

Microcomputer Activities of the Special Materials Project

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The Special Materials Project (SMP) circulates Educational Captioned Films (ECF) materials nationwide through 58 film depositories, most of which are located in residential schools for the deaf. Two microcomputer-based systems enhance the cost-effectiveness of this materials circulation: FILMSHARE, an interdepository loan system, and BICS, a booking and inventory control system.

FILMSHARE operates through two Smoke Signal 6800 microcomputers at SMP headquarters in Silver Spring, Maryland. The system makes it possible for ECF depositories in each of the seven ECF administrative regions to draw on one another's film collections for bookings they would otherwise be unable to make. Depositories may access the system with either a TTY or a computer terminal. In addition to increasing access to ECF materials, FILMSHARE also facilitates management communication between the SMP and ECF depositories and between individual depositories.

BICS operates through an Apple II Plus microcomputer at an ECF depository in each of the ECF's seven geographic regions. The system permits the SMP to manage a floating inventory of ECF

materials within each region; automatically produces confirmation letters, which are sent to requesters of all materials bookings; prints shipping documents and mailing labels for use by depositories in materials delivery; and maintains up-to-date records of all transactions, from which management information reports may be generated at any time. ECF depositories can also use the system to manage the circulation of other materials at their school sites.

FILMSHARE, now completing its third school year of operation, has enabled more than 6,000 captioned film requests to be met that otherwise would have resulted in turndowns. More than 90% of all requests submitted through FILMSHARE are booked. FILMSHARE and BICS also have made it possible to successfully implement a variable acquisition policy for captioned materials. Instead of each of the 58 ECF depositories having an identical collection of one print per film title for the exclusive but limited use of that depository's clients, numbers of prints are now based on overall demand for individual titles among all depositories. As a result of the cost savings in prints, more than 150 new titles are now being added to the ECF collection each year; prior to FILMSHARE, only about 70 new titles a year were being added. With the help of FILMSHARE and BICS, ECF circulation has increased substantially and the overall booking-to-request rate for ECF materials has risen to 96%.

The Special Materials Project (SMP) is an activity of the U.S. Department of Education, Special Education Programs, performed under contract by the Associations for Education of the Deaf (AED).

Predecessor contracts of the SMP have been called the Educational Media Distribution Center and the Captioned Films for the Deaf Distribution Center. Though the name has changed over the years, the project goal of providing captioned material cost-effectively has remained a high priority.

The two main collections of materials circulated by the SMP are the General Interest Collection, housed at the SMP film library in Indianapolis, and the Educational Captioned Films Collection (ECF). The ECF collection is circulated from the SMP's 58 film depositories. These depositories, primarily located in residential schools for the deaf, serve the programs you represent here today.

Educational captioned films are booked through the use of two microcomputer-related systems—the ECF booking and inventory control system (BICS) and the interdepository loan system (FILMSHARE). Each of these systems carries out separate discrete activities; however, the relationship of the two systems enables ECF materials to be circulated cost-effectively while maximizing service to clients and providing up-to-date usage data to the project management and the funding agency.

FILMSHARE

In addition to meeting its own faculty's needs, each depository serves registered school programs in its geographic area. Until 1979, accounts were able to borrow film prints only from their regional depository. Because of this there was always a need to have a minimum of 58 copies of each film title. Under that system, although there was tremendous print depth nationwide, that depth was invisible to users because they had access to only one of the 58 collections. The purchase of 58 prints of every film without regard to the use a film might get nationwide became a cost-ineffective artifact of the distribution system.

In 1978 the Conference of Educational Administrators Serving the Deaf (CEASD), the contracting entity at that time, initiated a study of the depository system and various alternatives to the traditional acquisition policy of the government. The study recommended maintaining all active depository sites, which serve approximately 40% of the hearing-impaired population and account for approximately half of ECF use. At the same time, a shift in the method of distributing materials among the depositories, were also recommended.

In 1979 AED was awarded a 2-year grant to develop an electronic interdepository loan system to assist in the management of the ECF program. The interdepository loan system is called FILMSHARE—Film Interchange Loan Mechanism: System to Help Arrange Reciprocal Engagements.

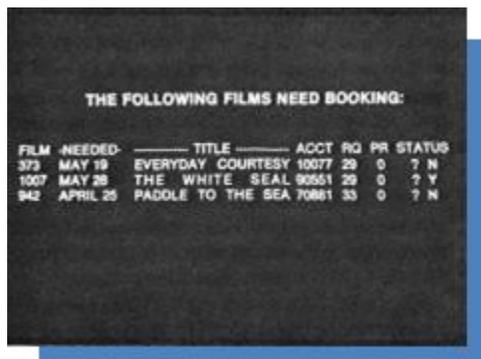
The key element of FILMSHARE is that each depository will help to fulfill the film requests made of any other depository in its region. The depositories are grouped into seven geographic regions.

The method for facilitating the communications involved in this system of backup bookings is the electronic bulletin board, which is gaining in popularity among various groups that need to exchange information on a mass basis. Basically, the system consists of a telephone line hooked directly into a microcomputer. A unique aspect of FILMSHARE is that it can accept interaction with both five-level and eight-level terminals. This was done so that the system could use the existing five-level TTY terminals commonly found at schools for the deaf. SMP uses two Smoke Signal 6800 microcomputers to facilitate the interdepository loan of films. These microcomputers each use two 8-inch floppy disk drives.

A depository manager calls FILMSHARE two or three times a week. The depository is identified by a unique user number and password. The password identifies the depository region and the group of depositories that share a bulletin board.

The first section of the FILMSHARE program is the listing of films that are needed by the other depositories in the region (Figure 1). These requests have been placed on the computer after a depository has determined that it cannot book a film requested because of a previous commitment.

Each film listing consists of the film number, the date needed, the title, the account number of the client requesting the film, and the requesting depository. The computer prompts the user to respond whether the depository's film print is available for booking the request. If the user responds negatively, the entry will appear on the bulletin board for all subsequent users to respond to until it is booked. Once a user responds that he or she will supply the film, the request will not reappear on the bulletin board.

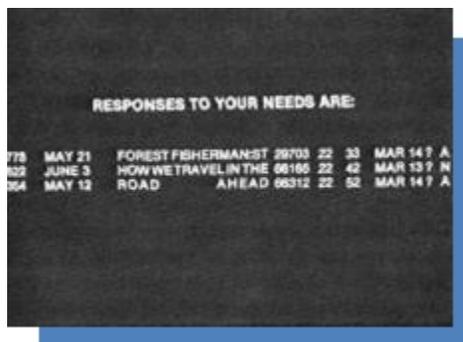


THE FOLLOWING FILMS NEED BOOKING:

FILM	NEEDED	TITLE	ACCT	RQ	PR	STATUS
373	MAY 19	EVERYDAY COURTESY	10077	29	0	7 N
1007	MAY 28	THE WHITE SEAL	90551	29	0	7 Y
942	APRIL 25	PADOLE TO THE SEA	70861	33	0	7 N

Figure 1: Example of FILMSHARE listing of films needed by other depositories in a region

When all films that are needed for booking have been seen, the next section of the program identifies for the user all films that he or she had posted on a previous call that have been booked by another depository (Figure 2). The user is prompted to acknowledge receipt of this information. Once acknowledged, the film does not appear in this section of the program again.



RESPONSES TO YOUR NEEDS ARE:

778	MAY 21	FOREST FISHERMAN'S	29703	22	33	MAR 14 7 A
622	JUNE 3	HOW WE TRAVEL IN THE	08185	22	42	MAR 13 7 N
254	MAY 12	ROAD AHEAD	98312	22	52	MAR 14 7 A

Figure 2: Example of FILMSHARE listing of films that user had requested that have been supplied by another depository

The next section of the program allows the user to enter any new film requests that could not be booked from the depository's own collection and that need to be supplied by another depository (Figure 3). The user makes the request by entering the film number, show date, and account number of the client requesting the film.

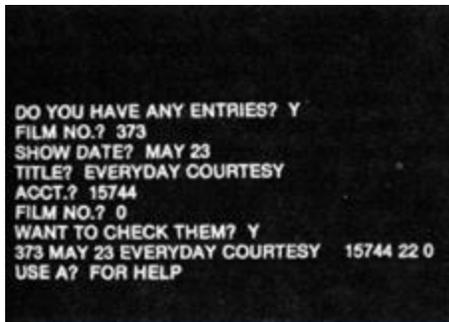


Figure 3: Example entry of a film request that cannot be filled by a depository

FUNC-TION	WHAT IT DOES
?	Lists functions in main menu.
N	Needs: Lists films that need to be booked. Requires a Y (yes, can supply film) or N (no, cannot supply film) response.
R	Responses to your needs: Lists a depository's requested films that have been booked by other depositories. Requires a response of A (acknowledge) or N (do not acknowledge).
E	Enter a Request: Allows user to enter new films that need to be booked.
S	Status: Prints the booking status of all films recently requested by a depository.
B	Bookings: Lists the films a depository has agreed to provide to the accounts of other depositories.
F	Find a Film: Prints status information on any film in FILMSHARE. The user needs to enter the film number.
C	Change: Allows a user to change or correct data entered for a film. The fields are D for date needed, A for account number, T for title, and S for status. Only films entered by a user may be changed.
D	Delete: Permits a user to erase a film that the user has entered.
W	Write: Allows a user to write a message to another depository. Each message has a limit of 10 lines.
H	Help: Prints an explanation of FILMSHARE and the available commands/functions.
T	Time: Prints the time (ET).
G	Goodbye: Allows user to sign off the FILMSHARE program. This function must be used or no data entered into the computer will be saved.

Figure 4: Functions/commands available

FILMSHARE requires the user to work through these three sections the program. Upon completion, the user has the opportunity to access any function in the program. These functions are accessed by one-stroke commands typed by the user in response to the prompt FUNCTION? A list of the available functions is shown in Figure 4.

Grant funding for *FILMSHARE* ended in September 1981, at which time the activity became a part of the SMP contract operations. *FILMSHARE* has had enormous impact on the ECF distribution system. Interdepository loan has freed the funding agency from acquiring one print of each new film title for each depository regardless of what the total demand for a title might be. SMP management successfully persuaded the government to start an acquisition policy that would result in a collection reflecting patterns of demand. By not buying 58 prints of each title, the government can buy more titles with the same budget. For instance, before *FILMSHARE* began, the government added approximately 70 new film titles to the ECF collection each year. Even with funding levels losing the race with inflation, the variable acquisition policy now allows for the purchase of over 150 titles per year.

FILMSHARE has enabled over 6,000 film requests to be met in the last 3 years that would otherwise have resulted in turndowns. Overall, more than 90% of all requests placed on the *FILMSHARE* bulletin board are booked.

FILMSHARE also provides a message system to depositories and to SMP management that facilitates communication between these centers.

BICS

In recent years a growing need has existed for ways to better manage the circulation of special education materials from small- to medium-size materials distribution centers. In particular, the captioned films depository system represents 58 depositories, each holding about 1,100 film prints. The size of those collections, and the addition of the interdepository loan system described previously, presented SMP management with the need to obtain accurate and timely data on film use and user demand. This information is necessary for the accurate recommendation to the funding agency of print purchases and for the movement of prints from depository to depository and region to region, placing films where the actual demand is.

Currently, the federal government, through the SMP, does not fully reimburse the operation of most ECF depositories. The host institutions often subsidize depository staff costs and time not covered by SMP budget levels. Many depositories do not have personnel available to confirm every booking. As a result, over the years a negative confirmation policy was adopted, informing the client only if a film request could not be met. A new inventory control system automatically confirms bookings to users while not increasing the workload of depository personnel. In addition, other automated procedures of the inventory control system cut down on the workload of depository personnel, enabling the SMP to keep operating costs low.

The booking and inventory control system (*BICS*) operates on an Apple II Plus microcomputer with 64K of memory and uses a Winchester 10-megabyte hard disk for storage. The programs supporting the system were developed to take advantage of state-of-the-art developments in computer technology.

A *BICS* unit has been placed in each of the seven ECF depository geographic regions. The depository sites were chosen for their high circulation of materials as well as for the willingness of the host site administration to house the operation. The *BICS* center locations are listed in Figure 5.

Region 1	Northeast	Austine School for the Deaf
Region 2	Mid-Atlantic	Western Pennsylvania School for the Deaf
Region 3	South	North Carolina School for the Deaf
Region 4	Midwest	Illinois School for the Deaf
Region 5	Plains	South Dakota School for the Deaf
Region 6	Southwest	Oklahoma School for the Deaf
Region 7	West	California School for the Deaf—Riverside

Figure 5: Location of BICS centers in the seven ECF depository geographic regions

The seven depositories use the *BICS* booking calendar to query the data base about the availability of any film print housed at that site. The system also gives the managers immediate information about the physical condition and location of every film print in their depository's collection.

The other depositories in each region schedule requests for materials using manual procedures previously established at the depository. The depository manager prepares a list of bookings with relevant data, such as client number, film number, and booking date, and sends it to the regional *BICS* center.

Depository staff at the *BICS* centers enters the bookings into the system on a post hoc basis; that is, the booking calendar is not used in this procedure.

All ECF bookings are processed through *BICS* and given transaction numbers. Confirmation letters, along with a copy of the corresponding ECF lesson guide, are mailed to each teacher who requests a film. The *BICS* system also prints mailing labels, which are sent to depository managers for use in the actual shipping of films to clients.

Audience counts sent to the *BICS* centers by the depository managers are added to the booking data. The *BICS* program processes this use data semi-annually. The data are used to determine SMP reimbursement to the depositories, and these data remove the time-consuming burden of reporting use from the depositories.

Results and benefits of the *BICS* system are as follows:

1. The inventory control system permits the SMP to manage a floating inventory of Educational Captioned Films. The inventory moves within each of the geographic depository regions on the basis of (a) positioning film prints at the depositories closest to the source of demand on a title-by-title basis; (b) minimizing the interdepository loan traffic on the *FILMSHARE* microcomputer; (c) providing timely information to support an acquisition policy designed to reduce the discrepancy between supply and demand, permitting a more cost-effective use of government material acquisition funds; and (d) offsetting what would otherwise be an increased workload for depository managers and a related need to increase compensation.
2. The system enables the SMP to meet funding agency specifications by confirming every Educational Captioned Film booking.
3. This capability creates the basis for a possible inventory control by region and the collection of management information on all transactions involving Educational Captioned Films.
4. The inventory control system can be used by depositories to catalog and track all instructional materials at their school sites.

Initiation of these two microcomputer activities has helped increase the use of educational films. Bookings of ECF materials increased over 8% in the second year of the current SMP contract. During that time the audience for Educational Captioned Films increased by over

19.5% to an annual figure of approximately two million viewings per year. Use of *FILMSHARE* has enabled SMP to maintain a 96% booking ratio for all film requests in the system.

Though it is obvious that these activities have been a success, we at SMP realize that without the support of the school administrations at the depository sites and without the dedicated work of the depository managers, such levels of achievement would not have been possible. A slow, reasonable, and well-thought-through approach to the implementation of technology is the lesson learned from the SMP experience in microcomputer technology.

Editor's note: This article originally appeared in the September 1983 edition of *American Annals of the Deaf*.