

NOTISes

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The Newsletter
for NOTIS Users

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Give Us Your Wish List

For those of you who have already taken the time to fill out and return the Customer Services User Satisfaction Questionnaire, I want to thank you. I have read the twenty I have received, and appreciate the time many of you have taken to write comments on the questionnaire.

If you have not returned the survey, remember our deadline is November 15.

This is your opportunity to help us put our priorities in line with yours!

*Maribeth Ward
Vice President, Customer Service*

Velma Veneziano and Dr. James Aagaard, of Northwestern University Library, are the originators of the NOTIS online integrated library management system. In this issue we feature a recent interview with Ms. Veneziano, originally published in NUL Computing News. Our thanks go to Wayne MacPherson of N.U.'s Science and Engineering Library.

Keep It Simple and Elegant:

An Interview with Velma Veneziano

"In the process of interacting with the users you find out what it is that they actually need ... NOTIS was not developed in an ivory tower."

Q: You started at Northwestern as a systems analyst in 1967. Could you tell us about your previous experience and how you heard about the opportunities here?

A: I have no formal training in computer science or in mathematics or in library science. I was a history major in college, back before and during World War II days, when computers were very uncommon.

I got involved accidentally in 1958 at Science Research Associates [which later became a division of IBM]. They published materials for schools and did educational testing. They needed a "girl Friday" to work on means of automatically collecting and processing standardized test scores, using computerized page readers. At that stage they were practically combing the streets for anyone with the slightest interest in computers.

Once on the job I was fortunate to have a real computer wizard who took me in tow and

ATTENTION MVS SITES!

New JCL for Release 4.5 Installation
See page 5

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CONTRIBUTIONS: NOTIS Systems invites and welcomes the submission of articles and suggestions from the user community.

Editors: Jim Meyer, Michael West
Design & Production: Michael West

NOTIS Documentation Services Department:
Stuart Miller, Manager; Laura Higgins, Jane Larkin, Jim Meyer,
Michael West, Sandra Yuen

patiently taught me the basics. From there I went to the Chicago Board of Education for seven years. Then, fed up with the graft and corruption which was going on at that time, I asked Ben Mittman (then head of N.U.'s Vogelback Computing Center) if there were any jobs on campus. He sent me to John McGowan, a new associate librarian, who was charged with developing a means of utilizing com-

puters in library operations.

I started work in January 1967. My first chore was simply to interview library staff members and flow chart all of their jobs. This gave me an understanding of how the work flow went, what forms were used, what kinds of output were needed. This resulted in a long-range plan for automation.

"It seemed to me that, if we were to make anything other than marginal improvements in operations, an online system was needed — not a batch system which poured out piles of paper..."

At that time batch processing was still the most accepted mode; people were just beginning to think about online systems. But after studying library processes, it seemed to me that, if we were to make anything other than marginal improvements in operations, an online system was needed, not a batch system which poured out piles of paper that immediately became obsolete.

Once we had developed a plan which called for developing an integrated, online system, which would be implemented modularly, John McGowan decided we needed a site where we had more latitude for experimentation than we would have in the main library. So he and I moved to Tech [now the Science and Engineering Library] until the new library opened in January of 1970.

During that time, Jim Aagaard (who was then at Vogelback), got interested in the library application and developed our first application, circulation control, which became operational in January 1970. It was one of the first online circulation systems in the country, and the first self-service system.

After we moved back to the main library, we were fortunate to have a dynamic team of eager, forward thinking people that Tom Buckman (the University Librarian who replaced Jens Nyholm) had brought in. It was an ideal environment in which to make a break with the past. Originally, we planned to develop a cataloging and acquisitions system only for mono-

graphs; however Mike Costin, who was then head of Technical Services, convinced me that we should include serials.

In retrospect, knowing how much I didn't know about serials at that point, I would not have tackled it. Fortunately, after a few false starts, it worked. Our development strategy, while somewhat

"We went through an extensive review process, with almost daily changes being made. This was very time-consuming, but users accept a system more readily if they feel they are involved."

idiosyncratic, has worked.

One of the things we have discovered over the years is that the only way users can effectively be involved in the design process is to use the prototyping technique. It is very hard for end users to look at paper specifications and actually visualize how the system will work in practice.

So we have over the years decided that even though work sometimes has to be redone, it is better to make prototypes than to try to come up with the perfect version from just paper specifications. The first version of the author-title index was really a prototype. We went through an extensive review process, with almost daily changes being made. This was very time-consuming, but users accept a system

more readily if they feel they are involved.

It does not mean that end users always get exactly what they say they want. But in the process of interacting with the user you find out what it is that they actually need. Usually it is possible to come up with a compromise. One of the reasons for the continued success of our development effort is that we have had a very, very close interaction with the librarians. NOTIS was not developed in an ivory tower.

As the Law, Medical, Dental schools started to use NOTIS this close interaction became more dif-

"Instead of automating one job at a time we looked at library operations as a whole. The advantage is that when you get through you have a system that hangs together."

icult. It is unfortunate that, with our small staff, we are not able to meet with them as often as we would like. I can't walk into their offices, sit down and chat with them about their problems. But this is a drawback which comes with growth. We don't have the nice, neat little laboratory environment that we had in the early days. It is also

unfortunate that even in the main library as more and more departments have become dependent on NOTIS, we have had to balance the needs of one department against the needs of another. These needs don't always coincide as neatly as one would like. So hard decisions have to be made.

I often feel that some of the people around the library, particularly the newer ones, are unaware of how difficult it is for a staff as small as ours (never more than five people) to not only keep a system as large as NOTIS operating on a day-to-day basis, but to develop new applications and enhancements for existing applications. They think these systems come ready-made, ready to plug in.

We have taken the approach that the system would be an integrated system; that every function performed had to serve multiple users. Instead of automating one job at a time we looked at library operations as a whole. The advantage is that when you get through you have a system that hangs together. The disadvantage is that the nature of many jobs must change, and staff have to learn to cooperate. Departments are now interdependent, which is sometimes a source of tensions.

Another problem which occurs when a system gets as big as NOTIS, and when the develop-

ment staff is so small, is that a backlog of applications develops. People get impatient with what they see as their needs being ignored. They decide, "Let's not wait; let's use our handy-dandy PC and write our own program." Unfortunately, it is very difficult to integrate these programs into into a mainframe based environment. Often, also, the programs are not well documented and when the originator leaves they may sit on the shelf, unused.

Q: Did you ever think the NOTIS software would grow as large as it has and be marketed?

A: No I didn't. In the early 70's, when we were still using typewriter-like terminals, Jay Paulukonis, who was the librarian up at Tech, and I talked about the possibility of having public access terminals. Just the cost of the terminals made it seem inconceivable that the public would ever get access to an online catalog. The success of the online catalog was frankly a big surprise to me. It is a tribute to the risk-taking of people in Tech Services and in Public Services. People made up their minds that there would be an online catalog and tackled it with optimism. When you make up your mind that something is going to be, and set out to bring it about, the odds are that it will happen.

We resisted for a long time marketing the system. However, over time we had so many libraries expressing interest in buying the software that our resolve collapsed. However, the first few systems which were sold did not include any commitment to maintenance. Even though we could see

that there was so much demand, Jim and I and everybody in ISDO really did not want to get into the marketing business; we would have liked to sell the system outright to someone to market, but

it didn't work out, so we set up NOTIS Systems, Inc.. This leaves ISDO staff free to concentrate on the needs of Northwestern.

NOTIS Systems, Inc. has done a phenomenal job with marketing. I hope they can do as good a job with keeping the system state-of-the-art. If you aren't constantly improving a system, it loses its competitive edge.

Q: Do you feel possessive at times toward what you have done?

A: I want NOTIS Systems, Inc. to improve

NOTIS, because no one knows better than the staff of ISDO how many improvements are needed. Naturally I have my own ideas on what those improvements should be. However, I recognize that the improvements I want for N.U. may not necessarily coincide with what other NOTIS users want.

"When you make up your mind that something is going to be, and set out to bring it about, the odds are that it will happen."

what other NOTIS users want.

Q: What improvements do you want?

A: I hope NOTIS will keep the system simple

and elegant. I don't like patchwork and add-ons. If NOTIS is to continue to be a good product, it must stay simple. It must stay comprehensible.

Q: Is there anything you would do differently?

A: I regret that we, at Northwestern, have not made more progress in retrospective conversion. Of course there are many small things which I would like to have a chance to do over, but in all the major areas I have no regrets.

Q: Rumor has it that you retired.

A: That is like the rumor about Mark Twain; it's been grossly exaggerated. Last year I went on a 2/3 time basis, because I wanted more time to travel. Now I'm back full time. I enjoy working. After years and years of working, I find many of the activities with which suburban housewives occupy their time boring. I hope to be able to work as long as there is work to be done and my health stays good.

Q: What things would you like to do to enhance the system.?

The area that intrigues me is how best to organize knowledge so as to enhance access. I am interested in the process by which knowledge is transferred. That is why the index redesign project has just been fascinating to me. There is so much left that we can do to improve access using the basic structure of the new indexes but applying them in new ways.

For example, we need to experiment with providing access by classification numbers. We need to be doing more work with evaluating the logs [of LUIS transactions] and building in means by which

we can take a user's terminology and translate it into the term used in cataloging. We need to experiment with "mapping" the vocabularies of different disciplines into a single unified super vocabulary. We need to be thinking in terms of providing users with an "expert system."

Q: I know people have spent a lot of time talking about keyword/Boolean as one way to take what people think they need and transform it.

A: Keyword-Boolean access is a brute force approach. People think in concepts, not in words. With k-b you get too much noise, but equally important, too much is missed. Using keyword/Boolean requires a user to know all the terms under which to look and even what form of a word to look under. There are better ways to lead the user to the desired information, using a controlled vocabulary, accessible by concept, with words displayed in context.

Q: What is a controlled vocabulary?

A: The most familiar example in libraries is the Library of Congress subject headings list. Even more systematic are MeSH subject headings which are very controlled, very hierarchically arranged. Some thesauri, such as the one for art and architecture, are very highly developed. There are also ways of describing material by a string of concepts strung together as in PRECIS. These are ways that the cataloger, indexer, and abstractor can provide controlled access to data.

We need to unify all these different lists and thesauri to provide one master vocabulary. Such a vocabulary needs to be constantly evaluated by experts and updated using information gathered from actual searches. One of the worst problems we have with k-b access is that the casual user doesn't know how limited the computer is, and how shallow cataloging data is.

Q: Doing the same job for 21 years, you obviously have found it intriguing.

A: I sometimes think that if I had to pay to do the job I would. Fortunately, I *do* get paid, although perhaps not as much as if I were in business and industry. However, the freedom of the academic world, and the company of stimulating, adventurous people, more than compensate for the small monetary reward. Not many people have that luxury. ■

Software News

CORRECTIONS TO 4.5 RELEASE INSTRUCTIONS

NOTIS MVS customers should make the following corrections to the installation instructions that were included in the 4.5 Release Document. We regret any inconvenience that this may cause. If you have questions, please contact your systems engineer about these or any other issues related to the 4.5 distribution tape.

1) Create a load module for LB619BAL (none was included in N45.DIST.LOADLIB). To do this, add a step to N45.DIST.CNTL(ASMALLB) before the step for LB620 as follows:

```
//STEP EXEC ASMLK,MODL=LB619
```

2) New customers (and those who want to run the batch conversion process against NOTIS 4.5 test data) should verify the value of the processing unit and correct it if necessary. In programs LBC70BAL, LBC90BAL, LBC91BAL, LBC92BAL, LBC93BAL, and LBC94BAL the processing unit should be XP, in order to conform with the new test data. To accomplish this, replace the location table which follows label LNTBL with those supplied here.

For program LBC70BAL use this table:

ML	LOCN	0,XP,LOC1,,,L,000006,LC
MLRE	LOCN	0,XP,LOC1,SUB1,,L,000006,LC
MLRF	LOCN	0,XP,LOC1,SUB2,,L,000006,LC
ILR	LOCN	0,XP,LOC2,,,L,000006,LC
ILLE	LOCN	0,XP,LOC1,SUB1,,L,000006,LC
ILLW	LOCN	0,XP,LOC3,,,L,000006,LC
ILLI	LOCN	0,XP,LOC1,,,L,000006,LC
ILLL	LOCN	0,XP,LOC4,,,L,000006,LC
ILYL	LOCN	0,XP,LOC4,,,L,000006,LC

For LBC90BAL, LBC91BAL, LBC92BAL, LBC93BAL, and LBC94BAL use this table:

OGA7	LOCN	0,XP,LOC1,,,L,000006,LC
AAAC	LOCN	0,XP,LOC1,SUB1,,L,000006,LC
AAAE	LOCN	0,XP,LOC2,,,L,000006,LC
OGA2	LOCN	0,XP,LOC1,,,L,000006,LC

OGAG	LOCN	0,XP,LOC1,SUB2,,L,000006,LC
AAAI	LOCN	0,XP,LOC1,,,L,000006,LC
AAAK	LOCN	0,XP,LOC3,,,L,000006,LC
AAAL	LOCN	0,XP,LOC4,,,L,000006,LC
AAAM	LOCN	0,XP,LOC4,,,L,000006,LC
AAAO	LOCN	0,XP,LOC1,,,L,000006,LC

After making these changes, use ASMALLB to assemble and link.

3) For new customers (and those who will use NOTIS 4.5 test files), additional steps need to be added to the member REPROALL distributed in N45.DIST.CNTL. These steps are needed to load the test files new with 4.5. The JCL for these steps follows. The number of the file to be used in the label parameter needs to be verified against the log of the job used to create your particular tape.

```
//REPRO16 EXEC PGM=IDCAMS,REGION=4096K
//SYSPRINT DD SYSOUT=*
//INTAPE DD DSN=N45.DIST.LIBILLF,
// UNIT=TAPE,
// LABEL=(20,SL), verify this parm against
log
// DISP=(OLD,PASS),
// VOL=REF=*.REPRO1.INTAPE
//OUTDSKDD DSN=USER.LIBILLF.KSDS,DISP=SHR
//SYSIN DD *
REPRO INFILE(INTAPE) OUTFILE(OUTDSK)
/*
//*****
//REPRO17 EXEC PGM=IDCAMS,REGION=4096K
//SYSPRINT DD SYSOUT=*
//INTAPE DD DSN=N45.DIST.LICRINX,
// UNIT=TAPE,
// LABEL=(21,SL), verify this parm against
log
// DISP=(OLD,PASS),
// VOL=REF=*.REPRO1.INTAPE
//OUTDSKDD DSN=USER.LICRINX.KSDS,DISP=SHR
//SYSIN DD *
REPRO INFILE(INTAPE) OUTFILE(OUTDSK)
/*
```

4) The blocksize of N45.DIST.KWBCNTL as distributed was 6160 and not 3120 as stated on page G2 of the 4.5 MVS Installation Instructions.

5) The files distributed as N45.DIST.USERMAST and N45.DIST.USERAPPN are both missing a necessary record. The record, with a key of 999999, will be found in the 4.4 version of USERMAST and USERAPPN and will also be in any test or production version of these files that you are currently using.

If you use job JCLSETOP (described on page T3 of the 4.5 MVS Installation Instructions) to convert your current keyword terminal authorization file, this extra step will not be needed for USERMAST.

To bring this record into the new USERMAST or USERAPPN files, JCL like the following can be used (substituting the USERMAST or USERAPPN data set names as appropriate).

```
//REPLACE EXEC PGM=IDCAMS,REGION=4096K
//INDSET DD
DSN=NOTIS.N44.USERMAST.KSDS,DISP=OLD
//MODDSET DD
DSN=NOTIS.N45.USERMAST.KSDS,DISP=OLD
//SYSPRINT DD SYSOUT=*
//SYSIN DD *REPRO -
  INFILE (INDSET) -
  OUTFILE (MODDSET) -
  FROMKEY (999999) -
  REPLACE
/*
```

6) Note also that problem V121 in this month's troubleshooting guide describes a fix for a 611L abend which can occur in discharging items.

MERGED HEADINGS INDEX STORAGE CORRECTION

The following corrects an article that appeared in NOTISES/34 (September, 1988), page six, "Merged Headings Index Project Update."

That article detailed the disk storage requirements of the National Geographic Society's bibliographic and authority records plus the new Merged Headings Index.

Due to a typing error, the bibliographic file was incorrectly stated to require 1220 cylinders. The correct number of cylinders required is 120. For a 3380 drive, this equates to 85,456,800 bytes. As stated in the article, the index for this file takes up an additional cylinder (712,140 bytes). The bibliographic file contains 130,471 records.

We apologize for the confusion.

EBSCO DISCUSSES RESULTS OF VITLS TEST-IN-PROGRESS

EBSCO, a major vendor of serials subscriptions to libraries, sponsored a breakfast meeting during the October Library & Information Technology Association (LITA) Conference in Boston.

The purpose of the meeting was to discuss implementation issues arising from the ongoing test at Auburn University of the NOTIS Vendor Invoice Tape Load System (VITLS). VITLS provides a means for loading vendor invoice information on magnetic tape into a library's data base. As these tapes are loaded, invoice records are created and fund and order/pay/receipt records are updated automatically.

Auburn University has successfully communicated to EBSCO the data necessary for the vendor to create a serials renewal invoice tape. Auburn is now preparing to load the EBSCO invoice tape data into the NOTIS acquisitions module.

Here is a summary of the major implementation issues raised during the Boston meeting.

1. Use of Title Number and Expenditure-by-Class Code

An EBSCO customer preparing to use VITLS must put the vendor-assigned title number for each order into the division note field in the NOTIS order/pay/receipt record (OPR). The customer may also enter an "expenditure-by-class" code in the OPR. If the customer does not enter expenditure-by-class codes in NOTIS OPRs, default codes must be specified in the VITLS software.

2. Use of "Note-to-Vendor" Field

As customers create new OPRs after the initial load of invoice data, they can use the "Note-to-Vendor" field in the OPR to communicate new data to the vendor. Data in the Note-to-Vendor field appears on the printed purchase order produced with a new OPR.

3. Communicating Changes to the Vendor

An EBSCO customer may also choose to generate periodically a new tape containing data about the

customer's subscriptions (e.g., at the beginning of a new fiscal year when fund codes may have changed). The customer's EBSCO representative should be kept closely informed about all changes involving the customer's subscriptions.

4. Multiple Invoice Records

At the Boston meeting NOTIS/EBSCO users asked how the VITLS programs deal with renewal invoices that have more line items than can be entered in one NOTIS invoice record. The VITLS programs first determine the maximum number of payment statements allowed by the customer in one invoice record and then create as many invoice records as necessary to hold all line items from the vendor's invoice. For a further discussion of the process, see the article "VITLS and Vouchers" in NOTISES/24 (November 1987), pp. 11-12.

Other NOTISES articles of interest to VITLS users are:

"Getting Ready for the New NOTIS Invoice Tape Load Programs" in NOTISES/18 (May 1987)

"Additional Information for Prospective VITLS Users" in NOTISES/21 (August 1987), pp.12-14.

Customers who want more information about VITLS may also refer to chapter J24 of the NOTIS Terminal Operator's Manual, Vol. 1, Part 2, Technical Services, "Introduction to the Invoice Tape Load Programs;" and Chapter M4 of the NOTIS Library Implementation Manual, "Implementing the Invoice Tape Load Programs."

Conversion Services News

CONVERSION WELCOMES EASTON, MIESSE

NOTIS has created two new positions to help speed the conversion workflow. Although the titles are new, the people who now fill these positions are sea-

soned NOTIS employees.

Bill Easton (as of September 1) is the new Projects Coordinator for Conversion Services. He is responsible for keeping conversion projects on schedule, scheduling conversion projects, and helping conversion staff with technical questions. Bill came to Conversion Services from the Systems Engineering department (now Technical Support), where he was filling in as Acting Manager of the department.

Jim Miesse became the new Account Manager for Conversion Services on October 1. The Account Manager for Conversion services is the primary contact for NOTIS customers in the conversion process. Jim will make many training visits and will be responsible for assuring the quality of Conversion Services products. Jim came to Conversion Services from User Services.

Hardware News

FIBER OPTICS CONNECT MAINFRAME, LIBRARY AT CENTRAL MICHIGAN

Daniel Ferrer of Central Michigan University reports that CMU is now using fiber optic cable to link the library with the computer center.

CMU has placed an IBM 7171 communications controller, which supports the library's NOTIS system terminals, in the library and connected it to the IBM mainframe via 4000 feet of fiber optic cable. An IBM 3044 Fiber Optic Channel Extender facilitates the connection.

Fiber optics cable is known for its virtually error-free transmission of data at speeds far in excess of anything attainable over ordinary copper wire.

Systems Engineering (Technical Support) News

"SYSTEMS ENGINEERING" BECOMES "TECH SUPPORT"

Wally Bardwell, who recently became manager of the NOTIS Systems Engineering Department, has announced that effective immediately the department's name has been changed to "Technical Support."

Wally explained that, as manager, he wanted to emphasize the customer support role of the department. Just the department name is changing, not its structure or its basic mission.

"Technical Support" more accurately describes the work of NOTIS systems engineers in providing assistance to NOTIS users.

Systems Development News

STAFF CHANGES

Randy Menakes, formerly of Systems Engineering (now called Technical Support), began work in Systems Development as Systems Analyst on October 1. Randy's first project involves further developing the technical specifications for implementation of NOTIS's multiple data base project. The aim of this project is to provide library users with access to multiple locally-mounted data bases through the NOTIS online public catalog interface. In his new position Randy will help turn functional specifications into technical specifications ready for use by programmers. All of the accounts for which Randy was Systems Engineer have been assigned to Gerry Ginsburg.

Vern Coppi will start November first as a lead programmer. Vern brings to NOTIS an extensive background in DOS/VSE and OS/MVS CICS environments. His first assignment will be to help implement NOTIS's multiple data base project (see above).

Sara Randall, formerly the Systems Librarian at Loyola University of Chicago, will start at NOTIS as Functional Analyst on November 15. Sara will work on further enhancements to the just-released Generic Transfer and Overlay (GTO) product. She will also help with the location-based inquiry enhancement to the NOTIS online public catalog.

Documentation Services News

NOTISes' NEW LOOK

NOTIS Systems' Documentation Services department is committed to providing NOTIS users with clear and helpful information in printed form. In pursuit of this goal we recently decided to improve the appearance and readability of our monthly newsletter. You are viewing the results of this upgrade, and we would welcome your comments.

This issue of NOTISes incorporates the page-layout capabilities of recent "desktop publishing" technology. A local area network driven by AppleShare software, a Macintosh II computer, a LaserWriter II printer, Quark Xpress, Microsoft Word, and MacDraw software: these are the main components in NOTIS's new (and still developing) publishing system.

We have already begun to use desktop publishing as part of our general upgrade of NOTIS technical and user documentation; you will be seeing much more of it over the next few months.

This is more than just a "cosmetic" improvement — though there's nothing wrong with a page of text being good-looking as well as informative. But the

real advantage of the new technology over the old is that it gives writers and editors much more control over how material will be graphically presented to the reader. This is especially important in the production of technical and instructional material. Many studies of how people read have shown that graphic organization of text — including the use of typefaces of appropriate sizes and styles, illustrations, headings and other editorial "signposts", and, of course, the all-important use of "white space" — all of these elements, used wisely or poorly, can make a measurable difference in our ability to read, comprehend and retain printed information. In other words, appearance is directly related to usability.

With desktop publishing, the creator of a text can see instantly how it will look when it is set in type, arranged on the page, and printed. It can easily be changed until it "looks right" — a matter of minutes, not days or weeks as before.

We believe the result of these enhanced capabilities will be that our documentation will continue to improve in accuracy and timeliness as well as in readability.

RELEASE 4.5 I&O MANUAL REVISIONS DISTRIBUTED

During the weeks of October 10 and October 17, our printing services vendor mailed packets of new technical documentation to all TECH I contacts.

The packets contain complete revisions of the following *Installation & Operations Manual* sections:

Chapter 7 - NOTIS Batch Operations
Chapter 8 - Keyword/Boolean Search
Appendixes A, B1, B2, B3, B4, C and D.

If you have not received your packet of technical documentation, please let us know.

NEW WRITER JOINS STAFF

Documentation Services has the pleasure of announcing the addition to its staff of Jane Larkin, effective November 7. Jane will write user documentation, filling the position vacated by Stuart Miller when he became Department Manager.

Jane has a Library degree from the University of Illinois and is an experienced data base searcher. She has worked at the American Medical Association Library and Continental Illinois Bank in Chicago. Jane is also Editor of the *Informant*, the SLA Illinois Chapter newsletter. She also writes book reviews for several publications.

TROUBLESHOOTING

This column is a regular feature of NOTISes. As we encounter problems which we plan to include in the Troubleshooting Guide (Appendix E to the *Installation & Operations Manual*, we list them here in NOTISes so you won't have to wait until a new release in order to be aware of them. If you have suggestions, send them to Jerry Specht.

It is our intention that you should take these troubleshooting pages and append them to the Troubleshooting Guide which you received in February, 1988. The problems have been, and will continue to be, assigned "temporary" numbers from V001-V999, so that they will be in sequence. We will periodically send out an updated index which will encompass both these problems and the ones already in the guide. Once per year we will send you an entirely new guide in which all of the problems which have appeared in NOTISes since the last publication of the guide will be integrated and assigned permanent numbers.

Problem V112 in the September Troubleshooting should have included an acknowledgement of the work by Beth Nicol (Auburn University) in diagnosing this problem with the LD120 job. Thank you, Beth!

Thanks to Barb Hieber at Pitt for the following two corrections.

Correction to Problem 7101: LD120 prints the expired action report, not purchase orders/claims.

Correction to Problem 9505: The last sentence should read "... the secondary allocation for DFHINTRA is, and must be, 0."

Problem: V115(Revision of Problem 0019)
You get anabend ASRA on any LT, LC, or LP trans-

action (so that you can't even call up the initial help screen)

Possible Causes: The original 0019 entry for this problem was wrong. It was not the reassembly which corrected this problem but rather the specification of FEATURE=DCKYBD in the TCT entry for the terminal being used. If all of your terminals have dualcase keyboards and you do not want to make this change to the terminal entries, you can eliminate the test for this in LC400BAL by commenting the "TMTCTTEFIB,TCTTEFDK" instruction 4 lines after the label A003, and the "BZA191" instruction which follows it.

What the program is trying to do is to produce a message, "TERMINAL NOT CORRECTLY SPECIFIED IN TCT". It seems that under MVS it does successfully produce this message but that under DOS a bug produces the ASRA.

This problem is much more frequent under CICS 1.7 where the use of RDO (rather than the batch TCT) seems to make it a lot easier to forget the DCKYBD.

Problem:V116

In the LB510 batch patron load you have the INSW1 switch in your LB530Txx set off (this is supposed to prevent update of the patron name), but you find that certain updates occur anyway

Possible Causes: Even with INSW1 off, certain minor updates will be made to the patron's name - basically, it will allow additional data on the end of the name.

Examples: Smith, J. toSmith, John; Jones, Betty toJones, Betty Ann.

Problem: V117(Revision of Problem 3024)

When you try to display certain records in OPAC (LUzz) you get an abend 794p.

Possible Causes: Prior to Release 4.4 the 794p abend indicated a problem with the LOCATN (LC106) table; the 794y, a problem with the LOCTNI (LC105), and 7941, a problem with the LOCC (LC106).

Because of space problems in LC794BAL, the 794y and 7941 were changed to 794p's with 4.4.)

(In LOCTNI) Is there an entry for this location in the LC105TBL? There must be.

(In LOCATN) Have you changed (in LC105TBL and LC106Txx) the number of this book's location? You can't do this. This number is hard-coded in the item record.

(MVS only) If this is a Northwestern test record, there are certain processing units (LL, HS) which don't have all their locations defined for them in the LC105/106 we supply. Do you have a valid "UNIT=zz" (where zz is the institution group) in the LOCATN statement (in LC106Tzz) for the location to which the record you were trying to display belongs? You must.

The table will assemble cleanly (provided LC100TBL mirrors the mistake) but the Online Public Catalog will abend.

In LOCC: Is there a LOCC for this location? There must be if there are circulating items attached to one of the copies. (If an item has been discharged, the system wants to check the SHELVE= parameter in the service unit table specified by the SRVC= value in the LOCC to see whether a "Recently returned" message should be displayed.)

Problem:V118 (Revision of V033)

"Special" characters in all records except the bibliographic record display incorrectly or cause PROGxxx's or ATNI ATNI ATNI abends.

Possible Causes: The bibliographic record is the only record for which character translation occurs. (See article in 3/88 NOTISES or Section 1.4.1 of the 4.5 NOTIS *Installation and Operations Manual*.)

One solution some users have implemented is to substitute a dash for any illegal character in the output (controller-to-terminal) translation table in the 3174 or 7171 controller.

Problem: V119 (VSE only) LB510

In running LB510 (to load patron records) you get a "RECORD SKIPPED" message on every record

Possible Causes: Have you tried to comment the "INCLUDELB511OBJ" statement in the LB510 linkedit? Commenting this (or any) INCLUDE statement doesn't work (the asterisk is ignored). This statement needs to be deleted (unless you are one of the four pre-4.3 users who require it).

Problem: V120

Whenever you try to charge an item you get abend 610h.

Possible Causes: This abend indicates that the charge program is taking the processing unit from the item index entry and trying to locate that processing unit in the LC101TB2 and can't. This can happen if the version of the LC601DSC which is copied into LB690 (which builds the item index) doesn't match the actual format of the item record. For instance, if you use the 4.5 version of LB690 on a 4.4-format item file or a 4.4 LB690 on a 4.5 item file.

Problem: V121(MVS 4.5 only)

In discharging an item you get an abend 611L

Possible Causes: The key for the bill & fine record is the patron record number plus the date/time. When an operator overrides (backdates) the date in performing a discharge, the same date/time is used for all items discharged during that session. If a fine is owed, the system tries to create a bill & fine record. The first for a particular patron is OK, but the second abends because VSAM finds that its key duplicates that of the first.

If you have DTB in place on the item file, the abend will cause the discharge to be backed out and the operator will then be able to go in and successfully discharge it with the b/f record being created.

Otherwise, the item will be discharged and the b/f record will not be created. To fix this, add the following 3 lines of code to LC610BAL (after the line at label B995):

LH R1,TSOTIME Add one to override time

AH R1,=H'1'
STH R1,TSOTIME Save new override time

Problem: V122(VSE 4.5 only)

In running JCLLOAD to build the Keyword/Boolean indexes you get the error

NTS005 ERROR ON INVERTED FILE READ ***
R15=00000008FDBK=00000010

in the JABSFB LD step (the last step).

Possible Causes: This seems to happen in certain DOS shops. The indexes have been built successfully but the program has read past the end of the INVTWK file, has gotten some garbage for an INVT record#, and abends when it can't find it.

Assuming that the message you get is exactly that described above, you can and should go ahead and use the indexes. We are working on diagnosing exactly why this happens and preventing it.

Problem: V123 (4.5 or later only)

When you enter the LPyy CBIL command you get an abend 405e

Possible Causes: This is due to the fact that LC532BAL uses the default processing unit (the first value in LC101TB4 for the PROS= parameter for the service unit with which your terminal is associated) to structure an LTxx transaction. Could it be that there is no LTxx transaction in your PCT where xx is the first PROS= value?

Problem: V124(4.5 or later only)

In the LB610 error report you get the message "DUPLICATE B/F KEY BYPASSED" and want to know what it means.

Possible Causes: This message indicates that LB610 had one fine for this patron already (and had therefore already produced a notice with a total of all fines owed by this patron on it), and has now encountered another fine request. What it is saying

is that this second request is being ignored so that it won't produce two bills for the same patron.

Problem: V125 (4.5 only)

When you search the course reserve index you get abends 871r, 872r, 873r, or 874r

Possible Causes: On the MVS side it seems that this was resolved by reassembling LC870BAL and it seems that this is necessary if you are on CICS 1.7. On the DOS side, however, this has occurred with a customer on 1.6 and we are still working on diagnosing it.

Special Feature

Choosing a Printer for Spine Labels and Date Due Slips

by Jim Aagaard

This article, by Dr. James Aagaard of Northwestern University Library's Information Systems Development Office, addresses the following issues:

1. Design of NOTIS date due slips
2. Telex printers
3. IBM terminal environments
4. Physical specifications of printers
5. Survey of printer makes
6. EPSON printers
7. Setting page length
8. Setting pitch
9. Settings on the 7171 controller
10. Printing spine labels

1. Design of NOTIS Date Due Slips

The design of the NOTIS circulation module provides for the optional printing of a date due slip, using a format controlled by tables in program LC614.

At Northwestern University Library, we wanted a slip which could be inserted in existing book pockets

and which would make it possible to read much of the printed information without the necessity of removing the slip from the pocket. These considerations indicated a slip with dimensions of 5.5 inches in length and 3.25 inches in width. These dimensions include pin feed holes. With a printable width of 2.5 inches and printing at 12 characters per inch, this satisfied our requirements.

2. Telex Printers

When we introduced the circulation system at Northwestern University Library, we planned to use Telex 476L terminals. An examination of the associated Telex 281B printer indicated it would satisfy our requirements with one exception: the printer tractors could not be moved close enough to feed the 3.25 inch forms. This problem was solved with the aid of a local machine shop. The tractors were removed from the printer and sufficient plastic milled from their sides to allow the desired positioning.

It should be noted that the 281B printer is a modified C Itoh 8510 and can be used in other ways than connected to the 476L terminal. Such use is not too practical, however, based on its cost and current unavailability. Other printers, even a standard 8510, cannot be used satisfactorily on the 476L because of an initialization character string which the 476L sends to the printer before each print operation.

3. IBM Terminal Environments With ASCII Printers

There are two other families of terminals which are likely to be encountered in a NOTIS installation:

- IBM 3270-type terminals (using a 3274 or 3174 controller and 3278, 3178, 3191, or equivalent terminals);
- IBM 7171 terminal controller with ASCII terminals (e.g., the IBM 316x series of terminals).

In either of these two environments, it is possible to use a standard ASCII printer such as those being mass-marketed for use with personal computers.

Many current inexpensive dot-matrix printers provide an impressive array of capabilities. These include the selection of character style, character

pitch, and page length by means of control sequences transmitted to the printer. These functions are very useful, but the control sequences require the use of ASCII codes which have no equivalent in the IBM 3270 environment.

In the IBM-based NOTIS environment, either an IBM 7171 terminal controller or a third-party protocol converter is necessary as an interface between the ASCII devices and the mainframe.

3270 Terminal Environment With Protocol Converter

Our experience has been with the InterLynx/3287 protocol converter manufactured by the Local Data Corporation. These can be obtained for about \$850 per device. There are two models. The first model has a front panel which allows configuration changes. This model costs about \$100 more. The model without the panel can be configured from a single portable front panel which can service many units or from any standard ASCII display terminal. There are a number of other manufacturers of similar devices. There do not seem to be substantial price differentials. Other brands may provide more or fewer useful options and may require changes in a few of the table entries in LC614.

Protocol converters provide a "transparent mode" in which arbitrary ASCII codes can be passed to the printer. There is no standardization on how this transparent mode is initiated, however. The method originally provided by Local Data and assumed in the LC614 program has been augmented by two additional methods in more recent releases of their converter. These additional methods may provide compatibility with the methods used by competitors of Local Data.

7171 Controller with ASCII Terminals

The situation is not as good for an ASCII printer attached to a 7171 terminal controller. The 7171 takes the place of a protocol converter. Although the 7171 provides for a similar transparent mode, once the mode is set the mode must remain for the remainder of the transmission. This means that the entire text to be printed has to be converted to its ASCII equivalent. This requires twice as much transmission time. The NOTIS programs do not

provide for this, limiting the number of features which can be used on the printer.

4. Physical Specifications of Printer

A printer for use with the date due slips of the size described above must have a tractor feed with adjustable spacing between tractors. It should be possible to move the tractors close enough for the 3.25-inch form. The tractors should be ahead of the print head (rather than after the print head) to allow the forms to be removed with minimum wastage. It should be possible to tear the forms close to the print position. The printer must be capable of printing at 12 characters per inch. Although there are many printers available, there are very few which meet all of these requirements.

5. Survey of Printer Makes

We have not found any Okidata models which will work. It appears that there may be some Panasonic models which meet the requirements. We have not examined these Panasonic models carefully because we seem to have difficulty in purchasing them. The C Itoh 8510 has been mentioned above, but assistance from a machine shop is needed.

6. Epson Printers

Epson is also a popular brand of printer, and there are several models which can be used. Our first experience was with the EX-800.

Epson EX-800

The EX-800 is fast and is available for about \$420. The EX-800 allows for very close tearing of the printed slips. It does require a modification to the tractors to allow them to be set close enough, but the modification can be done with order hand tools. The EX-800 has proved very satisfactory, but it appears that it may soon be discontinued.

Epson FX-850

A more recent introduction, the FX-850, may be even better. (The FX-850 has a higher-quality twin, the LQ-850, which is also usable but costs about \$200 more.) The tractors on the FX-850 can be positioned as needed without any modifications. Although at first glance the paper tear position does not appear to be as good as the EX-800, the FX-850 has an optional "short tear-off" capability which is actually

better. The short tear-off capability is activated with a "DIP" switch on the printer. When a form feed command is received, and the command is not followed by additional data within a short interval, the paper is advanced several inches to a convenient tearing position. When the next print command is received, the paper is automatically reversed to the proper printing position. The InterLynx/3278 protocol converter used with this printer should have software at level 4.07 or higher. This is because of the need for a new option which suppresses the normal generation of a "new line" function in the printer when the "end of message" code is received from the NOTIS program. When this new line function is generated, it will follow the form feed command and thus suppress the short tear-off function. A similar capability would be needed in other brands of protocol converters.

Use of the Short-Tear-Off Function

The proper use of the short tear-off function requires that the Epson instruction manual be followed carefully. Resist attempting to make adjustments with the paper knob on the printer.

Start with the printer power off and place the forms in the tractors. Then turn the power on and press the LOAD/EJECT button. The forms will feed into printing position, but this position will very likely be too high on the forms. Press the ONLINE button and note that the MULTI-PART light is blinking. This indicates that the FORM FEED and LINE FEED buttons can be used to make an adjustment in the initial print position. These adjustments are in very small increments (1/80 of an inch). After this is set, print a date due slip and note whether the position at the tearing edge is satisfactory. The MULTI-PART light will be blinking again, and the FORM FEED AND LINE FEED buttons again can be used to position the paper. Once these positions are set, they will be remembered, even when the printer is turned off.

7. How to Set Page Length (Using Protocol Converter)

For proper operation, a page length setting of 33 lines is needed. This can be accomplished in several ways. LC814 can transmit a code ('1B4321' for the Epson printers) to set it. In this case it must be done for each slip, since the program has no way of knowing whether the printer is already set correctly. The Interlynx protocol converter can send it as part

of an "initialization sequence" whenever the printer is made ready. Configuration from an ASCII terminal is required to establish this option.

Alternatively, the InterLynx/3287 can be configured for a page length of 33 lines and for replacing the form feed command received from the program with the appropriate number of line feed commands. One small problem may be encountered when the program sets the page length, because (on the EPSON, at least) this resets the top-of-form position also. Unless the protocol converter has been configured to suppress the extra line feed after a form feed, the result is one line too many. Either change the configuration (necessary anyway to use the short tear-off feature), or change LC614 to specify 32 lines instead of 33 (i.e., '1B4320').

8. How to Set Pitch (Using Protocol Converter)

Another need is for setting the pitch to 12 characters per inch. This can be done in the same ways as described for the page length. In addition most printers have either "DIP" switches or front panel controls (as do the EPSONs) which allow this setting to be made manually.

9. Settings With 7171 Controller

Because of the generally unsatisfactory transparent mode capability of the 7171, a printer should be used which allows manual setting of the character pitch. There doesn't seem to be any good method of setting the page length, however.

10. Spine Label Printing

Similar considerations apply for spine labels, except that the transparent mode capability of the protocol converter is used more extensively. The SE-LIN labeling system prints the labels near the center of the printer, and the margin setting capability of the printer is used to avoid preceding each line of text with several dozen blanks. This could be changed with suitable modification to the tables in program LC867 for use with a 7171. Also, the program provides for the possibility of pitch changes as a function of the number of characters in a line. This capability could not be used with the 7171.