

## MacPALS: A Macintosh Front-end to the PALS Library System

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### Introduction

**I**n 1980, the Mankato State University library became the first in the state of Minnesota to "deactivate" its card catalog and provide online access to its holdings. The PALS software, developed by the Minnesota State University System/Project for Automated Library Systems (MSUS/PALS) at Mankato State under the direction of Dale Carrison, is now used by public libraries, school systems and academic libraries in fourteen states from coast to coast as well as sites in Australia, Canada, South Africa, and western Europe. PALS offers a powerful, easy-to-use online catalog together with sophisticated circulation, serials, acquisitions and interlibrary loan subsystems.

The system supports a larger number and more different types of individual participating libraries than many other automated systems in the U.S. For example, the MSUS/PALS network of 55 libraries in Minnesota and North Dakota includes all seven Minnesota state universities, nine private colleges, 18 community colleges, and 16 state agencies. Within this network, more than 700 dedicated terminals access over 4 million records stored on a Unisys 2200/600 mainframe, with a peak load of about 30,000 transactions per hour. Each transaction takes an average of less than two seconds. Access to external databases from Information Access Company and ERIC

has been available since 1991; search results also show the availability of the publication in the local holdings.

In spite of its programmers' best efforts over the course of a decade, however, PALS remains a command-driven system. While staff terminals have evolved from the original dumb asynchronous terminals to MS-DOS-based microcomputers that provide easy workforms, terminals in the public areas of the libraries are only command-driven. Access to dial-in lines and from faculty offices is provided in the same command-like form.

### Mac-inization

In 1989, PALS received an equipment award through Apple's Higher Education Academic Development Donation Program to design an alternative interface to the PALS network. The main goal of this project was to enhance public access to PALS with an easy user-friendly approach. As a secondary goal, a Macintosh interface could later be developed for "staff-only terminals".

### Project Philosophy

A quick look around in 1989 showed two HyperCard interfaces to traditional systems (also supported by Apple grant awards): MacPAC, a HyperCard-based front-end interface to Cornell University Library's NOTIS online public access catalog, and MacNOTIS, also a front-end to a NOTIS system, developed at Texas A&M. These systems used different approaches to get information from the catalog and both are a great enhancement over a standard dumb terminal, especially for the novice user. The MSUS/PALS developers sought to learn from these products and apply Apple Computer's human interface guidelines in

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the design of pull-down menus and dialog boxes that would help even first-time users find their way through PALS functions with ease.

As more library catalogs become available on Internet, the dream of a universal interface to dissimilar systems — NOTIS, PALS, DRA, DYNIX, etc. — has become increasingly important to end users, although not always so enticing to the systems' vendors. As a contribution to making this dream a reality, the MSUS/PALS team chose to follow a structure similar to one of the existing interfaces, MacPAC. The development team began with the hope that HyperCard's flexibility would make it possible for similar cards to perform the same functions in different systems, making it easier for users to move from one system to another. Unfortunately, the obvious differences between the command structure of NOTIS and PALS required distinct approaches to searching and displaying items. Credit must be given, however, to the creators of MacPAC for some of MacPALS' functionality ideas, such as the automatic logon, the main search screen, and the use of a "notebook" to store any information that the user deems necessary. Although the look of some MacPALS screens may be familiar to MacPAC users, in the end the resources available for this project were not sufficient to achieve the rather utopian objective of a universal interface.

### **The Users**

As stated above, access to the MSUS/PALS network is available from any campus terminal and from any microcomputer using a terminal program. Thus the initial Macintosh interface was limited to generic terminal emulation only. Vocal support for a "real" Mac interface came from PALS libraries that use Macintoshes for other purposes and wanted to integrate their hardware/software systems for overall library management. The Mankato State campus itself was a promising site for implementation of the new interface, with hundreds of networked Macintoshes in academic computing laboratories, faculty and administrative offices, and residence halls. In addition, any library patron with a modem can gain dial-in access to MSUS/PALS. Therefore, beta-testing was based in the Mankato State library, whose staff made a commitment to develop training materials for public use and provide follow-up user support.

### **The Project Staff**

Three developers collaborated on the initial MacPALS project: a systems and network specialist who was an early Mac-addict; a longtime MSUS/PALS staffer responsible for the actual stack design and the application's "fit" with existing PALS protocols; and a telecommunications specialist who saw to the new application's compatibility with existing networks. Recent upgrades have kept pace with PALS software development at the mainframe level in the area of serials databases (ERIC, Business Index, Company Profiles, Magazine Index, etc.) and acquisitions (indicating when a book is not yet available but on order).

### **Hardware and Software Requirements**

**Hardware:** The design team was committed to producing a stack that would run on a relatively low-end Macintosh. The final product can be run on a Mac Plus with 2.5 MB memory and a hard disk. The user must also, of course, have direct or modem access to the MSUS/PALS mainframe. Communication may be set up using the standard serial interface or through the Communications Toolbox. The latter allows access to MSUS/PALS over Ethernet connections or terminal servers.

**Software:** System 6.03 or higher. MacPALS was developed using HyperCard 1.2.5 and can run on any Macintosh that runs HyperCard. If necessary, it may also be converted by the user to HyperCard 2.x and run with System 7.

### **Documentation**

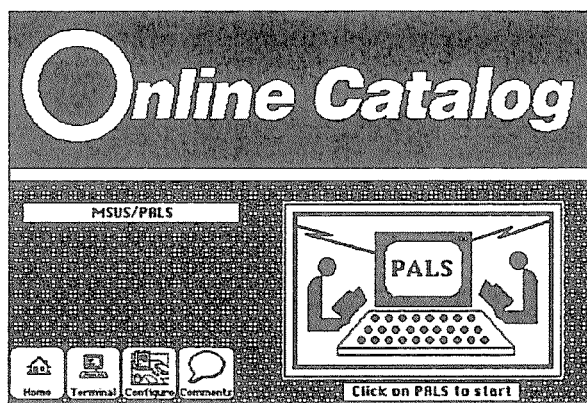
A 20-page document is distributed with MacPALS which details the functionality of the program.

### **The Product**

#### *Getting Started*

The introductory screen (Fig. 1) enables the user to use a plain terminal emulator, to configure the communications parameters, and to forward comments, problems and suggestions to the programming and

**Fig. 1: Introductory MacPALS screen (modified from the original MacPAC screen)**



support staff. The Comments button brings up a form that users can print and give to a PALS member library for forwarding to PALS staff. During an active session (as opposed to the introductory screen shown here), comments can be sent directly to support staff. A special Help sequence results in the dispatch of E-mail at the touch of a (HyperCard) button.

MacPALS provides a user-friendly setting for existing PALS screens that are familiar to regular users of the system and Help is available throughout the program for novice and experienced users. Ease in troubleshooting is an added benefit of embedding the standard PALS screens. For example, on the MacPALS session initiation screen (Fig. 2), users are able to follow the process as the interface does its work. This provides important clues to help solve any problems that may arise in the online connection process.

If the connection is successful, the "Welcome to MacPALS" screen appears and the user has access to all the functions of PALS. A simple modem or online connection to PALS permits general searching in the

online catalogs of all member libraries. To access the FULL Library System (which allows both basic searching and special search capabilities in other areas of the library, such as external databases), a barcode-ID (the 14-digit number usually attached to a patron's library identification card or available from any PALS library) and associated password (last name up to 8 letters) are needed.

#### *MacPALS function buttons*

Five arrows and nine buttons are located at the bottom of most MacPALS screens (as in Fig. 3), in addition to Library and Database boxes at the top of the screen. These arrows allow the user to move through the results of a specific search. (Previous/next screen, previous/next record)

The small arrows to the left of the Command line scroll through previous searches, which are displayed in the Command line. Any search can be redone or modified with a click of the mouse, a function available only to MacPALS users. The Return arrow ends a MacPALS

**Fig. 2: MacPALS session initiation screen**

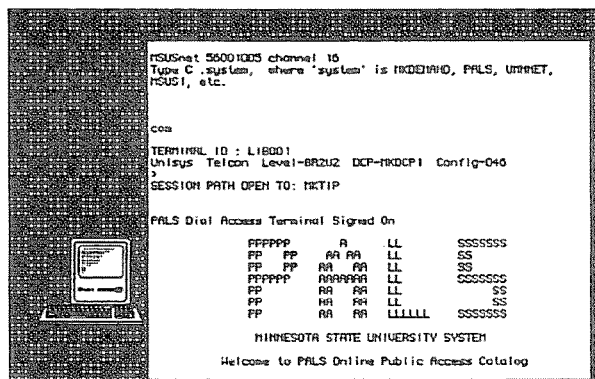
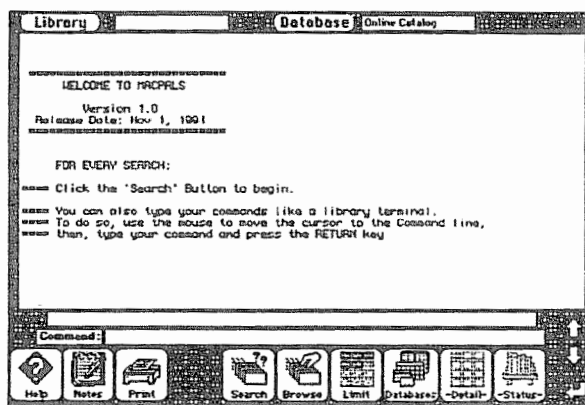


Fig. 3: Welcome to MacPALS screen



session. The user may also type End or Bye in the command line.

Helpful information is always available for each MacPALS button. The Notebook offers a quick way to build a research bibliography. Search data can be saved to view, edit, print, or save to a diskette. The Print button prints the contents of a PALS session screen.

The six buttons to the right of these commands refer to search options and vary slightly, depending on the type of search in progress, as outlined below. Their use is outlined below in excerpts from the users' manual/online help:

Either of the Database buttons will produce a list of the available PALS databases, shown below. As in other automated libraries, this is a growth area for MSUS/PALS. Some databases have restricted access and will ask for a PALS barcode and password. The default database is the online catalog.

The Library buttons will produce a list of groups of MSUS/PALS libraries. The default is Total System. Choosing a group other than "SYS Total System" will bring up the list of libraries in that group. Users may limit the search to any library.

#### *Searching with MacPALS*

The main search options in PALS are Author, Title, Combination of Author and Title, Keyword-Term, and Subject. MacPALS shows the Library and Database being searched. Users can choose to "point and click" or type their search commands directly into the command line.

A search is displayed first in "summary" form, with batches of 20 records listed by title and author. Clicking on any item selects that record for a "detail" display. The detail includes the call number, full bibliographic entry and location of the item. Finally, the patron can check on the availability of the item by clicking on the "status" button. If a patron is logged on with a user-id and password, a hold can be placed simply by selecting

Fig. 4: Database window

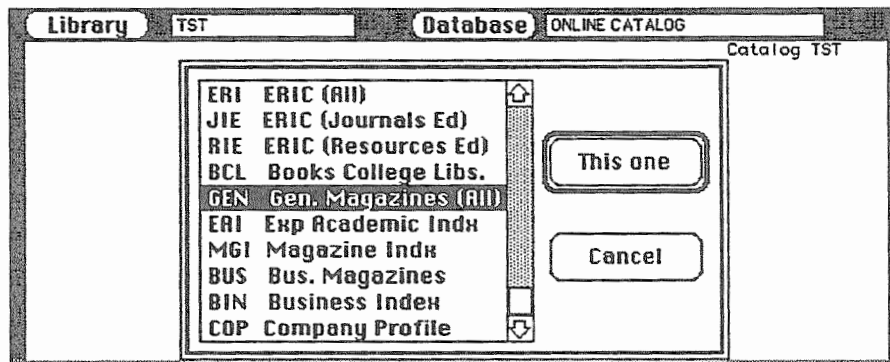
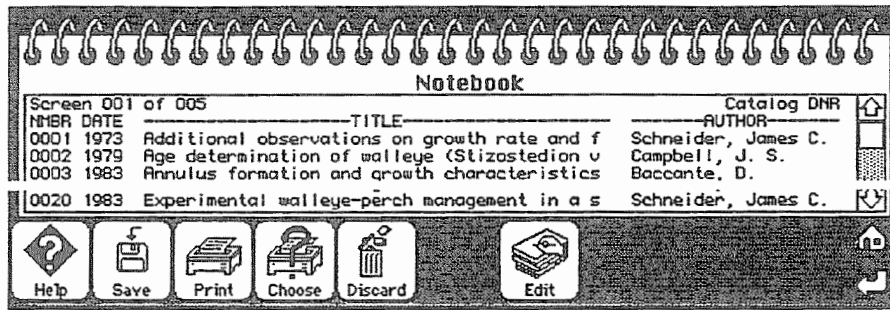


Fig. 5: Notebook screen



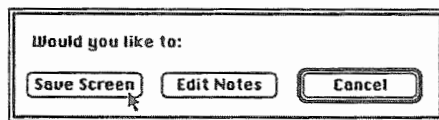
the desired item that is in circulation. When the item is returned, a printed notification is automatically generated.

Browsing through the search indexes can help patrons find the correct word, spelling or phrase (e.g., an author's last name, or a Library of Congress Subject Heading). The Browse button offers Author, Title, Subject and Call Number searching.

A patron who has been too successful in locating titles can Limit by format, language and date of publication.

#### *The Notebook*

This function, available only to those using MacPALS, is a powerful tool for building a bibliography. Material can be edited and saved throughout the session, then saved to a text file. When the user clicks on Notes, a dialog box appears:



The Save Screen button will save the contents of any PALS window to the Notebook, placing it after previously saved information. The Edit Notes button will display the Notebook screen (Fig. 5), so the user can edit, print or save text.

#### **Project Benefits**

Anyone who can point and click can now breeze through any public user function offered by PALS. The features described here are only a sample of the ways MacPALS has enhanced access to the PALS library system. These enhancements provide both more user-friendly access and more functionality than is available from a standard terminal interface to PALS. Far from having to learn and remember the many commands for performing online searches, a Macintosh user simply selects from the available buttons and pull-down menu options — and there is more than one way to access most functions. With the notebook, information may be edited, printed and stored for a multitude of uses. Service to patrons is the name of the game, and HyperCard makes it possible for a programming team to develop and maintain an effective product with a reasonable investment of time without using third-party software.

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