Israel Hospital, Boston; Office Manager, Full Charge Bookkeeping, Jewish Memorial Hospital, Roxbury; Full charge bookkeeping (15 years) Israel Klein Co., Phila., Atlas Assoc., Ardmore; Scotch Glen Products, Bryn Mawr.
U. S. Navy, 3 years (WAVES). SFB - Jan., 1967 to date.

Extensive organizational experience; paid and volunteer.

Married, 2 children.

CLERICAL ASSISTANT $1.25 to $2.50 an hour

Assist with work designated by bookkeeper.

Requirements: Ability to type and use adding machine and other office equipment (such as Spirit Duplicator, Addressing Machine, etc.)

Not filled.

SHIPPING CLERK $1.25 to $2.50 an hour

Same as mailing clerks but will work mainly under supervision of technician and bookkeeper in Instruments and Aids Department.

Requirements: Reasonable manual dexterity.

SHIPPING CLERK: Claire Armstrong

St. Mary's Institute for the Blind, Lansdale, Pa.
Curtis Institute, Philadelphia
Field: Piano

Experience: Concert work with the Red Cross and the U.S.O. during World War II; Volunteer teacher of braille at Bordentown State Prison; extensive volunteer work.

Blind since age 7; uses guide dog.
Married, one son.
Age 41

Office and Lab Facilities: Since the Science for the Blind facility at Haverford College is, at the request of the College, being moved to a different location on the campus, certain changes are necessary. The new College location will be somewhat smaller than the present one and we will therefore store most of our inventory at the Rock Hill Road location, where Science for the Blind began renting about 1000 sq. ft. of space on a shared basis with a small electronics company just over a year ago. The Haverford College Lab will continue to handle all duplication and circulation of tapes for Science for the Blind publications. All other shipping (tapes and supplies as well as instruments and aids) will be handled at Rock Hill Road.

Since storage of inventory for sale requires considerable space, the Rock Hill Road location is beginning to show signs of strain. There will likely be additional space available in the building and as soon as the budget permits, we will arrange to expand facilities. The current space problem is compounded by the fact that some lab and storage space is now being taken for conversion into an additional small office for increased administrative staff. The space problem is, therefore, becoming critical.

It is anticipated that office space requirements for the future will be substantial. At the moment, the Director and the Business Manager share a small 7' x 11' office and another 10' x 12' office serves the remainder of the administrative staff, including bookkeeper and secretaries. Within one to three years small private offices should be provided for the following in the Administrative and IAP complex:

Director
Associate Director
Engineer
Business Manager
Services Coordinator

and larger shared offices for

Bookkeeper, Services Secretary and assistants (4 desks);

Technician, Machinist and Assistants (4 desks)

In the Tape Circulation Department, a small office should be provided for

Senior Clerk (could share larger office with Services Coordinator, if SFB were completely under one roof)

Total Space Requirements by 1969:

1000 square feet for office space

1000 square feet for Tape Circulation Department (currently provided rent-free by Haverford College)

2000 to 4000 square feet for IAP, inventory storage and shipping.

Total: 4000 to 6000 square feet

It should be recognized that an important function of Science for the Blind is response to queries from individuals and organizations. Some of these require detailed replies which draw from the combined experience of the organization and all members of its staff. Many require substantial research. To date this function has been handled inadequately.

Future facilities and staff must be geared to handle such requests efficiently. Staff members must therefore be supplied with the space and privacy required for research and contemplation of the questions, and dictating or typing the answers.

FINANCIAL REQUIREMENTS

Payroll

See following charts, pages 40, 41, 42

Other Financial Requirements

See charts, pages 43 to 47

1967

	1969	1967	IAP	Tape Circ.	Total
Director	H.T.		1500.	1500.	3000.
Assoc. Dir.	F.T.	4-Q only	975.	975.	1950.
Engineer	F.T.	N.F.	--	--	--
Technician	F.T.	P.T.	2500.		2500.
Machinist	F.T.	P.T.	2500.		2500.
Asst. Tech.	F.T.	P.T.	2000.		2000.
Tech. Asst.	F.T.	P.T.	1500.		1500.
Tech. Asst.	P.T.	N.F.	--	--	--
Bus. Mgr.	F.T.	Q,1,2, 3 only	2130.	2130.	4260.
Serv. Coord.	F.T.	P.T.	500.	1500.	2000.
Serv. Sec'y.	F.T.	P.T.	750.	2250.	3000.
Bookkeeper	F.T.	P.T.	1750.	1750.	3500.
Cler. Asst.	P.T.	N.F.	--	--	--
Sr. Clerk	F.T.			3600.	3600.
Mail. Clerk	P.T.			1000.	1000.
Sr. Dup. Op.	F.T.	P.T.		2500.	2500.
Asst. Dup. Op.	P.T.			1000.	1000.
			16105.	18205.	34310.

H.T. - Half Time
P.T. - Part Time
F.T. - Full Time
Q - Quarter
N.F. - Not Filled

- -

	1969	*	IAP	Tape Circ.	Total
Director	H.T.		3000.	3000.	6000.
Assoc. Dir.	F.T.		4680.	4680.	9360.
Engineer	F.T.		9000.		9000.
Technician	F.T.		6000.		6000.
Machinist	F.T.		6000.		6000.
Tech. Asst.	F.T.		5000.		5000.
Tech. Asst.	F.T.		3500.		3500.
Tech. Asst.	P.T.		2000.		2000.
Bus. Mgr.	F.T.		--	--	--
Serv. Coord.	F.T.		1000.	3000.	4000.
Serv. Sec'y.	F.T.		1000.	3000.	4000.
Bookkeeper	F.T.		2000.	2000.	4000.
Cler. Asst.	P.T.		500.	500.	1000.
Sr. Clerk	F.T.			4000.	4000.
Mail. Clerk	P.T.			3000.	3000.
Sr. Dupl Op.	F.T.			3500.	3500.
Asst. Dupl. Op.	P.T.			2500.	2500.
			43680.	29180.	72860.

H.T. - Half Time
F.T. - Full Time
P.T. - Part Time

* Transition 1967-1969

1969

	1969	IAP	Tape Circ.	Total
Director	H.T.	4000.	4000.	8000.
Assoc. Dir.	F.T.	5200.	5200.	10400.
Enginee	F.T.	10000.		10000.
Technician	F.T.	7000.		7000.
Machinist	F.T.	7000.		7000.
Asst. Tech.	F.T.	6000.		6000.
Tech. Asst.	F.T.	4000.		4000.
Tech. Assts.	P.T.	4000.		4000.
Bus. Mgr.	F.T.	3000.	3000.	6000.
Serv. Coord.	F.T.	1250.	3750.	5000.
Serv. Sec'y.	F.T.	1125.	3375.	4500.
Bookkeeper	F.T.	2500.	2500.	5000.
Cler. Asst.	P.T.	1000.	1000.	2000.
Sr. Clerk	F.T.		4500.	4500.
Mail Clerks	P.T.		4000.	4000.
Sr. Dupl. Op.	F.T.		4500.	4500.
Asst. Dupl. Op.	P.T.		3500.	3500.
		56075.	39325.	95400.

F.T. - Full Time
P.T. - Part Time
H.T. - Half Time
N.F. - Not Filled
Q - Quarter

1967

	IAP	T.C.	TOTAL
Materials for special projects and for research, development and investigation of additional instruments for SFB stock. *	$ 1,000.		$ 1,000
Rent **	900.	300.	1,200.
Printing	2,250.	750.	3,000.
Public Relations	1,000.	1,000.	2,000.
Travel and misc. expenses	1,500.	200.	1,700.
New Brochure	2,500.	2,500.	5,000.
Purchase of fixed assets (office and recording equipment)	1,000.	2,000.	3,000.
Maintenance fund for equipment and other fixed assets	400.	600.	1,000
	$ 10,550.	7,350.	17,900.

* This is a non-rotating fund and should not be confused with capital investment in stock instruments which will be sold and the money thereby returned.

** Assuming the Tape Circulation Department remains on the Haverford College Campus, rent free.

1968

	IAP	T.C.	TOTAL
Materials for special projects and for research, development and investigation of additional instruments for SFB stock *	$ 2,000.	---	2,000.
Rent	2,250.	750.	3,000.
Printing	1,500.	1,500.	3,000.
Public Relations	1,500.	1,500.	3,000.
Travel and misc. expense	1,500.	200.	1,700.
Brochure (included in Printing and Public Relations above)			
Purchase of Fixed Assets **	2,000.	2,000.	4,000.
Maintenance Fund, equipment and other fixed assets	400.	600.	1,000.
	$ 11,150.	6,650.	17,000.

* This is a non-rotating fund and should not be confused with capital investment in stock instruments which will be sold and the money thereby returned.

** Office furniture, tape recorders, electronics and machining equipment.

1969

	IAP	T.C.	TOTAL
Materials for special projects and for research, development and investigation of additional instruments for SFB stock *	3,000.	---	3,000.
Rent	5,250.	1,750.	7,000.
Printing	1,500.	1,500.	3,000.
Public Relations	1,500.	1,500.	3,000.
Travel and expense	1,500.	200.	1,700.
Brochure (included in Printing and Public Relations above)			
Purchase of Fixed Assets **	3,000.	1,000.	4,000.
Maintenance Fund for equipment and other fixed assets.	400.	600.	1,000.
	$ 16,150.	6,550	22,700.

* This is a non-rotating fund and should not be confused with capital investment in stock instruments which will be sold and the money thereby returned.

** Offices for technical staff; additional equipment, etc.

FINANCIAL REQUIREMENTS BY DEPARTMENT

INSTRUMENTS AND AIDS

	1967	1968	1969
Payroll	16,105.	43,680.	56,075.
Other	10,550.	11,150.	16,150.
	26,655.	54,830.	72,225.
Income anticipated (Return on labor investment when stock instruments are sold.	3,000.	6,000.	7,000.
Funds Needed	23,655.	48,830.	65,225.

TAPE CIRCULATION

	1967	1968	1969
Payroll	18,205.	29,180.	39,325.
Other	7,350.	6,550.	6,550.
	25,555.	35,730.	45,875.
Income Anticipated			
Service Fees	2,500.	3,000.	3,000.
Tape Sales and Misc. Projects	7,000.	7,000.	8,000.
Home Teaching Soc.*	3,500.	3,500.	3,500.
	13,000.	13,500.	14,500.
Funds Needed	25,555.	35,730.	45,875.
	-13,000.	-13,500.	-14,500.
	12,555.	22,300.	31,375.

* The Pennsylvania Home Teaching Society has supported Science for the Blind since its inception. The grant in 1966 was $5100. but previous years have averaged $3,000. to $3500. It is at present uncertain whether the 1966 increase will hold for 1967.

BUDGET 1967 - 1969

Total Operating Funds Needed

	1967	1968	1969
Instruments and Aids	23,655.	48,840.	62,225.
Tape Circulation	12,555.	22,230.	31,375.
	36,210.*	71,060.	96,600.

* $18,000. has been received from The Seeing Eye Foundation and an additional $12,000. has been pledged by The Working Blind.

CAPITAL INVESTMENT FUND REQUIREMENTS

Instruments and Aids — 20,000.

These funds will be used for inventory and will be replenished as the inventory is liquidated. For example, the following purchases have been made recently or are in progress.

100 Lafayette RK 142 Tape Recorders. Purchase of this quantity gives us a good discount price. Our blind technician can check the machines efficiently and our repair technician can see that they are in good working order for shipment. Stock will be liquidated in about one year. — 5,300.

100 Singer disc players. Large quantity purchased for good discount and efficient conversion to speeds appropriate for special use by the blind. — 3,000.

100 Tape Players. Efficient labor, and parts discounts require large purchase. — 8,000.

16,300.

Tape Circulation — 20,000.

Funds are required in this department for periodic purchase of large quantities of recording tape. Purchase in such quantity allows extremely good discounts which reduce the cost of the service operation and improve the modest profit made when the tape is sold. High discounts also enable us to offer better prices to organizations serving the blind and to blind individuals, thus extending the scope of our services. This fund will also be used for purchase of new equipment which would be amortized from the fixed asset fund listed in our operating budget.

INFORMATION - INSTRUMENTATION

Purposes

The purposes of Science for the Blind are as follows:

to record and distribute scientific information for the use of the blind,

to conduct and promote scientific research for the benefit of the blind,

to develop, manufacture and provide aids and assistance with a view toward enabling blind persons to obtain and retain gainful employment.

It has become increasingly apparent that these purposes can best be served through two distinct departments for two reasons:

1) the physical facilities of SFB are divided and the rent free space offered by Haverford College represents a significant yearly saving.

2) Some contributors have shown a decided preference for supporting one or the other of the two aspects of Science for the Blind.

Internal Reorganization

The tape player and recorder projects and the calculator project have been transferred from general SFB activity, where they originated, into the Instruments and Aids Project. This move creates a sharp delineation between the two SFB departments: Tape Circulation and Instruments and Aids.

Information

We receive many questions every year from people requesting assistance with curriculum and employment problems. For most of these, there is no stock answer. This is a personalized information service which we hope to expand so that blind people and organizations serving the blind will, in the future, feel free to write to us regarding any problems which they might have in connection with their

studies or their employment in technical fields, and also in connection with the ways in which scientific techniques are being applied to assist the blind in all aspects of their daily living. Some of the answers may be supplied in a series of recorded pamphlets, but there will always be individual needs to be met with individual assistance.

Publicity

It has been obvious from some of the correspondence we have received that many blind people who could make good use of our services have been unaware of our existence. We have, therefore, launched an extensive program to inform the blind community of our activities.

The yellow and pink flyers appended are examples of mailings which have gone out from Science for the Blind in 1967. Our mailing list numbers over fifteen hundred and includes agencies serving the blind, publications for the blind, libraries and schools for the blind and a small number of individuals who have requested information. Responses to our first mailing have been extremely encouraging, and we fully expect all facets of the SFB program to become much better known and used.

The current publicity campaign will be followed up in the near future by the mailing of a new brochure which will describe in detail all services and materials available from Science for the Blind. A business reply card will be enclosed with the brochure so that recipients can indicate to us whether or not they wish to remain on our mailing list. Recipients will be asked for accurate addresses including zip codes so that future mailings can be made under a non-profit mailing permit at considerable savings. They will also be asked to list any other persons or agencies who might be interested in our literature. The cost of this project will be significant but the brochure will prove invaluable in detailing our services both now and in the future.

Plans for future publicity include the circulation of a quarterly "Newsletter" which will describe various aspects of the Science for the Blind program, focus attention on specific items of current interest, announce new articles and materials available in scientific and technological fields for the blind, and solicit contributions on scientific topics of interest to the blind from other agencies and individuals. Such quarterly mailings as well as occasional special announcements will be sent only to those persons who have indicated a definite desire to be placed on our regular mailing list. In addition, we anticipate perhaps one mailing a year, unsolicited, to a much wider audience.

Our Public Relations requirements will be handled by Kampmann and Bright, Public Relations Consultants for The Working Blind. We expect with their help to bring SFB before the general public for the purpose of stimulating interest in supporting our activities with either funds or technical assistance. Such publicity will also, indirectly, make the blind community more aware of our work.

Tape Circulation

Cost: During 1966, Science for the Blind continued to distribute almost 2,000 tapes monthly to blind readers in the U.S., Canada, Australia, England, Peru, Israel and France. This department showed a cost for 1966 of about $13,000. over and above the $2500. taken in on service fees. Over $7,000. of the cost was covered by profit from the sale of large quantities of blank tape. Our tape market has grown significantly and we hope to maintain comparable profits in years to come. The balance of the cost of tape circulation was covered by contributions, mainly from the Pennsylvania Home Teaching Society.

Volunteer Readers: All of the taped material for six monthly periodicals and several miscellaneous tapes produced each month and circulated to our 250 regular listeners, is read on tape by volunteer readers in many parts of the country. Grace Burkett, Thomas Everist, Henry Kuhn, Dr. Frank Levy, and Edwin Randall each produce an entire periodical. Mrs. Burkett reads at the Science for the Blind recording room; the others, as well as 15 to 20 more volunteers in the field who read miscellaneous material, record at home using their own equipment. One lives in California, some in New York, Pennsylvania, Massachusetts, Delaware and Wisconsin. All have struggled with us during difficult times when they must have felt neglected and sometimes even unappreciated. They have stayed with us, though, and have helped (or perhaps we have helped them!) to build the varied and worthwhile service which SFB now offers to blind scientists and technicians all over the world.

New Volunteers are currently beginning to work with us in the fields of computer technology and anthropology. If they show the enthusiasm and sustained interest of those who have worked with us for the past few years, we are certain not only of maintaining the current activities of SFB but also of experiencing the gratifying and continued growth which has marked our recent past.

New periodical, Computers: Science for the Blind has long been vitally interested in the progress being made by the blind in the computer field. We now have an opportunity to make a significant contribution to this progress by providing taped information on the subject to the blind. At a meeting of the American Computing Machinery Committee on Professional Activities of the Blind on February 13, 1967, Science for the Blind was designated as a central depository for all taped materials relative to computer work. It is our hope that all books and articles already recorded will

be deposited with us and that all material put on tape in the future will come through our hands so that we can make up and retain master tapes which can be copied and distributed on request. In addition, we plan to begin distributing a new Science for the Blind periodical: a complete recording of the monthly ACM "COMMUNICATIONS". Volunteer readers are currently working on the first issue. The entire COMMUNICATIONS will require about six hours of recording: two 7" reels of tape. It is anticipated that circulation of COMMUNICATIONS might begin with about one hundred subscribers. Our usual $10. a year fee will apply.

New activity - Anthropology: The Wenner-Gren Foundation for Anthropological Research has recently made a contribution in the amount of $250. to Science for the Blind for the purpose of supplying taped material on anthropology to blind persons interested in the field. Both the Society and a number of its members have shown considerable enthusiasm for this project. We feel there is a definite possibility that, if demand for the subject warrants it, we will be producing a monthly periodical on anthropology at some time in the not too distant future.

Quarter-track: Since many persons now have quarter-track recorders, Science for the Blind plans to investigate carefully during the next year the possibility of beginning a quarter-track system for Science for the Blind periodicals which might eventually result in the conversion of much of our duplicating to quarter-track.

Speech Compression: Science for the Blind has also been interested in work being done in the field of Speech Compression for reading matter for the blind. Efforts will be made in the next few months to evaluate the use of this type of material in our Science for the Blind recordings. We have also done a considerable amount of research into the possibility of obtaining the necessary

equipment to provide compressed recordings on request from individuals for a nominal fee. However, the equipment is expensive and the market is, as yet, uncertain. Should a definite market develop, however, we hope to be among the first in the country to provide such services.

Duplicator: The new Science for the Blind duplicator purchased in 1964 will require thorough overhaul in 1967, including new heads. The cost of this maintenance will be about $1000. Changes will be incorporated in the machine which will allow future head replacement to be done more efficiently and at less cost. Some work will also be done on the old duplicator to keep it in good working condition for the occasional usage it receives. The tape duplicating contract with The Library of Congress terminated in the Spring of 1966, and we have not yet received definite word concerning their intentions with regard to future work, though a recent conversation indicates that some work in this area may be forthcoming. Plans are also being made to solicit duplicating work on a nationwide basis in order to make more efficient use of our duplicating equipment and to encourage tape sales. The modest profit which this type of project yields is used to support our tape circulation service.

Instruments and Aids Project:

Consultants: Science for the Blind has been fortunate to have, during the past few years, the able assistance of Electrical Engineer James C. Swail (blind), who is a staff member of the Canadian National Research Council. Mr. Swail has developed a number of instruments currently being marketed by SFB and has assisted with others. He has also taken an active part in the development of special instruments for individual needs. During the first two and one-half years of the project Mr. Swail gave us the advantage of his background and ideas without compensation. He

currently receives a token stipend and we sincerely hope that there may be included in future budgets not only funds for more suitable compensation for Mr. Swail but also for additional consultants in the field.

The Canadian National Research Council has been most generous in allowing its laboratory and technical personnel to be used in the research work which Mr. Swail has done for SFB. The progress made to date would have been seriously delayed had their fine facilities not been available to us.

T. A. Benham, director of SFB Instruments and Aids Project, has provided additional engineering consultation, and has been responsible not only for some of the research and development work but also for the production work done at the SFB facilities. He has also had the seemingly never-ending job of collating and editing the vast amount of material currently circulated on tape by SFB. Some assistance with the editing has been provided by one or two of the blind members of the SFB staff, but it seems likely that more substantial assistance from a knowledgeable scientist-editor will be required in the future to handle the ever-increasing load.

Mr. Benham's has been a difficult and often frustrating job, but adequate funds for technician, editing and secretarial help should lighten his burden considerably. Like Mr. Swail, he currently receives token compensation.

Calculators; The conversion of the Monroe Model K or KA machines (the only models which can be converted) to Braille will be continued as well as the sale of the Facit Ohdner Braille calculator. Demand for calculators is small, perhaps eight to ten each year. No concerted effort to increase sales is anticipated since the Monroe Model K or KA machines are difficult to find, but should we have the opportunity to stock a number of these calculators, we will distribute a direct mailing on them to publicize their availability.

Tape Players: The cost of the Viking Deck used in our Tape Players has increased again, this time by over $6.00. An increase of $6.00 on our sale price for the tape player will bring it to $76.00. Since this makes our "inexpensive" tape players somewhat more expensive than some of the recorders on the market (i.e., the Lafayette RK 142 described below), we feel that continued production of the tape player is justifiable only under one condition: that we can make the best tape player available to the blind anywhere. Since the Viking Deck is extremely easy to thread and is basically an excellent piece of equipment, we think we can do just that. By making every effort to upgrade all aspects of the player, we will strive to produce a sturdy, simple, trouble-free machine. The ultimate cost may be $80. to $90. but problems which have developed in the past will be eliminated. For example, we will look not for an inexpensive case to house the machine, but rather for the strongest, most suitable case we can find with price being a secondary, though important, consideration. The parts for 100 players are currently being stocked.

Lafayette RK 142: In the Spring of 1966, Science for the Blind began handling the Lafayette RK 142 Tape Recorder. This machine seemed to us to be one of the best machines available in its price range and our experience over the past year has indicated that our impressions were correct. We have had a number of the machines in the field with a very small percentage of complaints.

In addition to checking each machine before it leaves us, we have also placed a one year guarantee on the 142, since we have found that occasionally a problem does develop in the field after prolonged use. Demand for these recorders has been increasing and 100 machines are currently on order. If all goes well, a small profit should be realized from the project which will be used to support other IAP activities.

Battery operated disc player: A number of requests for battery operated disc players led us to investigate the availability of this item on the commercial market. We were able to locate numerous machines with speeds of 33, 45 and/or 78 rpm. but none which operate at 16 rpm., the speed of Talking Book Records and the soundscriber discs produced by Recording for the Blind.

We have undertaken to convert a 33/45 rpm. disc player to 16/33 rpm. For this purpose, we have chosen the Singer Model 2205 with an AC adapter which sells commercially for $29.90. It seemed to us to be the best available machine at the price with the capability of being converted to slower speeds. We will sell these machines, converted to 16/33 rpm with a one year warranty for $35.00 each. We have ordered 100 of them in order to begin this project. We expect the disc player to be useful to all blind persons using Talking Books who have occasional reason to require a battery machine, but especially to students using soundscriber discs for their textbooks. The portable disc player will go with them anywhere and is small and compact enough to be carried with a briefcase, enabling the blind student to make use of periods of time for study when he is away from his regular study equipment.

Simpson Multimeter: A special mailing has gone out on the Simpson 260. Twenty of these instruments have been sold and it is anticipated that 25 recently received from James Swail in Ottawa, Canada, will be sold within a few months. Future production will be handled at the Science for the Blind facility.

Continuity Checker: The special mailing sent out in late February brought orders for a dozen complete kits within a week (see attached flyer). Orders for two to three kits per week have been coming in since. We expect the Checker to be a popular item and plan continued production.

Other Instruments: Science for the Blind has developed a number of other instruments which will be publicized in the near future as our production rate enables us to stock them for current delivery.

Research and Development: Science for the Blind will continue to develop new instruments to fill individual needs. Some of these instruments will have wider application and will be publicized and stocked; many will suit only the purpose of the individual for whom they are made. This aspect of the program will be fairly costly, since the individual blind person will not be asked to pay for development of the instrument but only for the instrument itself. However, occasional grants in specific cases can be expected either from employers of blind technicians or local agencies.

It will be our purpose not only to work from specific requests by technicians in the field but also to seek out possible new fields for research into instrumentation of all sorts which might somehow serve the blind. Some of these projects will be suited to our facilities, others will not. The former we will endeavor to make a part of our program, the latter we will recommend to other, more appropriate organizations. We hope that within a few years, Science for the Blind will be looked to as the significant authority on science in all its aspects (except medical) as it relates to the blind.

Special Projects:

Interim Professional Aid: Once a blind person is well established in his job and can secure a secretary or assistant, his visual handicap becomes incidental. However, during his first few years in his profession, he is, like anyone else, at the bottom of the proverbial totem pole. Hiring an assistant to provide "eyes" for him can be a severe drain on the individual's own budget or a serious

deterrent to a prospective employer. It would be our aim to provide funds for such assistance to qualified blind scientists. If it were necessary to have assistance available to the blind person at all times, the employer could undoubtedly be expected to cooperate to the extent of supplying an assistant whose time could be divided between help for the blind scientist and other productive work for the company. In other cases, a part-time assistant would suffice for each blind person. A grant of perhaps $1,000. to $3,000./year for each blind scientist would likely be adequate.

As a pilot study three or four college graduates should be chosen and awarded appropriate grants. Some portion of the grant should be returned by the grantee after the period of his apprenticeship. Such an arrangement would limit applicants to those really needing assistance. Perhaps something like a 25% return could be expected in future years. A five year period would be required to evaluate the program.

If the project works out well, we could expect local vocational rehabilitation departments or other, similar agencies to continue it.

Yearly Grant Requirements

$5,000. - $10,000.

Obstacle Detector: For the past thirteen years Bionic Instruments, under contract with the Veterans Administration and under the direction of T. A. Benham, Director of Science for the Blind, has been developing a guidance device to aid the blind in travelling. While the "ideal" travel aid is still not a reality, there is every indication that a "flashlight" obstacle detector would be an extremely useful instrument. A prototype of such a device has been produced by Bionic Instruments but

is regarded by the Veterans Administration as an interim device. Since they are interested in pursuing the "ideal" device, no further work is anticipated with the small obstacle detector.

Field tests on the predecessor of the flashlight unit indicated a definite need for an instrument which can be placed in pocket or purse when not in use. It would be of valuable assistance to the blind person travelling in semi-familiar territory for such purposes as avoiding unexpected obstacles (trash cans, projecting open doors, people, cars in a parking lot, etc.) finding open doors or windows, following another pedestrian, locating certain landmarks. It will not detect curbs or similar small step-ups or downs. It will not detect overhanging obstacles unless pointed in the right direction.

The use of this device is limited but, to some, valuable. Science for the Blind feels that final development and testing work should be done with this device and that, providing no unexpected problems appear, a production run of 100 to 200 instruments should be made.

The flashlight obstacle detector is similar in application to the Kay Sonic Aid already in fairly wide use, but it operates on a different principle which will likely make it more valuable than the Kay device to a large number of people: it does not encumber the ears and the information it gives is simple. The Kay device is marketed for about $250. The flashlight detector could likely be made for about $300.-$400. and should be partly subsidized.

The lab work on this project would be carriad out in consultation with Bionic Instruments, developer of the original prototype.

Development and Testing of final prototype "Flashlight" unit	$ 15,000.
Production of 100 to 200 instruments (Most of these funds would be returned as instruments are sold, although it would be necessary to subsidize the program to some extent.)	30,000 - 60,000.

FUTURE

We are progressing toward an extremely busy future and look forward to it with increasing enthusiasm. We sincerely hope that our friends, who have given us this initial boost, will continue to support our projects and will also share in the feeling of pride which is starting to grow at Science for the Blind as we begin to see our plans take shape.

APPENDIX

Publicity Flyers

SCIENCE FOR THE BLIND
HAVERFORD, PENNSYLVANIA
19041

INSTRUMENTS AND AIDS PROJECT

SIMPSON 260 MULTIMETER

Blind technician measures transformer voltage in tape recorder using brailled Simpson Meter developed by James C. Swail of Canadian Nat. Research Council.

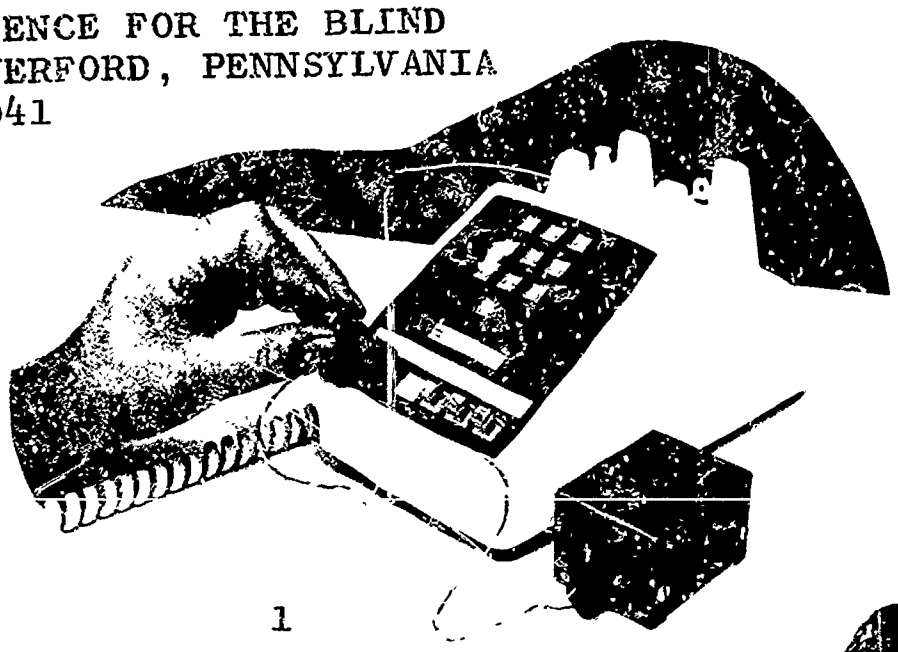
The Simpson 260 can be used to make a variety of measurements in electrical and electronic circuits. Ham radio operators, hi-fi hobbyists, radio and TV repair technicians, electronics lab technicians and students can make accurate measurements as quickly and easily as a sighted person by connecting the meter setting switches, turning the pointer until a null in the audible tone is found, and then reading the braille scale.

Simpson 260 Multimeter available from SCIENCE FOR THE BLIND
HAVERFORD, PA. 19041 $80.00

SCIENCE FOR THE BLIND
HAVERFORD, PENNSYLVANIA
19041

INSTRUMENTS AND AIDS PROJECT

CONTINUITY CHECKER



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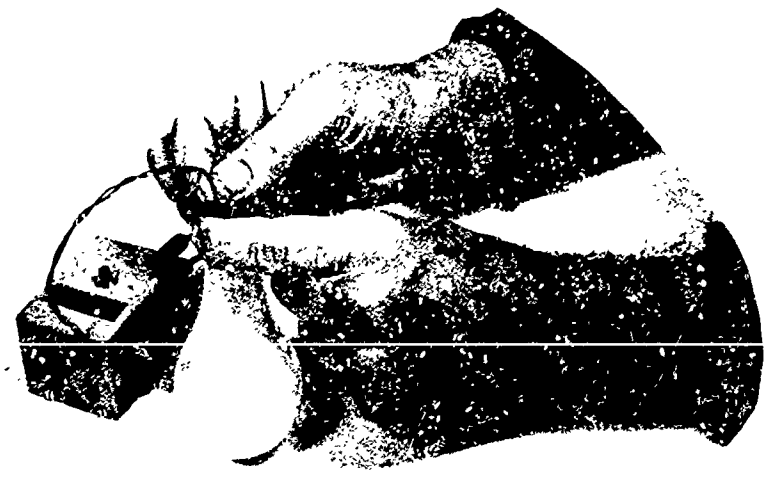

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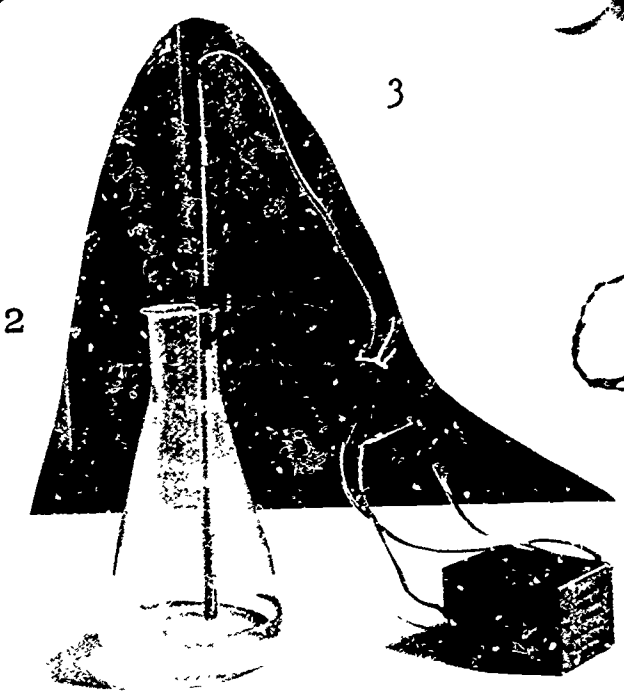

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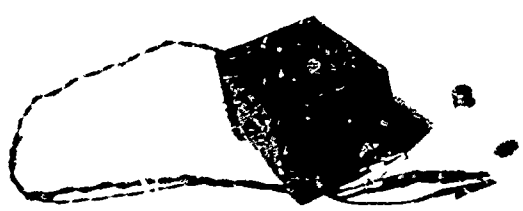

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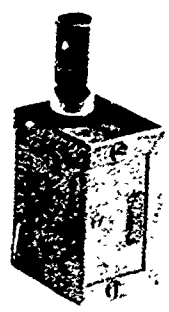

5

CONTINUITY CHECKER

1. Check for lighted telephone buttons, switchboard signals, and computer panels.

2. Check liquid levels.

3. Check for burnt-out light bulbs or fuses.

4. Check electronic components.

5. Check to see if lights have been left on.

The CONTINUITY CHECKER consists of a small metal box measuring approximately 2" x 3" x 1½" and containing a loud speaker, a 9-volt battery, a transistor circuit board, and a 3-hole socket into which the accessories are plugged. Information is obtained from an audible tone ranging from a few ticks per second to a high-pitched squeal. For example, a good light-bulb when connected to the clip leads will be indicated by a high-pitched tone; a burnt-out bulb by no sound at all. The level indicator squeals on contact with liquid. The light sensor produces a tone whose pitch depends on the intensity of the light reaching a photocell through the end of the cylindrical cover.

CONTINUITY CHECKER with clip leads		$15.00
ACCESSORIES:	Plug-in light sensor	3.00
	Light sensor on cable	4.00
	Liquid level indicator	1.50
	Tape recorded instructions	.50

CONTINUITY CHECKER WITH ALL ACCESSORIES: $21.50

Print instructions are provided with all Checkers.