U&lc.

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U&lc.

Vision '77 covered much more than the new typesetting technologies and typographic refinements reported in the previous issue of U&lc. It was concerned with everything from information flow and systems to the role of creative graphics in making communications work; with the experience of companies that have used various typesetting systems; with the viewpoints of educators, designers and typographic services concerning the new machines and materials; and with what the near future holds in store. This second half of U&lc's Vision '77 report covers those subjects and includes a roundup of projections by the presidents and top management executives of some of the field's leading manufacturers and suppliers.

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Ed Gottschall concludes his account of what took place at the ITC symposium in Rochester last spring—an overall view of (as is said) "the state of the art." Page 2.

Pro.Files: The Great Graphic Innovators

Continuing our series of insights into the personalities and artistry of the industry giants, this time featuring Herbert Bayer and William Golden. Page 12.

On The Couch

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Holiday Postcards

Once again we're the benefactors of Carol Wald's fascinating hobby, as the pages of U&lc are graced with an assortment of cards from her wonderfully-diversified collection. Page 20.

Something From Everybody

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Ms. Jacqui Morgan.

Our famous featured female is a triple-threat illustrator, recently absorbed in designing provocative graphics on clothing. Page 28.

The Sensualist Approach.

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Face To Face.

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COMMUNICATIONS
TYPOGRAPHICS
VISION '77
PART 2

The Word

Paul Doebler
Publishing and Printing
Management Consultant
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It is time to lay a foundation for understanding some of the advanced ideas that will be talked about during the rest of Vision '77. That is the reason for the title

"The Word." We will provide a consistent background or framework within which you can think about some of these advanced ideas. We will first focus on principles and concepts. One must understand concepts before one can talk about the nuts and bolts of where the machines fit and who does specific things with them. Vision '77 came about because of the conversion and collision of two very different technological areas: word processing and typesetting. Word processing has its origins in the office field. It is really a transcription process to increase the efficiency of getting information down on paper, getting it to someone so that he or she can comprehend it. Word processing has developed along these two themes. One of them is to improve the flow of correspondence and documents in their preparation. This involves reorganization of the office staff.

At the highest level, word processing concepts separate the creative handling of text from machine keyboard operations. Keyboarding is put into the hands of a group of professional machine operators. People either dictate copy, write it in longhand, or get it down on paper by some other means. Then the material goes to what is, in a sense, a transcription pool, where the machine operators transcribe it onto magnetic tape, cards or some other medium used to store it. Printed copies are then produced and sent back to the editor, who edits them. These are returned

to the processing center for transcription of the changes. This cycle of editing and changing continues until you get a final approved document. This is a text handling system. It has led to other reorganization of office duties. For example, if you take all of the transcription work out of the regular secretary's job and put it in a special unit, this enables the other people in the office to concentrate on other things, and they become a different kind of support for the executive personnel.

The WP/typesetting connection

Of these two themes in word processing—office reorganization and the streamlining of text handling—for our consideration here today it is the text handling system that's really important. That's the element with implications for connecting up with typesetting, with implications for very radical changes in the way people of the future will operate in transmitting and using information. The average state of the art technologically in word processing at this point is the automatic typewriter. We are seeing the introduction of newer equipment though. We are seeing video screens added to the automatic typewriter so that the material is no longer played back on the typewriter platen, but on a video screen for changing and editing. We're seeing sophistication in the programs put into these machines. These are no longer simple write-and-edit routines. Some machines are even able to draw diagrams on video screens and have these played out on the output typing element. We're seeing special capabilities for building and maintaining lists programmed into the machines. Word processing is moving towards explosive growth in the abilities of these machines to do all kinds of special chores.

The office of the future

The office of the future lies out beyond the horizon a little bit, but it seems to be getting closer. This is one of the eventual developments the word processing system will have to tie into, in a very big way. The office of the future concept gets somewhat exotic. Visualize executives working at their desks with their own video screens. If they want to know something, they push a few buttons and it comes up on their screen. If they want to write something, they type it into the machine and the text appears on the screen, or they may dictate it and have it translated into the machine. They edit it on their own screen. Perhaps, if they are doing research, they can put some numbers up on the screen and manipulate those numbers. These are far-out concepts. They do not exist yet. But these are dreams of the people who want to create the office of the future.

Where does WP fit in?

Just how does the present concept of word processing fit into this? Let's go back a little now and consider, just briefly, the typesetting tradition, which is the reason for this meeting today. Its origins were 500 years ago when we first got moveable type; it can go back even further than that if one counts hand lettering, the carving of blocks, and so forth. But moveable type is a good beginning point to work with. Over the years we've developed an elaborate composition department to approach it—heavy machinery, and industrial type operation with development of highly specialized skills. This work was done in manufacturing plants because of the capital investment. The lighter computer-type machinery of today is challenging this industrial plant approach to the creation

of composed type. It's moving it out of the plant and into the office. The one thing that must go along with it though, as Aaron Burns pointed out, is the graphic tradition. Typesetting has always had the feel of aesthetics associated with it. Word processing, however, is only now coming up against graphic considerations. So as these two meet, the word processing area will contribute modern technology and reorganization of people in the offices. The typesetting tradition will contribute graphics, and appreciation of aesthetics, and the use of typography for more efficient communication and greater economy in the communications process. At the same time, the typographic area, even though it grows out of an industrial plant tradition, has developed a great deal of sophistication in the office systems of its own—the kinds of things that you hear about in newspapers where the editorial staffs work on video terminals and with OCR copy. They produce the newspaper today almost without the composing room, and in the future it will virtually go that way entirely. The creative decision-makers—making their decisions and using these kinds of equipment in their offices—have developed a very sophisticated level of copy processing technology. This technology is fundamentally parallel to the concepts of word processing. It's going to be very interesting to see how these very sophisticated so-called "front end" systems, which have evolved in newspapers and which are now moving into books and magazines and some commercial printing applications, merge with the word processing equipment, which is coming from a relatively simple base into more sophisticated types of products. I'd like to look at this a little more systematically in several areas.

Information management

First the larger picture. Word processing and typesetting do not exist in a vacuum today. They exist in something much larger which is coming to be known in the industry as information management. The problem in information management is that the cost of managing information in a large organization—almost any organization for that matter, but especially in large organizations like governments, big corporations, foundations and so forth—is astronomical and growing rapidly. Some people put the cost of managing information as high as 15% of the gross revenues of a large corporation, and perhaps even higher in certain industries.

The scope of the problem

The scope of the problem is enormous. It stretches all the way from information coming into the organization to information going out the other side to someone you want to influence. And in between there is a tremendous amount of information processing. For example, think about the kinds of departments in organizations that are concerned just with the handling of information, not with manufacturing or selling the product. There is the market research department; it brings information into the company, centralizes it, makes sense out of it. There's R&D. The accounting department in essence is an information department. On the output side there are the sales promotion, advertising and public relations departments. These departments are just a few of those that handle information and are crucial to the flow of knowledge within the company. Beneath these departments there is a whole galaxie of support departments—the word processing center and in-plant print shop, to name just two. There is also the mail

room, which is in charge of distribution. There are the messengers who run around bringing things back and forth. There are the telephone switchboard, the computer data processing department, the records storage and retrieval department, the forms management group, and the company library. If you add up the cost of these, and then add on the money that is spent going to meetings and buying information from the outside, you come up with some rather astronomical totals. And this whole information enterprise is almost totally unmanaged in organizations today.

A new management discipline

We mentioned the phrase "information management" before. What is beginning to emerge is a new management discipline, and it's going to be called information management. You will have information managers in corporations. They will have responsibility for word processing and in-plant print shops, but they will have a lot of other responsibilities as well. Their responsibility will be to take this disarray of disjointed information techniques and operations and put them together into an operating, functioning information-managing system.

Flow

Let's explore some of the characteristics of information and how they relate to the problem of designing word processing and typesetting systems. We'll start with the concept of flow. It's fundamental to everything.
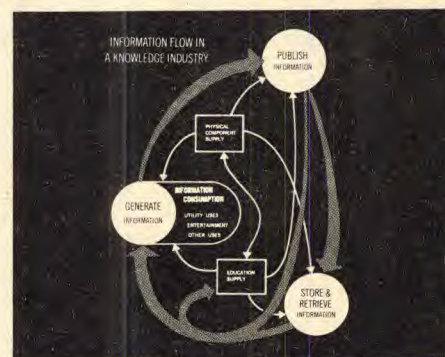
1. Information flow in a knowledge industry.

Information does no one any good unless it moves. As the diagram shows, on the far left someone generates information. It is written and transcribed somewhere as thoughts are thought. If it is worth distributing to anyone, it moves to a publishing function. Publishing, as used here, is a generic term describing the whole process of writing, editing and designing, and includes the conversion process of setting up the type, proofreading, correcting, perfecting, making the graphic page, reproducing copies and distributing them.

Distribution

Sometimes these copies go to libraries, or to other storage and retrieval facilities where movement is suspended until someone needs them; one of the problems with information is that you never really know when somebody is going to need something. However, most copies skip the storage facility and go directly to their end consumers, shown on the left of the diagram in the same area as the original information generators. In fact, this published information often becomes the basis for generating new material—the information is reorganized and reformatted into a new information product. Information regenerates itself in new forms.

2. Many media can be fed by one data base.

Another way of viewing the problem which we have to manage is looking at the variety of media we have to deal with. Most of us think of type as something to put on paper. But look at this diagram, at all the different media we can deal in: the print media, photographic media, electronic media, and even face-to-face communication. Each presents different kinds of problems in graphic presentation; but processed text ultimately set in type is a key element in all of these media.
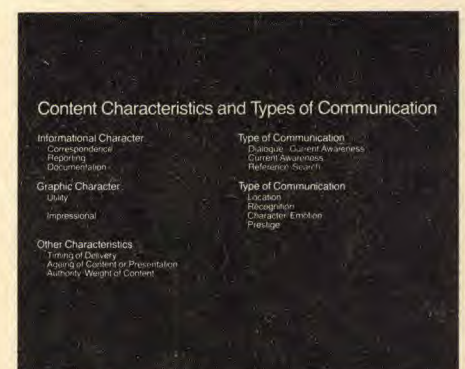
3. Media/communication task relationships determine the hardware, software and personnel needs.

How media relate to content

The media/content relationship determines the kind of system that you must have in terms of hardware, software and how people are organized. On the left (Figure 3) are a number of characteristics inherent in the various kinds of media, and on the right are the types of communications tasks that these characteristics are best suited to serving. Correspondence, for example, is used quite often in dialog situations—you write someone and you want a reply. It's also used in the current awareness situation where you are informing someone of something. These are terms that have come out in the last twenty years from the information science field. Various types of reporting media obviously are well matched to current-awareness needs.

On the other hand, there is the function of documentation, in which you are not necessarily reporting current information—you may include some current information, but you also use the backfiles. The purpose of this is for reference and search. Someone comes into a field cold wanting to know something about it, and has to go back into the files to build a background.

Graphic character

Another dimension of information with which Vision '77 is concerned is its graphic character. Most word

processing systems have been concerned only with the utility characteristics of graphics. We develop adequate typography, for example, so that one can find wanted information easily. This is a very simple, utilitarian situation.

But utilitarian considerations leave virtually untouched other aspects of graphic character. Relatively unexplored in terms of systems development are facilities for generation of impressional graphics. Impressions are what graphics can uniquely give to a message. Graphics can leave strong and lasting impressions on people. Much advertising, and the fine corporate pieces try, as much as anything else, to develop a prestige image, a character or an emotion. Word processing and typesetting systems of the future, if they are going to be optimally used in organizations, are going to have to provide that kind of capability.

Timing, aging, authority

Still other information characteristics also will determine the shapes of systems. One is timing of delivery—must you have it overnight? What about aging of the content? Unlike the Library of Congress, we do not want to retain in these systems everything that was ever done—only to save live information.

Authority, the weight of the content, is important in many instances. A small document, such as a memo, may only need to be read and thrown away; thus it can be prepared quickly and proofread and edited only once. But when you produce the price list for the company, it has a weight of authority that is going to be crucial in many cases, and you take a lot of editorial care producing it. These widely different activities and work flow patterns shape the kinds of systems that you apply.

Types of communication/media links

Let's look at another concept, at how the specific media tie together in different kinds of communications. At the top (Diagram 4) is something called simple communications. That would be the simplest memo or letter, for example. From there you branch out into at least four major areas: entertainment uses, current awareness uses, reference and search uses and educational uses. Each box shows some of the media involved for each kind of communication.

### Internal publishing
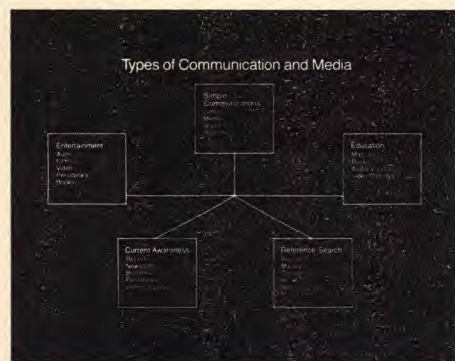
4. One system doesn't fit every situation.

This diagram (4) illustrates an important principle, namely that if you start at the basic word processing level (in the uppermost box) with simple documents, as you move out to the four other areas documents become more and more complex. This implies that we are not going to be able to use just one system for every kind of situtation. As you move out from the simple communication where one person writes it

and someone types it up, and you send it elsewhere, you encounter increasingly elaborate operations, in some cases whole departments of 30 or 40 people with professional editorial and production skills, departments that constitute miniature publishing houses just to produce a particular kind of document. If you go into these elaborate departments, you find an organization of commercial publishing companies. The technical manual department of a large high-technology corporation will have many of the characteristics that you find in a book or magazine publishing house, or even possibly in certain newspaper operations. You will find that the new technological systems that apply will perhaps look more like the kinds of systems we find from the typesetting tradition than from the word processing tradition. This is very important—what I am implying here is that in the future there will not be one universal system in a large organization for word processing and typesetting. We will have many different kinds of systems for different uses.

Basic work flow
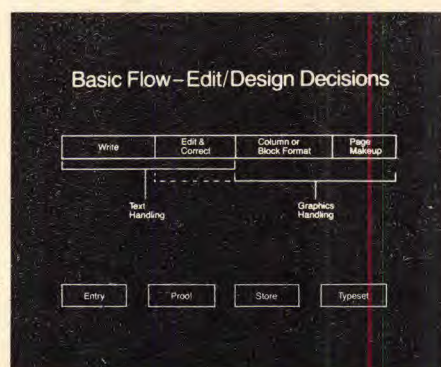
5. Decisions are made at the front end of the process.

Let's now turn to the editorial, word processing, typesetting work flow, which is the specific segment of the larger picture we are really here to talk about today. This (diagram 5) shows the fundamental kinds of activities we deal with in any processing/typesetting system.

The top line—writing, editing, column or block formatting, and makeup—are decision-making functions. People such as editors, designers and authors make decisions on what is going to be placed on the page and how it's going to be placed there. Below are four boxes—entry, proofing, storage, typesetting—which are support functions. They may be crucial to the system, but are not decision-making functions.

### Organization information flow
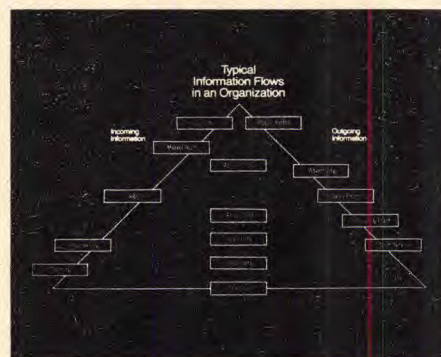
6. Organization information flow.

This flow can exist in an organization in many, many places, and in different forms. For instance, assume the triangle in diagram 6 is an organization.

As shown on the left, a variety of incoming information flows exist. Within the organization, a range of administrative procedures constitute or are supported by additional flows. And various forms of outgoing information (right) are issued by still other flows.

Incoming information tends to present a make-or-buy decision. Can you buy the information as a package from an outside vendor such as a publisher, or do you produce it internally? If you produce it, somewhere along the line you probably will have a word processing/typesetting function to handle the job, as you will for internal and outgoing material.

The basic electronic system
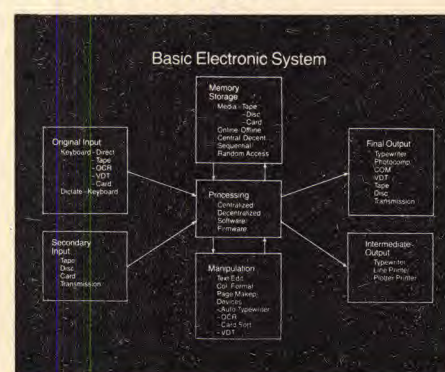
7. Components and functions in a basic electronic system.

Now let's look at electronic systems and how they fit into these flow patterns. This diagram can be used to represent almost any kind of electronic word processing/typesetting system. No matter what kind of equipment you are considering, you can fit most of the pieces into these boxes. Then you can analyze and compare systems offered on the market in these terms and come to grips with what specific variations you need in each area.

We have a broad variety of options to choose from here. We have direct keyboarding, keyboarding to tape, and keyboarding for optical character scanning. You can also use VDT, or mag cards, punched cards. You can also input onto computer discs and read them into the system. You can take the material from another system on-line or you can get it in a package that was prerecorded on an off-line machine.

Three common input devices are the tape perforating keyboard, the word processing typewriter which can interface with typesetting systems, and the optical character reader (OCR).

Processing

Somewhere in the system you've got computer power that enables you to manipulate the material and to store it in memory for a while. Once it is in the system you can edit the content, give it format, prepare it for output.

You can have centralized processing by using a master computer at the center of the system, or you can have decentralized processing by splitting the computer power up into a number of units and packaging it with other machinery. I'm sure you know about the problems of writing programs, of software. One of the newer developments is the idea of firmware. Firmware is simply a program that was originally a software package which now has been packaged permanently in integrated circuit chips so that it remains in the machine as a permanent piece of programming.

Memory

There are a variety of memory forms, such as tapes, discs and cards. You can have some of these wired onto the systems. Others can be stored on shelves until needed. Memory can be all in one place or it can be scattered around the office. It can have sequential or random access; both types are important because in some kinds of work it is easier to go through from one end to the other, and in other kinds of work you need to pick out things at various points. Memory devices come in a wide range of sizes.

Manipulating

For manipulating and checking material as you are working on it, there are a number of editing devices, as well as devices for column formatting and page formatting. Devices include the automatic typewriter as used in word processing systems. OCR equipment sometimes has formatting capabilities. You can use card sort systems where you arrange the cards in a certain sequence before you put them into the machine. Without question, though, the major device which has captured the imagination of everyone is the video display terminal. In a sense, it's the universal window into the system; it is the key device that really makes today's truly interactive systems practical. Some terminals enable you to do a great deal of positioning of elements and sizing of type. This gets you into graphics and graphic manipulation in addition to text manipulation. The area makeup terminal, such as those now used for advertising makeup, is leading us very rapidly into the page makeup terminal in which entire pages can be assembled on a screen, in a form which you can approve before they are output to go to press. Full page makeup eliminates a great deal of the paste-up operation and subsequent proofreading and checking.

Outputs

There are two forms of output. Intermediate output is usually represented by the printout with which most people are familiar. It's an intermediate working document. The final output, of course, is the ultimate page that you want to distribute. There are many kinds of final outputs. If it's adequate, such as on a word processing machine, you can use a typewriter output. The most graphically sophisticated output, of course, is phototypesetting.

COM is a special variation of typesetting output in the microforms field. It involves special CRT machines which set type in miniscule characters on microfilm. There are limitations on what they can set, usually one typeface, maybe two. They usually can't handle graphics and different sizes of type, for example. But for specialized applications, such as producing lists of data, they are quite efficient.

The video display terminal can be an output machine if you think of it as a device on which the user calls up information on the screen, reads it and gets everything he needs to know without further permanent output. This kind of service is developing in the information industry, where companies subscribe to on-line services such as Lockhead and SDC. A subscribing company has an in-office terminal. Someone desiring certain information calls in through the terminal, over an on-line network, and is connected to any of a variety of data bases or collections of information in which he can search for what he wants. He pays for this service on a time usage basis.

The phototypesetter

Let's take a closer look at the phototypesetter of today and some of the radical implications of these powerful machines. A modern phototypesetter literally can set everything we want—in complete pages—fully automatically. Thus, in essence, we have taken that industrial plant, the composing room, and condensed it into a box. But this does not solve all our problems. What do we do with the work flow that we've always had to live with? What does this technology do to that work flow? It allows us to change a great deal—and this is where we make the payoff in this system.
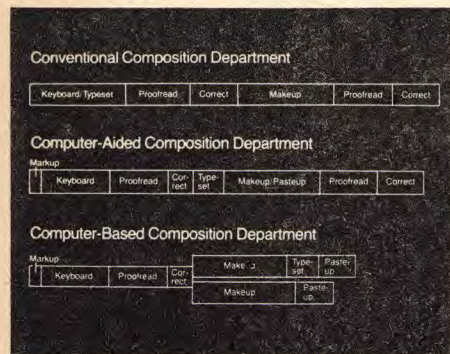
8. Corrections can be made and makeup done before setting the type.

Here, in the top bar, is the conventional composition department work flow, one that is very traditional. You keyboard and set the type, proofread it, correct it, make it up into pages, proofread these and then correct them. The more times you go around and around to get corrections made, the more involved things get, but those are the fundamental operations that happen in a normal sequence.

Computer-aided composition

If you are going to use a computer to speed this conventional process, as represented in the middle bar, you spend more time at the beginning to think and plan. You mark up copy with instructions for keyboarding, then you keyboard it. If you use a video terminal in this system, once you have keyboarded and placed the copy into magnetic storage, you can bring the image back onto the screen of the terminal, and proofread and correct it right there. This is more efficient than correcting the type after you have it set. Then once the text is correct, you can typeset it, make up pages, proofread the pages and correct them.

There are a number of systems operating in this basic mode today.

Computer based composition

Here, as shown in the bottom box, we push the typesetting function back even farther. We go through the same markup-keyboarding-proofreading-correction sequence as we did before. But in this case we assume we have the electronic capability in the system to make up pages on a video screen or in some other manner. It doesn't have to be done on a screen; it can be done in a controlled program operation such as has been the case in the directory field for a number of years now. The pages are made up by the computer reacting to instructions from an operator or from some kind of a program. Then the job is typeset. There can be two variations to this procedure. In one, you go most of the way without makeup and then you do a little paste-up afterwards; in the other, you have total automatic makeup in the machine and you get absolutely finished pages as output.
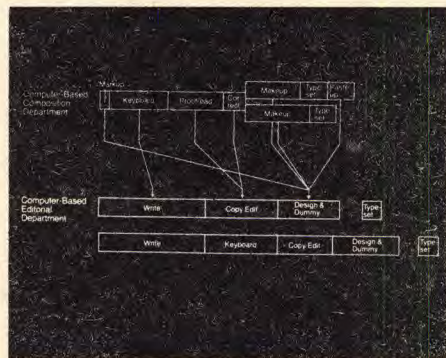
Editorial/composition interaction

These applications of computer power have created some improvements, but they still involve only typesetting in a conventional composing room environment. The real challenge and the real economies from electronic systems come when we take this kind of process and lay it against the editorial process that takes place before composition.
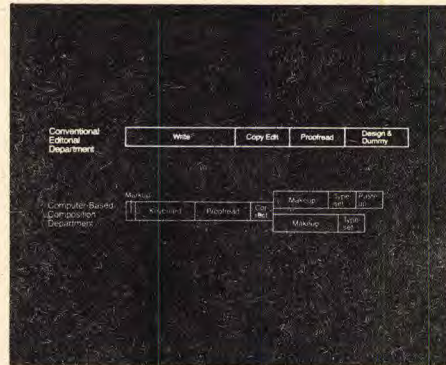
9. Interfacing the editorial and composition departments.

This process has been standard almost since the beginning of time, as shown in the top section of diagram 9. You write the material, edit the copy, design and dummy the pages, send the material out for typesetting, get the finished material back. I don't know of any publisher who is willing to trust a typesetter completely, so someone in the editorial office sits down and proofreads it as well. And you check page proofs in the editorial office too. The typesetting takes place in the plant as shown by the second bar, which represents the kind of computer-based composition department indicated in the previous diagram. In many of the advanced operations today we are already living with this situation. But look what happens when we begin to think in terms of not having the composition department use the equipment, but having the decision makers use it? Remember our concern with work flow.

10. Keyboarding becomes an editorial function; other operations, formerly executed in the composing room, are now done in the editorial department.

In diagram 10 the basic editorial flow is shown in the middle bar. The composition flow is shown in the upper bar. If your writers work on video terminal keyboards instead of conventional typewriters, the way they are doing in a great many newspapers today, the composing room keyboarding is collapsed into the writing process—you don't have to rekeyboard in the composing room because the text is captured in machine-readable form from the instant it is written. Next, one of the things a copy editor does is clean up the copy; in a sense, he is proofreading as well as changing words and generally improving the

text. So, if the copy editing is done on a video terminal, the proofreading that was done before becomes part of the copy editing function because once the copy editor is finished the system has the corrected material safely in its memory—no additional verification is needed. The copy editing function may be lengthened somewhat, in order to do a good job, but it is still a net saving over what you would need for a separate proofreading. The correction function becomes part of the copyediting as well, because the editor has already made the corrections in the stored copy. The markup at the beginning of the composing room process is really a translation of instructions from the publishing house; therefore, the person who decides the design specifications in the publishing house can simply insert these directly in the system via a keyboard or some other device, and collapses markup into the design and dummying process. Similarly, if these people input these instructions properly into the system, the system can then generate madeup pages and eliminate manual makeup and paste-up; these functions then collapse into the design and dummying function. The one thing left from the composing room to be done separately is the typesetting—the very end process.

The human factor

Some people will argue that you can't have the writers write material on terminals all the time. This is absolutely correct. From this, there have been some assumptions made that in certain fields, especially the book industry, this negates use of the new technology. Not so. Look at the last bar at the bottom. Assuming that you get a manuscript from someone who has not typed it into the system, then you must add the rekeyboarding function back in as a necessary cost. But you will still have a tremendous net saving from all of the other composing room functions that can be collapsed into the editorial process. This kind of approach is being proven out emphatically in the newspaper business. It is being developed in certain book and magazine situations and will become important in in-plant and word processing fields as well.

Current directions

Let's go back to the original electronic system, diagram 7. The basic concept that we started with in the early '70s was a system in which all of the different devices were wired together. In this wired system, we transmitted the information back and forth, and the processing was done in a central computer.
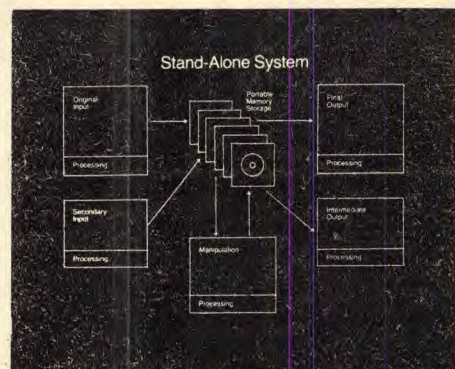
11. There is a current trend to a system in which the components are not wired together.

The current trend in equipment is providing us with a new configuration, portrayed in diagram 11. Many of the systems today are not wired together. What you really have is a number of peripheral devices, each

with some processing capabilities. Small mini computers, or certain amounts of computer circuitry, are built into the various peripheral devices to provide certain functions in these machines. So the computer has become distributed to the other devices. The memory is often portable, taking such forms as floppy discs or tape cassettes. You link the devices by carrying the memory discs or cassettes back and forth between the machines. Consider a typical word processing arrangement with a typewriter. It may have a magnetic-tape storage device so that you can store and retrieve, play back and edit. Here you have original input capability on the keyboard, and some processing capability. You also have manipulation ability in that same keyboard by playing back and inserting your changes. And you have a form of output—a typed page. It can be considered intermediate output, or it may be final output such as the final letter, document or page to be transmitted. You can describe today's typical word processing systems with this approach.

The stand-alone

Another popular kind of machine is the stand-alone phototypesetter which has a video terminal and a keyboard. The keyboard is used for initial inputting. The video screen and the same keyboard provide manipulation capability, and final output is produced through the typesetter. Many such machines have now been expanded to take floppy disc memory capability as well, and they can be teamed with other video terminals from a number of machines.

Editor's note

So much for the theoretical diagramming of how information is organized and how it flows. Now let's consider how specific equipment and systems generate, record, process, store, retrieve and output information and match these technologies to purpose. These subjects were covered at Vision '77 by Donald Goldman and Ralph Squire.

The Word:
Copy Processing/
Typesetting
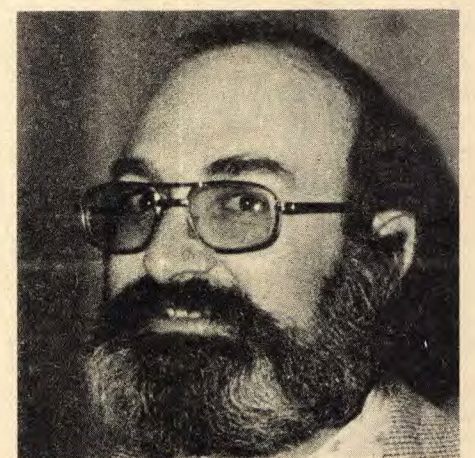
Donald H. Goldman
Independent Management and
Technical Consultant to the Graphic Arts

Phototypesetting, a thumbnail history

In the early 1940s, phototypesetting was first developed as a method of producing higher quality

imaging for offset printing. It was later that we appreciated its flexibility, utility, and cost effectiveness. In the 1960s, we began making use of computer technology, a key to the recent growth of typesetting devices. Computers for phototypesetting have, since the 60s, become faster, smaller, and less expensive, making phototypesetting machines with increased capability more widely available.

A word of caution. While we must learn to accept change, we should not jump on the new technology bandwagon without justification. Decisions on change should be made with sound justification, and not rationalization. Too many companies have installed computers for their PR value instead of for economic reasons. A good example is the companies that jumped into CRT typesetting several years ago just because it seemed the right thing to do. Many of them are no longer with us.

Obsolescence

Take advantage of the equipment you have now if it is still cost effective. If you had good sound justification for the equipment in the first place, it can remain cost effective for years. For example, at a company I visited in Pennsylvania several years ago I saw a computer over here. a phototypesetter over there, and various terminals—quite an array of equipment. But, standing at a bench in the corner someone was reading a tape. laying it down on what seemed to be a breadboard, razor cutting-in the corrections and sticking them together with Elmer's glue. "Hey," I said to my guide, "what's going on here?" "Look," he answered, "she can read those codes faster than you could read a manuscript. We've accumulated all these tapes. If we tried to convert them for our computer, it would take several years. This method is the most cost effective one for this job." This same company, by the way, still uses Photon 200's early phototypesetters for their math work because they continue to be the most cost effective for this work. Not to say that its methods won't change, but the firm still makes good use of equipment selected with good judgment.

Making an equipment decision

Before you change, think about such things as reducing your cost per unit output at a given quality standard with your present, as well as future, equipment. You want to be able to increase your speed, with, hopefully, no sacrifice of quality. You want to reduce the mechanical complexity if possible. There is no point in going into a technology that is going to make it harder to do things. You should be looking to do things in a simpler way, to reduce labor and costs. If you follow these fundamental rules, you will immediately identify your present weaknesses and those elements important in helping you make an effective selection.

Physical support requirements

To reduce labor costs, whatever the equipment you choose, doesn't mean to lower wages. It does mean using production people more effectively, perhaps by cutting down the time it takes to perform some operations, such as corrections, or by making it easier to mark up and keyboard complicated text through format usage. In other areas, you may want to reduce corrections and pasteup time and the follow-up operations with an electronic makeup device. Or, by better pre-planning of the text, cut down on later errors and corrections. How often we hastily set the type on a job, then we find we spend more time correcting

errors than we would have if we had filtered out these errors at the outset of the job. A job should be thoroughly pre-planned before it is typeset.

Interactivity

You want to increase your ability to control and predict your output. This is the one value of many of the interactive systems. With video display terminals, for example, editors can review a composed galley of type for copyfitting. They can also check for correct hyphenation before the copy goes through a typesetter

System flexibility

Perhaps the computer/typesetter system can be used for operations beyond typesetting. If you have a large data base, can you make use of it? We talk about word processing. Can you use the word processing output as input for the typesetting operation? Or can you use a variety of typesetters with the same input machine?

Keyboards

As the industry has progressed, a whole array of keyboards have been designed. There are paper tape devices with counting (justifying). keyboards. Today, more electronics are being utilized. Some keyboards have one-line display screens. Others look just like typewriters hooked up to electronic systems with video display terminals. And some keyboards, of course, are connected directly into the phototypesetter. Some of these, too, have a VDT for corrections and show you what you are setting before the typesetting process.

Training operators

Training should not be overlooked as you move into new technologies. An appealing thing about typewriter-like keyboards is their familiar key layout —familiar to anyone who has taken an elementary course in typing. There isn't that much more to learn, at least about the basic keys. You have OCR and OBR (Optical Character Recognition and Optical Bar Code Recognition) typewriters as well as strike-on composition, such as the AM Varityper and the IBM Composer. There are blind keyboards without a hard copy print. To help operators spot and correct errors, some blind keyboards have LED (Light Emitting Diode) displays. LEDs are also a part of all direct input typesetters. They show 32 or 64 of the last characters set and allow an operator to find and correct errors before sending the line into production.

VDT input units

When I first saw the VDTs (Video Display Terminals) I thought, here you are typing along, you see this information on the screen, it's going to distract you. You won't get any production out of something like this. But I must admit that not only can you get good production out of it, but you can also use the VDT creatively. You are able to type something and change it around without fully retyping. Using a VDT to do creative writing is pure luxury. The ability to make changes easily and interactively is the premise, not just with the VDT, but with any kind of input revision typewriter that allows you to type information, change it, store it, then bring it out and edit it before finally committing it. Hence, the appeal of "word processing" for offices, typesetters, et al.

The justifying keyboard

Keyboards that have the unit width values of the different characters you are keyboarding tell you when you are near the end of the line. The operator can

then make a decision, put in a hyphen as needed, and continue on. This method has been found to give the best quality in terms of line endings as long as the operator understands hyphenation, but it has been a handicap in terms of speed. Studies have shown that 25 per cent is gained in production, especially on short line lengths, if operators do not have to make end-of-line decisions.

This paved the way for so-called idiot keyboards. These keyboards are nonjustifying. The operator pays attention to the text, puts in the codes, and does not have to worry about line endings. Since keyboarding is a major cost factor, the time saved with such idiot keyboards is an important consideration. The output tape then goes to a typesetter where the hyphenation routines can be put in electronically.

If speed is not the problem, but accuracy is, justifying keyboards will fit in well, although they are more expensive than nonjustifying keyboards.

VDTs

VDTs are used, of course, in the visual text editing. They enable you to review the keyed text, correct or alter it and check that the changes have been made before setting the type or storing it away for later use.

With a page display or visual area composition and makeup systems, this interactive page makeup permits you to see the end result immediately, often with a representation of the type in proportion and in the proper place on the page.

Many of the input or editing units operate in a batch mode, interactively. Some modes, though called interactive, actually are quasi-interactive. The computer computations involved are fairly rapid, though. You can record on such media as paper tape, magnetic tape, discs—either hard or floppy, or output directly into the typesetter.

Input media

The one that is probably the most popular and most likely to remain so for a while is paper tape. The material is not very expensive, and the hardware is relatively inexpensive, too. This is a positive medium. If you type a code you see that you have punched a hole in the tape. Proficient operators develop the ability to read tapes. You can get paper tape almost anywhere. It is portable; you can carry it anywhere. It does have a few disadvantages. It is relatively slow and bulky…and have you ever had a paper tape knot, or, on a long job, while running it through your typesetter, had someone step on it?

Hollerith cards

These are data processing cards with the copy typed on them. The cards are then sequentially photographed. This is a form of cold type or strike-on composition especially suited to directories. If you want to make a change or add a new section, you just change or add some cards.

Magnetic media

All cassettes may look alike, but the internal coding formats are often not compatible. The cassettes, however, are popular and relatively low cost. Their drives are not very expensive, and they are readily available. You can use it a number of times—but you may get a surprise when the tape stretches. Though fragile, with proper care and use cassettes can be a very cost effective medium that can also be interfaced directly to many phototypesetting machines.

The mag card is another way to store material. Some manufacturers are talking about adding mag card readers to their phototypesetting devices.

Reels

The granddaddy of all magnetic storage units is the tape reel. It enables information to be taken from a computer and outputted on a typesetter at relatively high speed. You can keep a lot of information on a reel at a very low storage cost, and the process is quite fast. Phototypesetting machines and the cathode ray typesetter (CRT) devices that utilize tape reels run much more rapidly, and are far more reliable, than machines using paper tape. The problem is cost. You start at $5,000 for such a reel drive. But if you have a computer, and want to use your data base—and have the programmers to do the software that makes the data composition useable—this can be a most effective way to communicate with your typesetter.

Magnetic discs

There are hard discs and flexible discs, or floppies, as they are known today. There are even mini-floppies and flippies, on which you can record on both sides. Disc hardware is relatively low-cost. A hard disc, which is the most expensive, runs $10,000-$15,000 for hardware. Floppy disc hardware is less than $5,000 and the discettes cost less than $10.00. Hard disc packs enable you to store up to five million characters, sometimes more, while floppies range from 250 to 500,000 characters per discette. Like cassette formats, the disc formats may differ in different devices.

Computer (Core) memory

This is the form of electronic storage into which you put information, which is retained (usually temporarily) until you enter new information. Besides core memory, there are ROMs, PROMs, and RAMs (Read Only Memories, Programmable Read Only Memories, and Random Access Memories), all of which are forms of semiconductor memory. The drawback with RAM, though, is that when you turn the power off the memory disappears, so you need a paper tape, cassette or disc device to restore the computer program.

Dedicated keyboards

These are keyboards, such as those on the direct input machines, designed exclusively for typesetting. If the keyboard hasn't been designed to run the typesetter in your system, you have to be careful that you use the right coding information and language for the typesetter.

Programmable keyboards

Many keyboards are programmable, being able to execute a string of commands when only a few keys are struck. This ability to compress multiple instructions and have them exploded and inserted into the text with a minimum of keyed instructions is known as formatting.

OCR

It is much cheaper to buy a $900 typewriter than a $5,000 terminal with paper tape and all the special keys needed. This consideration has opened a new business, cottage industry keyboarding. In their homes, people type OCR copy on a per page basis. Editors can create their own OCR copy and send it to their vendors for conversion and typesetting. We have operator familiarity with a standard typewriter keyboard. The machine is portable from home to home, department to department. Cost of training

and labor is low, and effective use can be made of formats. The keyboarder is typing, not composing per se. Many of these devices enable you to type in a string of codes (format the text) that will command the typesetter later on. You write the codes into the manuscript. The typist keyboards them in along with the body copy.

One negative aspect of OCR is the time it takes to get your typewriter adjusted. Accurate, clean copy is a must for the OCR reader. Because of this problem, one manufacturer has developed a machine that tests typewriters for accuracy. In one test, of 25 typewriters, only two didn't need adjustments. Since the problem can be remedied, it is a minor point. I make it only so that you know that your typewriters have to be put in good shape before attempting OCR use.

The difference between OCR and OBR is the bar code, a little code at the bottom of the characters of the alphabet. We have become familiar with bar codes because we see them in grocery stores today. The values principle is the same.

The OCR/OBR scanner

Here's how a scanner works. There is a light source. There is also a rapidly rotating drum, which focuses on the special characters on the bar code, or the characters themselves, then converts them into signals used to punch paper tape, or into other codes (possible magnetic) that are readable by the typesetter. One problem with OCR is its slower speed, though some relatively high speed devices have been developed.

The Visual Display Terminal

The use of the VDT for input and editing has increased significantly over the past few years. It almost has become a necessity. Back in 1970-1 an inexpensive VDT unit cost $17-18,000 or more. Today, you can get one for $3,000 or less. The VDT is a fast keyboard, but its great advantage is its interactivity for editing. The operator can see the input results and make changes immediately. The VDT has flexibility and can include a programmable keyboard much like the input devices discussed before. Many companies use a VDT for both input and editing. Some VDTs even have dedicated keyboards which, as well as being designed for typesetting, are connected directly to the typesetter.

A first generation phototypesetter

The Intertype Fotosetter was little more than a linecaster with a photographic unit in place of the slug-casting mechanism. Its mats look like linecasting mats with film negative characters. They are dropped in front of a light source and photographed.

Today's technology falls into three categories: Photo/optic, which some call second generation phototypesetting; electronic/mechanical, in which characters are photo-scanned instead of being photo-projected; and digital-scan, using cathode tube and laser technology.

Matrices in the photo-mechanical devices or in the photo-scan devices require a light source, a negative photographic character matrix, a lensing system, and a mechanical character positioning capability. Speeds go from five to 150 eight-point, 11-pica lines per minute.

The second generation

With the exception of the Alphatype, the early second generation machines were very expensive. They needed a justifying keyboard because computers

weren't around, and they were relatively slow. By the mid-1960s, comparable, in fact better, models were about $50-60,000. They were all good quality machines, but because they were somewhat slow they weren't always cost effective, and the keyboards to drive them were expensive and cumbersome.

The price revolution

In the 1967-68, Compugraphic introduced a machine, at first designed for the newspaper industry, for under $10,000, with some slave (computer-driven) versions for under $5,000. In 1970-71 came the Dymo Pacesetter. Photon (now Dymo) virtually wiped out its entire product line with one piece of equipment. A-M came into the photocomposition market with a Pacesetter-like machine, first the 725, later the 747, and then the 744. Their latest machine is the 748. And Mergenthaler came out with the VIP. The average price of these machines dropped to under $20,000. It became more economically feasible for many of us to get into the typesetting business. While there was more to it than just going out and buying a machine, it was a start in the right direction. In a similar manner, $40,000-$200,000 computers have given way to computers that cost from $1,500 to $10,000 and are as powerful as some of their expensive ancestors.

The third generation

Photo-scan typesetters use a light source, a font grid and a scanning CRT—that is , a high-resolution television tube, which electronically, or electro/mechanically positions the scanned character on the typeset page. Speeds are up to 600 newspaper lines per minute.

With these systems the font character is scanned and reproduced on the CRT face, then lined up and imaged onto the photographic material. You can do neat tricks with the electronic positioning of characters. You want a condensed typeface? An expanded version? You want it bold? You want to italicize it? You want to slant the character? Back slant? Fore slant? You can do all of these electronic tricks. Just instruct the machine (through codes) and the standard Roman face can be manipulated, distorted, expanded, condensed, made bold, or whatever you desire.

The cost of the CRT is coming down. Most CRT typesetting devices a few years ago were in the $100-$125,000 range. About two years ago we started seeing machines in the $75,000 range. Then Compugraphic took another leadership role with this kind of device and came up with a machine that ranged from $23,000 to $44,000. In 1977-78 you are going to see other CRT units that will be even more cost effective, more versatile, and will produce even better quality work.

The fourth generation

The digital-scan machines give you still more flexibility. With these machines, characters, instead of being in photographic form, are stored away in digitized (reduced to computer code) form. You can store hundreds of fonts, electronically produce them by drawing the character on the face of the CRT tube, and from that point project them onto the image carrier (film). With these units you can do all the electronic tricks you could do with photo-scan devices. And, because you omit the photographing of the font matrix, you have astronomical speeds. . .from 2000 to 3000 newspaper lines a minute.

You should be aware of how the characters are drawn on the CRT. The density of the scan lines will affect the quality of the type. There is a stepping effect along the edge of the characters. This is a characteristic of the machines generating images from digitized fonts. You are not photographing the font, but creating it. You are defining how long and how wide the scan lines should be to form a character. Many CRT typesetters will have more than one mode. One higher speed will give you fewer scans per inch (used for proofing), and a quality mode, with more scans per inch, which will improve reproduction quality, but lower the operating speed.

Digitizing graphics

As you digitize the input you could also use a scanner to merge in graphics of various forms. These include type, line graphics, halftones, or special effect screens. You can merge these with the type, manipulate their size and reproduce them on the CRT face. You literally set pictures as well as type. You can simulate halftones. This is one of the principles being used in ink jet printing, where digitized data can be produced through a hard copy output device that works on the scan-line principle.

Another digital scan device is the laser typesetter. The laser has only one moving part, the moving mirror, which receives a high intensity light beam and transmits it directly onto the photosensitive material. The ultimate advantage of a laser will come when it exposes the image directly onto a printing plate. The light source used by conventional phototypesetters or CRTs is not intense enough for most plate materials.

Page makeup

We used to talk about page makeup as the manual pasteup of paper and film. We are all familiar with the technique—rubber cement or wax, and scissors. Today we can use the computer to assist in this process. First you define your pages (we are talking about standardized page layouts) through keyboard commands which call up various format instructions. Then, when you enter your data into the system, it will be formatted into these preselected type blocks. By assembling the text blocks into pages, we have performed electronically the same function as is done manually. The obvious disadvantage is that you can't see your results until the typesetting is done. Also, corrections or adjustments must be done manually.

Typographic previews

On some interactive VDTs you can see the line endings before you go to your typesetter. This is useful for accurate editing and corrections, but it does not always solve the problem of visual copy fitting or help in the positioning of copy blocks. The trend today, especially for ad work, is to have a VDT that will represent the type as it will look, before actually reproducing it on photographic material. These devices are coming down in price significantly. Some machines only a few years ago were in the $200,000 range, but recently one was introduced at $30,000. So you can expect these units to become more cost effective for the commercial market in the near future.

Full page display

These units are an advancement on the interactive VDTs and display ad systems. With them, all the text on a newspaper, catalog, advertisement, etc., is displayed in position, and, with some machines, in the exact typeface to be used. There are units today that

can also display the graphics in the desired position. These full-page systems are the ultimate objective, since they offer electronic pasteup capabilities along with the high-speed batch processing of text. This is important since the weakness of many of the present Display Ad units is that they do not always save time on the initial composition because much of their operation has to be done interactively.

Proofreading

There have been a number of attempts to proofread by machine. However, people still do this job best. The lone proofreader remains the most popular way of proofing and probably for many kinds of work, the most cost effective. The copy holder/reader team uses one person to read the copy while someone else checks for errors. This method is used for detailed financial material, for example. Of course, the cost goes up when you use a copyholder/reader, but it is not proven that accuracy goes up, or that the proofing process is speeded up for all types of work.

Some exotic proofreading techniques have been tried, such as the cassette tape recorder reader. But think about it. Why does that have to fail? All the dese, doses, and dems must be filtered out and understood. Punctuation isn't obvious, and it takes as long (or longer) to recite the text than it does to read it.

Another machine approach to proofreading, used for numeric or highly technical work, is double keyboarding. this teams input with computer programs that attempt to match the lines of the two sets of input, and, if something doesn't match, print it on a terminal. The corrections are then made interactively or by patch insertion. This process is used a lot, for example, in telephone directory work and statistical typesetting. Another type of electronic proofreading is the AT&T spelling program, designed to catch commonly misspelled words.

Proof media

We have been discussing typeset output that not only shows us the editorial information, but also whether it has been set properly. This is often the most expensive way to proofread, because you have to go through the typesetter to produce a proof, then repeat the cycle to correct and even recorrect it. A combination of computer printout and an interactive VDT (or page makeup system) has the most potential for combining the editorial proofing requirements with the typographic ones. You can proofread right on the terminal. However, this can tie up a relatively expensive device, diverting it from its primary purpose. Yet in many newspapers today editors are doing just that. This way, as they read the story, editorial adjustments can be made immediately. As VDTs become less expensive, perhaps we will be making more use of combined proofreading and correcting methods. This has the potential of increasing productivity and accuracy.

One last word

I have covered perhaps too quickly all aspects of the typesetting scene. You probably are confused and frustrated. Hopefully, by the time you have digested all the Vision '77 reports in U&lc, some of the confusing aspects will be sorted out. However, it still will not be enough. You will have to visit, touch, examine, review and interview just to determine what, if any, equipment or method you should use. It takes a great deal of homework. Good luck!

The Word: OCRs & VDTs

Ralph I. Squire
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Wouldn't it be nice to talk to a device and output our copy directly from it for all the verbiage we go through? It really hasn't come to that yet, but we do have some effective pieces of equipment now and I'm going to provide you with more details on some of this equipment that is in widespread use, and on some of the things we think of as revolutionary, although they are essentially evolutionary.

The two technologies we are going to focus on are 1. optical character recognition (OCR and OBR too), and 2. the VDT systems. These two technologies came into being in 1970, primarily in the newspaper field. Here, with a large daily product, the per page production cost was very high. Economies were crucial to survival. Keyboarding was recognized as a major cost factor and one objective was to eliminate double keyboarding (as reporter plus typesetter).

OCR and VDT's, then, were designed for reporters as well as for skilled typesetting people and thus became typewriter oriented. It was decided to use the editorial environment so as to eliminate the later keyboard operation.

OCR

OCR was first introduced in 1970. It takes typewritten copy and translates it to machine language through a device commonly referred to as a scanner.

Input

In an editorial environment the primary input device in use today is the IBM Selectric typewriter. It is a precision typewriter and, with its interchangeable typing element, you can select a special element with characters the scanner can read. When you type for OCR you require a little better quality paper than scrap newsprint, which newspapers have used in the editorial environment. A 20lb white bond would be sufficient. We use the one-time carbon ribbon and, of course, the special typing element that the scanner can read. You can use special ribbons, or a Tech III ribbon which is about a third of their cost and lasts five times longer. Most of the scanners today read Tech III copy quite effectively. I have also seen good results with a correctable film ribbon. This permits the keyboarder to eliminate errors and go to the scanner with corrected copy. Scanners are not as fussy as everyone seems to think.

We use a standard forty-four key IBM typewriter with duplexing of the period and comma, so we can put down eighty-six different characters. From a typographic standpoint that is not enough. We need to be able to put in characters not common to the typewriter keyboard, as instructions. We do have one character that is different—a delta symbol in place of the underscore. The little triangle is used in some systems as the insertion code. It must precede and follow certain information. Our keyboard uses the IBM OCR Courier typeface. The slash mark (/) is on the right-hand lower row of the keyboard and is our precedence character. It allows us to input instructions: by striking it before keying a command, we enable the scanner and the typesetter to distinguish commands from copy.

Mnemonic coding

If your manuscript requires pi characters and your typesetter has the ability to reproduce them, you can put them in the copy by using a slash mark and mnemonic coding. Journalists and authors have done this for years. They space over and put characters in with a pencil or indicate them with mnemonic coding on the side. Any character that the typesetter can reproduce for you can be put in by simple mnemonic coding. The coding can be designed by the author, not the production people. It should be symbols with which the journalist or author is familiar and uses, and not those peculiar to the word processing environment. Our special characters can be put in to specify typesetting functions, like bold face, italic, etc. "Headlines, /24, /HM" would give you a 24 pt Helvetica Medium headline. In a similar way you can specify a style (from the storage in the machine's memory) or column lengths or widths, a switch of typeface or size, etc. Very simple mnemonic coding can provide all the necessary coding in your copy.

Typing for scanning

We hear all kinds of concepts about how to type for the scanner. I believe that you don't need to have a printed form. You don't really have to do extra-ordinary things. An author or journalist should be able to type very much the same as he or she has in the past, except for some very basic fundamentals. One thing you don't do is strike over. And in newspaper journalism one of the bad habits journalists have is x-ing out typing errors in copy. We try to avoid new work procedures that can disrupt the creative thought process. You can treat the scanner the same way you treat copy off the manual typewriter—space over, retype the word correctly and cross out typing errors by hand afterwards. It's a very effective process.

Forms for OCR Typing

Some companies use preprinted forms for OCR typing. What we do, and strongly recommend, is to standardize the operation. For example: one inch margins, vertical line space based on the scanner's requirements (some are five lines per inch, some are six, etc.). We use a 10 space preset tab. You have to use the typewriter properly. You don't indent with a space bar—you use the tab for indenting.

There are two ways of correcting a typing error. There is the red felt tip pen method, described later, and deletion symbol editing. In the latter, a number symbol is used in the scanner as a deletion instruction. If you type a character and put a number symbol after it, it tells the scanner to ignore the character, and not re-

produce it. Two-number symbols say, "don't reproduce the word preceding," three-number, "the line preceding."

If you were to compare the IBM Courier OCR with a piece of copy typed on a standard IBM Courier face you probably would not know the difference. There is very little noticeable modification.

The editing process

After you take the copy out of the typewriter you go through the editing process to be sure the copy is correct before going to the production cycle. Since the scanner we use is not too sensitive to red, a red felt pen is used to indicate where the errors are in a line, and any corrections are put above the line accordingly. After that is done you go through with a black felt pen. The scanner recognizes the black carbon ribbon image as the typewriter's and also recognizes the black carbon from the felt tip pen. You can go back and cross out where the changes are to be made or where you want copy deleted or inserted. One thing you must be aware of is training. Training is basic to all this technology. You must look at every character in the typewriter in terms of it having a picture frame around it. Every character sits within that frame. When you cross it out make sure you don't go outside that frame into the frame of the next character. To be sure, you can simply cross out a part of the character or the complete character. It isn't necessary to blacken out the entire area. Just a single black line will do the job effectively. After that's done you put the copy back into the typewriter and type in your additions. In correcting the word, "family," for example, one would type...Delta, space, FAM, Delta. This causes the scanner to drop down 2½ spaces below the line and look for the correction, so when you type in corrections between the lines you type them in as they appear in the copy line above. If there is more than one correction in a line, you copy them in sequence as required. Of course, there are other situations, but the point is that anyone who can type can produce copy for a scanner.

OCR's limits

But this system works better for typists than for authors, reporters, or editors. The basic problem that we have come to recognize in the publishing industry is that OCR is fine for the reproduction process, but is not a very effective tool for the original author, newspaper journalist, magazine writer, whatever. The reason is that we just don't think logically. We, in newspapers for example, commonly have a second thought on something. We write a paragraph and may insert it in the middle of the copy. It's not at all uncommon to write a paragraph at the bottom and then, when you get all through reading and editing, you say, "That would make a better lead than the one I wrote at the start. I want to move it up." There is no way you are going to be able to do that with a scanner without completely retyping the copy. The industry has recognized this and today, for the newspaper industry, OCR has pretty much peaked out. The trend in newspapers today is not to consider the scanner unless you can justify it in other than editorial areas. The trend is to VDTs.

(Editor's note: At this point Mr. Squire showed slides of different OCR scanners, explaining the chief characteristics of each. He indicated that scanners are cost effective in such non-editorial areas as word processing centers, handling of syndicated copy, classified ads, and capturing wire service copy.)

VDTs

Video Display Terminals allow us to manipulate our copy on the face of a cathode ray tube (CRT).

Some copy displays in single columns, some in double. The whole premise and concept of a VDT is this. There's a bright spot or a blinking bright spot or underline, which is called a cursor. "Cursor" is a computer oriented term. Some cursors are blinking bright spots, some are outlines, some are underlines. But the premise of the VDT is that anything under that cursor or to the right of it can be deleted or altered. A set of cursor control keys permits you to move the cursor left or right, up or down, to any position on the screen, and thus tell the VDT where the change is to be made. You then add, delete or change copy as necessary. The cursor controls are in various formats on different keyboards.

The cursor control block of keys might be called an editor's electronic pencil. In our Harris 1100, the home key would put the cursor in the left-hand position of the screen. Keys with arrows on them move the cursor to the right, up, down, and to the left. A control key can be depressed with a cursor directional key to move the cursor through the limits of that direction. We are also able to move the copy across the screen. It can be scrolled up or down to bring into view other parts of a story, or the next story. Special control keys bring you quickly to the bottom or to the start of the copy. Other keys can remove a character, a word, or a line. And there are keys which allow you to delete information you have defined on the screen with the cursor.

Character deletion is usually instantaneous, but some systems provide for a redundancy in respect to the word, sentence, paragraph and block deletions so that you do not lose copy accidentally. For example, a word or a sentence removed, instead of leaving the screen at your first request, may be underlined or may start blinking, saying, "Dummy, do you really want to get rid of me?" If you do, just strike the remove key a second time. If you don't, touch one of the cursor control keys and it will stop the function. In practice it's a device which you can get used to very quickly.

Above the character remove key there is a key called the insert key. This enables you to go out of what we call the normal overstrike mode of operation. When you strike it and then strike a character that character converts to the new character and you go to the insert mode. At that point old copy moves out of the way and you insert the new copy. You would be surprised how little instruction and time is required to use these systems effectively.

With paper and pencil editing we have the luxury of going back and reading what we have crossed out. With a VDT, never delete until you have put in what you want. Don't write over what's there. Just put it in insert mode, type in what you want, then delete what you don't want. There is no way to get back deleted copy.

The first VDT was not called a VDT. It was called a CRT proofing and editing terminal. It was first brought out on the market in 1970 by Harris Intertype. (Now called Harris Corporation.) The 1100, by the way, is still manufactured on request. It was first priced around $18,000 and was not intended for editorial use. It aimed to facilitate the reading and editing of paper tape. It also handled incoming wire service copy. How did you edit wire service copy? You

didn't edit it. You had to take it as it was and chop out certain paragraphs and edit it journalistically. The Harris 1100 was developed to take paper tape, read it, display the information on the screen, and allow you to effectively edit and delete as required, and then it would generate a new corrected paper for the production process. A lot of other manufacturers produce stand alone VDT units today.

(Editor's note: Here Mr. Squire showed slides of and compared diagrams of VDTs and VDT systems introduced over the past seven years. Mr. Squire also reviewed portable VDTs currently used by on-location news reporters. They weigh only 26 lbs, fit under an airline seat, use cassettes that can transmit by phone lines to a central computer or be put on line to a paper tape punch. He also described the system approach "where we take more than one VDT and control it by a central CPU," and compared several major systems. He explained that "the systems approach does one different thing for you. Other than having a screen showing you the mode of operation, where we can do the normal writing or editing of a story, we also have directory modes." Directories are, literally, electronic files. Editors can call up on their screens and index what is in the file (memory) and call up, by keyboarding the correct file number, a story that is in the file.)

Newspapers the point of entry

Most of this equipment was designed for newspapers rather than for commercial applications. Later on, as has been true of so much word processing and typesetting equipment, we can expect very capable lower priced systems for the commercial and office markets. A real problem with some of the equipment and systems is that they aren't human engineered. Screen reflection is one of the problems, keyboard layouts another. Too often, in the printing/publishing industry, lack of acceptance by authors or journalists has been due to the system being designed unilaterally by production oriented people, rather than in cooperation with journalists or other word originators.

How many journalists and authors are really very good typists? In the newspaper industry, I would say sixty to eighty percent of them are very bad typists and most of them are "seek and ye shall find" two-fingered typists. They get by. They are very good authors, but they are not very good communicators through that keyboard. As a result, as they type they must alternately watch the keyboard, then the screen. If you had to do that, with bifocals, I'm sure you would be a little disgusted.

Prices breaking

New model VDTs are coming in already in the $30,000 price range. Essentially they give you a unified composing system, tied to a videosetter/computer program capability that enables you to formulate copy or a story on the screen, pass it through the circuitry of the videosetter and then call it back and get a copy on the screen, and even a hard copy printout to get advertiser's approval prior to committing it to type. The state of the art of the industry has mushroomed very rapidly at the same time as prices have come down.

Cost justification

It is very difficult for even fulltime expert systems consultants to keep track of all the changes taking place in their industry and to truly measure their significance. Nevertheless you must practice basic man-

agement principles in making new equipment purchase decisions. So much is at stake. First you have to determine what you really need to do and what you can do now. Chart out what you are doing, using a PERT chart or the CFR project type. Determine if you are doing it right with your present process before you consider putting in any new equipment or system. At this point, systems are cost justifiable in areas where they formerly were not, but you have to be able to pinpoint where *your* cost justifiable point is.

Case Histories

A different historical perspective
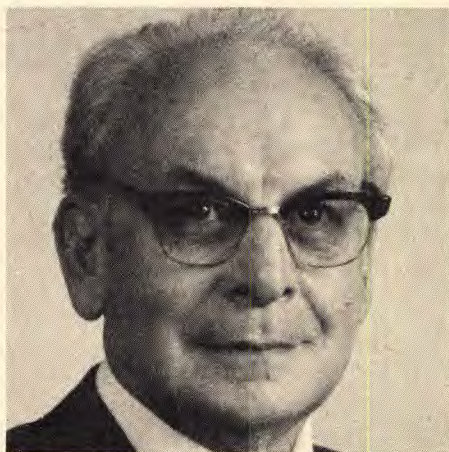
John W. Seybold
President
Seybold Publications, Inc.

Editor's Note: *After Vision '77 examined many of the new word processing and typesetting technologies, it asked a panel headed up by John Seybold to present case studies of how several different kinds of installations had been put together and how they were performing. Mr. Seybold's panelists were Joyce Kachergis, Harold Chevalier, and Perrin Long. Before calling on them, Mr. Seybold offered his own comments on some of the points covered by previous speakers.*

I differ with previous Vision '77 panelists in my analysis of the history and thrust of the word processing/typesetting relationship. There has been an assumption that these two phenomena developed simultaneously. As I look back on their evolution, it seems to me that the word processing revolution doesn't explain the typesetting revolution at all. The typesetting changes occurred long before there was such a thing as word processing. It is true that the MTSC, when it came out in the early 1960's, gave impetus to the new phenomenon of word processing. But, until recently, word processing and typesetting pursued independent courses. It is only recently that people in each field have come to recognize the other's existence. What happened in the graphic arts industry, as I see it, was that the rush to offset printing made hot metal typesetting to some extent an

anachronism. Out of this need, photocomposition began to be adopted in the 1940's and early 50's. But photocomposition presented some significant problems that could only be resolved when computers came into being. In the early 1960's computers began to be applied to some of the perplexing formats of photocomposition. In the 1970's we had the equally significant development of the minicomputer which again transformed the character of the industry and the way computers relate to photocomposition processors. Mini-oriented computer typesetters, as we know them today, are where the action now is in typesetting.

Word processors and typesetters compared

The present minicomputers have been applied to make much better typesetting systems than word processing systems. Today, word processors are fairly naive and ineffective tools. I think this is changing, but the word processing industry can learn a great deal from the photocomposition industry regarding the development of better tools. As consultants, we are often intimately involved in selecting systems which require us to look at editorial functions, and we find in general that the solutions proposed by word processor manufacturers and by their equipment suppliers are comparatively expensive and relatively ineffective.

Basically, we have an editorial revolution

These changes in typesetting have been inaccurately described as a typesetting revolution. What we are really witnessing is an editorial revolution. This means that it just happened backwards, as many things do, so illogically, in our society. We started to automate the back end (output, typesetting and composition) and have been moving closer to the front end (input and editing) all along. This came about because the technologists couldn't understand anything but the back end. The really exciting consideration is how far "up front" the process can take us.

The typesetting function, interesting as it is with all of its aesthetics, is still merely an output phenomenon. What we are talking about here is much more significant, and this trend toward the automation of editorial functions is still proceeding. It concerns functions which are extremely difficult to define and, as with most things involving computers and most tasks involving society, the actual doing isn't as difficult as the defining of the task. Understanding the task is terribly difficult.

Page makeup

It's not hard to write a page makeup program. All we have to know, and nobody has really defined this, is to come to grips with what the page makeup is supposed to do. We need an understanding of what the functions are before we can really address the problem. We have to look at the way words are generated and follow the flow until they come out the other end, if indeed they ever need to come out. We find such a bewildering variety of explanations that it is hard for us to design *the* system, if indeed there is one ideal system.

We find there are some people who write by scribbling on pads, others who write by dictating into equipment, with their feet on the desk. There are people who write by dictating to stenographers, where the logical place to enter material into the system is at the stenographic level. There are people who write on video tubes. There are people who do

extracts or translations and who could easily record their work directly on tubes. There are people who produce information in remote locations, producing manuscripts that they hope some publisher will take. Their work comes in over the transom and may then be rekeyboarded. And there are people whose normal function is to be "captive writers" in a particular environment. Other people write at home at midnight. There are people who write a few words that need to be engraved in marble and others who write stuff that is meant to be thrown away without hardly even being read. The tremendous variety of what is written, how it is written, and what it is written for creates the problem we are all facing.

The total picture

It doesn't do as much good to look at only part of the task as it does to see if we can step back and examine the entire function. And this obviously involves a total restructuring of the way our industries have related to themselves in the past. This restructuring threatens jobs, it threatens institutions. We are trying to salvage some part by finding new roles to play. None of us really knows how it's going to go but we find it a very exciting time in which to be alive and, we hope, well.

WP/typesetting differences

What are some of the differences between word processing and typesetting? Word processing is deficient in the sense that it usually doesn't offer any kind of file management system. It's up to the individual operator to keep track of his tapes or his floppy discs, or to some supervisor to follow the status of jobs. What we find in modern typesetting systems, generally speaking, is a superb file management arrangement with directories, cues, cross-directories and so on—the ability to ascertain the status of jobs.

Word processing systems, by and large, make insignificant contributions to the work flow. Work flow does not proceed through the word processors as it does through a good typesetting system. In the latter case, the material which is input stays within the system until it is finally disposed of, if it is indeed ever finally disposed of, in typesetting output. (The input may simply change form and become part of a data base.)

Queuing, filing and the multiprocess editing and composing stages are characteristic of the large typesetting systems today, the typesetting plus editorial front-end systems. And word processing people have not yet really begun to address these problems in the most constructive way. For the most part, they are offering not solutions, but panaceas.

Formatting flexibility

Formatting flexibility is generally much more extensive in typesetting than in word processing systems. There are some advantages to word processing, in little things like decimal alignment of tabular material, documentation aids, and adding totals of columns when you're inputting tabular statistics. But on the whole I think the word processing people have to look at what's happened in the graphic arts industry in order to design appropriate systems.

Needed...a more embracing system

There's another ballgame which has to do with the large computer configurations, and the typesetting industry has to address that problem too. We have to find some method of accommodation which embraces, strictly speaking, stenographic-type word processing functions, typesetting functions and file

management and work flow functions, and large computer data-base applications.

What is needed, moreover, is a corporate overview of these problems, and this is not yet happening. People are making the wrong decisions. Decisions are being made by the wrong people.

Inplant printers are often judging the kind of equipment they should have only in relation to their own needs. Or, decisions are made in an agency by various divisions or departments about what kind of word processing equipment they should have. Each one to his own fancy. They're made by computer people about what kind of systems and equipment they should have, all with no overview of the interrelationship or possible interrelationships between functions. This can't continue because we're all in the information game and all of these problems and challenges have to do with the processing of information *in all forms.* Within a company there is redundancy of capability and equipment; there are overlapping abilities and yet much unused time on too many machines. This doesn't mean that we want one gigantic supersystem, but it does mean that there has to be some accommodation. Management needs to make the decision at a corporate level. At least, if they're going to go ahead and let people in different departments make their own judgments they should adopt the policy of: "Rent it. Don't buy it until we take stock of where we are and where we're going." In many instances one same system will do a better and cheaper job addressing *both* typesetting problems and the so-called word processing problems. But we also need to consider such other things as data bank problems. There are really exciting opportunities for storing information, using it effectively and getting at it when you want it.

Three case studies

The case studies that follow were selected because they represent interesting situations, interesting problems in quite different areas. Let's see what light their experiences can shed on some of your problems and on some of the thoughts offered above.

Case History: A University Press
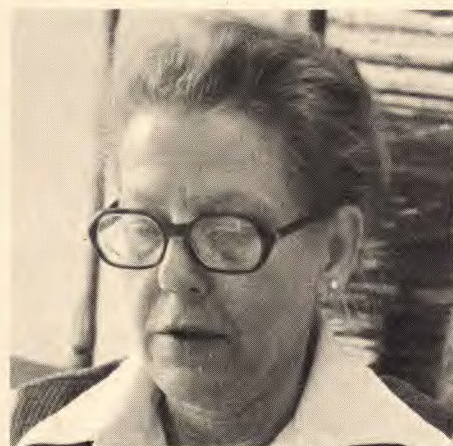
Joyce Webster Kachergis
University of North Carolina Press
Production and Design Manager

The University of North Carolina Press is a scholarly publisher. The university press book is written by the scholar for other scholars and university press books represent a full range of typographic problems.

University press books have a circuitous proof flow. They are written by a scholar, who is someplace else, and must be proofread by that scholar because he or she may be the only one who understands the book.

Orazio Vecchi

L'Amfiparnaso

A New Edition of the Music with Historical and Analytical Essays

Transcribed, Translated, and Edited by
Cecil Adkins

The University of North Carolina Press   Chapel Hill
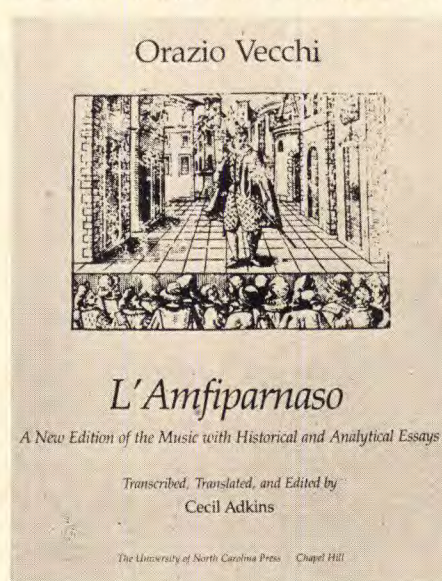
1. The scholarly book.

The scholarly book's purpose is to communicate new ideas in a professional field; or it can convey new knowledge or a new interpretation resulting from the scholar's research.

Carolina Home Gardener
by Chris Florance

2. A regional trade book.

Another area of scholarly publishing is regional trade books.

SKIALETHEIA
or
A Shadowe of Truth,
in Certaine Epigrams and Satyres

BY
EVERARD GUILPIN

EDITED BY
D. ALLEN CARROLL
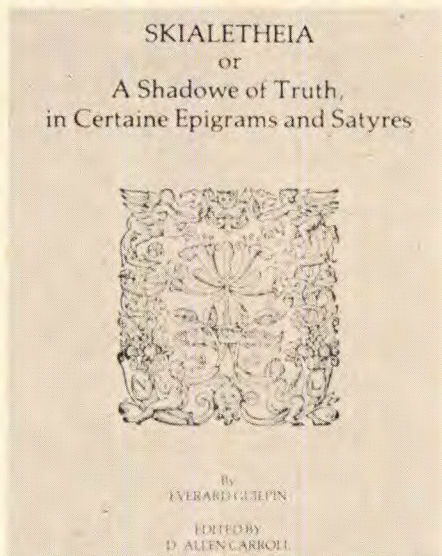
3. Conservative design is common in University Press books.

University press books are—by advertising standards —conservatively designed.

They have a tradition of quality in design and production, exemplified by their high proportion of representation in national and regional book shows. The edition size, the number of books printed of an individual title, is usually small—1,500 to 2,000 copies, to meet the small market.

Who buys university press books? Scholars ⊙ the particular field of study and libraries. Students and many scholars prefer to get this type of book from a library. So scholarly publishing has an obligation to use good materials that will last, paper that will not self-destruct.

Education is costly; scholarly books are published at a financial loss but, hopefully, for a cultural gain. They are an important means of transmitting knowledge and research.

An in-house start

The low edition sizes cause the cost of composing a scholarly book to be a very high percentage of the total cost of manufacturing the book. Because of this, in 1971, at North Carolina we began our experiment with in-house composition by leasing an IBM stand-alone and composing three books with startling savings. This strike-on composition produced typelike characters, more legible than typewriting, but the 9-point unit spacing resulted in loose lines and less legible type.

After a period of leasing time on an IBM MT/ST on campus, we purchased a Compuwriter II, a direct-entry phototypesetter. We composed 19 books on the Compuwriter, again at a great savings and with decent results. We were convinced by the savings, the flexibility, and the convenience that composing our own books was not only a way to survive but a way to survive and maintain quality. On the basis of the savings we effected, we submitted a request for an equipment grant to the Kresge Foundation and were awarded $65,000 in 1974 to purchase equipment to experiment with in-house composition.

Direct-entry typesetting

Direct-entry typesetting equipment has changed the world and indeed changed ours at North Carolina. After receiving the Kresge Foundation grant we decided that simply purchasing more Compuwriters was not a good solution for our press. We wanted a more sophisticated type-generation system, more computer power, more efficient correction, better type quality, and more flexibility in mixing type fonts. We decided to purchase a more flexible configuration with the phototypesetter (which sets the type) as a separate item from the input source. (Input, of course, is whatever feeds or drives the typesetter.)

What immediately occurs when the keyboard is separated from the phototypesetter is that many more functions are possible—functions like more sophisticated tabular composition formatting; and these functions can be either in the keyboard or in the typesetter. We purchased and still use a one-drum Comet I Mergenthaler VIP. One-drum means that it holds six type fonts. This is enough flexibility for bookwork. Our VIP sets type from 6 to 72 points on the line. It can float accents over or under any character. We have a pi font which is a type font with blank positions so that we can put our own characters on the font.
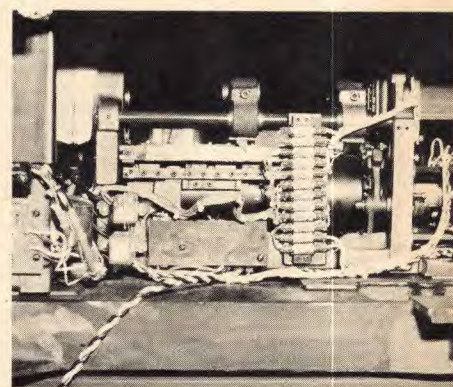
4. The inside of a V-I-P. Drum holding tape is on left; lens system is at top center.

At picture 4 you see the inside of the VIP with the drum holding the tape on the left and the lens system toward the top on the metal pipe. What will it do? Its intelligence is measured in k's, each k representing just over 1000 bytes or positions in the computer. This is a 16 k machine.

This VIP has a small exception-word dictionary. An exception-word dictionary is a list of words, word roots or word segments stored in the computer core. It also has logic hyphenation. These machines hyphenate by first checking the exception-word dictionary; if the word being checked is not there, they use logic hyphenation. We can purchase more intelligence for the typesetter enabling it to perform more functions. What kind of type will it set? With care and the proper choice of typeface, the quality is legible and can be handsome.

We have absolute control over the interword spacing. The parameters controlling the interword space can be established.

minimum 4, average 5, maximum 6

Linking the two extremes, and so articulating a coherent intellectual response, was the radicals' belief in the relevance of the fate of liberty in America to its situation in western Europe in general and Britain in particular. Thus a sustained interest in the United States was not only an end in itself but had an exterior purpose, and as radicals wrote about America, whether publicly or privately, they not only dispensed advice but pondered its significance for themselves. They implicitly sought through their advice to direct America toward developing a stereotype model community that would exemplify the requirements of their own ideological system.

5. This is the spacing we feel is most legible and that we normally use.

minimum 8, average 9, maximum 10

Linking the two extremes, and so articulating a coherent intellectual response, was the radicals' belief in the relevance of the fate of liberty in America to its situation in western. Europe in general and Britain in particular. Thus a sustained interest in the United States was not only an end in itself but had an exterior purpose, and as radicals wrote about America, whether publicly or privately, they not only dispensed advice but pondered its significance for themselves. They implicitly sought through their advice to direct America toward developing a stereotype model community that would exemplify the requirements of their own ideological system.

6. Very loose spacing reduces readability.

Very loose space (6) results in an almost unreadable paragraph. When the type is enlarged, the space is exploded and we have to automatically kern.

The New Republic

The New Republic

The New Republic ◄

The New Republic

7. We would kern as shown in the third line.

Kerning means taking space out between the letters to achieve a more pleasing and legible combination. The top line (7) is as the machine would set the letters if left to its own devices. We have taken space out in increasing amounts. The bottom line is too tight. We would use the one indicated.

Typeface reproduction quality

We have great flexibility in space, size, and speed, but with photocomposition some typefaces have suffered badly. Typefaces that were designed to be printed with metal and pressed into paper have thinner lines because they spread when printed letterpress. Notice

sample—Roman character A—42 pt.

A A A A A A
Bembo Janson Palatino Sabon Times Helvetica
                                  Roman

8. Some typefaces that were designed for letterpress need to be redrawn to reproduce well when photoset and printed by offset.

the Janson 'A' (8). The great contrast between the thin and thick lines will result in a page that looks like a picket fence.

There are some typefaces that work. We have found that Times Roman is satisfactory and that Bembo can be beautiful, but requires care in typesetting; the shape of the letters requires careful interletter space. The 20th-century faces—Sabon, Palatino and Helvetica—are very satisfactory. The typefaces for photocomposition can be improved with more careful design on the part of the manufacturers.

In short, those typefaces designed for letterpress—to be printed by pressing the type into the paper with a resulting spread—lose their character when simply copied for photocomposition. If they were adapted for photocomposition using the type form as it looks after it was printed by letterpress we would have much better looking and more legible faces.

Keyboards

We have 3 AKI keyboards, paper-tape driven. This keyboard is a compromise between blind keyboards and large general computer systems. The software and computer contained in this keyboard are geared to all levels of "operator interactive" kind of be-

havior. That means that they are not designed to simply have raw words fed in. They do not justify and hyphenate, or generate ligatures. They do not produce totally coded tape without the aid of human hands. They *are* programmed to greatly assist the compositor by computer calculation. This assistance provides enough information from the keyboard on how the type is going to look and fit, to allow the compositor to do extremely complex typesetting, some of which would be too laborious without the aid of computer calculation.

What can this keyboard do? It will read paper tape or show you the type on a screen, allow you to move it around, delete and add letters or words. It has a justification program with composition hyphenation. It has memory keys that the compositor can use any way she wishes. For example, the running head could be set once and every time the compositor strikes that particular memory key, the running head would automatically be set. It has a search function; you can tell it to search for a particular word and the cursor will move along rapidly until it finds that word.

It can also, of course, be used to typeset a manuscript or as an editing terminal.

Factors that we consider in evaluating methods of composition are speed and the cost per hour of different machines.

We constantly re-evaluate and modify our methods to try to arrive at maximum utilization of machines and personnel. It is important to remember that machines by themselves are helpless…dormant. Knowing this, we made a major change in December of 1975.

The goal of maximum utilization

Instead of keyboarding our manuscripts on our expensive AKI terminals, we began to keyboard for scanners on an IBM Selectric typewriter. The advantage is that a relatively inexpensive machine with a typist is used to capture the keystrokes—leaving editing terminals and compositors free to perform their specialized functions.

OCR scanning

We use the scanner as follows: The type must be clean —that is, not filled in—so that the scanner can read it properly. Scanners read by placing a grid over each letter and, by logical deduction (part of the letter is in this square and part of the letter is in that square, therefore this must be an R) "read" the specially typed page at great speed. This method is called optical character recognition, or OCR.
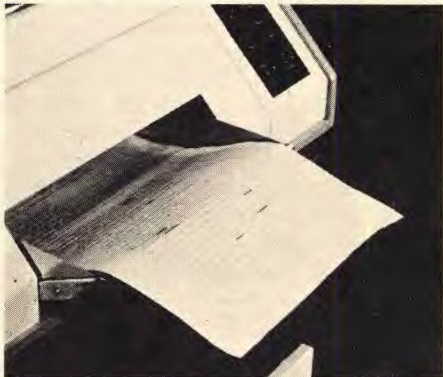
9. Copy being read into the scanner.

Here (9) you see the copy being read into the scanner. We use red and black pens to mark the OCR copy.

Red is not visible to the scanner, so the red margins, red type and red markings will not be scanned. Black is visible, and all copy or markings to be scanned are in black. The copy can be seen and checked through a window. The scanner stops when it comes to a blurred character that it cannot read. The operator of the scanner can make corrections by keyboarding them in, using the regular and editing keys.

To use the scanner, we type the manuscript, send it to be scanned and to produce a paper tape. The scannable retyped typescript is proofread against the original manuscript and the tape is sent through the terminal where the corrections are made, the formatting accomplished and the line endings established.

The corrected tape is run through the photocompositor for the first and only time. Proofs then go to the editor and author.

Comparing proof flow methods

We tried many variations before arriving at the basic routine described. At first we put all codes in during the initial typing and went directly from scanner to phototypesetter, bypassing the expensive editing terminal.

This did not work well because:

1. The typist is not a trained compositor and many situations arose which required specialized typesetting knowledge to resolve.

2. Many kinds of copy demanded that a "counting" keyboard be used to foresee awkward breaks, etc.

3. We had to rely totally on VIP computer hyphenation for line-ending decisions. That simply was not accurate enough to let us avoid massive rerunning of the galleys through both the editing terminals and the VIP/Processor.

We then modified our methods dramatically. The typist simply retyped the manuscript, the only codes used were paragraph and italic codes. Our idea was to re-insert the editing terminal into the sequence, letting the typist type as quickly as possible, with no code instructions to worry about. Then, after scanning, the compositor and VIP could be used to put in all typesetting codes efficiently before the phototypesetting step. This made sense functionally.

We first tried having copy proofread before scanning. Corrections were written in and it was the responsibility of the scanner operator (at the printer's) to interpret and insert these codes. We quickly found (a) that we did not like relying on the printer for this function—it was not done well—and (b) since we were running all material through editing terminals anyway prior to type generation, we might as well make corrections ourselves during this step.

We now have evolved a system that combines the best utilization of both methods. This involves analyzing the manuscript and making the following decisions, based on the needs of the particular manuscript.

1. Typing for OCR with all codes in (simple ms.);

2. Typing for OCR with part codes in (moderately simple ms.);

3. Typing part for OCR and part keyboarded (difficult ms.)

This has resulted in the greatest efficiency and cost saving.

The scanner we use (Compuscan) is programmed by the scanner user. It is programmed by making up a header sheet. Each character with its corresponding

code is typed on a scan sheet to be used as a header sheet and then read into the scanner's computer and stored in memory. The computer can also be programmed to recognize character combinations and output codes.

We used the header sheet to produce characters which the VIP has on its fonts but are not on the IBM typewriter we use when we type for the scanner. This (10) is a code sheet from which the header sheet is made.
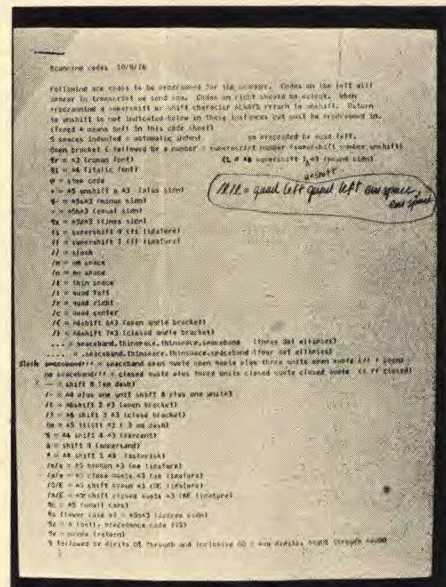
10. The code sheet from which the header sheet is made.
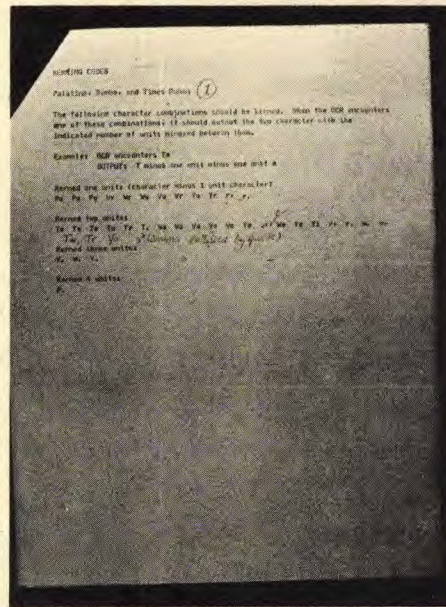
11. Kerning code sheet.

We also use the header sheet to produce ligatures and kerning combinations. We use this scanner pass to implement a fine typography program which we devised. Since the Compuscan is programmable, we have programmed character combinations to be kerned and ligature generation for the different typefaces we use. During the scanning these kerning combinations and ligature codes are output. Therefore, this effects kerning combinations before line endings are determined, so that the word space is based on the typefit after kerning.

Author's terminals

If we could have our authors write their books directly on terminals, what a great saving that would be. We

12

In 1939, one young German artist and two young New Yorkers, comparing philosophies, found certain kinships. At the last *auf wiedersehen*, bewildered by what, even then, commercial graphics had wrought, the visitor bewailed, "Why is it difficult to be simple?"

By the 1970's, that young man, born in the baroque of Austria, his leitmotiv a search for simplicity within the total concept, had taken his probings to a third dimension. Herbert Bayer, seminal designer, has spanned the world with typographics, tapestries and architecturals, and has felt the earth move with his sculptured landscaping.

Exquisitely tailored in green tweed, the urbane Bayer was in New York recently, interviewed en route to Jerusalem. He first came to New York from the Bauhaus, the art school founded in 1919 in Weimar, Germany, to eliminate barriers between artist and architect, crafts and industry.

"Why was Germany ready for an advanced aesthetic concept?"

"Because of the economic and moral breakdown of the nation after defeat in the First World War, people's minds were ready for new and promising orientations.

"The totality of art was more understood in Germany than it was in other countries. While painting might have been more individually developed as a fine art elsewhere, it didn't look outside itself to related areas. In Germany painting had developed a relation with architecture— with the total area of design. At the Bauhaus, Gropius called on the crafts and the artists to unite, to form again the role they played in the Middle Ages where they worked together as a unit towards building beautiful cathedrals.

"This was a romantic idea which soon changed orientation towards the present, towards industry, to the idea of using the machine as a tool…the machine can be worthy of the artist.

"A second point was a plan to break down the separations between fine and applied arts. We looked upon the two as an entity. We believe the crafts—elements that make art—can be taught, but not art itself. You cannot make someone talented. An artist becomes a good artist when he has the basis of a good artisan …herein lies a certain modesty. We did not see the artist on a pedestal…we were concerned with the place of the artist in his society. We're still coping with this problem today."

Political Germany an ocean away, Bayer began his career in the United States designing an exhibition of the Bauhaus for the Museum of Modern Art. His hegira for simplicity then led him to Walter Paepcke of the Container Corporation of America. For years, friendship bound these men who each believed in a unity of the arts in an industrialized society. In America at that date, an advertisement was literature. "I started to work for the Container Corporation… ads with copy limited to 15 words. The first works I did here were simple, visual.

"In 1945, I went to Aspen. That was made possible because Paepcke said, 'If you come to Aspen to help me with its develop-

ment you can work there directing Container Corporation's design department.'"

"You've done an environmental sculpture in Aspen. Did that derive from the American Indians and their earth sculpture?"

"No. I was planning a treatment for the environment of the Aspen Institute for Humanistic Studies. I envisioned something sculptural; the surface of the earth could be molded. It would not cost much— it was a question of money in Aspen, getting things done on a shoestring.

"This idea derived in part from previous studies of geology and the configurations of the earth in connection with my work on the World Geographic Atlas. I also had done a series of paintings on this subject. I suddenly conceived the mountains as living organisms which move on a time scale and at a speed different from that of the human being."

"In your relation as conceptual designer to the client, how do you work together constructively?"

"I have long believed in collaboration and teamwork and look back on some successful experiences.

"In relation to cooperation with clients I am cautious not to talk about art during presentations but concentrate on the purpose of a project, on techniques, on explaining meaning and content. I use the word 'art' as little as possible."

"You deal with the concept first?"

"Yes. By explaining the nature of the solution, I have few difficulties getting ideas accepted which are new and unusual. I have been envied for having such marvelous clients, but I believe my clients are not basically different from anyone else's.

"But I considered myself lucky twice to have become friends with the top echelon in industry. Walter Paepcke and I were friends, and he gave me assignments such as were necessary, and then he let me do them without interference.

"This is the case even to a larger extent with R. O. Anderson. He has the gift of choosing somebody in whose work he believes and then giving him responsibilities but letting him alone in his own field. I am able to deal with the top executives, a different situation from trying to convince a complex corporation from the lower departmental level up. I realize that enlightened industrial leaders such as R. O. Anderson are not easy to find.

"There is a curious reciprocity between the sensitive sophisticate whose eyes yet are on the pragmatic path to simplicity and the pragmatic men who are firmly focused on the bottom line."

"Paul Rand feels that establishing a Bauhaus in America was not a success—that you can't transplant a culture. How do you feel about that?"

"I don't know what he means by success or not success. Certainly there is enormous influence in systems of teaching. It also has influenced architecture, and all areas of design throughout the world, even Rand. If I remember rightly, he was very impressed by what the Bauhaus

stands for. Of course, I agree with him, that the Bauhaus cannot be repeated except in a context adjusted to changed times. From the Bauhaus, people came to practice in America…Breuer, Gropius, Albers…and have made their mark."

"Do you still want to redesign the alphabet, dispense with capitals? In print, you double-space for clarity, after the period."

"That's only the first step. Why write with two alphabets when we can do it with one? The alphabet needs complete revision and reorganization—a more phonetic alphabet. We have to add more symbols, do away with writing one sound with two or three symbols. We could use one symbol for the sound "ch," presently written with two letters in the English language. For the same sound you even need three letters "sch" in the German language. There are endings which always stay the same, like "ung," or "ing," or the word "and." It would simplify enormously if we had symbols for them. It would not detract from the richness of the language.

"The problem of reeducation towards the use of simplified phonetic writing is perhaps less complicated and difficult than switching from right-hand driving to left, or to the metric system.

"Do you have plans? Would you like to do something in a different way?"

The softly accented voice replies positively. "Oh, yes, I always change and am often tempted to try again something new. But it is more a question of deepening and expanding on a once discovered path.

"I might concentrate more on free speculative work—painting, sculpture, writing, ideas for the environment.

"Now I spend much time on commissions, which involves traveling, correspondence, meetings. The businessman has done his work when he is finished with meetings, while the creative artist only then can begin his work.

"After my stay in Jerusalem, I go to Linz, Austria. I have designed a fountain there. I have to look after that. And I have to go to Munich and to Nuremberg to see tapestries being woven. I've just come from Philadelphia where I am working on an outdoor mural and on a small park. Before I left, a new project came up: new headquarters for a large corporation in Denver requiring special design concepts, acquisition of an art collection, etc."

Native-born to mountains in Europe, Bayer has always been fascinated by mountain climbing…"It's an accomplishment, a challenge. You do something that is difficult, and you use the whole man to do it. You have to stay on top. There's marvelous beauty involved. It's different, climbing rock, or ice, or a path. It's an experience in texture, climbing rock. You climb different mountains because they have different rock.…Above all, is the feeling of accomplishment."

"You've never found the simplicity we three spoke of, long ago?"

"No. I'm still looking…."

GERTRUDE SNYDER

THIS ARTICLE WAS SET IN ITC BOOKMAN AND ITC AVANT GARDE GOTHIC CONDENSED

CHRONOLOGY

The chronology that follows is as up-to-date as we can make it.

1900: born in Haag, Austria, near Salzburg
1919: completed military service, and became apprentice to an Austrian architect; left for Darmstadt, Germany to work on packaging and interior design.
1921: enrolled as a student at the Bauhaus in Weimar, Germany; studied mural painting with Kandinsky; began experiments with typography.
1923: designed the 1st Bauhaus book with sans-serif type, designed multi-digit money for the Thuringian government; was responsible for the innovative design for a stained glass workshop trademark.
1924: travelled through Italy and Sicily, sketching and painting; made experimental designs for a streetcar structure and newsstand using prefabricated units.
1925: placed in charge of a Bauhaus workshop in typography, where he taught for 3 years; left the Bauhaus to work in Berlin as a designer; designed "Universal," a Grotesk type face.
1926: designed the extraordinary poster for the Kandinsky exhibit.
1930: collaborated with Gropius, Bauer and Moholy-Nagy in the design of the Deutscher Werkbund exhibit in Paris.
1931: was art editor of Vogue; collaborated on design of "Building Workers' Union" exhibit in Berlin.
1933: designed the geometrically constructed sans-serif typeface, "Bayer-type."
1938: came to the U.S.; began a new career in advertising; became consultant Art Director for J. Walter Thompson, was Art Director of Dorland International; began his association with the Container Corporation of America.
1946: became design consultant for the Aspen development.

Most recently, Herbert Bayer has been the design consultant for the Atlantic Richfield Oil Company and is resident of Santa Barbara, California.

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Pro.File:

Herbert Bayer

Bill Golden was a complex man. Bill Golden, one of the handsome men, was a complex entity who dealt from a base of simplicity. Bill Golden was a complexity whose simplicity rested on an ability to—in Lou Dorfsman's words: "cut through the fat" in a problem. Bill Golden was a demanding man, yet "...all of us would have jumped off the roof for him. If he worked late, we all hung around, working late. What is that—Loyalty? Fear? Charisma? When he worked on his own projects, you couldn't get to see him until 8 o'clock at night, when he finished. He closed his door, and the whole department hung around, waiting for approvals. I think that was a great quality. He could turn off everybody and do his own work."

When there was no need for talk, Bill Golden didn't talk. When asked to describe his first interview with Golden, when CBS was a radio network, Lou Dorfsman, now senior vice-president of the Columbia Broadcasting System, said, "It wasn't much of an interview. I had gone to CBS for a job right after I got out of the army. I left a portfolio with Harry O'Brien, who was sitting in for Golden, who was being released from the army. O'Brien felt Golden should do the hiring. Golden wasn't a big interviewer, wasn't a loquacious person. He said, 'You want to work here?' and I said, 'Sure' and he said, 'Come on up on Monday.'"

Ask colleagues, staff, friends, men in the stat room, and there will be many answers, consistently conflicting—harsh, gentle; shy, articulate; simple, decisive; and, in unison, uncompromising. There's the classic story of a group of staffers at lunch who raised the question: "Shall we order first or talk about Bill right away?"

His professional basic training was at Condé Nast Publications, under the watchful eye of Dr. Agha, the Legendary.

Over after-dinner coffee at her city apartment, Cipe Pineles Golden talks:

"I first met Bill when I was working full time at Condé Nast. He was working full time at Hearst Publications. We met because in those days we gave time to interesting and needy avant-garde publications. We were both working at night on a magazine called *Theatre Arts*.

"There was a job opening at Condé Nast, and Bill took it, working with Agha for a year. He said it was like working with a professor who gave you a great deal, with whom you studied intensely for a year, eight hours a day.

"Bill didn't regard our craft as an art. He astonished me with the energy he put into a simple job. He turned the most ordinary job into an experience by the attention and the earnestness he gave it and by having such an honest attitude. It was a most extraordinary interest in doing something. I used to marvel that he put so much enthusiasm into that small job.

"He had a great interest in graphic design, in making type readable. It wasn't something he allowed to happen on its own. I would watch him make type tracings until it read right. I kept looking in on him now and then, saying, 'There

must be an easier way.' He would laugh.

"I remember with what pleasure I looked forward to weekends when he brought home type proofs, illustrations, or photographs for a job. Within an hour, the room was one mess of papers and photostats, and he was immersed in the business of putting into book form the type, photographs, illustrations, and headlines.

"Making it into a unit became an exciting thing for me to watch. He had cast the type, had it set. When it came back, he divided it into pages, snipping the galleys apart, putting them into consecutive pages, changing them around as much as he needed to."

Softly, "Bill was interested in every aspect of living fully. He didn't make small talk but he could talk very comfortably. He was a person who would have the most marvelous time at a good party. When I would feel a party coming on, sometimes he'd say 'Please don't make any parties next month', because he was going to be busy. Two weeks later, he'd ask, 'That party we're talking about...whom are you inviting?' I'd give him the guest list, and he'd say, 'I like the party, I don't like the guests.' He might not cross out anybody, but he would add names to make it a party he felt he'd have a marvelous time at."

He accepted women as professional equals.

"I don't think we ever talked about it. The largest piece of women's lib promotion Bill did was to get me into the Art Directors Club. I'd been turned down for years. The Club noticed Bill wasn't a member, so they took him to lunch to bestow membership. He said, 'I've no intention of joining because you're not a professional club. My wife has been eligible for 10 years, as an art director in her own name.' The next day, I became a member of the ADClub. He felt very strongly about admitting women."

You two pioneered the four-day work week.

"That was Bill's pioneering. CBS offered him a raise which he accepted, held for 24 hours, then gave back in exchange for an extra day off. I began to take an extra day after Bill showed the way."

He managed well on a corporate level?

"He was articulate and strong when there was something to be said. He in no way avoided having to say something unpleasant. When the industry was attacked, he felt attacked. Bill felt strongly that criticism of radio or television was criticism of a thing with great influence on people's lives. It was a seductive medium, but Bill felt it had the same faults as all aspects of life. It needed attention and battle to make it better. He felt the job of CBS promotion was to speak for all the broadcast media."

Which brings us to the story of the eye. How did he start thinking "eye"?

"First there was radio, and the ear was important. Then came television, which

was for seeing. In one of Bill's ads, he had a plaster cast of an ear and of an eye. That was at the beginning of television. It was a simple, direct idea."

Bill Golden has written in *My Eye*... "Our 'service mark' was conceived primarily for on-the-air use. It made its first appearance as a still composite photo of the 'eye' and a cloud formation...Later, when I suggested we abandon it, and do something else, Frank Stanton reminded me of an old advertising axiom. Just when you're beginning to get bored with what you've done is probably the time it's beginning to be noticed by your audience."

A last question for Cipe...What things did Bill like to do other than work?

"He was an avid reader. When we moved to the country, he spent a winter reading everything about gardens, and he emerged from a winter's reading saying, 'No two books agree on how to till the soil.'"

More on Bill from Lou Dorfsman:

"To the 'real Bill Golden', quality was the concept. His thinking was simple and brilliant; execution was beautifully simple. Once, I asked, 'Bill, how do you do an ad?' He said, 'What do you mean?' I said, 'Where does it begin?' He said, 'It begins when you...begin.' I asked: 'Does someone usually come to you with a thought-out premise for an advertising statement?' He answered, 'Sometimes, but generally *I* evolve the advertising premise and concept.' Question: 'If you disagree with the idea offered by someone else, the client in this case, what do you do?' Answer: 'If I disagree I make it my business to come up with one that answers the problem more clearly and makes more sense than the 'idea' delivered by the client. My solutions do not spring from aesthetic considerations but from a business or marketing position. The aesthetics will take care of itself.'"

His philosophy was to deal with the full spectrum of an advertising problem — the need, the strategy, the concept, and certainly, the aesthetics.

Invariably, the most effective advertising came from Bill Golden conceived and executed campaigns rather than those that started with client ideas or desires.

The measure of the man is the caliber of those on staff who "hung around": Lou Dorfsman, George Lois, Kurt Weihs, Mort Rubinstein, Tom Courtos, Joe Schindleman, Irv Miller...

A copywriter on staff, now president of another network, wrote: "He was the most stimulating, the most exciting, the most truly creative man I've met in this professional world."

The obvious function of the designer is to design. His principal talent is to make simple order out of many elements.

William Golden, from a paper read at the 9th International Conference, Aspen, Colorado, 1959.

He died later that year, suddenly.

GERTRUDE SNYDER

CHRONOLOGY

1911: Born in New York City, on the Lower East Side; was the youngest in a family of 12 children; attended the Vocational School for Boys, where he was taught photoengraving and the rudiments of commercial design.

Worked in Los Angeles, in printing plants, and in the art department of the Los Angeles Examiner.

Returned to New York; worked in the promotion department of the Journal-American; worked for Condé Nast Publications, on *House & Garden*.

1937: Joined the Columbia Broadcasting System.

1940: Appointed Art Director of CBS.

1941: Married Cipe Pineles; took leave of absence from CBS to work for the Office of War Information, Washington, D.C.

1943: Entered the United States Army as a private; served in Europe as Art Director of Army Training Manuals.

1946: Discharged from Army with rank of Captain; resumed work at CBS.

1951: Became Creative Director of Advertising and Sales Promotion for the CBS Television network.

1958: Collection of his work exhibited at the White Museum of Art, Cornell University.

1959: Posthumously chosen Art Director of the Year by the National Society of Art Directors.

Golden was twice chosen as one of the "ten best" art directors by the National Society of Art Directors; he has received prime awards at various graphics exhibitions throughout the nation; he was a member of the Board of Directors of the American Institute of Graphic Arts; he inaugurated the "Fifty Advertisements of the Year" show.

1971: Posthumously became one of the first members of the Art Directors Club Hall of Fame.

Pro.File: **Bill Golden**

HERBERT BAYER

A

B

C

D

E

F

G

H
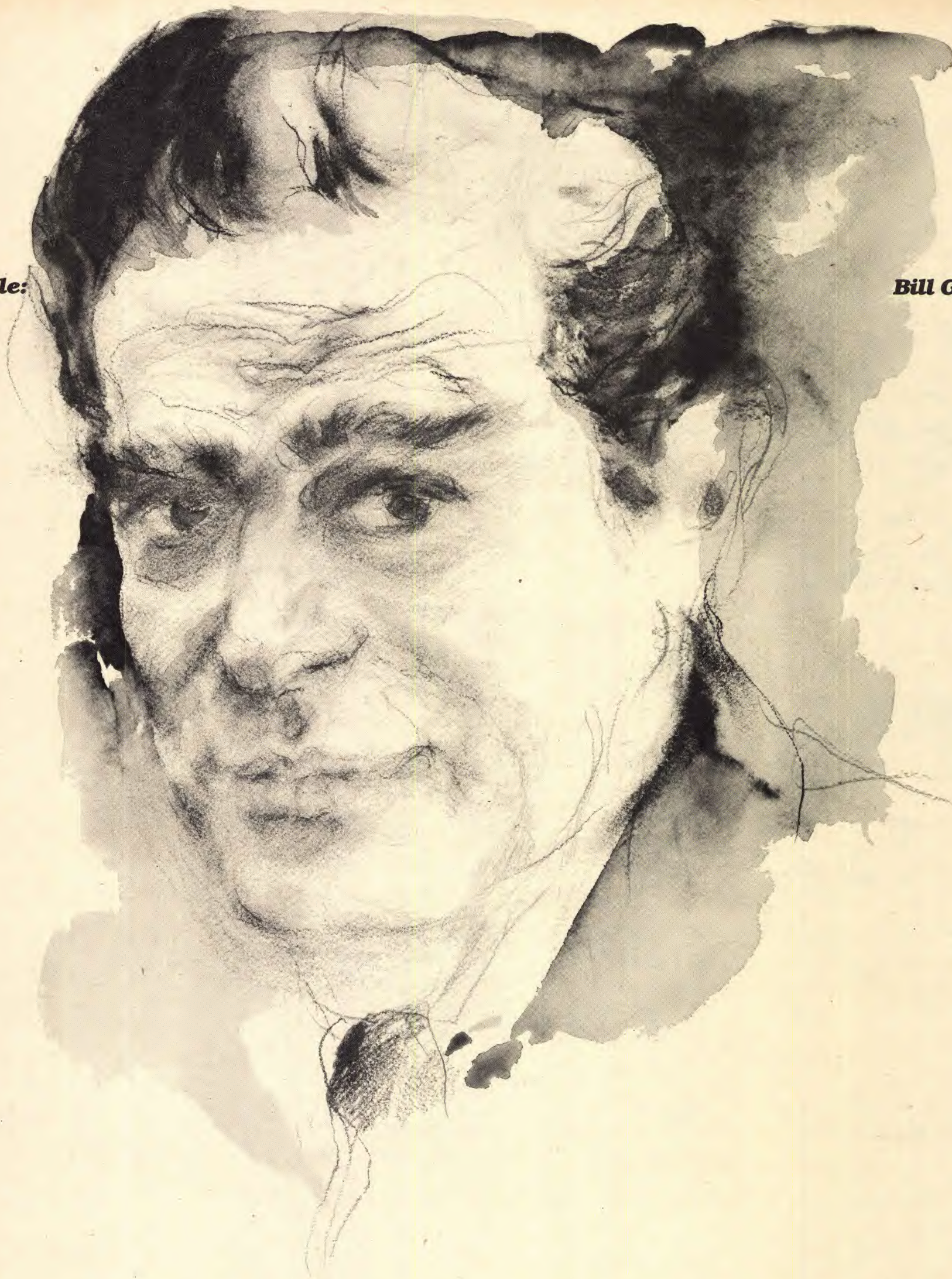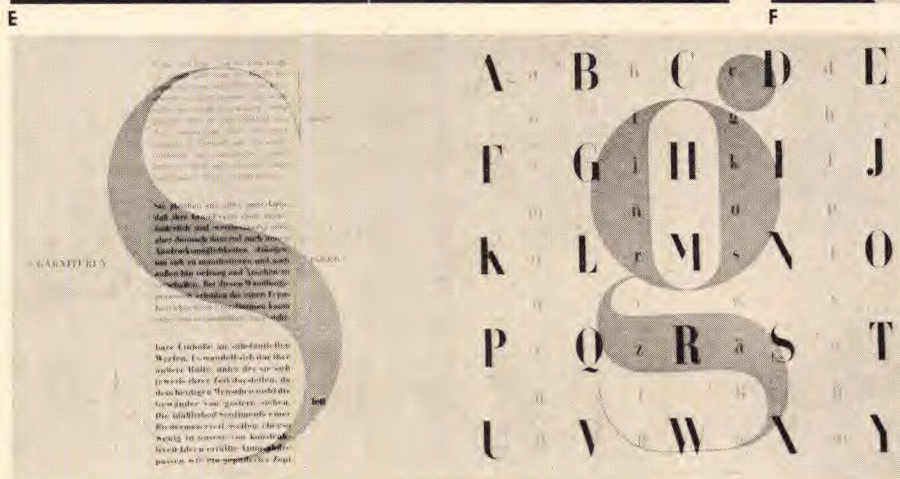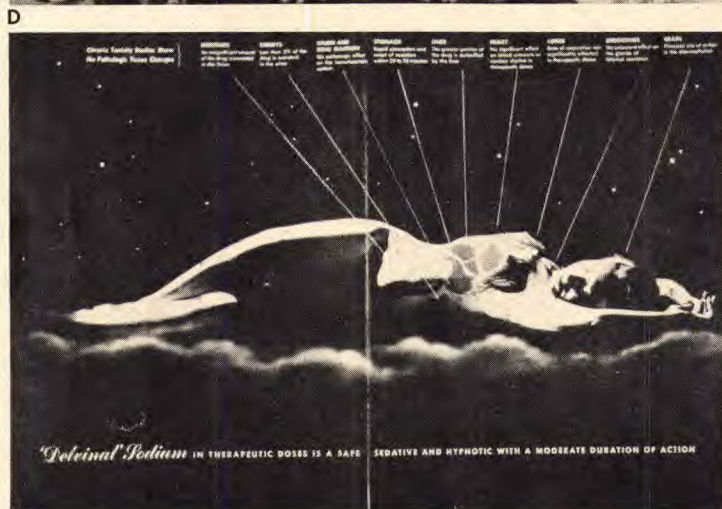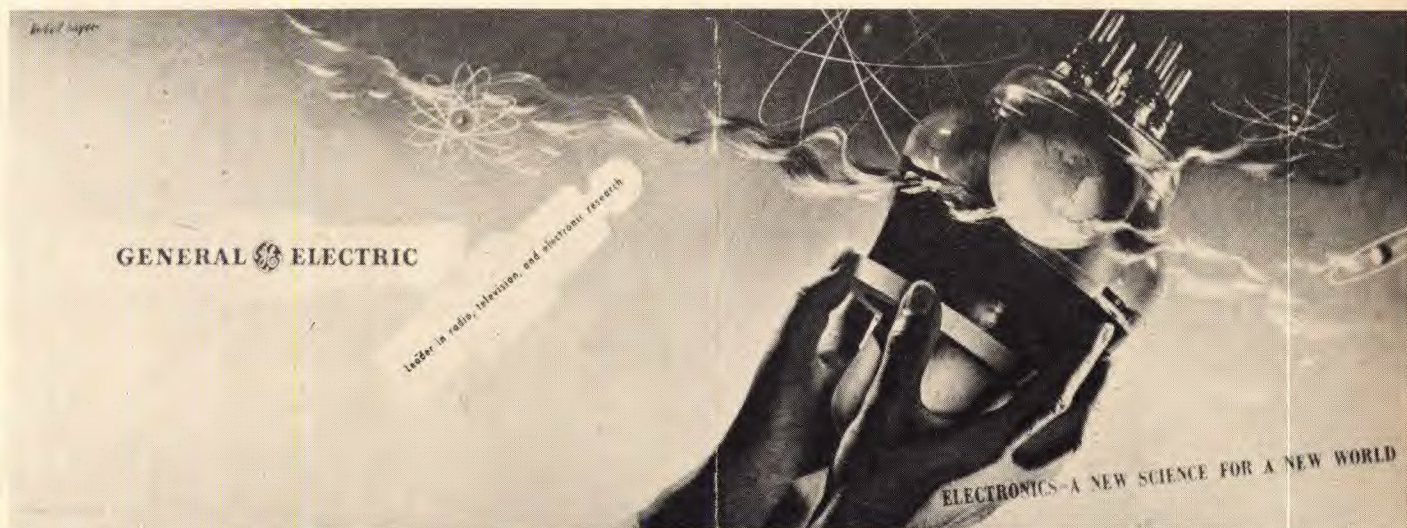
A Ad for Container Corporation, 1939
B Cover design for General Electric booklet, 1942
C Ad for Container Corporation, 1939
D Spread from General Electric booklet, 1942
E Center spread magazine ad, 1940
F Poster, 1942
G Page from World Geo-graphic Atlas, 1953
H Spread from H. Berthold type catalog, 1933

A Cover for folder with drawing by Ben Shahn
B Cover of a program kit for Dupont Show of the Month, 1957
C Brochure cover illustrated by Ben Shahn
D Network ad by Ludwig Bemelmans
E Trade ad, 1954
F Symbolic use of trademark in trade ad
G CBS network ad for summer programming, 1957
H Brochure for CBS Radio illustrated by Jean Pages
I Trade ad photographed by Arik Nepo, 1956
J Double page spread ad photographed by William Noyes, 1950
K Cover for 80-page book
L Trade ad illustrated by Joseph Hirsch

WILLIAM GOLDEN

Harvest

A

ground. £3 15s.—Wes. 0664.

ANYONE POSSESSING INFORMATION about the case of Rees Mathry an innocent man convicted of murder, please contact Mathry at 611 River Street.

DISTRESSED GENTLEFOLK'S AID ASSOCIATION appeals for widow of professional man aged 77 living alone fractured spine and

DU PONT SHOW OF THE MONTH
PRESENTS A.J. CRONIN'S MYSTERY
"BEYOND THIS PLACE"
STARRING FARLEY GRANGER,
BRIAN DONLEVY, PEGGY ANN GARNER,
HURD HATFIELD AND SPECIAL
GUEST STAR SHELLEY WINTERS.
LIVE ON CBS TELEVISION ●
NOV. 25, 1957, 9:30–11 PM, CNYT
SPONSORED BY E.I. DU PONT
DE NEMOURS & COMPANY

B

MEN'S VIOLENT

C

after you...

The CBS Television Network

D

WHICH·WAY·IN?

CBS TELEVISION

E

TARGET

F

THE BIG PUSH

CBS TELEVISION

G

Crescendo

H

watch closely!

CBS TELEVISION

I

J

The MAGIC is built-in

CBS TELEVISION

CLOSE-UP

K

POWER TO COMMUNICATE

CBS TELEVISION ●

L

ON THE COUCH:

"SMITH...
GO IN FOR
KAPLAN."

by
loumyers

"I am the cause of my own happiness."

"I am exploring my own inner and outer space"

"By risk taking I experience myself in the here and now."

"I rid myself of addictive habits and am able to wake myself without an alarm clock."

Some Good Old-Fashioned Greetings:

New Year's Day—January 1st

Lincoln's Birthday—February 12th

St. Valentine's Day—February 14th
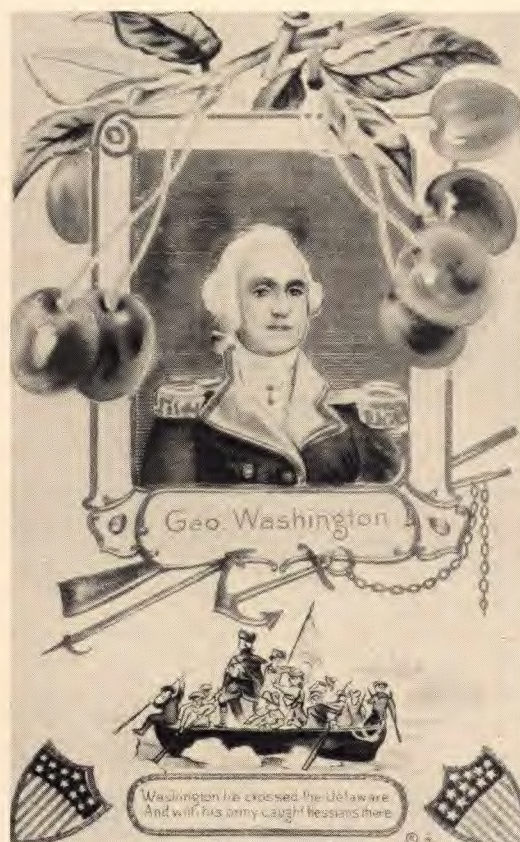
Washington's Birthday—February 20th

St. Patrick's Day—March 17th

Easter Sunday—March 26th

Mother's Day—May 14th

Happy Holidays in 1978

Memorial Day—May 29th
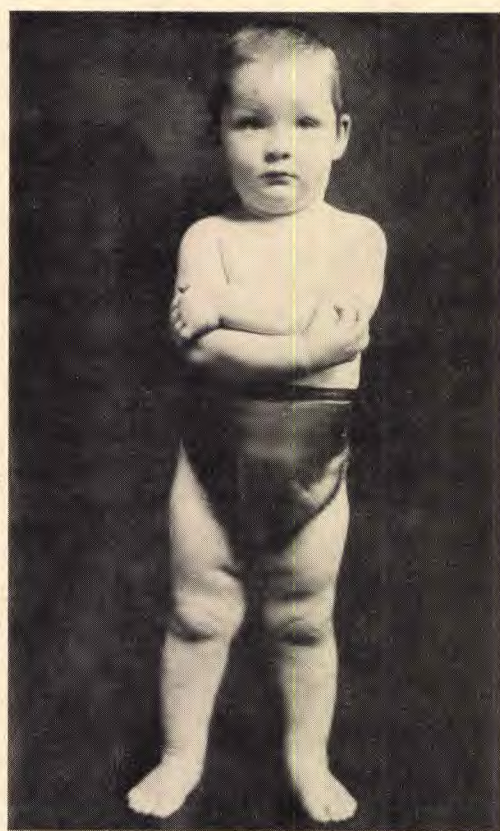
Children's Day—June 11th

Flag Day—June 14th

Father's Day—June 18th

Independence Day—July 4th

Jewish New Year—October 2nd

Labor Day—September 4th

from Welc and Carol Wald

National Public School Celebration
COLUMBUS DAY
Oct. 21st
1492 1892
OFFICIAL BADGE
PATENT APPLIED FOR
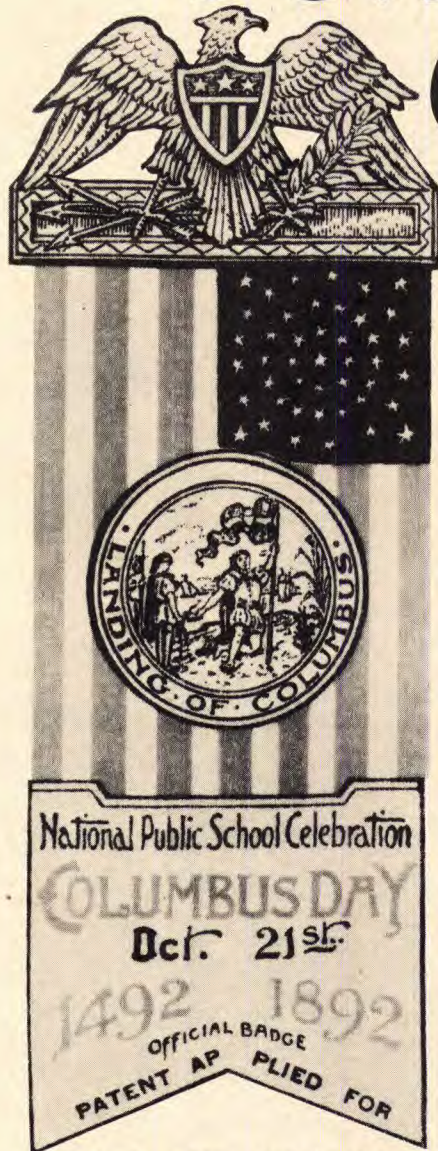
Columbus Day—October 9th

Veteran's Day—November 11th

There is a maid for every man
And every man be free
At this last hour of Halloween
By him to find the "She."
HALLOWEEN GREETINGS

Halloween—October 31st

The Nations Choice

For President
Hon. William Howard Taft
OF OHIO

For Vice President
Hon. James S. Sherman
OF NEW YORK
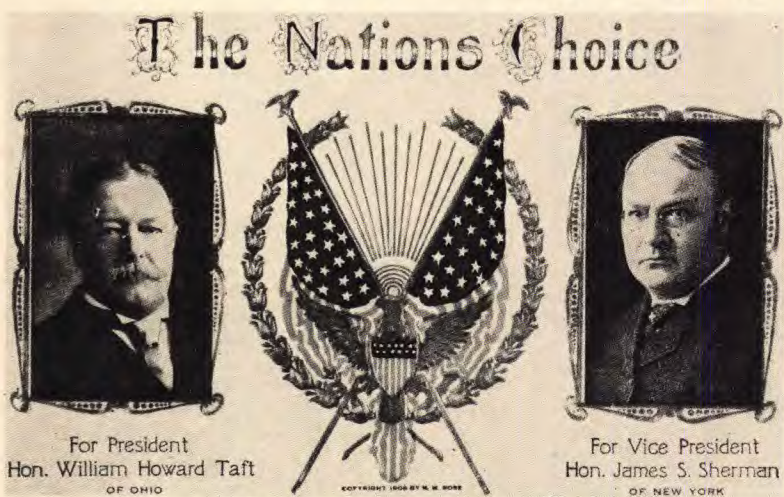
Election Day—November 7th

Greeting Thanksgiving.

Thanksgiving Day—November 23rd

XMAS

LEST WE FORGET

Christmas Day—December 25th

Something from Everybody for U&lc

Lubalin:

You got a lot of damn gall to expect us hardworking pros to shell out ... and ... to a bunch of ...
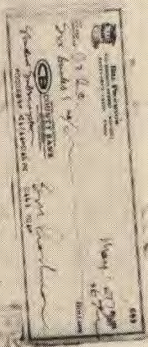
... hippy ... sectarian ... especially them at **ARIZONA STATE** UNIVERSITY ... Arizona ... So, you ain't getting nothing from me unless you make sure ...

you stop sending m... ... because its hard to read one with each eye unless I have somebody else turn the pages— but its OK to keep me on your list at 630 Mission S... Santa Cruz CA ... out ... your ... at 2 Roof & Cliff Drive Santa Cruz CA ... & don't forget while you are at it to ProFiles. ...

Gossage in your classy rag & Thank you very sweetie & you be OK worst

LETTERS
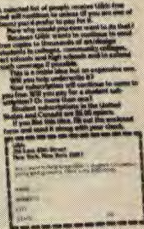
Introducing the Questpersand (pronounced "And?")

&?

JOHN LANGDON 106 S. MARION AVE. WENONAH, N.J. 08090 (609) 468-2777

THANK YOU!

FOR THE BIT OF EXPOSURE IN THE RECENT ISSUE

I SEE BY YOUR RATE CARD THAT YOU ELIMINATED 35,000 NAMES FROM YOUR MAILING LIST. I SURELY HOPE THAT MY NAME... FRED E. DENZLER, WAS NOT AMONG THEM! ☐YES ☐NO?
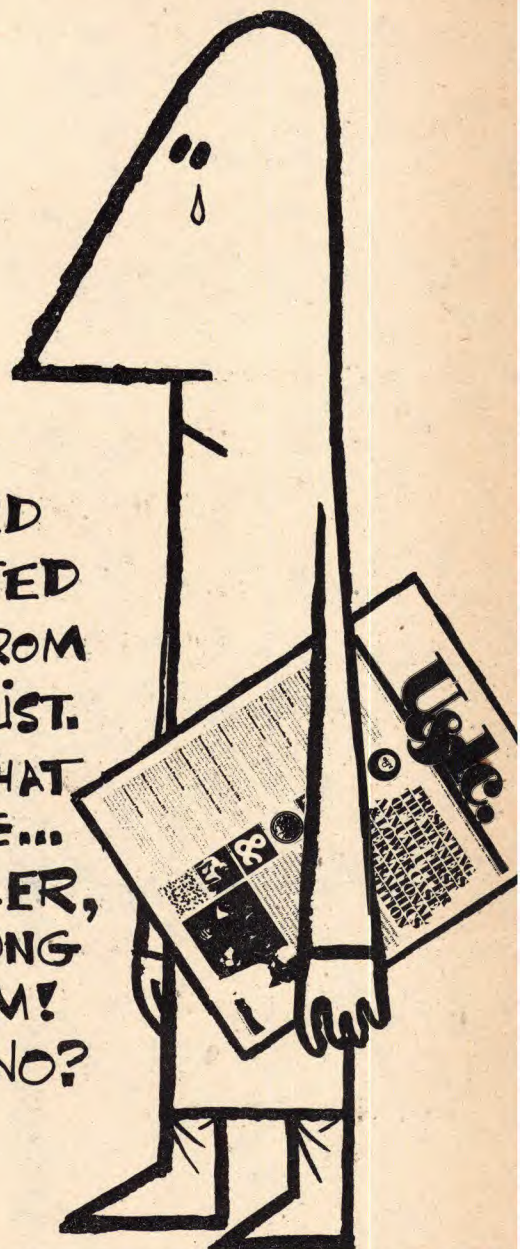
GEE-OH-METRIKS
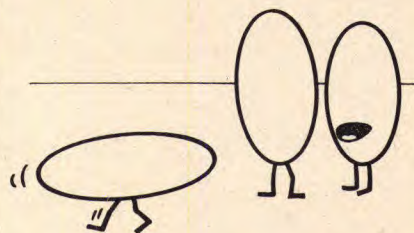
He's maintaining a low profile until the bad publicity subsides.

GEE-OH-METRIKS
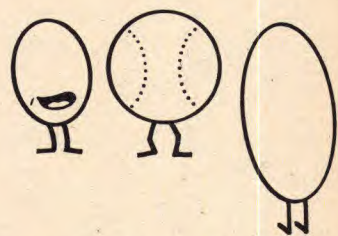
Meet my son – the baseball star.

GEE-OH-METRIKS
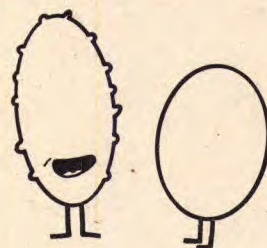
Mosquitoes aside, our week at the lake was super!

GEE-OH-METRIKS
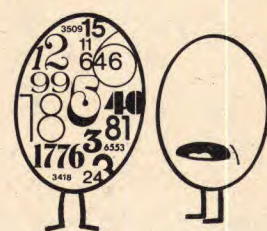
I can't figure you at times, Gig.

GUS CARLGREN

ABCDEFGHIJKLM
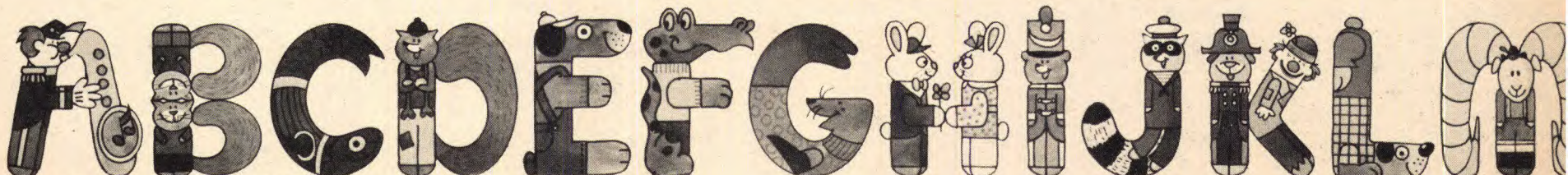
WHEN WE ASKED FOR LETTERS, WE GOT 26 OF THEM FROM LOU CUNETTE.

HERE AT THE STUDIO,
WE JUST EAT UP EVERY
ISSUE OF U&lC. WHAT
THE HECK — IT'S LOW-CAL
ISN'T IT?

SO DON'T MAKE US
CHANGE OUR DIETS...
INCLUDE PAM AND
ME ON YOUR
MAILING LIST...

INDYTYPE, INC.
225 N. NEW JERSEY
INDPLS. IND.
46204

WE EAT AT
SEVEN — SO
HURRY!

THE INEFFECTIVE ROOTER

A DRUNKEN MAN
WAS LYING IN THE ROAD
WITH A BLEEDING NOSE,
UPON WHICH HE HAD FALLEN,
WHEN A PIG PASSED THAT WAY.
"YOU WALLOW FAIRLY WELL",
SAID THE PIG,
"BUT, MY FINE FELLOW,
YOU HAVE MUCH TO LEARN
ABOUT ROOTING."

— AMBROSE BIERCE

TY "PIG" GRAPHIC BY
PHIL MEANS

WANTED
A SPREAD ON YOUR MAILING LIST
MARK HANLY
P.O. BOX 16123, PHX.,
ARIZONA 85014

SEE, I TOLD
YOU INDIA, INC.
HAD MOVED!!

3010 S. HARVARD
TULSA, OK. 74114
SUITE 216

Dear U&lc:
Vouchsafe to escribe my
name to thy mailing list.

Steven Schwartz
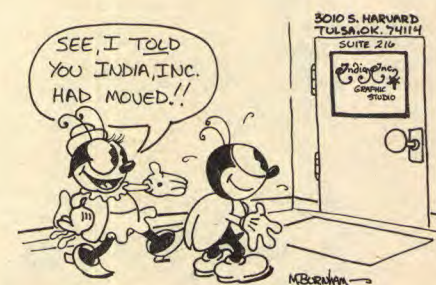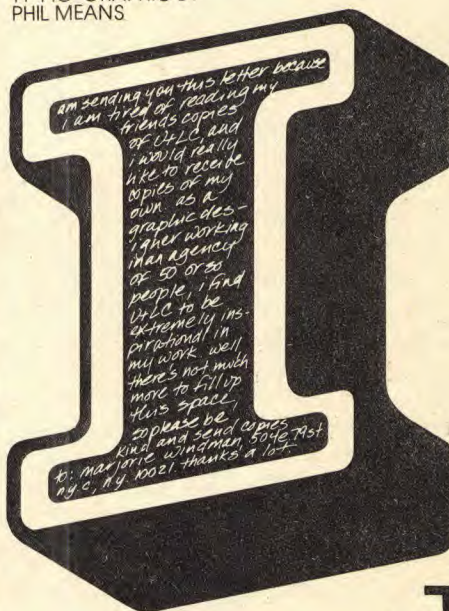
Dear,
U&lc.

We have been avid readers of "U&lc" for some
time and feel that this publication is definate proof
that "the best things in life are free".

There is but one problem which we call
to your attention. As "U&lc" is published
on newsprint, the pages when saturated
with drool tend to disintegrate. We are
presently experimenting with plastic
lamination in an attempt to preserve past
issues, but the expense is becoming rather
prohibative. Any and all suggestions you
may have to help us in averting this tragic
loss would be greatly appreciated.

In closing we'd like to go on record as
citing "U&lc" as the only case in which we
know of "a breath of fresh air" being mailed
from New York to Oregon.

Once again our thanks.

Steve Martin   Mel Patch
Graphic Designer   Typographer

Mt. Hood Community College
Gresham, Oregon 97030

NOPQRSTUVWXYZ
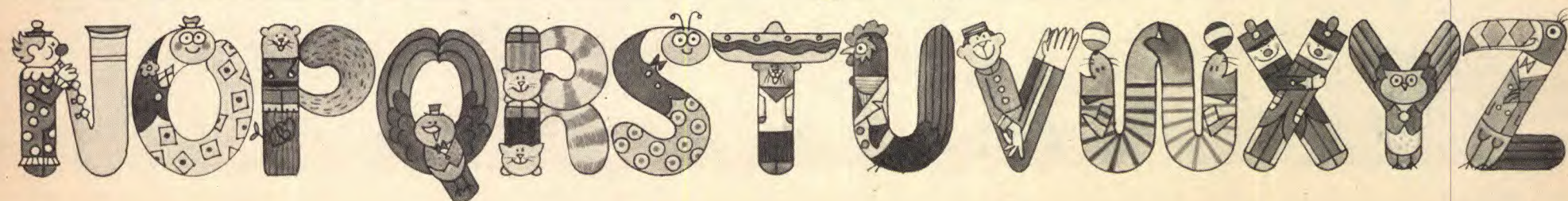
happy smtwtfs 1978
by Jan Sawka

January
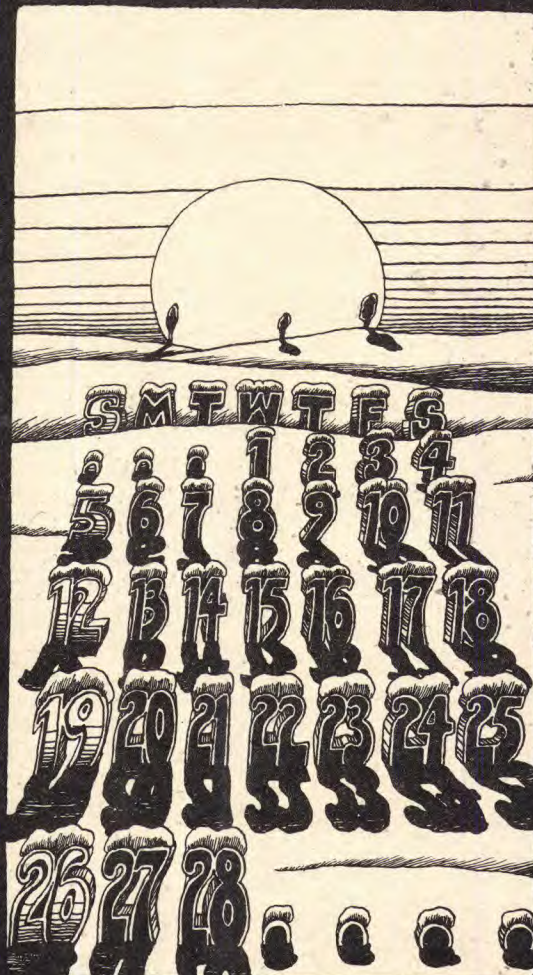
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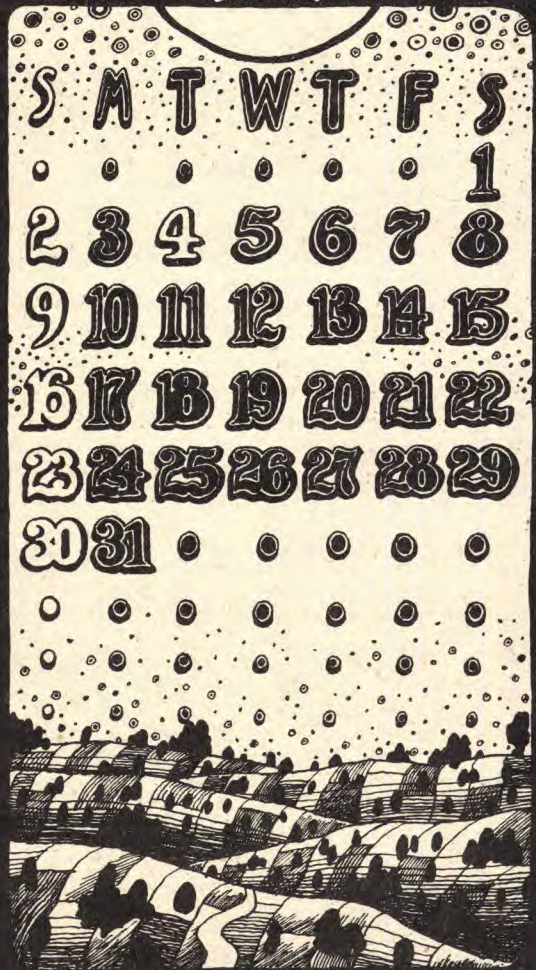
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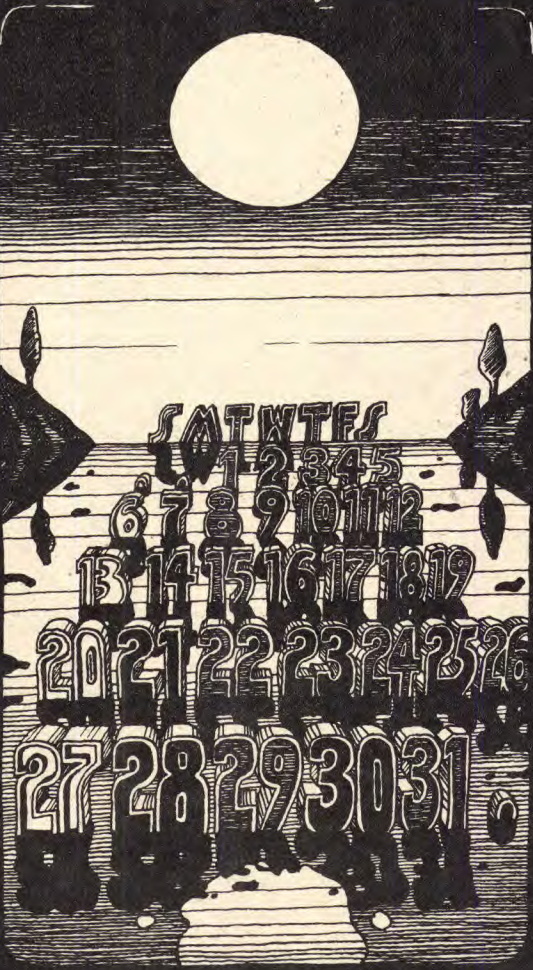
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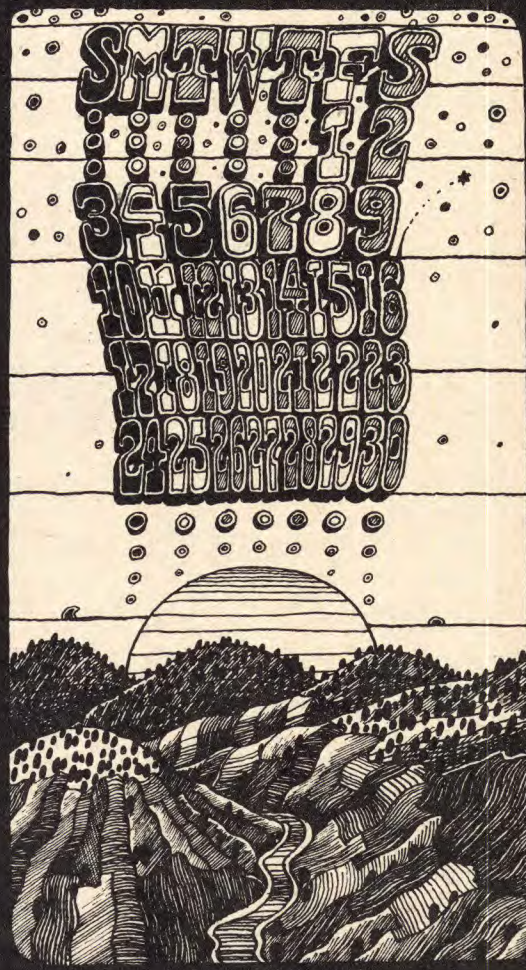
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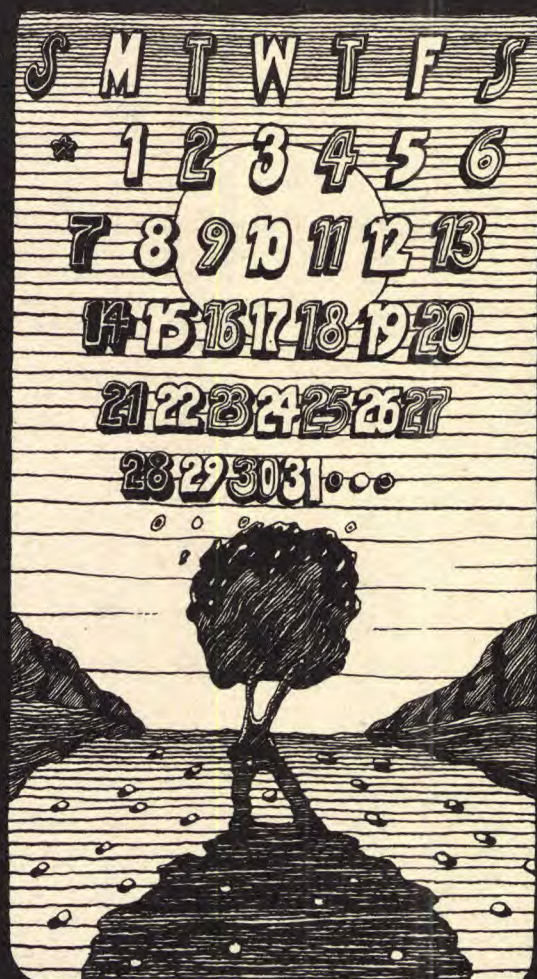
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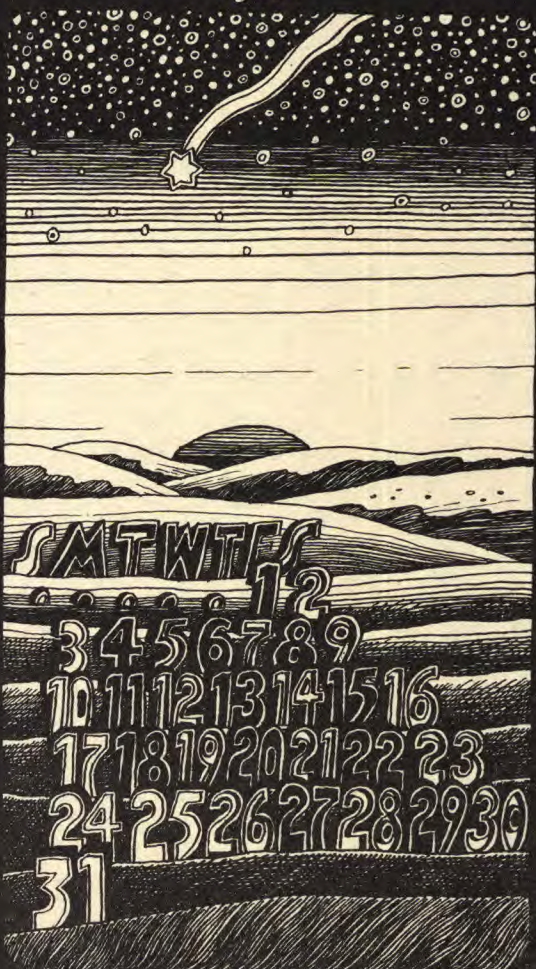
December

Ms.Jacqui Morgan

In past issues of U&lc, our famous featured females have run the gamut from designer and illustrator to sculptress and calligrapher. This time around our Ms. lady is a lithe blonde triple-threat artist—a New York illustrator whose vibrant organic compositions have appeared in the national magazines, on clothes, and as a focal point of many ad campaigns. Jacqui Morgan says that nothing excites her more than the opportunity to apply her special imagery to a new vehicle. This constant restless search has brought her from designing textiles to illustration (advertising, editorial, and book) to the design and manufacture of clothing using her own fashion graphics—projecting her artistic sensibilities into the denim scene to make an ordinary piece of clothing a wearable art. Says Jacqui: "It's very seductive, designing apparel. There is great pleasure and satisfaction in seeing your design walk down the street." The samples appearing on these pages provide only a small glimpse of the work of this multi-talented artist whose clients read like a virtual who's who list of corporations, ad agencies, and print publications. As she says, her work is sensual. The intense colors and curves rise and swirl in rhythmic patterns, perhaps echoing the artist's own early training as a dancer, and come together in a face, a hand, or a landscape that is disturbing and surreal. It's not easy to say which field she favors. But in her posters, advertisements, illustrations, and other prints there is an atmosphere reminiscent of the jeans she paints, the linen dresses ornamented like evening gowns, and the things of everyday use her touch transforms into toys. Whether working in two or three dimensions, whether for posters or album covers, whether on clothing or in the palm of a shovel, Jacqui Morgan's artistry has brought a new excitement to illustration and design by way of her unique application of the graphic arts.
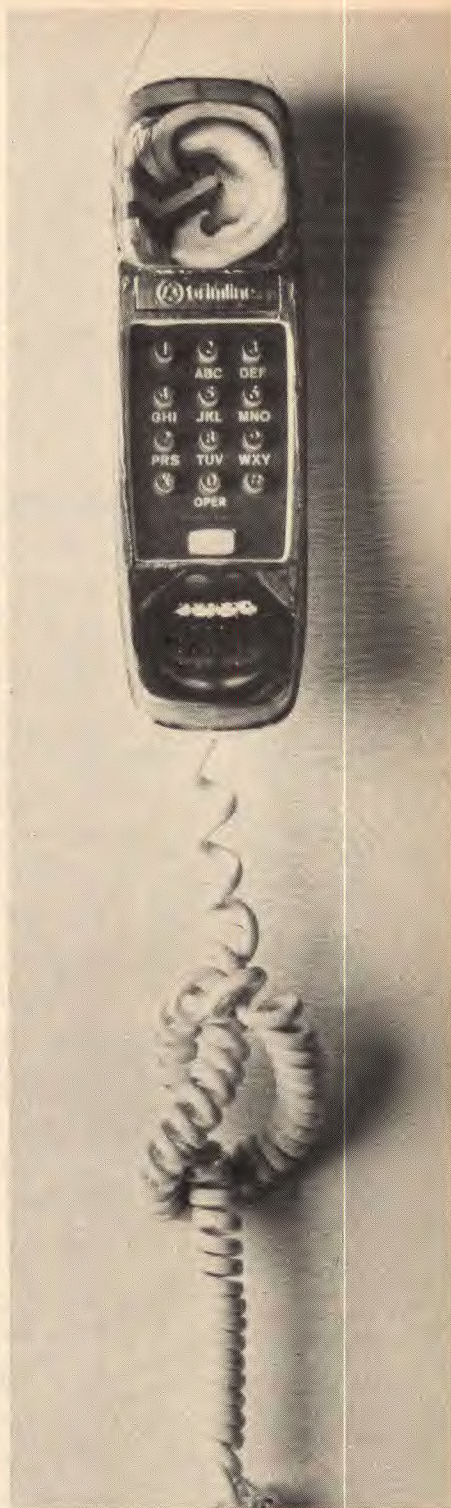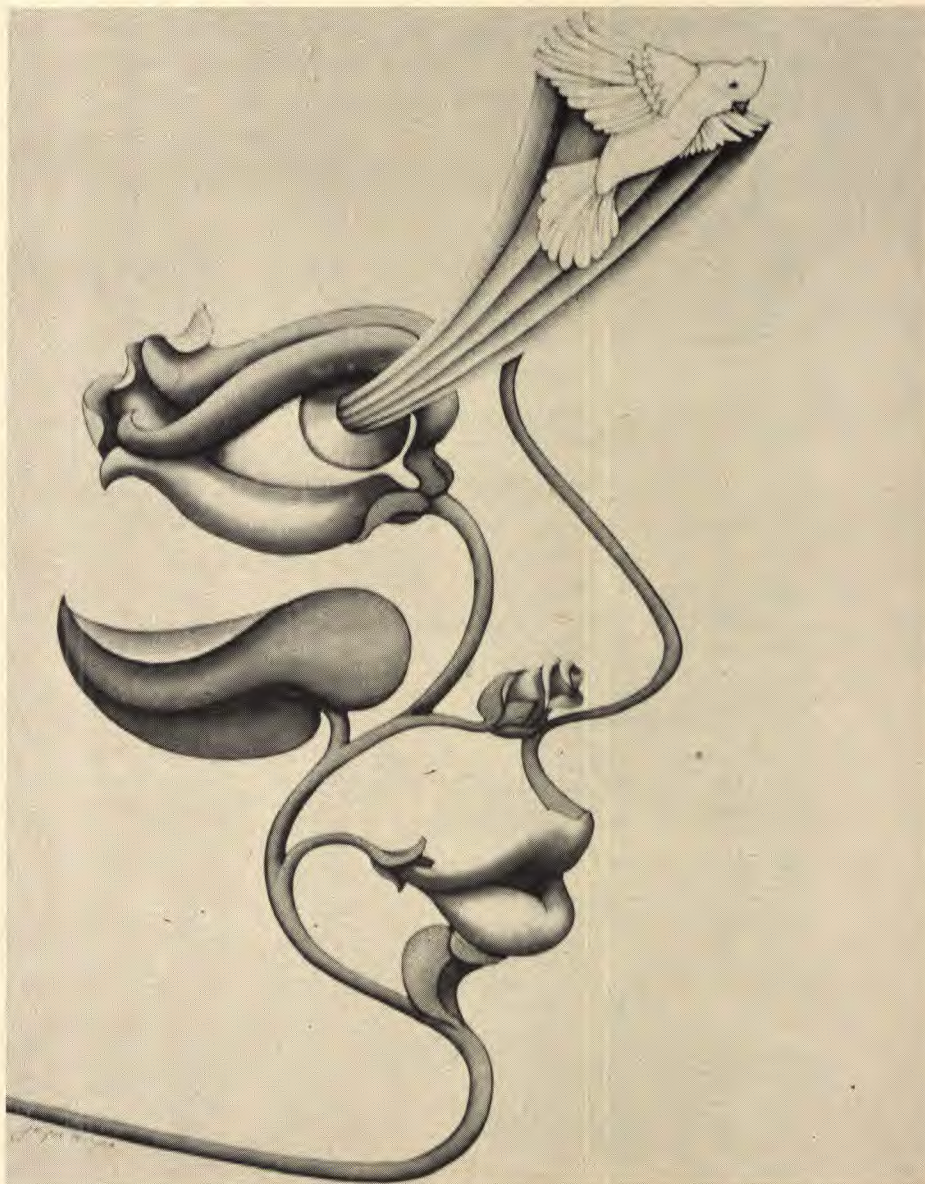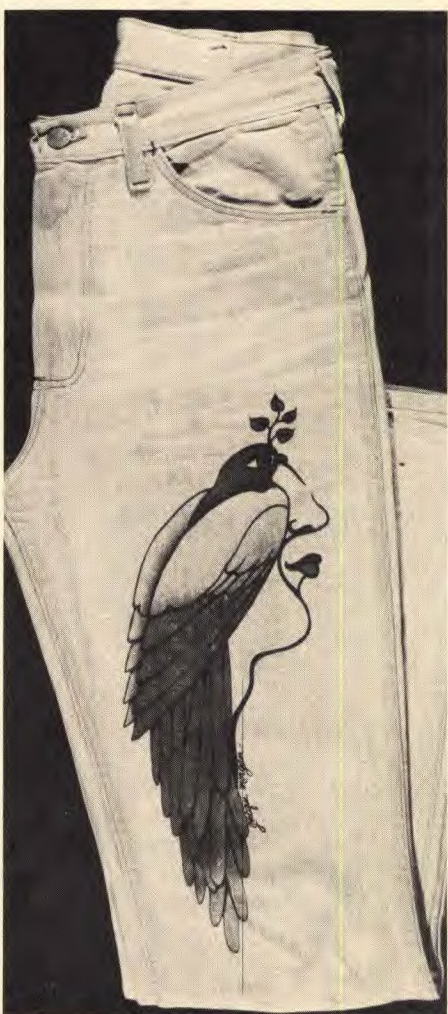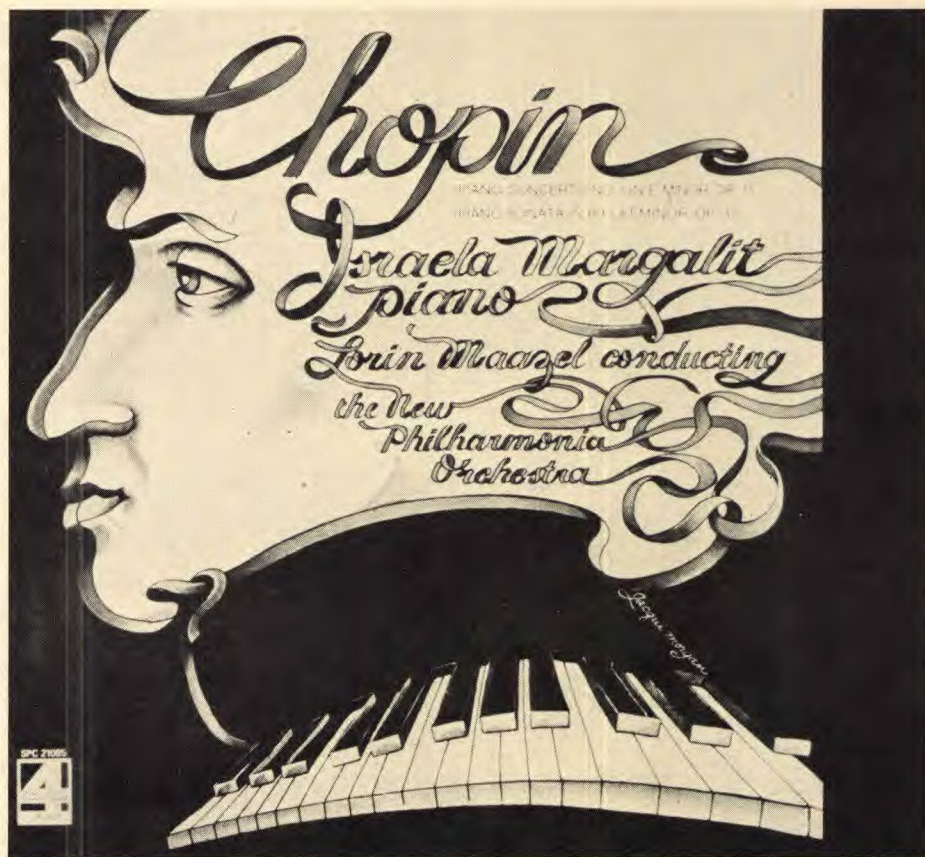
The Sensualist Approach

The work on this double-spread is taken from a calligraphic engagement calendar put out as a private edition by members of the Society of Scribes. From the one hundred and sixty entries considered, fifty were printed. Several scribes were represented by more than one example of their hand, with a few calligraphers included "sans jury" out of respect for their achievements and contribution to the profession. U&lc, after much deliberation, selected the designs on these pages as being the most outstanding. We think the range and technical excellence of the pieces is exceptional. There must be great satisfaction in being able to turn out work of this caliber, not the least of which is not having to close letters to friends with that much-abused phrase "Please forgive my handwriting, but...." Truly, as calligrapher Tim Girvin so beautifully has it, "the sensualist approach to the alphabet."

PAUL FREEMAN

LINDA DANNHAUSER

Learning to manipulate your nib will greatly enhance your skill with the letters. Take the time to play & experiment. Do things type can't do. Try twisting the nib from steep pen angle to flat & back again. Move up on one corner of the nib, then the 'other.' Let the freedoms you discover move into your more formal work

JACQUELINE SVAREN

NANCY GULMONE

wo der Geist des Herrn ist, where the spirit of the Lord is, there is liberty. da ist Freiheit. PAUL/SECOND CORINTHIANS 3:17

ALLEN Q. WONG

The lyf so short, the craft so long to lerne.

GUILLERMO RODRIGUEZ BENITEZ

A letter is a designed area. It is a pattern made within a space. Its outlines have the effect of motion. It begins and ends. The things are true about the shapes of letters that are true about all designs that have pattern and motion.
W.A. Dwiggins

Painfully but lovingly, each letter, each numeral, and punctuation mark, must be cunningly contrived to give maximum legibility without encroaching on its neighbors' right to be seen. Added to this is the delicate problem of achieving forms that have rhythm without monotony, and are pleasing to look at.
Fridolf Johnson

Accused though I may be of fantasy, I still assert that the written word has a soul, a certain built-in dynamic flow which under our pen is self-transmuted into a shape, into a certain expressive outline.

CLARK MILLS

CWM FJORD- BANK GLYPHS VEXT QUIZ

MARK L. VAN STONE

Panel 1 — HOWARD GLASSER

On The Making of Writing Fluid

Take three ounces of small, heavy, shrivelled
oak galls and pound them roughly in a morter
and pestle. Soak in a half measure of wine or
rain water and leave it in the sun for one or
two days. Add two ounces of copperas or
dark, fine Roman nitre and stir well with a
fig stick. Leave it in the sun for another day
or two. Add an ounce of clear and shining
gum Arabic and stir well. Let it stand for
another day and then add a few pieces of
pomogranate rind. Boil over a very low
heat and strain into a glass or lead vessel.
Keep well covered & it will be perfect.

Giovanbattista Palatino · Rome 1533

HOWARD GLASSER

Panel 2 — ALICE

THE ART
AND
CRAFT
OF
LETTERING

THE LETTERER
PUSHES THE
PUDDLES OF
INK·NOW VERY
WET·NOW VERY DRY·
IN THE BEST WAY HE CAN.

HE LETS THE WORLD
CALL IT CALLIGRAPHY OR LETTERING·
LOOSE OR TIGHT·
WRITTEN OR BUILT-UP·
CREATIVE OR SLAVISH·AS IT PLEASES.
HE IS ONLY CONCERNED
WITH MAKING BEAUTIFUL FORMS
AND ARRANGING THEM WELL.
ARNOLD BANK

ALICE

Panel 3 — GORDON H. DAVIES

A TRIBUTE TO THE GREAT
HUMANIST SCRIBES OF
THE FIFTEENTH CENTURY

Gringherius Oriens · Hieronimus de Stabellinus
Nicholaus Iovannes de Vannis · Giovanni Aretino
Johannes Istraneus · Giovanni Curlo · Frater Hie
Piero Strozzi · Bartolomeo Squara · Felice Feliciano
Ubertus de Ghiringhelus · Laurentius Dolabella
Antonio Simbaldi · Domenico di Niccolo Pollini
Johannes de Mundi · Bartolomeo Forizio · Matteo Contugi
Giovanni da Stia · Giuliano Amedei · Marcusde Cribellanus
Domenicus Cassi de Narnia · Pietro Cennini · Frater Vitalis
Poggio Bracciolini · Johannes Incontrius · Jacobus Naplave
Joachimus de Gigantibus · Frater Perigrinus · Rogério Giraldo
Johannes de Parvolis · Guido Galeazzo Thomas Guarimbertus
Andreus de Bandis · Jacobus Cardogna · Leonardo Bruni Aretino
Franciscus Cataldini de Callio · Jacobus Macharius · Tadeus Solacius
Bartolomeo di SanVito · Petrus Canonicus · Andriocchius Gerardi
Piercandido Decembrio · Giovan Francesco Marzi · Antonius farina
Niccolò Niccoli · Nicolaus de Fiorenza · Johannes de Canonicus
Pierantonio Sallando · Bartolomeo de Matras · Leonardus de Piodunis
Ludovico Carbone · Marino Tomacelli · Giovanni di Giuliano Boccardi
Gherardo di Giovanni del Cirragio Angelo Aquilano · Thomaso di Plebe
Antonio de Mario · Angelus Vadius · Paulus Johannes de Interamna
Niccolò Berti · Leonardo Francisci de Orto · Albertaccio de Daniello
Francisco Kiello · Laurentius Bellanti · Ludovico ser Angeli de Auximo
Franciscus Taurus de Rimini · Thomas Baldinoccus · Georgius de Napoli
Pietro de Bonaghuida · Hieronimus Baliocus · Johann Baptista de Spada
Gulielmus Basciera de Campo · Frater Bellinus · Gerardis de Campis
Frater fortunato · Giovanni Gradinigo · Johannes Andreàes de Colonia
Laurenzo Spinto de Gualtieri · Dominus Ciprianus · Christophora Graius
Honofrius · Thomas Murchius · Bernardodi Christophoro Carnesecchi
Johannes Caravaziensis · Johannes de Itro · Bartholomaeus Paruta

GORDON H. DAVIES

Panel 4 — ISMAR DAVID

ISMAR DAVID

Panel 5 — JEANYEE WONG

abcde
fghijk
lmnop
qrstu
vwx
yz
Greetings

JEANYEE WONG

Panel 6 — ROBERT RUBYAN

SQUO
GVFE
ZGRW
4TDHD
DBLY
NKV
OX

ROBERT RUBYAN

Panel 7 — LILI WRONKER

A BRIEF VISIT TO XVth CENTURY
Italian Writing Masters

Rome 1522 — LAOPERI NA di Ludovico Vincentino

Venice 1568 — alabaja

You can buy the Yale paperback version with
John Howard Benson's English translation.
If you are a beginner, be VERY careful when
copying any swashes! Ludovico was a writer
of Papal briefs, scribe of manuscripts & a printer

Don Augustino da Siena (Arthurian Monk)
Published by David Godine · 306 Dartmouth Street, Boston, Mass.

Geofrey Tory
CHAMP·FLEURY
Art and science
for sale on Paris
three crowns
Antique Letters
& the signs of the
Zodiac

Book of Giovanbattista Palatino
ROMEMDO
"Ancient and modern
Letters of all Nations"

Giovannantonio 'Tagliente'
Ink & Toure

Books available: TENTALIC 152WIIE N FISII
Three Classics of ITALIAN CALLIGRAPHY Dover
Publications BUT for the REAL SOURCES·

In this
at any
other year!

VISIT the Pierpont Morgan Library N.Y.C.
VISIT the Newberry Library, Chicago, Ill.
VISIT the Folger Library Washington, D.C.
VISIT the Huntington Library, S. California.

Various exhibitions with the same flat edged pens

LILI WRONKER

Panel 8 — TIM GIRVIN

Calligraphy
is the sensualist
approach to
the Alphabet

TIM GIRVIN

Panel 9 — DENNIS LUND

I admit that among those of
your tasks which require
physical effort that of the
scribe, if he writes correctly
appeals most to me: and it
appeals, perhaps without
reason, for by reading the
divine scriptures he whole-
somely instructs his own
mind and by copying the
precepts of the Lord he
spreads them far & wide.
Happy his designs, praiseworthy
his zeal, to preach to men
with hand alone, to unloose
tongues with the fingers, to
give salvation silently to
mortals, & to fight against
the illicit temptations of
the devil with pen and ink...
And so, though seated in one
spot, with the dissemination
of his work he travels
through different provinces.
The product of his toil is read
in holy places; people hear
the means by which they
may turn themselves away
from base desire and serve
the Lord with heart un-

defiled. though absent, he
labors at his task...with
gliding pen the heavenly
words are copied.
They deserve praise too for
seeming in some way to
imitate the action of the
Lord, who, though it was
expressed figuratively,
wrote his law with the use
of his all-powerful finger.
Much indeed is there to be
said about such a distin-
guised art, but it is enough
to mention the fact that
those men are called scribes
·librarii· who serve zeal-
ously the just scales ·libra·
of the Lord.

Cassiodorus senator
cdLxxx - dLxxv A.D.
from:
an introduction to
divine & human relation
chapter xxx · on scribes
& remembering of
correct spelling

DENNIS LUND

THIS ARTICLE WAS SET IN ITC ERAS

Face to face. To find is a pleasure of the mind, and Pentagram Papers publishes examples of curious, entertaining, stimulating, provocative and, occasionally, controversial "finds" that have come to Pentagram's attention. The collection of accidentally created faces shown here was conceived, photographed, and assembled over a period of years by the Swiss designer **Jean Edouard Robert** and published in its entirety as Pentagram Paper 4 under the heading "Face To Face." Responses to the faces vary. Individually seen, one looks for a "face" but, collectively, finding the face is no longer a problem; rather, the problem is in identifying the subject. U&lc editors, for instance, saw a "sophisticated lady smoking a cigaret" in the object to the right just below, a "toy soldier" in the camera case, and a "flying space visitor" in the corkscrew. The game is limitless, with much depending on the intuitiveness of the viewer and his imaginative flight of fancy. In his brief introduction to the Paper, distinguished American photographer Irwin Dermer sets out more complex, and even poetic, responses to this series of inanimate masks—more complex and poetic, certainly, than could ever have been imagined when the collection was just starting. But however you view the series, one of the nicest things about it is that you can make of the faces what you will on whatever level you like and still find amusement in them and a source of joy. After reading the Dermer introduction, see what kind of responses you have to "faces."
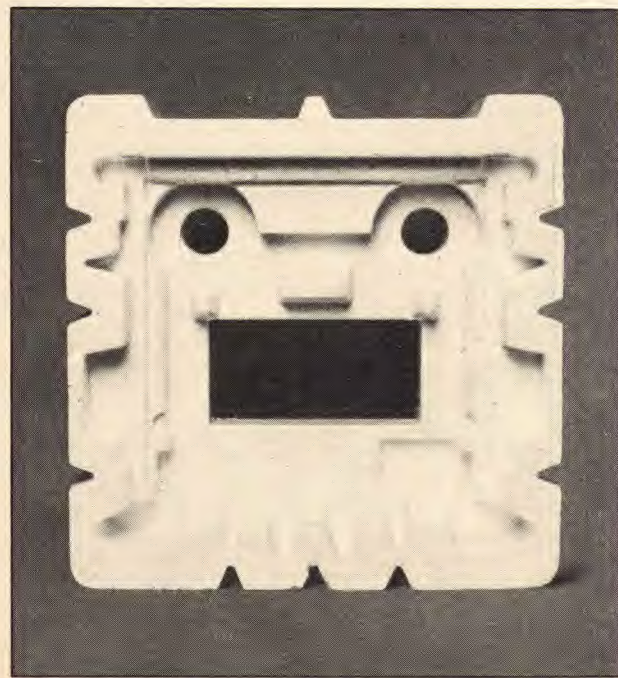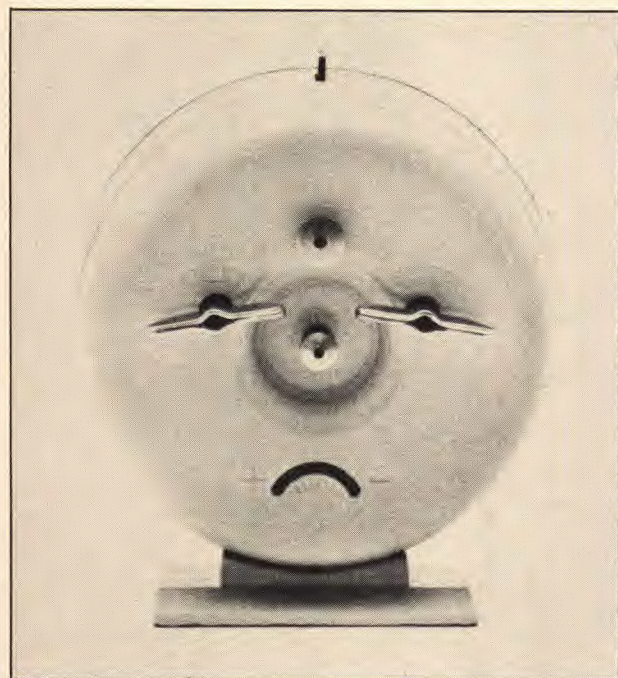
Face to face how many "faces" lie hidden, waiting for the time when curious eyes will find them in their secret places.

In the heart of a leaf or the bark of a tree. In a frozen pond or the turning sea. In the twist of a chair or the look of a key or the shrivelled skin of an elephant's knee.

Some are seen in a twinkle of light while others live in the shades of night.

For many, they change with the moods of the weather, ageing and gathering qualities suggestive of human characteristics which transform the object. It may then appear to be more than an inanimate object thereby raising the question of the physical or metaphysical state of an object at a particular time.

So much depends on the awareness of the searcher; his intensity of feeling, the depth of his life experience together with his sense of fantasy. For the moments before finding a "face" also bring delight as well as the moment during and after the experience.

The appetite of fantasy is intense and must be fed its special food. But, the mind must first enjoy an attitude of freedom in order to support this appetite. Only then does the magic begin to work. Only then is it possible to begin to search with any hope of ultimate success.

Once a group of "faces" has been found, it can be seen that a unique society has been discovered. A society existing in isolation until the moment they are seen together in relation to each other. But unlike other societies, there is no interaction between members. They serve silently until the time when they no longer function or simply become worn out.

In this group I see "a sleeping boy" who is a wooden stool, "a soldier" who is a camera case, "a nurse's face" that is a door lock and a "juggler" who is a toilet brush.

Together with the other members of the group, their expressions offer a constant source of playful joy.

To find is a pleasure of mind and not to care for "where." For to seek and see for the pleasure of "me" is the sign of the man who is wholly free. **Irwin Dermer**
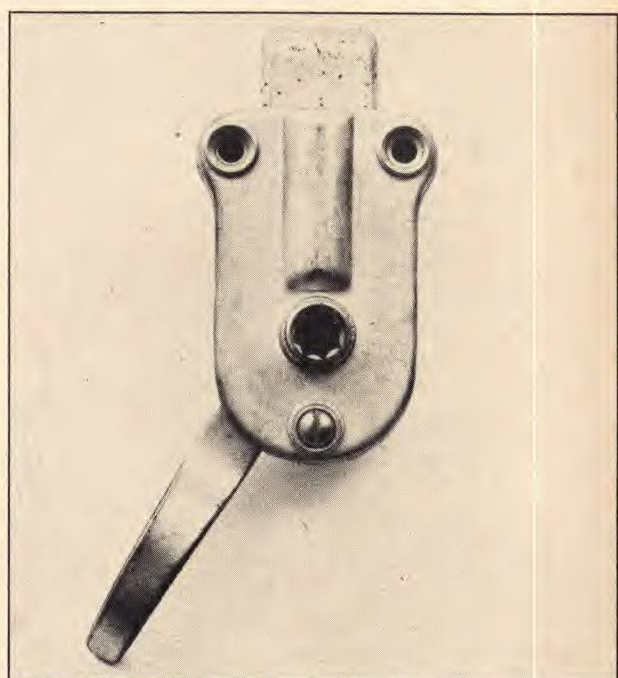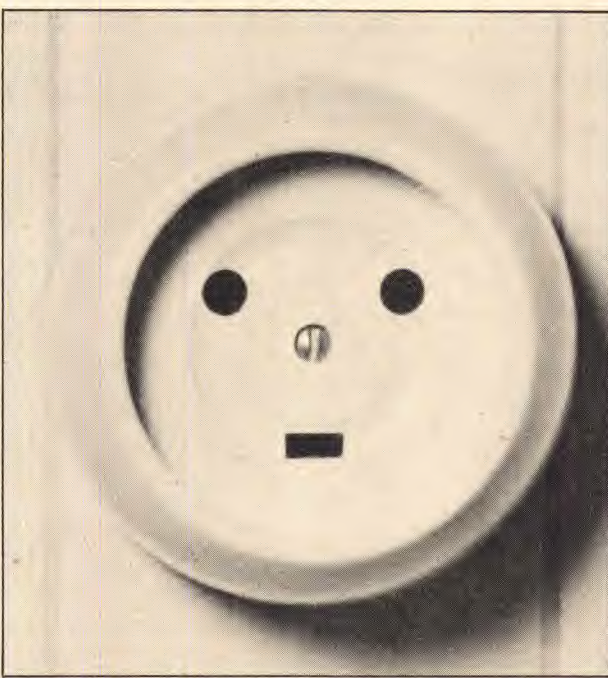
Pentagram Papers are available from Pentagram Design, 61 North Wharf Road, London W2, G.B. Five have already been published and two more are in the pipeline. If you would like to receive all seven, please write to Pentagram at the above address. The cost is only $20.00 which we think is the buy of the year.

OXO

"OXO" CUBES
DISSOLVE AT ONCE.
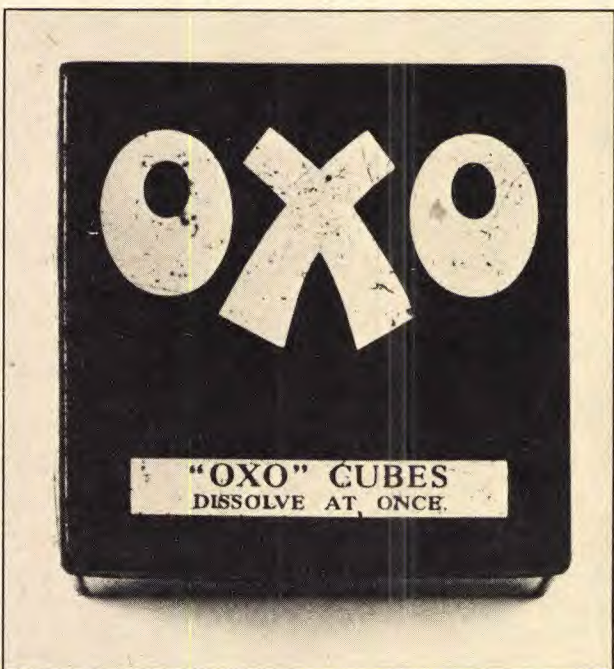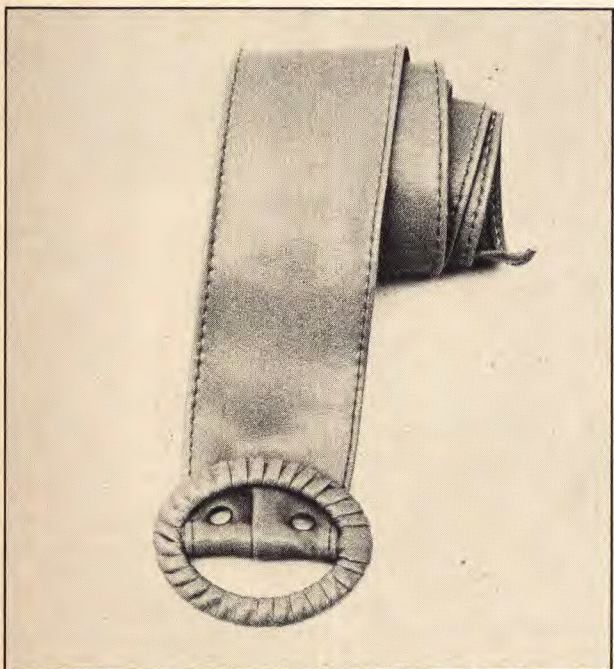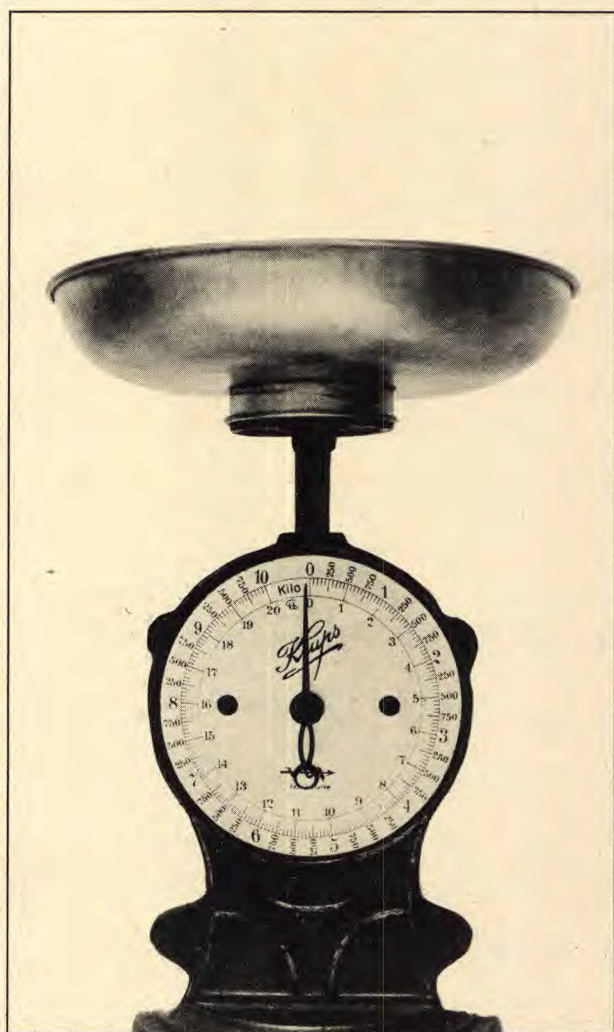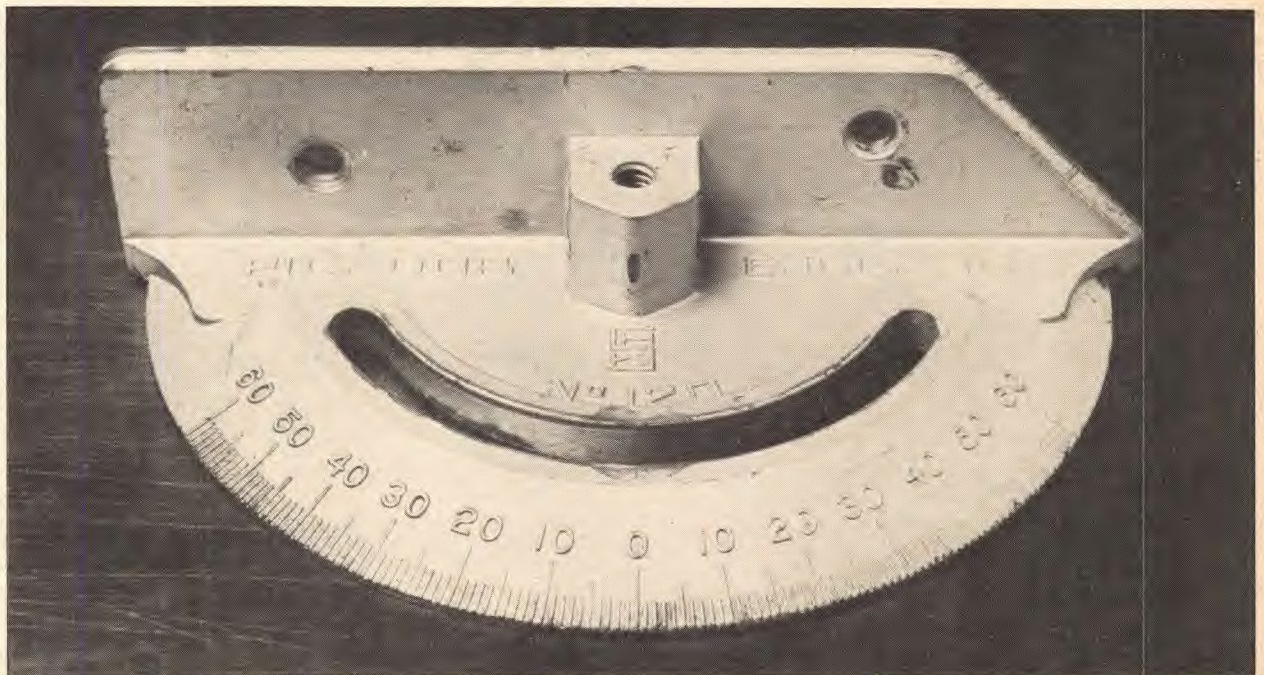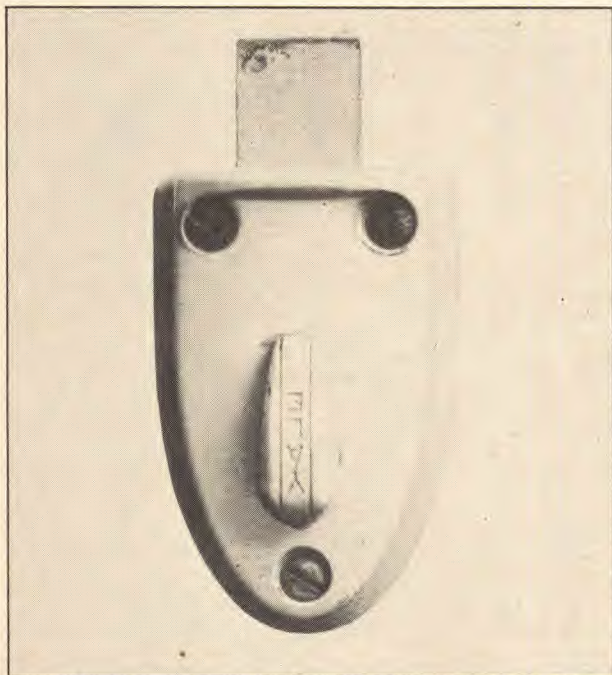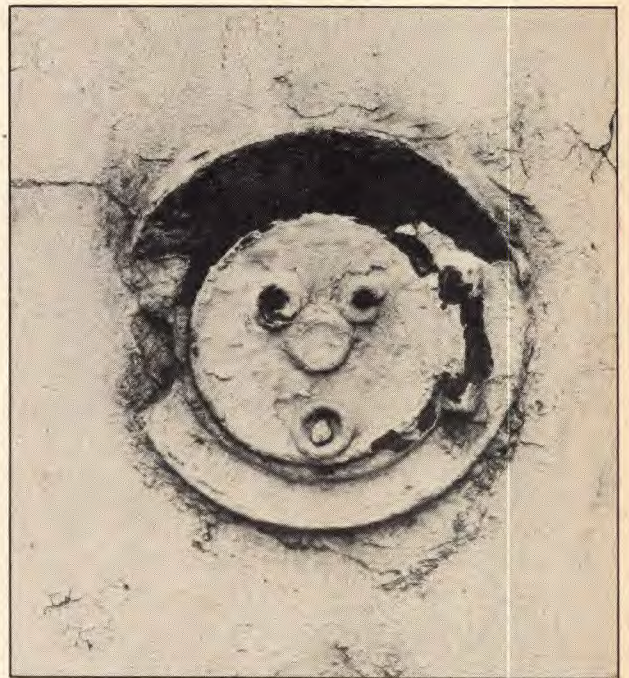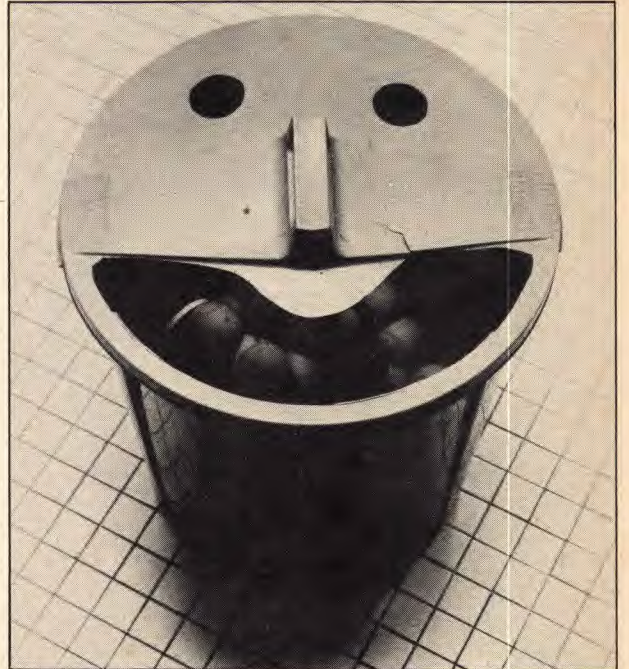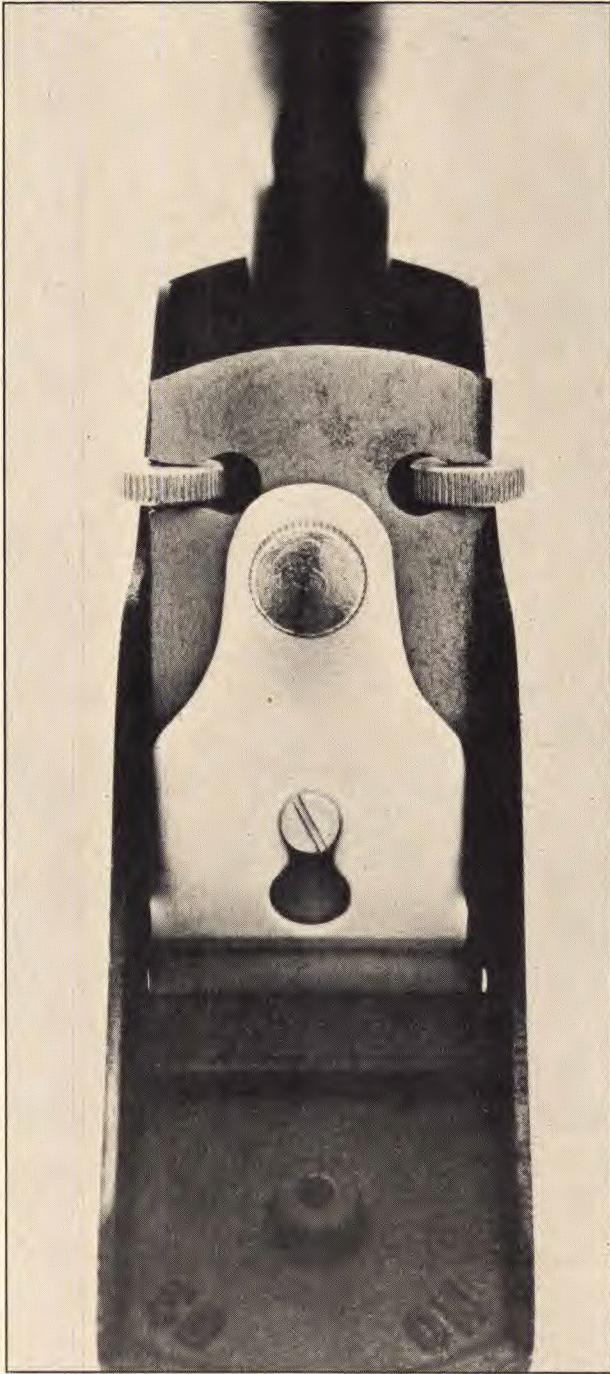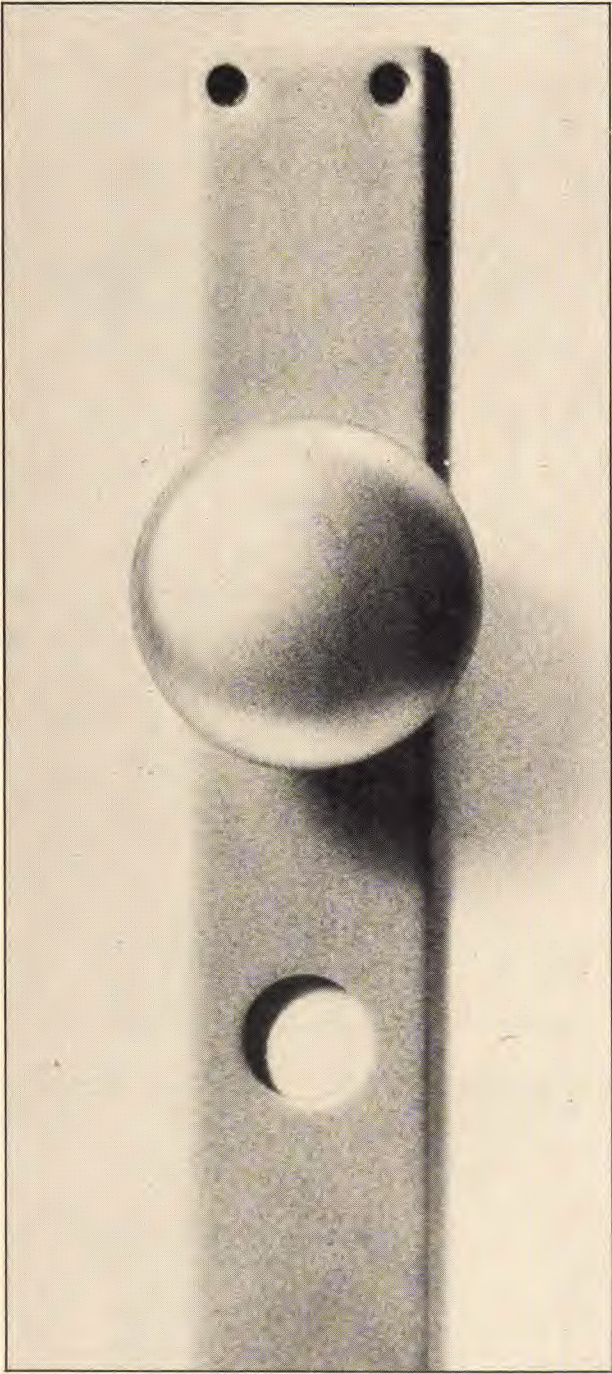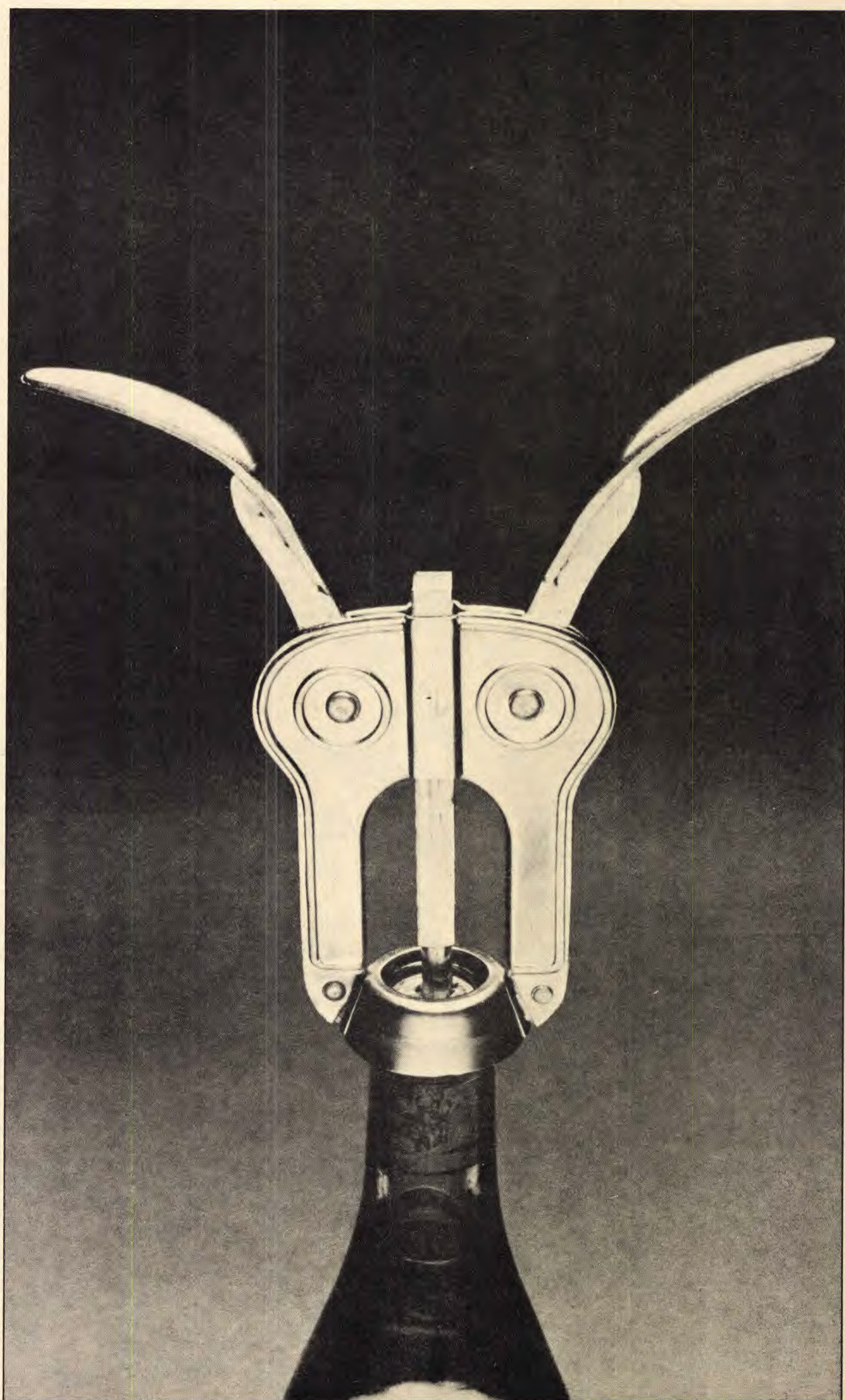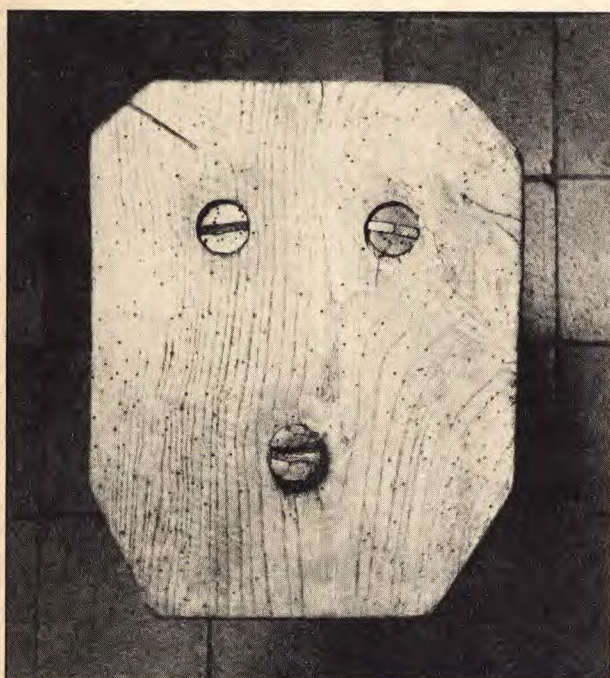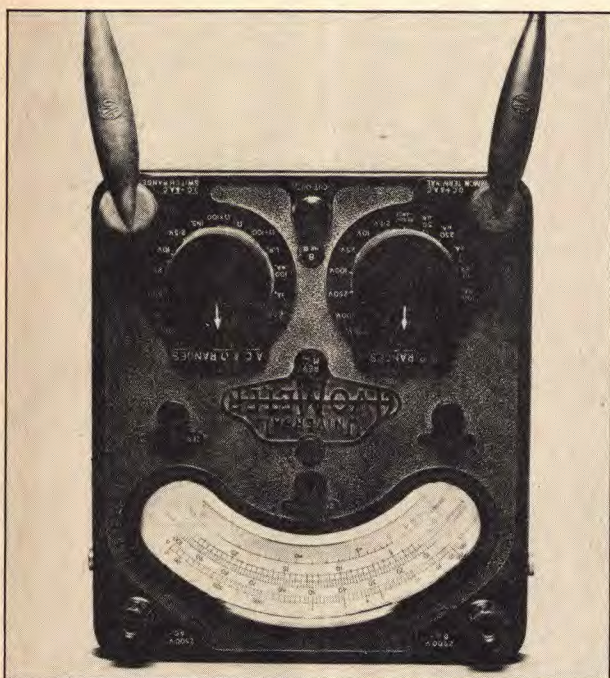
ITALIAN CUIZINE

ZALUT!

Zabaglione: fiendishly clever combination of egg yolk, sugar, and Marsala.
Zepole: fried cake dough with powdered sugar; greasy and gorgeous.
Zucchini: the squash that made Naples famous.
Zuppa de cozze: mussel soup that bites back.
Zuppa crema di pollo: cream of chicken soup like Guido's mother used to make.
Zuppa di funghi: Mushroom soup from darkest Milan.
Zuppa inglese: Italian trifle that doesn't mess around.
Zuppa di lentecchie: Lentil soup for the serious.
Zuppa di patate: Potato soup unavailable in Dublin.
Zuppa di pesce: Fish soup just for the halibut.
Zuppa di piselli: pea soup that proves green is beautiful.
Zuppa di pomodori: tomato soup just right for those cold days in Rome.
Zuppa di spinaci: See insert.

ABBONDANZA!

Zuppa! Zabaglione! Pizza! Pasta! Thousands of delicious calories from Italia, where garlic and olives await the tender touch of the press. What more could one ask? (A little less garlic, but pass the salami anyway.)

But the best thing about Italian food is the ritual of eating it. Sniffing, savoring, twirling the fork. (But only if you're eating spaghetti. Never twirl the fork with zuppa.) That's what makes an Italian meal special. It's like floating down the canals of Venice; it's not necessarily the quickest way to get somewhere, but that's hardly the point.

So, with no further delay, partake of the ritual. Sniff the page. Savor the aroma. Dig into "Italian Cuizine."
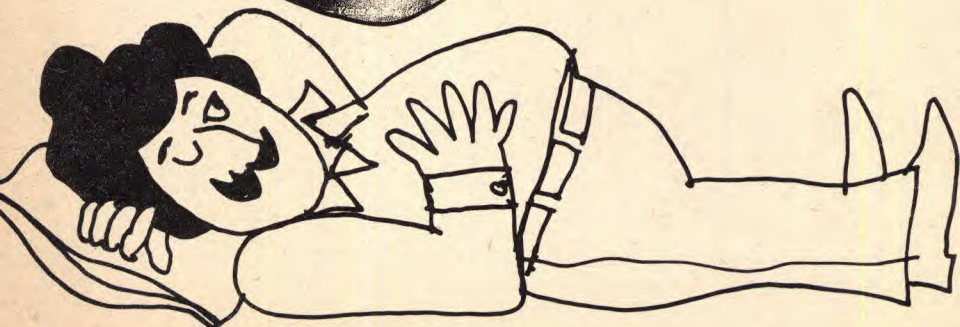
No. 2 in a series of Very Graphic Crossword Puzzles

ACROZZA

1. See 44 Acrozza.
7. Italian leaner.
8. Italian beachhead, WW II.
11. "Of_____I sing."
13. Forbidden.
14. Atlantic Alliance.
17. Music for Caruso.
19. _____ Hospital Staff. (abbr.)
20. Sound made when successfully swatting a fly.
21. Pertaining to.
23. Close one's trousers.
25. Greek Letter.
27. Eat too much Pasta.
30. "Take the_____."
32. Where the Wiz lives.
33. "The fork ran away with the_____."
35. Cheer for Manolete.
36. Word for a sharp Ferrari.
37. Nickname for singer Bennett.
38. Attlee, Chamberlain, and Churchill. (abbr.)
40. Frame the Den for paneling.
42. Baked Italian Pasta.
44. Ice Cream on top, with 1 Acrozza.
45. Straw hats made in Ecuador.
48. "_____ Sono Buoni."
50. Miss Gardner.
52. Fifth Avenue Italian bookstore.
55. Platinum (chem. abbr.)
56. Suffix expressing aptitude.
58. Italian Soprano voice above Contralto.
59. Multicolored mineral (Gemstone)
60. "When_____ _____do as…"
62. Variety of Pewter.
64. Yalie.
65. _____de Campe.
66. "Gimme That_____." Time Religion."
67. Heyerdahl craft.
68. Fork prong.
69. "Great Caruso" star and family.
73. Before 5, in Rome.
74. A mean (abbr.)
75. "_____tu, Brute?"
77. "Show_____", in Variety.
78. Where rich Mario lives.
80. What Venice is doing.
82. Goose eggs.
83. One very wide shoe.
84. Miss Rand.
86. Married women's title.
88. After 2, in Rome.
89. It pays for dinner in Milano.

DOWNA

1. Do, Re, _____.
2. A mouth opening, in anatomy.
3. Food for Univac.
4. She lives in a convent.
5. The Cocktail hour, in Rome.
6. Big, Italiano Burger.
7. Green potage, in Rome.
8. _____e Molise, Italian region.
9. How a fella travels with his girla in Venezia.
10. Where it's_____!
11. What medium is the message?(abbr.)
12. Initials for a House of Worship recognized by law.
15. Tricky ruse.
16. Crumb.
18. Chinese weight.
22. College teacher, for short.
24. Some like it with extra Cheese and Anchovies.
25. Kind of extra Cheese for 24 downa.
26. _____Spumanti.
28. Where the General Assembly meets, for short.
29. Many rejections.
31. It flies to and from Rome.
34. Northern Italian river.
38. Making "Sacramento tomato juice" sounds.
39. _____Ray, (Devilfish).
41. "Like a kitten_____…"
43. "In a_____" (Confused).
44. "_____You like it," to Vito.
47. Neon (chem abbr.)
48. Abbreviated British stargazers.
49. Nickel (chem abbr.)
51. Italian town with alotta water.
53. Suffix for change.
54. Variant for where animals are kept.
57. Joyeux _____.
59. Fruit for Italian Martini.
61. Map abbr.
63. Pasta patties with meat.
64. Including everything (Latin).
66. Harriet's husband.
67. Famous Broadway theater.
70. "Li'l _____."
71. Antiballistic missiles.
72. Droops.
76. _____ Eliot.
79. Myrna _____.
81. "_____ a Camera."
85. Building Designers' Org.
87. Before 12, in Rome.

By Al McGinley and Martin Alter
ANSWERS ON PAGE 87

TODAY'S SPECIAL
ZUPPA DI SPINACI

2½ TBS. FLOUR
½ PT. SPINACH PUREE
1½ PINTS CHICKEN STOCK

¼ CUP BUTTER
1 GARLIC CLOVE, CHOPPED   ½ PINT CREAM

TAKE A SAUCEPAN & MELT THE BUTTER. ADD GARLIC & FRY GENTLY FOR FIVE MINUTES. STIR IN THE FLOUR THEN BLEND IN THE SPINACH PUREE, THE STOCK & THE CREAM. STIR CONSTANTLY UNTIL THE SOUP COMES TO A BOIL & THICKENS. SIMMER FOR 10 MINUTES. SERVE

THIS ARTICLE WAS SET IN ITC QUORUM

The ABC's of coloring. It's hard to believe that anyone can add substantively to the voluminous number of letterforms that fairly boggle our minds and dazzle our senses. But Jean Larcher has done it again. Just when we think that designs of the alphabet have been exhausted, up pops Larcher with still another fascinating variation — this one a spread from his forthcoming "Alphabet Coloring Book," which will be on the bookstands in March courtesy of Dover Publications. This prolific multi-talented designer from Paris — who has contributed so handsomely to the editorial excitement of earlier issues with his playful interpretations of both numerals and alphabets — has come up with a bright new concept: an "audience participation" alphabet, with the readers invited to go for their color markers to fill in the provocative lettering with their own choice of colors. We suggest that you keep these pages on hand as a reminder to yourselves and your typophile friends who might want to go whole hog and buy the book on publication date (on the pretext, naturally, that it's really "for the children"). Give it a whirl. We think that you, like us, will never cease to be amazed at Larcher's creative reach and technical wizardry — brilliantly enhanced, of course, by your own glorious color schemes.

Letters to Giorgio

FOLON
LETTRES A GIORGIO

ALICE EDITIONS CHÊNE

PARIS, APRIL 22, 1975

5 Via Santa Cecilia
Milano
ITALIA

FOLON BURCY 77 FRANCE

BURCY, JUNE 18, 1971

Giorgio Soavi
5 Via Santa Cecilia
20121 Milano ITALIA

BURCY, APRIL 8, 1975

Giorgio Soavi
5 Via Santa Cecilia
Milano
ITALIA

BRUSSELS, JUNE 13, 1973
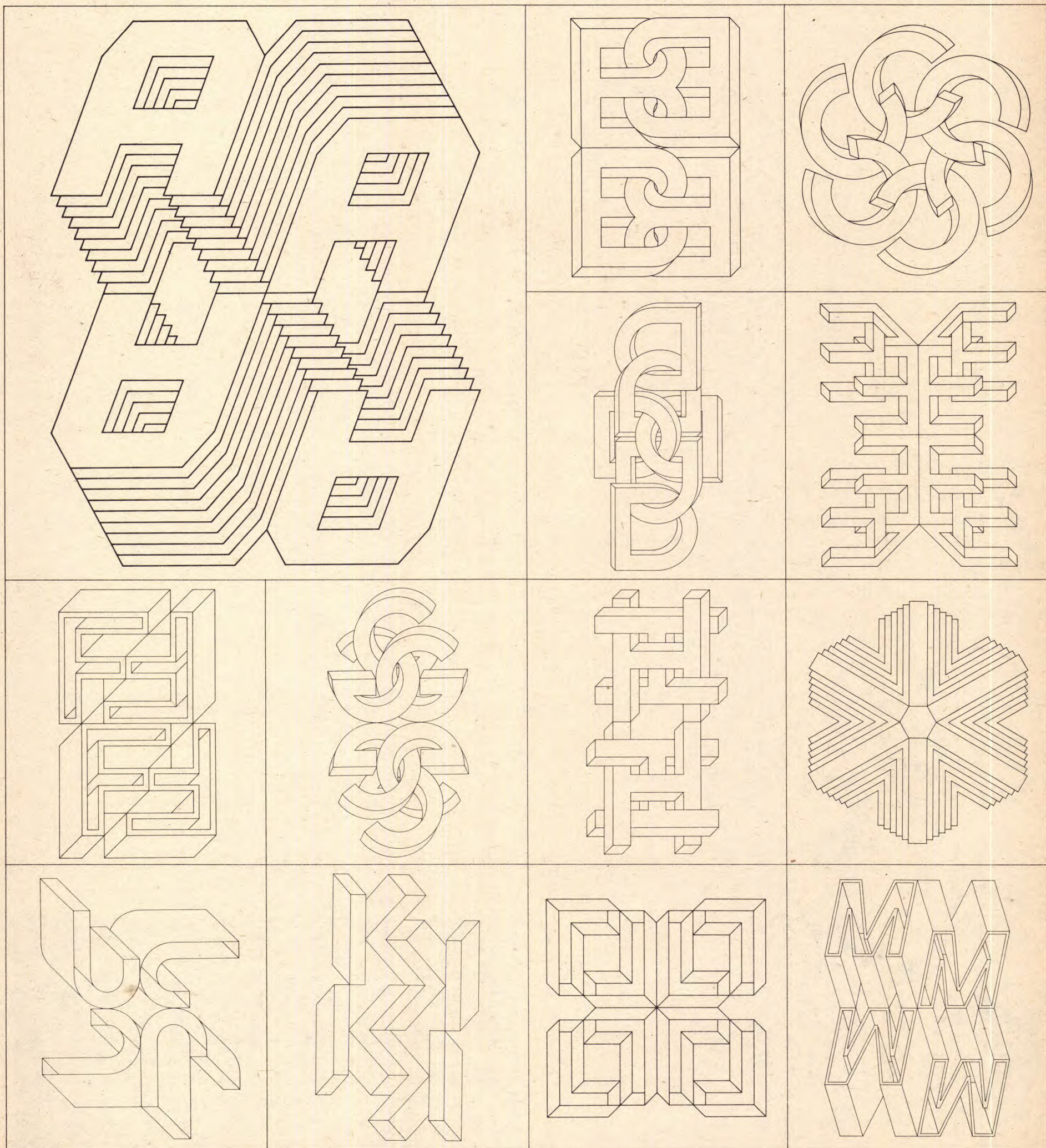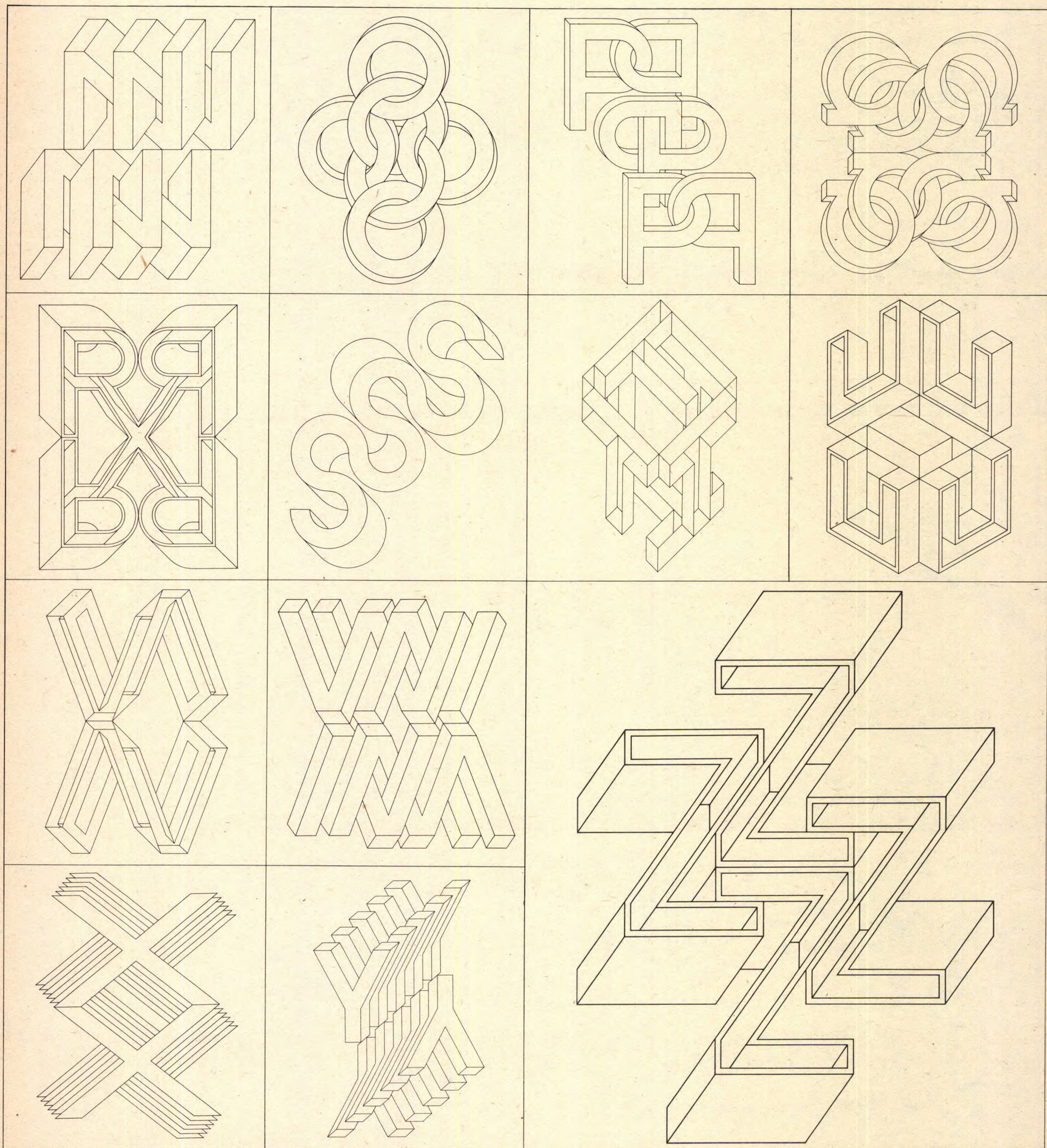
Through the centuries, a great body of knowledge has come down to us through the medium of letters. In this way, we have learned intimate details about famous people ("The Collected Letters of Bernard Shaw," Franz Kafka's "Letters to Milena," et cetera). Not in our recollection, however, has there ever been a collection of "envelopes." Not, that is, until Giorgio Soavi, Creative Director of Olivetti in Milan, decided to save and collect the uniquely designed mail he received from his Parisian illustrator friend, Folon.

It is difficult to evaluate a language in terms of that language itself. Its readers and writers are normally unaware of both its advantages and disadvantages, which can properly be brought into focus only by comparison with another tongue. And since those acquainted with another tongue are a rather small minority, the majority of reader/writers go through life in a kind of blissful ignorance of what their tongue really represents in the world of language.

There is, however, one universal theme that cuts through the barrier of word differences, and that is the image, the picture, the illustration. Whether put down by a Frenchman, a German, an Italian — anyone — the recognizability of an illus-
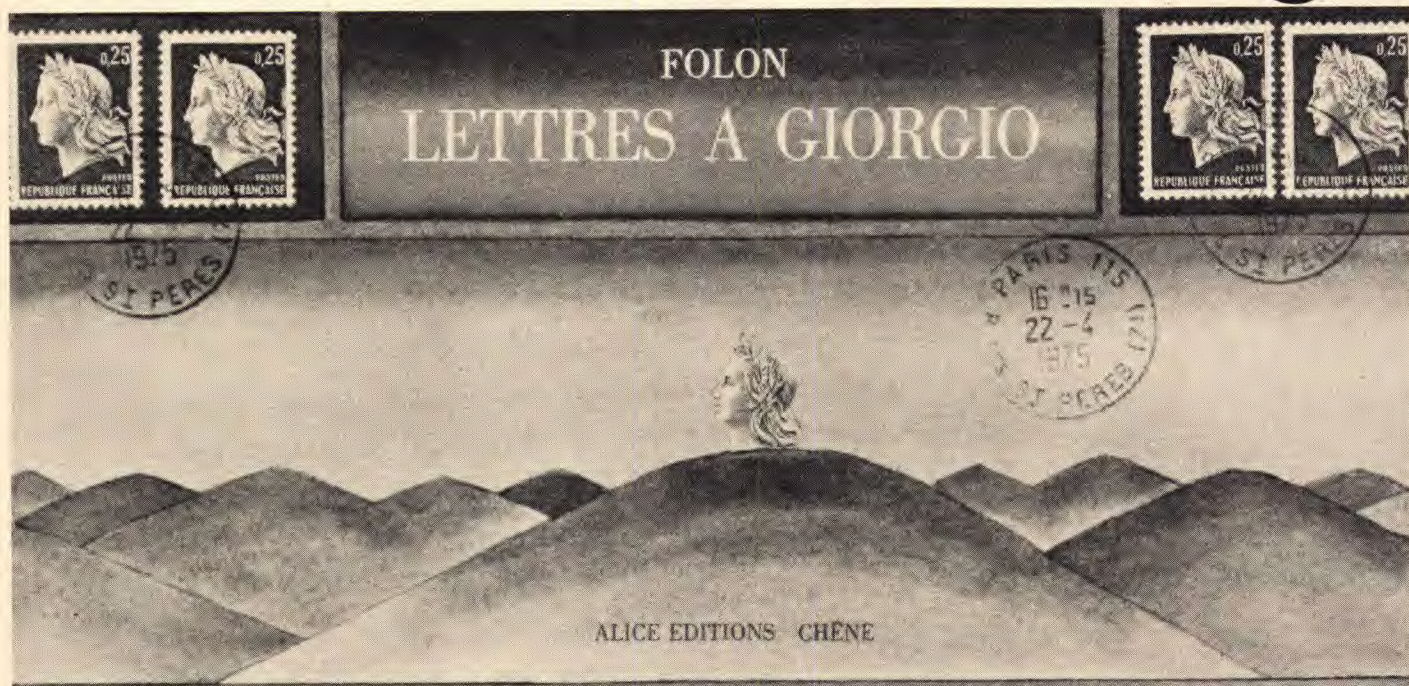
BURCY, AUGUST 8, 1970 WITH ROLAND TOPOR
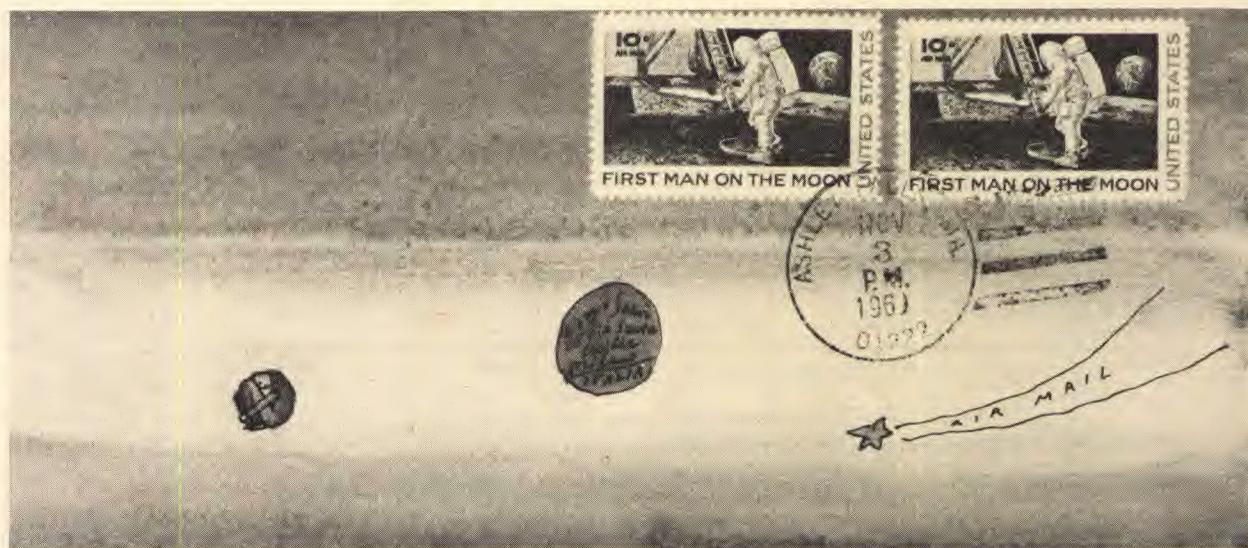
NEW YORK, NOVEMBER 3, 1969 WITH R. O. BLECHMAN

PARIS, NOVEMBER 11, 1968
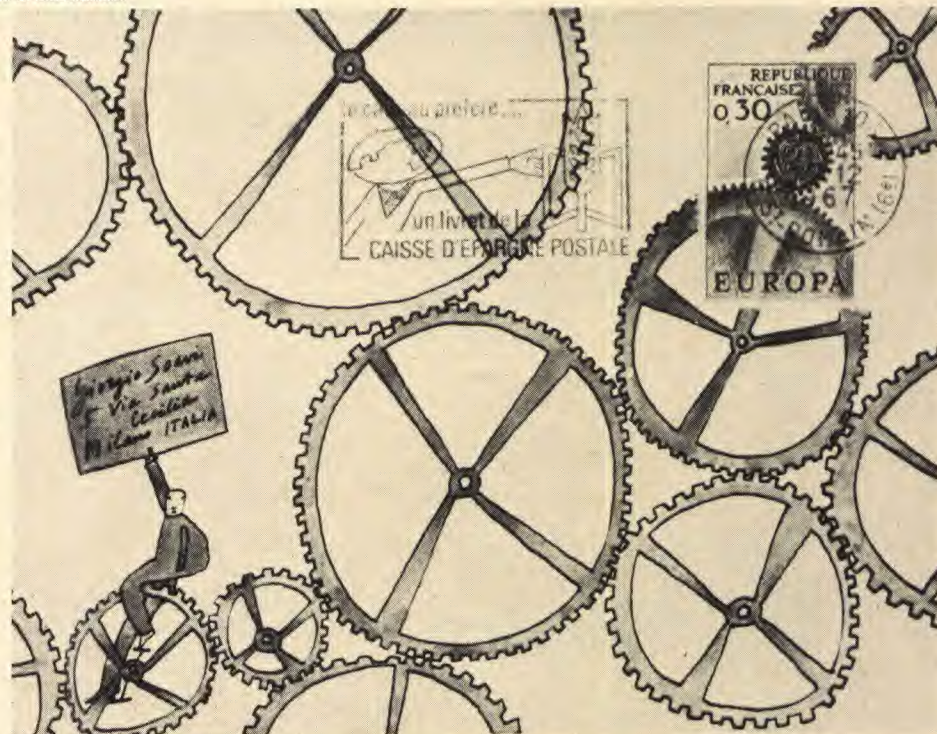
PARIS, DECEMBER 20, 1967
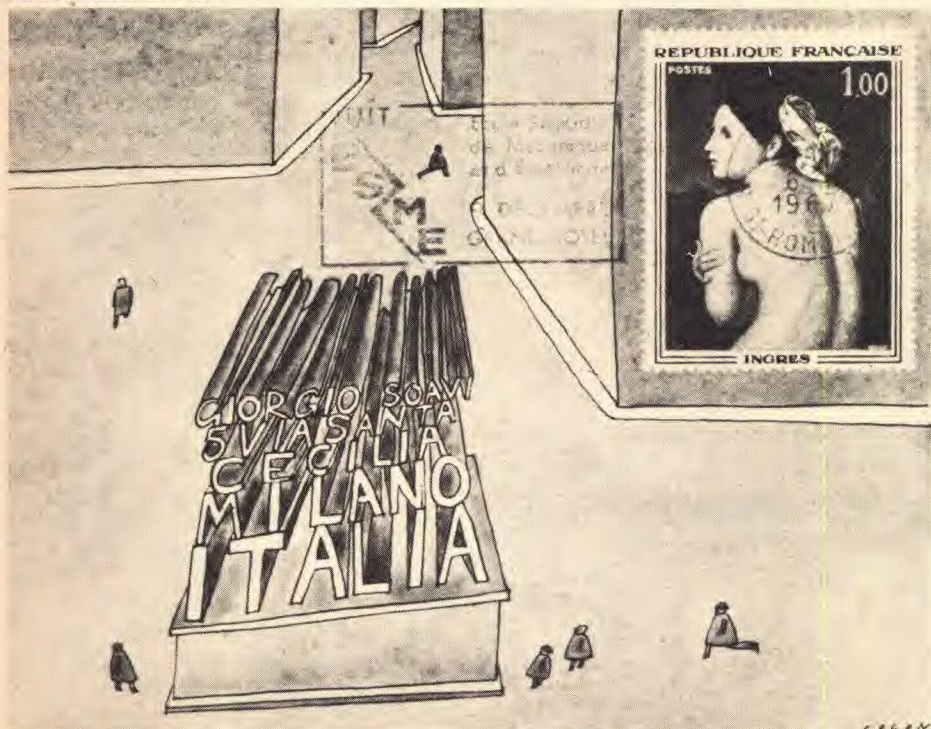
PARIS, OCTOBER 6, 1967

FONTAINEBLEAU,
OCTOBER 30, 1969

THIS ARTICLE WAS SET IN ITC AMERICAN TYPEWRITER LIGHT CONDENSED
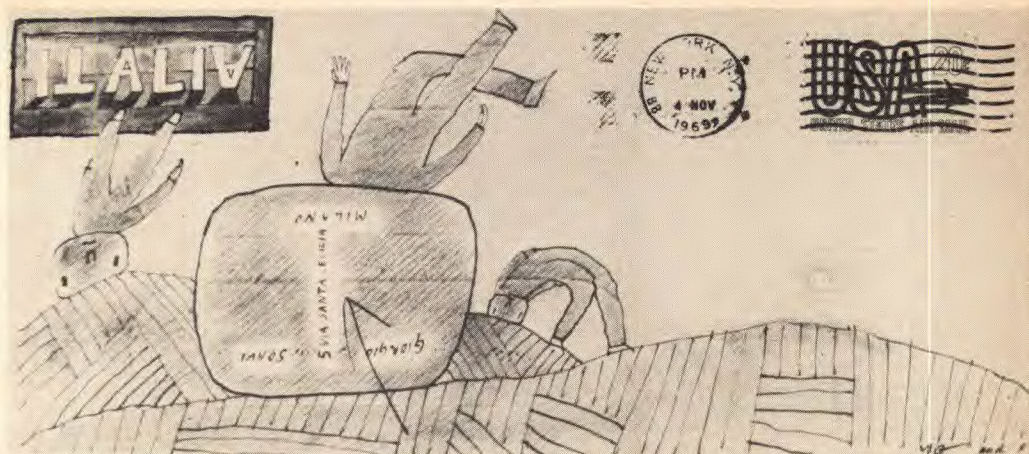
NEW YORK, NOVEMBER 4, 1969 WITH MILTON GLASER
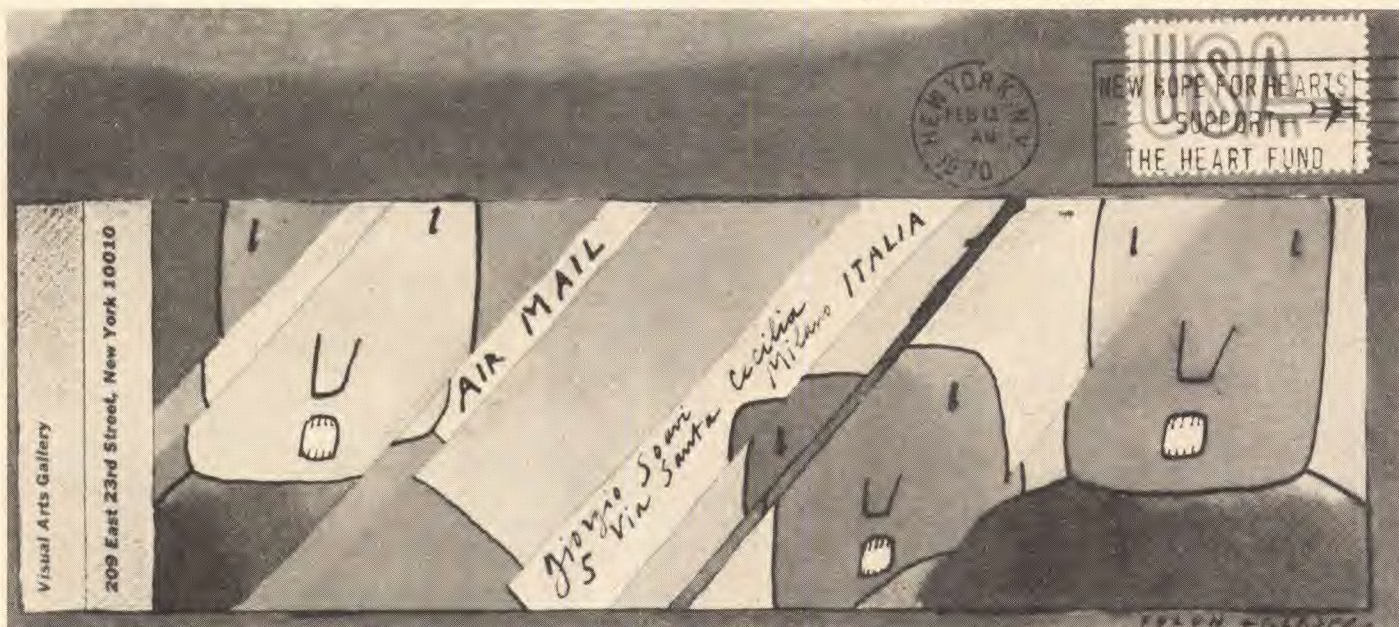
NEW YORK, FEBRUARY 13, 1970 WITH MILTON GLASER

PARIS, MARCH 12, 1975

tration is available to us all.

When Folon began writing to Soavi in the 60s — from Paris, Milan, Tokyo, New York — he continued in earnest his delightful idea of illustrating the envelopes. The work was so lovely that Soavi kept and treasured them — collecting and, eventually, having them put out as a color booklet by Alice Editions. It is a pleasure for us to feature on these pages several selections from it revealing Folon's masterful illustrative wit.

Although most of the envelopes were conceived and drawn by Folon himself, others were done on occasion in collaboration with such artists as Milton Glaser, Pierre Alechinsky, and R. O. Blechman. Various elements combined to inspire the illustrations, not the least of which was the design of the particular stamp used.

Looking for a fresh approach to addressing envelopes? Folon's "Letters to Giorgio" may give you a lead — a lively realization of the reach of an inventive mind. **J.A.F**

BURCY, MARCH 17, 1972

PARIS, JULY 14, 1970

PARIS, MARCH 14, 1968

CHANDIGARH, MARCH 21, 1974

BURCY, OCTOBER 31, 1970

BURCY, MARCH 14, 1975

TOKYO, MAY 7, 1970

BURCY, JULY 13, 1970 WITH PIERRE ALECHINSKY

ITC BENGUIAT ™

(BEN-GAT)

ITC Benguiat Book

It takes no crystal ball to foresee that the future will give ITC Benguiat its firm stamp of approval as the right face at the right time in the right place, for here is a design overflowing with contemporary goodies, drawn with fervor by one whose artistry sees far down the line, and whose pen records in vibrant graphics clear to all.

Benguiat's design confidence reflects in every letter his eagerness to set down the lively shapes with unfaltering boldness; his assurance that in so doing he is taking a firm step forward. These are the traits that give this new typeface such vitality and assure for it a worthy role in tomorrow's typography.

By no means its least important attribute is that, along with other ITC typefaces, it is available under license to manufacturers of scores of different keyboards and manual typesetting machines, transfer sheets, etc. Worldwide. This worldwide coverage brings new ITC faces promptly into the visual mainstream, giving them advance standing in broad dissemination

of the printed word. Benguiat is available in three weights, roman and italic, separately designed for text and display.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

ITC Benguiat Medium

It takes no crystal ball to foresee that the future will give ITC Benguiat its firm stamp of approval as the right face at the right time in the right place, for here is a design overflowing with contemporary goodies, drawn with fervor by one whose artistry sees far down the line, and whose

pen records in vibrant graphics clear to all.

Benguiat's design confidence reflects in every letter his eagerness to set down the lively shapes with unfaltering boldness; his assurance that in so doing he is taking a firm step forward. These are the traits that give this new typeface such vitality and assure for it a worthy role in tomorrow's typography.

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ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

ITC Benguiat Bold

It takes no crystal ball to foresee that the future will give ITC Benguiat its firm stamp of approval as the right face at the right time in the right place, for here is a design overflowing with contemporary goodies, drawn with fervor by one whose artistry sees far down the line, and whose pen records in vibrant graphics clear to all.

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ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

ITC Benguiat Book Italic

It takes no crystal ball to foresee that the future will give ITC Benguiat its firm stamp of approval as the right face at the right time in the right place, for here is a design overflowing with contemporary goodies, drawn with fervor by one whose artistry sees far down the line, and whose pen records in vibrant graphics clear to all.

Benguiat's design confidence re-

flects in every letter his eagerness to set down the lively shapes with unfaltering boldness; his assurance that in so doing he is taking a firm step forward. These are the traits that give this new typeface such vitality and assure for it a worthy role in tomorrow's typography.

By no means its least important attribute is that, along with other ITC typefaces, it is available under license to manufacturers of scores of different keyboards and manual typesetting machines, transfer sheets, etc. Worldwide. This worldwide coverage brings new ITC faces promptly into the visual mainstream, giving them advance standing in broad dissemination of the printed word. Benguiat is available in three weights, roman and italic, separately designed for text and display.

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

ITC Benguiat Medium Italic

It takes no crystal ball to foresee that the future will give ITC Benguiat its firm stamp of approval as the right face at the right time in the right place, for here is a design overflowing with contemporary goodies, drawn with fervor by one whose artistry sees far down the line, and whose pen records in vibrant graphics clear to all.

Benguiat's design confidence reflects in every letter his eagerness to set down the lively shapes with unfaltering boldness; his assurance that in so doing he is taking a firm step forward. These are the traits that give this new typeface such vitality and assure for it a worthy role in tomorrow's typography.

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ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

ITC Benguiat Bold Italic

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ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
1234567890

ITC BENGUIAT BOOK

AABCDEFGHIJKLMMNOPQRSTUVW
XYZabcdefghijklmnopqrstuvwxyzfil
234567890&*AABÆÆAHÆKÆARAASS
TTÇØŒßçæøœ£$¢!?(#%*/-"''-)[:;.@]

ITC BENGUIAT MEDIUM

AABCDEFGHIJKLMMNOPQRSTUV
WXYZabcdefghijklmnopqrstuvwxyz
fi1234567890&*AABÆÆAHÆKÆARAA
SSTTÇØŒßçæœø£$¢!?(#%*/-"''-)[:;.@]

ITC BENGUIAT BOLD

AABCDEFGHIJKLMMNOPQRST
UVWXYZabcdefghijklmnopqrst
uvwxyzfi1234567890&*AABÆÆAF
AHÆKÆARAASSTTØÇŒßçæøœ£$¢
!?(%*/-"''-)[:;.#@]

═══════════════ ITC BENGUIAT BOOK ITALIC ═══════════════

AABCDEFGHIJKLMMNOPQRSTUVW
XYZabcdefghijklmnopqrstuvwxyzfi
1234567890&*AÆBÆÆÆFHÆKÆPÆRÆ
SSTTÇØŒßçæœø£$¢!?(#%*/-""—)[:,,.@]

═══════════════ ITC BENGUIAT MEDIUM ITALIC ═══════════════

AABCDEFGHIJKLMMNOPQRSTUV
WXYZabcdefghijklmnopqrstuvwx
yz1234567890&*AÆBÆÆÆFHÆKÆPÆR
ÆSSTTÇØŒßçæøœ£$¢!?(#%*/-)[:,,.@]

═══════════════ ITC BENGUIAT BOLD ITALIC ═══════════════

AABCDEFGHIJKLMMNOPQRST
UVWXYZabcdefghijklmnopqrst
uvwxyzfi1234567890&*AÆBÆÆF
ÆHÆKÆPÆRÆSSTTÇØŒßçæøœ£$
¢!?(#%*/-""'')[:,,.@]

DRAWING BY JOHN ALCORN

7 On the

On the **7**th day of Christmas, my true

On the **8**th day of Christmas, my true love gave to me, **eigh**

On the **9**th day of Christmas, my true love gave to me, **nine ladies dancing**

On the **10**th day of Christmas, my true love gave to me, **ten lords a-leaping,** nine ladies dancing

On the **11**th day of Christmas, my true love gave to me, **eleven pipers piping,** ten lords a-leaping, nine ladies dancing

On the **12**th day of Christmas, my true love gave to me, **twelve drummers drumming,** eleven pipers piping, ten lords a-leaping, nine ladies dancing

Something For Everybody From U&lc

The Twelve Days Of Christmas

On the **1**st day of Christmas, my true love gave to me, **a partridge** in a pear tree.

On the **2**nd day of Christmas, my true love gave to me, **two turtle doves,** and a partridge in a pear tree.

On the **3**rd day of Christmas, my true love gave to me, **three French hens,** two turtle doves, and a partridge in a pear tree.

On the **4**th day of Christmas, my true love gave to me, **four calling birds,** three French hens, two turtle doves, and a partridge in a pear tree.

On the **5**th day of Christmas, my true love gave to me, **five golden rings,** four calling birds, three French hens, two turtle doves, and a partridge in a pear tree.

of Christmas, my true love gave to me, **six geese a-laying,** five golden rings, four calling birds, three French hens, two turtle doves, and a partridge in a pear tree.

ve to me, **seven swans a-swimming,** six geese a-laying, five golden rings, four calling birds, three French hens, two turtle doves, and a partridge in a pear tree.

ls **a-milking,** seven swans a-swimming, six geese a-laying, five golden rings, four calling birds, three French hens, two turtle doves, and a partridge in a pear tree.

aids a-milking, seven swans a-swimming, six geese a-laying, five golden rings, four calling birds, three French hens, two turtle doves, and a partridge in a pear tree.

aids a-milking, seven swans a-swimming, six geese a-laying, five golden rings, four calling birds, three French hens, two turtle doves, and a partridge in a pear tree.

aids a-milking, seven swans a-swimming, six geese a-laying, five golden rings, four calling birds, three French hens, two turtle doves, and a partridge in a pear tree.

aids a-milking, seven swans a-swimming, six geese a-laying, five golden rings, four calling birds, three French hens, two turtle doves, and a partridge in a pear tree.

would not have to retype and then proofread what we have retyped.

We have given some thought to requesting scannable copy from authors. This has real disadvantages. Editors and copyeditors would find scannable copy difficult, even impossible, to work with. Also, if the author's typist does not type with care (because it is better to type some codes in) or if any letters fill in, the resulting tape is more troublesome and expensive to work with than one produced from our retyping. The need is to receive the manuscript from the author in a form that can be used by machines without re-typing and proofing what we have retyped.

Word processor input

There is some hope with a system which uses word processors. These automatic typewriters, which can double as text editing systems, are proliferating as office equipment. There are, for example, 30 to 60 IBM processors on the campus of The University of North Carolina at Chapel Hill. Some universities are developing word-processing centers which could help scholarly publishing because our authors are generally with universities. However, there are serious problems to overcome: how to effect code explosion and how to translate and interface the many different text storage methods now used by word processors.

At North Carolina we look forward to changing our system (when the work load demands a change) to terminals that will allow us to store data more easily and to manipulate data more quickly, that will have a better storage medium than paper tape, that will be programmable, and that will have a program or programs that interface with word processors.

The Eames movie "A Communications Primer" is pertinent to this discussion. Any system has to pro-duce type that is legible—that is the whole point—to communicate with the least amount of noise. Type gives clues to the reader that allow the reader to per-ceive what he reads. The loss of a ligature with the re-sultant disturbing blots is noise that interferes with reading—perception, communication and retention. A huge variance in the thick and thin lines of a character results in the same noise interference in communications; it doesn't matter what else a sys-tem will do if it will not produce legible type. Machines and systems do not operate by themselves. We are saving money at Chapel Hill because we have developed craftsmen with a sense of typography and a sense of the book and proofreading skills to operate our machines.

The necessary factors are the right equipment for the job to be done, the trained people to operate the equipment, the patience to try, and the ability to hang loose and realize that the best answer is not a single answer but multiple answers. What works for one manuscript does not necessarily work for another.

Where has this philosophy taken us?

From July 1976 to June 1977 we have composed 29 books and journals at a percentage savings over commercial typesetters of 43%...based on their estimates.

Our costs include all composition costs: labor, supplies, depreciation and a percentage of overhead.

It is not easy. It's not pie in the sky, but it is possible and well worth the effort. Type quality can be achieved with savings.

U.S. News & World Report, Inc.

Harold Fine Chevalier
Book Production Manager
U.S. News & World Report, Inc.

My personal concerns as a former book compositor relate to the image quality and letterforms that CRT typesetting can offer. Image quality is not a problem. Letter design remains, however, a thorn. The digitiz-ing of letterforms is equivalent to the translation of a designer's drawings to metal patterns prior to the mechanical cutting of punches. This crucial elec-tronic stage is rarely overseen by the type designer. Most digitized fonts today are engineered copies with generally unsatisfactory results. Hermann Zapf is happy to be free, in this electronic age, from base-line restrictions. But did the several digitizers of Optima, under different names, consider asking Mr. Zapf to oversee the process? When I asked him, he said that no one in the U.S. had done so!

The front end

At *U.S. News & World Report* in Washington, the original Atex system supports three primary functions —file management, editing, and composition—from one CPU (a minicomputer). We have three systems. The first is in our Data Communications Depart-partment, which controls composition, page makeup, and transmission to remote printing plants. A second system is in our newsdesk area, where editors can send stories, interactively, through hyphenation and justification to fit them to page layouts submitted by the art department. Stories then go into System 1 for page makeup, typesetting for proofs, and transmission.

The Atex Edit One System.

In January 1977 we installed a third system which Atex calls Edit One. Designed for writing and editing by news reporters, it uses a smaller CPU than the first

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two systems. It cannot perform hyphenation and jus-tification, or other composition functions. The two main systems, 1 and 2, are driven by Digital Equip-ment Corporation 11/35s, each of which can support sixteen video display terminals. System 3 is driven by a DEC 11/04 that supports thirty-two VDTs. Mass storage devices are moving-head drives, each with twenty-nine megabytes available.

Part of the Atex hardware is designed so that the CPUs are not required for refreshing the VDT screens, and similar functions. This removes a significant load from the CPUs, leaving them free for editing func-tions. The VDTs in the Atex systems have no memory built into them, but are assigned a part of main memory.

An editing terminal keyboard.

Terminals for systems 1 and 2

These terminals have a group of keys on the 2d row, called "save/gets," that access private memories for storing temporary files of any length. They are used for formats, repetitive portions of text, commands, etc., significantly increasing the speed of editing and composition. The top row accesses pi characters. The mode keys are in the third row from the top and are particularly important in the overall design of the system (see below).

The simplified keyboard for the Edit One is adequate for reporters.

The Edit One terminals (our System 3) have no pi keys and no save/get keys. They are used by the writ-ers and editors for input and editing. When the writ-ers and editors have completed a story, they send it to a supervisory editor, on the same system, for review. Then it is sent electronically to System 2 for copyfit-ting, and on to System 1 for page makeup. Should an editor or writer wish to see a story on paper, the file can be printed out on a TTY Model 40. The use of the Edit One system at *U.S. News* has significantly reduced the amount of paper flow, as well as the amount of original input keyboarding that was required of our compositors in the Data Communi-cations Dept.

Satellite transmission

We transmit to our printers, via Western Union satel-lite, complete pages in "packed" digital format, which increases our transmission rate eight times

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over our previous rate by telephone circuits. We have started to transmit pages that include typeset halftones, which require more speed, because digital halftones require far more information per square inch than type areas.
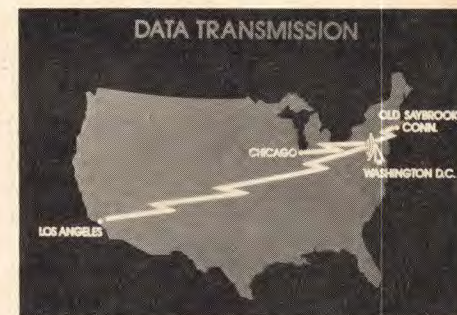
Printing is done at three locations.

Three printing centers

We print in three locations: Old Saybrook, Connec-ticut, and Chicago, with R.R. Donnelley, and Los Angeles, with Arcata. We have Videocomp 500 (elec-tron beam) typesetters installed at each of these plants, identical to a fourth in our Washington, D.C. headquarters, because we are transmitting complete pages, including halftones.
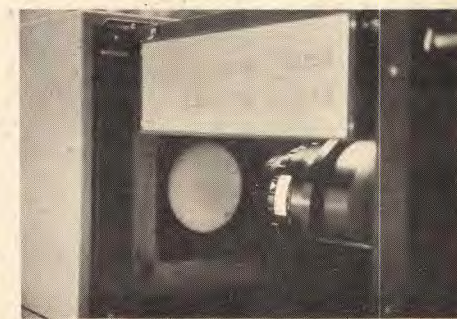
The VideoComp's tube face.

The typesetters

The Videocomp 500, made by Information Interna-tional, Inc., is ideal for typesetting halftones because its recording medium (RC paper or positive film) is stationary while paginated files are being set. Half-tone dots cannot be laid down with any accuracy if the recording medium is moving. When in line-by-line (galley) mode, the electron beam writes over a 30-point vertical area before the recording medium is moved in the increments called for by the leading commands. The maximum page area is a rectangle whose diagonal is 81 picas, in full-face mode, after enlargement by a lens system of about twice the image size on the tube face. Type size, leading, and rules can be specified in increments of a tenth of a point, fixed spaces to a hundredth of an em.

Font storage

Width tables for all fonts are stored in the Atex system, English language versions of these may be called up on a VDT screen if we need to check set width or description of any character. We can also typeset our fonts so that all characters appear in a table showing side bearings. Digital stroking infor-mation is stored on a double disc monitored by a minicomputer, both within the typesetter.

Image quality

Information International describes resolution of characters with the term "granularity," which is a combination of vertical and horizontal electron beam movements, and beam diameter. The beam

sweeps vertically from bottom to top. After each vertical stroke, the beam moves horizontally (in stroke spacing increments) so that each succeeding stroke overlaps the preceding one by one-third its width.

Type size ranges

Information International has defined four size ranges with a separate font description for each range. In range one, the recommended point sizes are 4-8, in range two, 4-18, in range three, 16-32, and in range four, 16-72. By overlapping these sizes and ranges it is possible to achieve any desired level of image resolution. The beam diameter itself can be controlled by software to eight standard diameters. For example, at 72 point the normal diameter of the beam is one and one-half thousandths of an inch. However, it can be so small that it will not record on a photographic emulsion.

Picture scanning

U.S. News & World Report has the first commercial model of a halftone scanner in the world, developed and built by Information International, Inc. Our scanner is integrated with the Atex system and the Videocomp 500, as shown in this diagram:

U.S. NEWS CONFIGURATION-OPTION 2
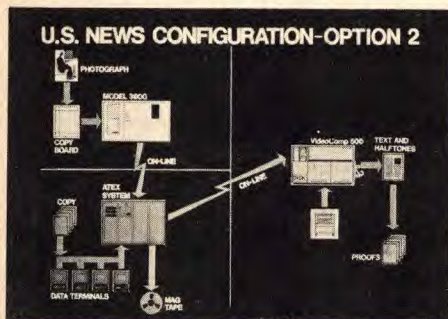
A diagrammatic representation of how text and graphics enter the system, are combined, typeset and transmitted.

The digitized halftone goes to disc storage, whence we combine it with the digital description of the type page.
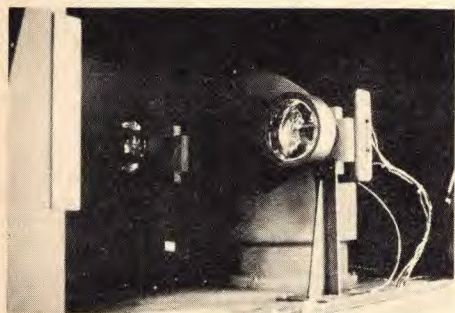
The photomultiplier tubes receive the scanning information from the electron beam in 256 shades of gray and convert these varying electronic intensities into digital information which can be stored, edited, and output in any of a number of halftone screen values.

Here is the interior of the scanner, showing the photomultiplier tubes. The cathode ray tube is mounted vertically below. Mirrors send the electron beam from the CRT to scan a continuous-tone photograph (or line art), held in place on a copyboard by cropping bars that carry gray-scale wedges. The photomultipliers read the reflected beam as two hundred and fifty-six shades of gray which are converted to digital values. The output size can range from ½-inch square to 54 x 66 picas, with screen from 65 to 255 lines per inch.

Checking picture quality

To check a halftone after it has been scanned and recorded on mag tape, the tape is hung on the 500 which typesets the halftone on RC paper. Each RC print shows two gray scales: one, the values available from the 500's dot font, previously specified by the scanner operator (dot fonts are available in any desired shape); and two, the values that the scanner read from the copy. To change the halftone, we can change some specifications at the 500 console and reset it, or rescan.
Here is a typeset page complete with halftones, type, and rules.
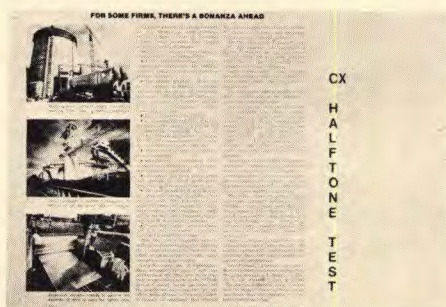
This full page...type, halftones, rules...was typeset. The full page is transmitted to the printers in Connecticut, Chicago and Los Angeles.

File management

Security on our system is maintained by a log-on procedure using individual passwords that cannot be seen when typed. Each person can get into the system only to a predetermined level. There are, for example, only two people at *U.S. News* who can access the software. There are public and private directories of different kinds. Each person using the system has a private directory, which shows four different listings, from simple file names and dates opened, to a context list with storage required for each file.

Our three systems can interchange files via an "interprocessor link" that is part of the Atex control software. Within systems, files may be merged, copied, renamed, deleted.

Electronic editing

The Atex system gives us a window into disc storage via "infinite scrolling," which allows us to look at any file from beginning to end and back. Beyond provision for insertion, deletion, and overstrike, we can search or make changes throughout a file with a single command. We can define characters, words, lines, or any block of text, which may be moved, copied, deleted, or stored via the save-get keys. We can run any block through partial H&J or supershift H&J.

Composition

Atex separates H&J from the output driver so that H&J can be used as often as needed before page makeup or typesetting. After H&J, if we want to know precisely how far from the top of the file or defined block a certain line is, we use the 2-key supershift H&J command to which the system responds by displaying in picas and points the precise distance of each baseline from the top; at the same time we are given the number of points required to fill a line set-wise, so that we can see exactly how loose or tight the interword spaces are for any defined number of lines.

The system contains a dictionary, prepared by the editors of *U.S. News*, that now contains well over a hundred thousand words, with four levels of hyphenation. Any word (for example, a homonym) not

found in the dictionary will be broken by logic and will be flagged on the VDT and on line printer output.

We can set parameters for minimum and maximum interword spacing, and to allow hyphenation only for a specified number of consecutive lines. We can set copy unjustified at left or right, with or without hyphenation. We can have automatic letterspacing, ligatures, kerning, dropped intials, and left and right indents of various kinds. Commands for automatic functions are inserted at the head of a file with mode definitions, or they may be scattered in the text if only occasional use is desired.

Mode definitions

There are eight modes (0-7), each of which causes characters to appear in a different form on the VDT—regular weight, bold, underlined, reversed, etc. Each mode used must be defined with a font number, face size, set width, leading, measure, and, if desired, the oblique angle in degrees. One or more of these can be redefined at any point in the text if more than eight styles are required.

A major system design decision by Atex was to use 16-bit words to define each character, at the expense of almost doubling storage requirements, so that the mode definition will follow each character through every operation in the system. As expensive as the mode system is in terms of storage, we are convinced that it saves a very large amount of time because we do not need to insert command codes every time we change from roman to italic, etc. A mode change is effected by striking one key.
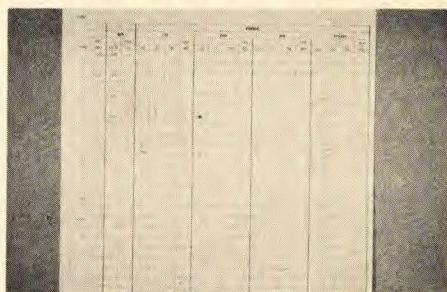
Tabular matter can be set and composed.

Tabular matter

Here is an example of a table from our system. We may specify up to forty columns across the measure. Column widths may be specified in five different ways. Within columns, type may be justified, centered, or flush left or right. The 500 allows us to draw vertical and horizontal rules (straight and curved) with weight and length in increments of one-tenth of a point.

Pagination

Page makeup requires a special set of commands for each page. These use vertical and horizontal starting points specified in points, picas, or inches, anywhere within a given page rectangle; another set contains the names of files from which text is to be taken, with the number of lines desired. The system returns the page to the VDT screen automatically, but columns or blocks of text do not appear in position within the page rectangle.

The near future

We are now working toward these short-term goals:
· Perfecting halftone generation on the Videocomp.
· Large-screen page display; all elements in position.
· Automatic page makeup for single-column text, using only one set of commands per chapter, or for other large blocks of text.

An In-Office Operation: Omnitext Terminals +A Pacesetter

Editor's note:

The system described here by Perrin Long, Jr. shows how a relatively small publishing operation can use some of the new technologies and methods to reduce costs while improving and stepping up output. Here Mr. Long outlines why and how Faulkner, Dawkins & Sullivan converted to a wp/typesetting installation, some of the problems they encountered and how they overcame them, and what the conversion has meant to the company's operations and customer service programs and what it is costing and what it is saving.

by Perrin Long, Jr.
Associate Director of Research
Faulkner, Dawkins & Sullivan

Before reviewing the Faulkner, Dawkins and Sullivan wp/typesetting installation one should know a little about the company's size and operation. Faulkner, Dawkins and Sullivan is a member of the New York Stock Exchange. Its revenues are about twenty-five million dollars and it had three hundred sixteen employees at the end of 1976. Faulkner, Dawkins and Sullivan does institutional research. The firm has twenty analysts, who cover about forty-five different industries.

Producing reports before 1976

I would like to walk you through, step by step, to what happened in January 1976 which made us change our method of producing research reports. The first quarter of 1976 was probably the peak period for brokers in the United States. The market was going through the roof, and everyone was making money and things looked good. It is at a time like this that most farsighted brokerage firms take a look at their costs and say to themselves, "These good days can't last forever. What are we going to do about it?" Early in January of 1976, the senior partner of Faulkner, Dawkins & Sullivan, Dwight Faulkner, called me in and said that he had had a complaint from one of our clients that it was taking too long from the time the analyst started writing a report until the report was in the client's hand.

The challenge

He asked me to cut that time by at least fifty per cent or more. The setup at that time was an IBM MT/ST system, which we had begun using in late 1967-68. By January 1976 we had three fulltime operators and a wide configuration of MT/ST typewriters, composers and so forth. Our annual rental for MT/ST equipment was running $25,000, our three fulltime operators another $36,000.

We formed a three-person team to study how to decrease the turnaround time and, secondly, cut costs. There was one other stipulation. At that time we had eighteen fulltime analysts. At the moment we have twenty. Our past and present policy at Faulkner, Dawkins is to assign a secretary to each two analysts.

We were not to consider a typing pool. Whatever system we came up with we had to maintain nine secretaries.

The search

In January 1976 we started looking at various systems. We looked at what Vydec had to offer. We took a look at AstroComp. We went back to IBM to see if they had anything new coming out. We went to Hewlett-Packard and we spoke to Xerox, at great length. We talked to a great number of people, one of which was Omnitext, in Ann Arbor, Michigan. Practically all of the systems, particularly AstroComp and to a degree, Vydec, had what we needed, but we settled on Omnitext for three reasons. First, they had the capability we might need in the future—looking down the road —depending upon how large our research department might become. Secondly, they were from Ann Arbor, Michigan, and I was a graduate of the University of Michigan, so anybody out of Ann Arbor had to be all right. But the most important thing was that we liked the people from Omnitext better than the other people we had seen. So we ordered an Omnitext system.

Costs compared

Let's consider the cost questions again. At the beginning of the year we had $25,000 in rentals and $36,000 for operators' salaries. To purchase the Omnitext system, we spent $96,000. We are depreciating that over five years, so we will say depreciation is $21,000 a year. Instead of three operators, we now have two at $12,000 per year each. Our total gross expenses therefore are $45,000, down from $61,000 when we started. So we are down $16,000, which doesn't sound like a great deal. But to a small firm, it's meaningful—that's a reduction in our direct costs of twenty-four per cent.

We made some mistakes

Let me just point out a few things that we did that in hindsight I don't think we would have done. In all of the installations that we visited, AstroComp, Vydec, Wang, and so on, we took along the three MT/ST operators that we already had. I think this was a bad mistake.

Secondly, we went into detail with all of the companies, including Omnitext, giving them reports, showing them exactly what we put out. There was a great amount of text material and a great deal of statistical material that we had to store and be able to update. Unfortunately, some of the vendors did not pay much attention to the research report that we had done in the past. They looked at them and came back and said, "Oh, this is a snap. We can do this on our system. There's no problem."

Well, in hindsight, in talking with others in the Wall Street area who picked up some of these systems, it was probably the fault of the individual salesmen that they really didn't take a hard look at what we were doing and try to come up with ways in which we could do it better.

As an interesting sidelight, when we were looking at Wang equipment, we were with a Wang salesman and a Compugraphic salesman. At that particular installation, up at Argus Research in New York, the Compugraphic salesman was only interested in selling a typesetter. He never said a word about having a complete system if anybody was interested. He and the Wang salesman were working hand in hand.

We placed the order with Omnitext, and gave them a

bunch of our past reports to take a hard look at, so that they could do the necessary programming to come up with formats we could use. We did have our initial headaches but I am very happy that we went with Omnitext and very happy that we got our feet wet in word processing, particularly where it involved CRT terminals, computers and optical scanning. This is the wave of the future. The way some of us have been preparing various types of publications is on the way out.

Rent it first

As John Seybold mentioned earlier, if anyone is interested in putting in a system, maybe they ought to rent it, because systems are changing so rapidly. On the other hand, if you can depreciate it fast enough you are not going to get stuck with it anyway.

If you are looking at systems now, don't procrastinate forever simply because everything is changing rapidly. You may think, we like what Compugraphic, or someone else, puts out, but let's wait a little bit, let's see what's new next month. You're not going to get anywhere doing that because there are going to be new things coming in rapid fashion.

Faulkner, Dawkins & Sullivan prepares reports

The pitfalls we have encountered have not been the fault of Omnitext, but the fault of Faulkner, Dawkins & Sullivan. For example, I did not ride our secretaries hard enough. There are two ways we receive material
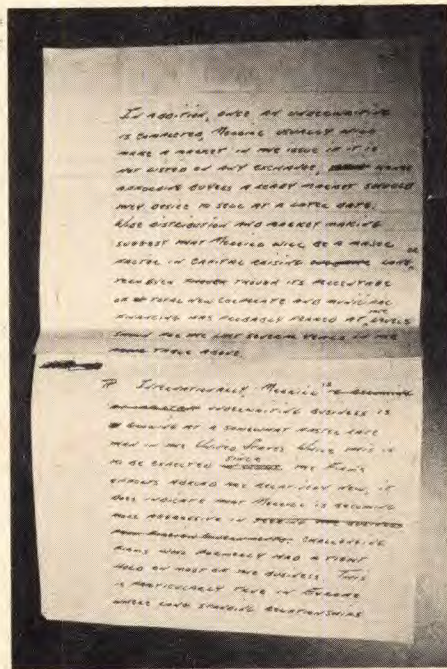
1. The original copy may be longhand reports from analysts or a typewritten manuscript based on dictated information.

that will be printed. (Fig. 1) Either the analyst writes it longhand or it is dictated. Since one of our requirements is to keep the one-secretary-to-two-analysts relationship, we cannot go into a typing pool. I disagree with this approach but there is nothing I can do about it. Everything you see on this page (Fig. 2) is set via the Omnitext system. The heading of the report is preprinted and we supply all the typeface copy for the balance of the report. We do not do our own in-house printing. Our printing bill runs to about $250,000 a year, which is a lot of money for a small firm. We are turning out 175 to 200 reports a year. They vary in length from four to 114 pages.
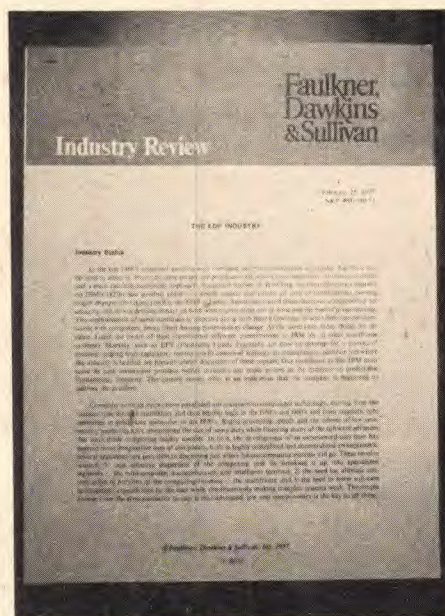
2. A typical report. Headings are preprinted. The report body is produced on the Omnitext system and the Dymo Mark IV Phototypesetter.

There is no systematic work flow. Analysts are odd individuals to begin with. Sometimes they are very prolific and at other times they sit on their duffs for a couple of months trying to work up an idea about what to do. Our problem is to work from handwritten notes and dictated text, and with nine secretaries.

Prior to installing Omnitext we would type up a rough draft of a report, edit it and return it to the analyst who would review it and then send it into MT/ST to type all over again.

3. IBM Selectric II's with OCR "golf balls" keyboard the copy.

OCR typing and scanning

We replaced all the Executive typewriters with the IBM Selectric II's (Fig. 3). We use a golf ball, OCR 173. We type everything on plain white paper, double spaced, and we type it only once. We type the text and the statistical material separately. We give the secretaries only three or four simple codes to type. For instance, we ask them to say whether they want a heading of a column flush left, right or centered. We ask them to put in simple coding for indents and to indicate when they have come to the end of a paragraph.

After a report is typed, the original copy is fed into an ECRM Scanner (Fig. 4). The material is scanned into a "black box," the computer. We could scan directly onto our CRT screen, but the way the system was set up for us we scan the material into our memory subsystem. This happens to be a Data General Nova 1200. We can add to it in the future if we need more capacity.
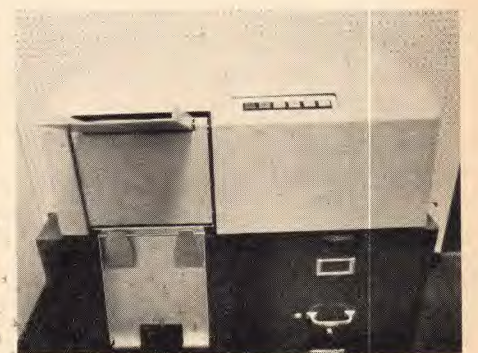
4. ECRM scanners read the typed copy and output it as punched paper tape which, when edited, will feed and drive the typesetter.

Once a report is completed, one of our operators will ask the analyst which table he or she wants to save. We save those tables and erase all the text and everything else from memory. This gives us more storage capacity for the future.

Filing

We use a very simple file system. We started off with job number 201 and now we are up to job 486. We just write them down and keep them in a book.

Editing

After we have the material in the memory we can bring it onto one of our two CRT screens for editing. We have a fulltime editor. She takes the typed copy and edits it using a red felt-tipped pen. After editing she checks back with the analyst to make sure the editorial changes are satisfactory. Then our two operators take the original text with the edited changes and make the changes right on the screen

5. One of the editing terminals.

(Fig. 5). We do not use the screens in a true sense for editing but rather for merging in the corrections. As in other systems, however, we can move columns around. We can delete and we can add. We can take whole blocks of paragraphs and move them here or there. We can go into a job file and pull out a table and put it in a report. We can put in the necessary coding for line lengths, etc.

We use the same line lengths for all reports, 37 picas. The operator enters the necessary coding for line length, paragraphing, tabular matter, etc. across the top of the screen and, using a cursor, can make the various changes. Once the changes are made a new file is created and the material is stored in the memory.

Typesetting

After final editing we are ready to set type. We use a Dymo IV (Fig. 6), and feed in paper tape which has been produced by our system or we go directly on-line to the phototypesetter from our memory. We use both paper tape and on-line inputs.

I don't think writing and designing are very different things. They both communicate and they both have to work together in print media. I work with my clients on the entire editorial product.

My viewpoint is what I hear described in this conference as the front end. Like any editor, I try to look at communications from the reader's end.

The Charles Eames' classic film on communication that opened Vision '77 reminded us all that we are not in the sharp type, soft typewriter or floppy disc business, but the information and communications business. If, as the film points out, the message isn't received it isn't communications—no matter what else it may be.

The real reason I came to Vision '77 was to learn. I learned a lot.

I learned right off, from Ed Gottschall's orientation, two things: one, the increasing integration of the sequential steps of print manufacture; and two, the shift of operations and decision making throughout the production line towards the front end.

I learned that the shape of the future is a triangle, that the graphic arts and publishing markets with which many of us are familiar are the small part and that the growth is at the base, the huge office market.

I learned about word processing and its potential.

I also learned about jet printing, web belt printing and laser beam platemaking.

I learned, from Aaron Burns, a new word—typographist.

typographist

I learned that she could turn a typewriter into a typesetter.

I was reminded of some things you can do with cold type that you can't do with hot type. I also saw the readability benefits of redrawing the classics—in this case Garamond with larger x heights.

I learned about programmed typography and programmed layouts.

We had a bit of history to remind us of where we came from—the better to cope with where we are going.

From Paul Doebler we learned about the relationship of word processing and typography. Ralph Squire gave us an equipment review and showed us a bewildering array of hardware. From Don Goldman we learned, among other things, the state of letterforms.

A tour through the RIT printing plant showed me the role an educational institution can play in a technological society. It can do things industry can't do... like train people.

For me, the evening with Colin Forbes and his 25 contemporary European designers was really something special. Forbes holds that there is a distinct European design and it derives from four sources—art, Bauhaus, craft, and American design. He showed us the pretzel alphabet of one ex-American, Klein, the research of Herbert Spencer and the wonderful envelopes designed by Folon for his patron at Olivetti.

In contrast to earlier presentations that were technologically strong, we ended the evening with style and imagination.

Klaus Schmidt reminded us that we must recognize certain limitations and disadvantages of printing... 1) Printing usually limits the information consumption to one person at a time. 2) Stored material is space consuming. 3) Access to material is frequently faster in other media. Picture and sound address several senses and impress themselves more intensely upon human minds. Klaus also acknowledged print's advantages.

He reminded us of Dürer's beautiful letter constructed with rule and compass, and showed us the 1962 French printing office type constructed within a framework of 2,304 squares.

He quoted from that grand English typographer, Stanley Morison, "Tradition, therefore, is another word for unanimity about fundamentals which has been brought into being by the trials, errors and corrections of many centuries."

Matthew Carter, from England, showed us the type selection of Gutenberg. He disabused me of everything I had learned about how letterforms were shaped by the tools and the materials at the designer's disposal.

He showed me that the Hollywood impresario Louis B. Mayer had a lot of style.

He showed us how script letters can be joined in photocomposition and why slanted letters are not italic—the lens plays distortion tricks. He showed us how the right computer program can provide us with an abundance of weights that will add refinement to tomorrow's typography. And, finally, he showed me the beauty of letterforms in other languages.

Patricia Seybold Breuer made me feel good as an artist when she showed us input equipment designed for a man or woman whose skill is with a pencil, rather than a typewriter.

She showed examples of breakthrough #1—page makeup that moves the design out of the pastepot.

From Victor Spindler we learned about breakthrough #2—automated basic formats.

From John Seybold we learned that the word processing revolution doesn't explain the typographic revolution. Until recently they have pursued different

courses. We learned that the real revolution is an editorial revolution.

We learned that defining the content—the input problem—is *the* problem, not equipment.

Three case histories by Joyce Kachergis, Harold Chevalier and Perrin Long showed us the real world.

Now a few observations

I don't really know how much or how soon word processing will overlap traditional typography but let's not underestimate these office workers. I have seen among them more skill and caring than I have seen in some unionized composing rooms. Let's not underestimate the motivation of that half of the human race, composed entirely of women, out to prove that they are as good as the other half.

I don't worry about the technology

I'm like Bob Benchley and the bison. Benchley used to worry about the bison and how they were disappearing, until he found out, after a few years of worry, that the bison were multiplying so fast the government would give one to anyone who promised it a good home.

However, I work with a lot of management people and items like this, in this week's Media Industry Newsletter, catch their eye: "Out in Chicago the Tribune is in the middle of converting to cold type composition. Now they're suddenly realizing that power bills for the computerized equipment are almost as much as they pay to run their entire press operation."

Our friend from Wall Street, Perrin Long, had a point. It will take more than the ability of a company to create magic black boxes for it to survive...it will take service.

At Harvard, Professor Levitt pointed out—IBM is in the service, not manufacturing, industry.

We also have to recognize that progress does not advance on a universal front. For example, researching an article for the next issue of *Folio*, I learned that at Time, Inc., while *Time Magazine* is working directly on video terminals, *Fortune* is still in hot metal.

With all the high speed new electronic equipment, we have to remember that the early typewriter key positions, which for mechanical reasons were deliberately designed to be slow, remain the same.

We need new tools to maintain not only style but simple readability. Man has a love-hate relationship with change. We read what we are used to reading... yes. We can change letterforms only so much...yes. But we have only to recall Matthew Carter's beautiful Arabic scripts to realize that man has learned to communicate with an incredible number of letterforms.

And, as a matter of fact, we read a great variety of letterforms in English, from impossible handwritten messages to severe sans serifs.

We will learn to accept tight setting and ligatures. And, while we may find it new or odd our children will not.

Man does change

Speaking from the editorial side...Yes, some writers at *Time* can't type. They file copy in longhand. Some use typewriters. Some writers input directly into the machine.

The production man told us he's not sure he wouldn't rather have them compose everything on paper and toss all the first drafts into the wastebasket, rather than store it all in his computer.

But, journalists—and I speak as one—will change, and you'll be surprised to find how soon the new will become standard practice.

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6. The Dymo Mark IV Phototypesetter can be driven by the paper tape or be on-line to one of the editing terminals.

We have no complaints with the Dymo. It is an eight-inch machine and takes eight-inch-wide paper which is readily available and inexpensive.

Savings largely due to one-time keyboarding

Although our system is nothing fancy, we find that it increases our speed in getting out reports by seventy-five per cent. Half of this saving comes from eliminating a second retyping as we did on the MT/ST. It is important that we get out reports quickly. Our clients need hard copy reports to make decisions.

There are other aspects to this equipment that we are looking into. For instance, we have offices in Florida and we could, with a hook-up, take copy right off the memory system and transfer it to Florida where they could output it and have it instantly on hand.

Viewpoints:

Viewpoints:
The Designer/Editor
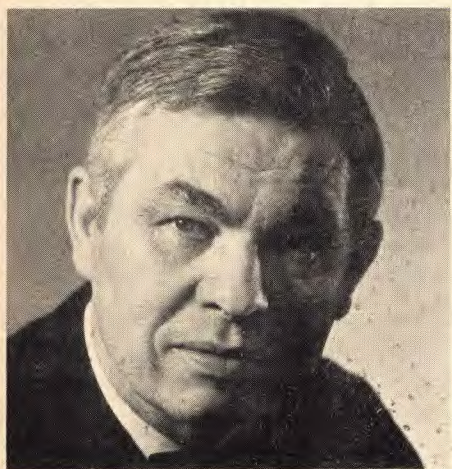
John Peter
President
John Peter Associates, Inc.

Things I learned

I'm a consultant. Like each of you, I will view the conference from where I am. I am a magazine man, although I have done newspaper tabloids. I worked as an art director at McCall's and have served my time as president of the New York Art Directors Club. I worked as a writer and editor at *Life* and *Look*.

To the question from the floor expressing concern for the future of typography design and the artists...

I don't know if you noticed how poor the Boston Globe looked, even though it was printed by computer methods. I don't know if you noticed how badly that programmed company format needed a more imaginative design. If you did you will know there is no need to worry.

There is already a desperate need for talent, not just for layout and typography but for content to fit these formats—better photographs, better illustrations, better graphs, better graphics, etc.

A visual managing editor

The machine will free the artist from the back room and make him a full member of the editorial team— a visual managing editor.

As to the question of craftsmanship and art...in Paris I saw a magnificent exhibition of Tibetan monastic art at the Grand Palais. Later, on a brief vacation in Burgundy, I visited Cluny and other Cluniac monasteries. I was struck by how wonderfully these craftsmen created...craftsmanship, yes, and often art, which is simple craft raised to a superior level...and how working in a monastic discipline, Buddhist and Catholic, they shaped and triumphed over their materials.

Our discipline is communication.

Our material is ideas.

We have an unprecedented set of new tools.

True craftsmen and great artists always work with the materials of their epoch.

I firmly believe that some will ride the computer to glory.

Viewpoints: The Educator
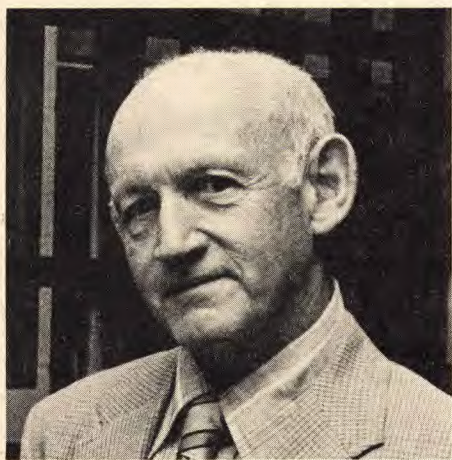
Alexander S. Lawson
Melbert B. Cary, Jr., Professor of Graphic Arts,
Emeritus
Rochester Institute of Technology

It will be obvious to many of you that anyone who has spent the past thirty years between captive college students and a blackboard should already have formed an opinion of what he was about, and I can assure you that this is so. I also know that the viewpoint of any teacher upon any methodology of learning is invariably subject to censorious scrutiny by his fellow practitioners.

An historic approach, more concerned with where we have been than where we are going, is closer to my heart.

Indenture, but no schools

While printing itself has a five hundred year history, the formal education of printers is still well within its initial century. The training of printers, however, is another matter. Traditionally this has been accomplished by periods of indenture, of various lengths, during which an individual was introduced to a craft by professionals who all too frequently resorted to duplicity and subterfuge in the instruction they imparted. While there were beneficial aspects in the ordinary apprenticeship, the system had many imperfections which were detrimental to enlightened progress. But the binding of employee to employer was just about the only way to learn the craft and thus the system was perpetuated.

In an article in the 1934 edition of the Gutenberg Jahrbuch, John Clyde Oswald, a former editor of *The American Printer*, stated that "at the turn of the century, nowhere in America was there a school in which one might learn to be a printer."

If this remark is accurate, as I believe it to be, then printing education is scarcely out of its incunabular period. By the time preliminary steps were undertaken to introduce printing to schools at every level, vast changes were taking place within the industry. The practice of typography became automated with the development of the linecasting and monotype machines which, between 1900 and 1910, were reluctantly being accepted as a replacement for orthodox hand composition. In this respect composition was the last of the major printing procedures to become industrialized.

Matching craft principles to technological demands

For about the following thirty years the use of typesetting machines became stabilized, with relatively little technological innovation which could upset printing industry leaders or those educators who established the training centers to service the new technology. It was during this time, you remember, that the William Morris revival with its re-emphasis on craft ideas had nearly run it course, and, under the direction of a number of most astute typographers, there had emerged a rational matching of craft principles to technological demands.

Such renowned designers as Bruce Rogers, T.M. Cleland and William Dwiggins proved without question that the typesetting machine could be used to produce printing of the highest quality, while maintaining a satisfactory rate of production. But it may also be noted that the Morrisonian convictions remained popular, although out of the main stream. Indeed they are again surfacing in a way which is no doubt disturbing to many observers who are presently promoting a new typography, which they believe should demonstrate the expansive capabilities of current technological advances.

It must now be asked, "Where was printing education in this period, and what were its contributions?"

The pleas for the establishment of school programs, by the illustrious Theodore Low De Vinne, the United Typothetae of America, and others, resulted in the introduction of a printing course at North End Union in Boston under the guidance of the Boston Typothetae, a program which was moved to the Wentworth Institute in 1916. By 1912 vocational education in printing had spread to several large cities, including the Winona Technical Institute in Indianapolis. In 1927,

the program at Winona was incorporated into the Carnegie Institute of Technology.

By 1931 such activity had resulted in the adoption of printing courses by many secondary schools. George Hebb, chairman of UTA's Education Committee, reviewed the number of schools then offering printing courses in all parts of the United States. He included some twenty-seven colleges and universities which "offer printing courses in engineering and management, in fine arts, journalism and teacher training."

The UTA also initiated a publishing program of up to sixty technical manuals designed to strengthen the teaching of printing courses in the vocational schools by the introduction of national standards of practice.

Three educational levels

During the years between the world wars, printing education thus established itself at three levels: (1) the strictly vocational, which was the responsibility of vocational or "manual arts" high schools; (2) the promotion of printing in the secondary schools as an "industrial art"; and, (3) printing courses leading to diplomas or certificates, offered by several colleges, with one major course at Carnegie Institute of Technology leading to a Bachelor of Science degree.

At the college and university level the industry also sponsored numerous specialized courses which touched on typography, design, and publishing. Most of these were evening or extension courses and were rarely taken as part of formal education programs.

Possibly the most widely known of these professional programs, because of the scholarly attributes of its teacher, was offered by Harvard's Graduate School of Business Administration in the period of 1911-1914. The instructor was the Boston printer Daniel Berkeley Updike, and from this course there emerged in 1922 the distinguished *Printing Types, Their History, Forms, and Use*, published by Harvard University Press. Updikes's course quite possibly represents the high point in printing education at the college level in the United States, although its purpose was merely to inform businessmen of the cultural aspects of typography. Certainly nobody has improved upon it, an indication of the opportunities still open to enhance the teaching of typography, even in the 1970's.

The major direction in printing education had been toward vocational guidance, with very little attention being paid to the development of cultural concepts. Throughout the period, however, arguments were occasionally heard which deplored the emphasis upon technology.

In 1933, for example, Professor Lehmann-Haupt of Columbia University wrote: "A program of instruction can be taught that would have as its result a good practical training in all the mechanics of printing...but it is exactly beyond this line that the real values are to be found. Beyond this line lie the character of work, its physiognomy, its style, in fact, the spirit which gives life to the technical accomplishment. This spirit relies upon the mechanics in order to manifest itself...a mutual relationship that is essential to both."

Lehmann-Haupt urged that teachers and students alike develop awareness of technology in the graphic arts by informing themselves about past developments and the forces behind them.

Craft a suspect term

Among practical printers the term "fine printing" seems always to have inspired polemics. Conse-

quently there has been broad opposition to courses being offered, at any level, which propose to acquaint students with craft traditions as opposed to the promotion of new and rewarding techniques. Craft, incidentally, appears to be a term now rather suspect and subject to contempt by our more pragmatic brethren who continue to disparage attempts to encourage esthetic values along with technological principles.

Possibly the course which prompted the most intense animosity was that offered by the Laboratory Press at Carnegie Tech. This was an elective course planned and taught by Porter Garnett, beginning in 1923. As a course in fine printing, it proposed, as Garnett wrote later, "to deal with the traditional, scholarly, and philosophical aspects of the craft, in its relation to the civilization of the future as well as of the past, and it was hoped to create in the mind of the students an attitude of sympathy towards the refinements of printing, which might bring about, in time, a general raising of standards."

From the very beginning, this estimable project was harassed by the hard-headed businessmen printers, who were disinclined to lend their support to an institution which strayed so far from the standard commercial practices of the era.

Porter Garnett never allowed his critics to divert him from his principles, but in the long run he did become discouraged by the unremitting criticism. After a dozen years he felt that conditions at Carnegie were no longer congenial to his purpose and resigned his position.

The role of the art school

Up to this time I have not mentioned the role of the art school in the education of the printer or in the teaching of typography. This, of course, is a subject fraught with difficulties far beyond my comprehension, and is even more controversial than that of printing education, during the past half century.

While my own experience has been with a school of printing, and is thus oriented toward a more traditional approach to typography, I have followed with interest many of the discussions, both in print and in seminars, which have endeavored to present the problems rationally.

I suppose it is a generality to note that with few exceptions the schools of design in the United States, particularly at the undergraduate level, have been unsympathetic to the technology of the printer. Such an attitude has affected the ability of commercial art students to cope with the difficulties created by their limited knowledge of printing processes, primarily the photomechanical. There appears also to be an inadequacy in their appreciation and knowledge of that principal tool of the communicator, printing type.

As Noel Martin once remarked about art school programs, there was a definite need for the designer to re-appraise historical typography and to avoid cliches and obvious trends. He also felt that no better method has been found than that of setting printing type in the composing stick, and that far too few art schools provided such materials in their curricula.

Many other observers have come to similar conclusions concerning the lack of realism on the part of such institutions in the development of designers to meet the potentialities of techniques and materials presently available to the printing industry.

A time of sad decline

At every hand, the need is obvious. The traditional training of printers is in a state of sad decline. The broad disciplines supplied by fairly long periods of apprenticeship will no longer bring to the printing plant that solid backlog of skilled craftsmanship expected from the journeyman printer. It so happens that typesetting is the first segment of the industry to be so affected. This gap in the preparation of career practitioners can only be filled by the schools, at every level from elementary through college.

Industry's help is essential

It will be immediately understood that such a program is not going to come from the academic world alone. Understandably, the educators tend to turn to the businessmen for the capital to mount specific programs. While frequently such aid is supplied—although seldom in sufficient amounts to satisfy the financial needs of the schools—the businessmen themselves are far too often quiescent in demanding an adequate return for their investment.

What now?

It goes without saying that we cannot begin to measure the effect of the transformations that are presently taking place in typesetting. Whether or not they will be shattering depends upon the circumstances of who we are, what we are doing, and the direction in which we are headed.

It is increasingly evident that typographic designers must begin to assume some measure of primacy over the techniques now being used for the dissemination of the printed word.

It is no longer sufficient to say that the designer is above and beyond the technical demands of his profession. While it will still be necessary to rely upon training in taste and an insistence upon the study of traditional postulates, future emphasis must be on the mastery of technological principles—far, far too important to be left to technicians.

Although there has been a spontaneous growth of the private press movement in recent years, this represents a turning away of many of us from the implacable mechanization of the craft of printing. While sufficing to meet certain individual needs, such a trend is most definitely not the response which is needed to meet the problems of the future head-on.

Too much shoddiness

Many of us, looking with dismay upon the shoddiness of so much printing presently being produced, look back with some nostalgia to William Morris rising in righteous wrath and almost single-handedly reviving interest in the practice of the crafts, from furniture design to typography. Appalled by the decline of standards, Morris determined to do something about it, and by the strength of his own personality and ability he did bring about a kind of resurrection.

As we know, the Morris example was followed by young men of the era, the best of whom adopted his principles, although establishing their own directions.

An ironical paradox

In our time, as was the case in Morris's, the decline in aesthetic standards occurs at a time when printing techniques are making possible the highest quality of production ever.

Without doubt, Morris with all his impatience made one very solid contribution, basing his revolt against

technology upon one very solid virtue—the human traits upon which craftsmanship is founded and which remain very much alive today. Those of us who would attempt to foster the more dehumanizing issues of contemporary technology might do well to keep this in mind.

Needed: design & engineering compatibility

I really can't begin here to suggest specific programs by which we can begin to make the gigantic strides so very necessary in bringing a sense of aesthetic awareness to what seems to be an implacable technology of communication—a technology which appears increasingly impervious to such an awareness.

The typographer simply must make the effort to become thoroughly familiar with the new procedures and to be sympathetic to the demands of the engineers. It is the great challenge of arranging such a compatibility that is the fundamental responsibility of the schools, at all levels.

I tend to be quite optimistic about the present 18 to 25 year old generation and its ability to overcome what can be the complete debasement of typographical standards brought about by thoughtless dependence upon devices which are just faster and more complicated than those which preceded them. Should we decline to face up to these issues, we may very well discover that we will not have another opportunity.

Viewpoints: The Typographic Service

James D. McLean
President
Cooper & Beatty, Limited, Toronto

How does the typographic service view all this innovation? How is it changing the type shop of today and of the future?

So that you understand my point of view, it is important that you know who and what C & B is. We are typographers and have shops in two cities, Toronto and Montreal. In each city we employ over 300 people in three separate type shops and serve the studio, agency, publisher, printer, direct and business market. We have a wide range of equipment, metal and photo-typography—including Alphatype, VIP's, Linofilm, Fototronic, computer setup with OCR and VDT's, even the Atex system and a Videocomp 500 accepting OCR and mag tape input. We span the whole

spectrum of typography and equipment technology reviewed at Vision '77. I believe that C & B is representative of the type supplier of today.

The reason we have three type shops per city is because no one piece of equipment can service all the typographic markets. Therefore, each shop has its own typesetting equipment configuration, each different and each serving different markets.

For example, the Videocomp Atex system is for TV listings, price lists, parts catalogues for General Motors, yellow pages for Bell Canada and rate manuals for insurance companies. On the other hand, ad work and brochures, etc. which require kerning, tight fit, good looks and a wide range of typefaces are done in another operation set up to deliver just that. C & B's setup is an example of how type shops all over America have changed over the past five years because of the new technology and new client demands.

What's next?

Now let's consider this full service type house and how it plans to work with, set up for, and become a part of the new technological environment of '77 and into the '80's.

With all of Vision '77's emphasis on in-office operations, one may wonder if there is a role for the typographer and how he sits with all these new innovations. Well, the type shops are sitting just fine. There is a role to play and the majority of them are rising to the challenges of change.

The typographic industry, within which there are thousands and thousands of shops doing roughly 700 million dollars worth of typesetting throughout North America annually, has gone through a big change in the last 10-15 years. The change is photo-typography and, more currently, the many systems that accompany phototypography—the computer hardware and software system; the way input is generated and supplied.

A full pre-press service

Typographers of yesterday set metal type only—made it up and shipped repros or the type itself. Today, the typographer sets the type by keyboarding it himself or by taking OCR copy from the customer or from mag tapes, cards or diskettes, and supplies, if needed, film negatives ready for press plates. He is supplying in some instances the whole pre-press situation.

So now the typographer is supplying more. In many cases, by accepting customer input, he now finds himself in a mutual working relationship with the client. The client provides input, the typographer output. Sure, some clients of ours have complete in-house operations. And that's o.k., because they still buy other services from the typographer, just as you will.

For example, we have a client who, believe it or not, has 42 employees involved in typesetting. He does an awful lot of work—he also has a lot of little problems and needs a lot of other services. And if the typographer of today is to stay around, he must provide all those other services, besides typesetting. We do, and we are growing.

Collateral services

Now let's look at all those services the typographer needs if he is to evolve along with new technology and new thinking by the customer.

First of all, he has a large camera facility to make halftones and negatives, and to take the work he gets that much further through the process, in some cases finishing what some customers only do a portion of.

He often masks it out and opaques it, readying it for prints.

He provides camera techniques such as line conversions of original photos, and special effects.
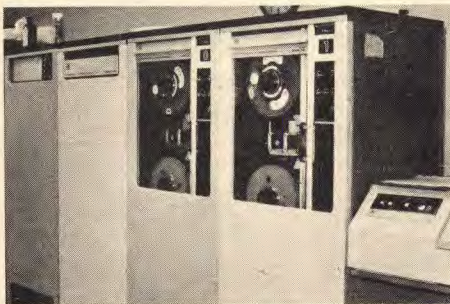
He must have large computers to take the sophisticated information on mag tapes from a client and transform it to type made up in position with rules, thereby providing extension services for the in-house operation. Shown here is a VideoComp.
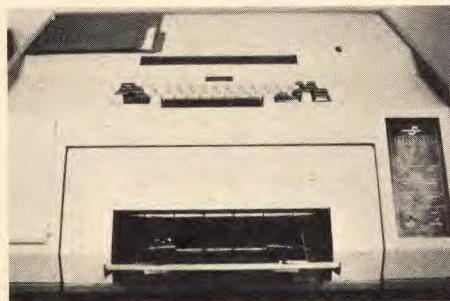
He must have equipment ready to accept OCR input should the client want to provide the front end of the typesetting process.

He must have VDT terminals to search for and update information that requires changes.
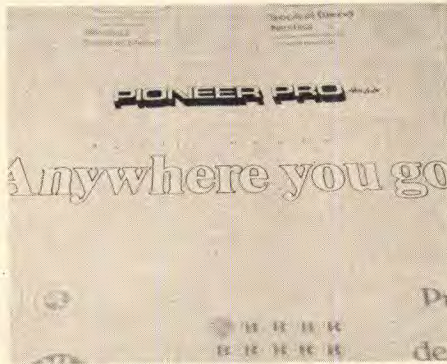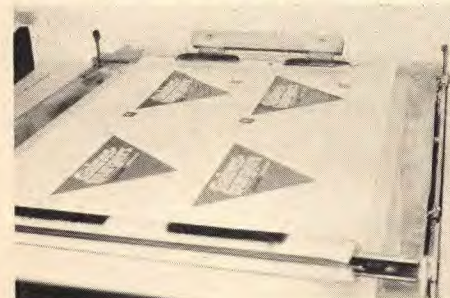
The type shop must provide services such as plateless color proofing for labels, packages, and covers of catalogues, as well as transfer sheets for art studios and creative groups. He must provide color dummies for ads, promotions, and packages, as well as informative slides for visual presentations.

Overnight service

A service must be able to do schedules and deliver—as we do for one account—up to 21 original 8½" x 11" pages of typography, and corrections on another 61 8½" x 11" pages per 24-hour period, and to offer overnight service on large and small work.

The typographer must provide the latest in type styles and as many variations of each style as possible. His library, established for many clients, must be truly extensive and up-to-date.

And what about costs?

The last is what every client speaks of first...price... how much is it going to cost? Are typography costs today too high? No way—*typography today is cheaper than it has ever been.* You can buy, from a lot of type shops, a page of type for $60 or $40 or $20 or even $3.20—depending on what you provide, or on what you and your typographer have determined is the right system for that particular job. The typographer must provide a price that can fit any budget and he is doing it.

Integrate your typographic service with your internal capabilities

Just as you investigate and inquire about new methods and equipment systems for your own use, you should inquire also about the new systems, methods and services of the type shop. With your new ideas and equipment, you can work hand in hand with the typographer and his services. Your typographer is rising to the new innovations provided by new equipment and by new ways of receiving your work, be it paper tape, mag tape, cassette, diskette, or OCR typed input. He is providing more services to fill your new needs and offers facilities to do a complete job or any part of the pre-press package with which you need help.

The Near Future

How It All Adds Up

Frank Romano
Independent Consultant and Publisher
Graphic Arts Marketing Association

The term "cold type" was used quite a bit at Vision '77. Don't ever use it again. There is no such thing as cold type. Cold type is what Gutenberg used on a winter's morning. Today we set type photographically. People write me nasty letters asking why photographic typesetting has degraded the quality of typesetting. I take those letters and I usually file them in the wastepaper basket, because those folks don't know what they are talking about. A tool is only as good as the workman—the quality that you get out of typesetting is only as good as the person who operates it. There are some typesetting devices that are not as good as others. There are some that are better. But you can use the so-called low-cost device or low-quality device and produce quality typography with it. Quality is the function of the operator, the designer and a lot of other things.

Overnight typesetters

People who tell you that you can turn a typist into a typesetter in an hour or a day are full of it. The only relationship between typesetting and typing is that you do both of them when you're sitting down. They're related, but so are ice picks and acupuncture.

There are three different ways of setting type photographically: photolettering, phototypesetting and photocomposition. Photolettering refers primarily to the setting of headline type. The kinds of machines in this category include the Striprinter, the Filmotype, the Phototypositor, the Visutek, the Compugraphic 7200, the Singer photo display, the old Photon Headmaster, and many other devices. They only have one requirement. SET LARGE TYPE. Period.

Phototypesetting refers to those machines that primarily set textual material. They are analogous to the Linotype machine. They set mainly galley material, large volumes of text. They mix headlines. They mix some faces and they give you some italics, etc. But the output is usually a long strip that you paste up.

Photocomposition refers to those machines that set both headlines and text material and, more importantly, position the type and/or graphics according to the operator's instructions, to create a finished page. We talk about typesetting as if it were the whole process, but typesetting is only one part of the proc-

ess. The second part is makeup. You don't just set type. You set type and then make it up.

Suppliers who sell typesetting to the in-plant market fail to tell the buyers this. They tell them that they buy this little $10,000 typesetting machine and they sit down with Susie secretary and she's going to turn out all these reports that they were buying on the outside before and two magical hands will come down from the heavens and do all the paste-up for them. It doesn't work that way. One of the great problems in the industry today is that suppliers are saturating the in-plant market, and all markets, with low-cost devices. But, unfortunately, they aren't teaching people how to use those devices.

Direct entry typesetting

There are now three different ways of setting type. Photolettering, phototypesetting, and photocomposition. You can use those methods in three different systems approaches. The first systems approach is called direct input or direct entry. In direct input typesetting we have a keyboard, or input device, physically connected to the output device, which is the typesetting machine. The Linotype was a direct input machine. The typewriter is a direct input machine. In this category today we have the Alphatype, Alphacomp 1 and 2, the Mergenthaler LinoComp 1 and 2, the Linoterm, the Berthold Diatronic and Diatext, the Varityper Division of Addressograph-Multigraph's CompSet series (the 500, 510, 520, 550, 560, 570, 3500, 3510, 3520, 3550, 3560, 3570, 4500, 4510, 4520, 4550, 4560, 4570), Compugraphic Corporation's Compuwriter Series, the 1-1 Junior, the 2-2 Junior, the Compuwriter 44, 48, 4, the Edit-Writer 7500 and the Execuwriter 1, 2 and 3, and the Itek Quadritek 1200.

And you tell me that you can make an intelligent decision? All these machines have one thing in common: they're cheap. They range from about $4,000 to about $12,000. The average price being somewhere around $10,000. They are not very productive devices. A direct input machine is only as effective as the person operating it. And only one person at a time can operate it. Did you ever see two people sitting at one direct input device? Four hands operating on the keyboard? Some keyboards need four hands. Most keyboards are designed by engineers with fifteen fingers. And they design the keyboards by taking all the keys and throwing them in a bag and they pick out the ones they want and put them all around. Most of those engineers have been living in a bell tower and they haven't stopped hearing the bell.

Direct input correction systems

So there's a problem with direct input machines and the problem is that if you make a mistake, what do you do? If you make a mistake when you're typesetting, when you see it, you can catch it and correct it right then and there. That's great, but you know that most errors don't get caught until they are printed out. Well, if you happen to make a mistake and catch it somewhere before printing, the only way to correct it with a direct input device is to reset the offending character, word, line, paragraph, section, or page—and then do what? Paste it in.

You spend $10,000 for a typesetting machine and you wind up pasting in corrections. So what do you do? Your friendly supplier comes back to you and says, "For $4000 or $5000, we'll give you something called record and playback." O.K. What they're going to do is add onto your direct input device some method for either punching out a tape and then reading it in, or recording on a cassette or a floppy disc. Did they tell you all the different kinds of floppy discs by the way? You know there's paper tape, and magnetic tape, magnetic tape cassettes, and magnetic cartridges, and there's the big floppy, which only records on one

side. Then there's a double density floppy which records twice as much on one side. Then there's a flippy you can turn over to record on both sides. And a double density flippy that records on both sides. And now they've got a new one called the mini-floppy. And that will probably have all the combinations. I predict that you'll be seeing every one of these different versions in direct input machines.

Separating input from output

But when you take a direct input machine and you add record and playback onto it, you are now in the next category, which I call "tape." And here I physically separate the input and output devices. And I have to have some recorded medium between the two —a communicating medium. Paper tape is the most common. In fact it's the only standard we have in this industry. It's call TTS for Teletypesetters six channel tape. We need more standards. Someone should tell the manufacturers to sit down together and do something unique like putting the quad-left key for every machine in the same place. That would be nice. We need a little technological togetherness.

But paper tape, though widely used, is not effective in most cases, so some people are starting to work with magnetic tape cassettes and floppy discs, and all kinds of other things. It really makes no difference how you communicate between the two devices if paper tape makes you happy, and most of us who grew up with paper tape like it for several reasons. One, we can see it.

When I first saw a magnetic medium, I asked, "Where do they punch the holes?" Because I can't see that something is on there. I don't know if it was recorded. With paper tape I can see. I guess it's a carry over from hot metal, right? You could see those galley racks with all the metal in them. You had this feeling of accomplishment, that you had done something. When we got to phototypesetting, we had a lot of paper tape hanging up. Now we get to magnetic media and we have one floppy disc with 300,000 characters on it. You don't feel that you did anything. They ought to make the floppies about one foot square, you know, a cube; when you carry it around, it should weigh 20 pounds so you feel that you did something. There's no sense of accomplishment any more in the typesetting process.

Correction with VDTs

So with tape you can communicate between input and output machines any way you require. But again we have the same problem. What if you make a mistake? People make mistakes. That's why there are erasers on pencils. And rubber mats around spittoons. And splash guards on urinals. So the typesetting industry, in its infinite wisdom, happened to notice that the people in the computer industry had a little device that looked like a TV set. And instead of watching Charlie's Angels, they used to watch these characters. We call that a video editing terminal. In most of the cases it operates as a stand-alone device, meaning that you feed your input into it and see the information and then you produce a new recorded medium. You can have a little flow chart that says: input it; run it and look at it again; edit it and rerun it. No problem. This is really the way you want to go. Because if you buy one direct input machine at $10,000, and you need a second one, that's another $10,000. But if I were to buy a tape operated machine, I might make an investment of $20,000, but my input devices might only be $5000 each. So I can add input devices more inexpensively here than I can add complete typesetters where I'm repeating the whole package.

Needed—more modularity

Why then is one getting into direct input? For only one reason: it's the cheapest way to start. Unfortunately, the suppliers don't don't make it easy for you to upgrade to the next level. What we really need is more modularity.

H&J

So, it is more economical to expand with an input-tape-output operation. Tape operation gives us something very important—machine intelligence. Machines will never be as smart as people (although I know some people who'll never be as smart as machines). The machine is programmed to do a job. That job is most often hyphenation and justification. Most typesetting machines do a really bad job of hyphenation and justification. The classic case is Dr. Jones who was a therapist, and it was hyphenated "the-rapist." Most of the suppliers are working very hard to improve their hyphenation programs. They are improving the rules of logic that define relationships between characters. One can establish a set of rules to hyphenate always after an "x" or before a "j," or between double consonants so long as there's not an "ing" at the end. But the rules can be effective in only about half the cases. In the other half they're wrong. They're going to make a mistake. So we supplement the logic programs with an exception word dictionary, a large list of words that don't follow the rules.

And there are all sorts of little tricks for storing dictionaries as roots or stems and then putting prefixes and suffixes on them. All the manufacturers have worked on this.

The single most important power in typesetting today is this intelligence, because without it you cannot interface to word processors, computers or other devices. In direct input in most cases the person operating the machine is making the decisions—ending the lines, determining the hyphenation point, making every decision. A direct input operator by definition carries this burden. You can never make money with a system like that. You must be able to put the burden on the machine. You must still have good people, you still review what you do, but you cannot be effective in today's marketplace without intelligence in the machines. The direct input devices lack extensive hyphenation programs. Some do have very minor kinds of programs but most avoid the whole problem of automatic hyphenation.

Some good programs

The tape machines had to get into hyphenation and some of them are doing a pretty good job. The Mergenthaler V-I-P, with the exception dictionary does a very good job, for example. The Compugraphic Unisetter, without a dictionary, does a lousy job. You can see this when you operate a machine.

Needed—more editing power. But why?

At this stage it seems people need more editing power. I always wondered why, and one day in our plant I figured it out. I was listening to the keyboard operator and she said "shit." All keyboard operators say that, by the way. I hope nobody's offended. When you go to keyboard school they teach you how to say it several different ways. Sometimes they typeset it because their fingers are going so fast. The editor thinks it's some kind of comment on his work. So after I heard her say that word, she said, "They'll catch it in editing." In other words, "I don't have to be good any more because there's somebody else over there who's going to make all these corrections for me." Well, we put a stop to that. But the problem became one of a lot of people needing a lot of editing devices. And in most cases they needed more editing devices than they needed input devices.

Clustering

So we clustered the editing devices. We connected a number of them to a central computer. We call this clustering and it means that we can share some of the intelligence. We can eliminate some of the hardware. In a cluster system, one can reduce the cost per element and one can cluster anything— keyboards, editing terminals, whatever. The problem with cluster systems is that when information is put into them it has to go somewhere. The computer by the way, is only about the size of your thumb. The reason they put it in a big box is so that you feel better about spending $20,000 to $100,000 for it. When all this information goes into the computer, the computer can't keep it. It has to be put someplace, so now we create a storage method.

Storage

A storage method can be more or less anything you want it to be. It could be a disc. It could be a small disc, which we call a floppy disc, or the big ones, which we call the rigid discs. Isn't this tremendous terminology? The rigid disc spins around at high speed and the reading head floats on a cushion of air about a micron in length. And sometimes it loses that cushion of air and falls onto the disc. We call that a head crash (I would be remiss if I didn't tell you that). So you can have all these different kinds of recorded media and storage devices, and have the system clustered together. But when you've done this you haven't gained intelligence, you've just added editing power. You've also lowered the cost per unit. Now you may ask, "Why don't I make the computer the central part of my system since it is so important. I bought a computer for my typesetter and it does certain things, so if I had a bigger computer, it could do more things."

Composition

Let's see—you added storage and editing terminals to your input and output. We call this the computer system. The computer system enables you to edit the copy and makeup the type and/or graphics in areas or pages. And that is the third method for setting type. Three different methods: direct input, tape orientation (tape linking input to output) and photocomposition or the computer system. You can see how they phase from one to the other and if you're smart, you can buy the devices properly so you can use them over and over again, but most of the suppliers have not made that job easy.

Why buy a computer system?

One reason is to get a bigger computer. You can do more with it. Mergenthaler has shown us that they have been able to do a heck of a lot with the computer inside the V-I-P, for example. The V-I-P has all those automated aesthetics such as automatic kerning, hung punctuation, minus letterspacing and alternative justification. Kerning has not only an aesthetic, but a pragmatic value. Kerning aids readability. With automatic kerning I can say to the typesetting machine, "Whenever you see a capital W and a lower case o, take out the space between them." I can therefore create more readable copy, more legible copy, copy that can be absorbed and communicated faster, because I can eliminate those unsightly gaps. We read word units. The eye focuses every few characters. It's called a saccadic jump and it tells us that the closer the characters are together the easier they are to read as groups. Of course you can go too far. We used to start with minus one unit. Remember that tight typesetting? They took out one unit of space. That was called minus one. That was nice. Minus two wasn't too bad. Now they're up to minus 75. The characters all sit on top of one another.

Programmed ligatures

But I can also say to the machine, "Every time you see an ff, automatically give me the ff ligature." And I can say to the computer, "Whenever you see a th, which is a very common combination in the English language, automatically output this new ligature for th." Or whatever it might be. For teaching reading to children, the potential is fantastic. Script alphabets. There's a magazine called *Highlights for Children* which many of you may have seen if you have school-aged children, and they have a whole repertoire of connecting scripts that they've worked on. I can do the same thing automatically through the computer. Now the computer does all this stuff; it doesn't care who operates it. It doesn't know the person, it doesn't care what typesetting machine it drives. The computer is totally neutral. It will always make the same mistake. Human beings are unique. They will make a different mistake as they go along.

The systems approach

So you can put your intelligence in the stand-alone or you can put your intelligence in the computer system. When you do that, typesetting now becomes what? It becomes peripheral to a computer system. No longer are we now talking about typesetting. We are talking about an entire systems approach. A big thing in systems today is the editing terminal. The TV set. Some of the new systems have hundreds of these VDT terminals on line. Some of them are pretty bad. Harold Chevalier discussed the Atex system. The terminal on the Atex system is not very good. Those Atex people created a hundred thousand dollar, a million dollar system and they put all these keys on the stupid thing and the editors of this industry go out and buy it. It's a dastardly thing. It's terrible. The whole function of an editing terminal is interaction with the operator. It's not a TV set. You're watching some program; you are interacting with the information. And therefore you must have the ability to do this from the keyboard, and the keyboard must be kept simple.

CAM ability

Now some editing terminals can display the copy as it will be typeset. That's very important. We will call that CAM, Computer Assisted Makeup. I believe when CAM is more common we will have brought the typesetting process full circle. Because it began as a visual process, a mental process, but a manual one. I had to handle the metal. I had to feel it and touch it. And space it. And I could see what I was doing. At first we were character oriented. Then we became line oriented. And now, with new technology, we are going to become page oriented. And the only way to do this is to see the copy as it will be seen and to be able to interact with it intelligently.

Inputting copy and commands with 44 keys

There are 44 keys on a typewriter and with them you have two jobs to do in typesetting. You have to input all the characters to be typeset and you have to input the commands, functions or instructions that tell the system how to set those characters. Everything is all well and good when you're setting the regular alphabet characters. But you've only got 86 possible characters (using the shift) on a typewriter because two are duplicated: the period and the comma. So what happens when you need a dagger? What do you do? Well, the manufacturers give you a litttle card. And on it, if you look very carefully, you'll see that the supershift position of the Q is the dagger. So when you need a special character, you look through this card, find it, and go through the keying sequence.

Code conversions and mnemonics

Optical character recognition taught us about code conversions. OCR required something that no other device had—the ability to use the typewriter as the input device. OCR had all the limitations of the typewriter and all its potentials. With OCR we could set up what we call code conversions. I could say to the scanner that reads the OCR sheet, "Whenever you see a certain code sequence, output these codes to operate my typesetting machine."

We created a language called mnemonics—memory oriented. And we said to the system, "Whenever you see a DA, that's a dagger; we want you to put an asterisk in front of it because that will make it stand out from all the other DAs in the English language. And if I need a bullet, it's BU. So I'll give you a little rule now. If there's only one word I give you, it's only the first two letters. If there are two words, you take the first letter of both words. What's a double dagger in mnemonics? DD. Very good. What's a box? BO. Let's get to the command side. I have an asterisk followed by an IL. That's an indent left. What's an indent right?' IR. What's a ragged right? RR."

Multi-source input

An important point is that when there is intelligence in a system, input can come from any source. It really makes no difference so long as the input is in a language that the typesetting machine or system understands, or is recorded on a medium that the system understands.

Word processing

Word processing is the big buzz word right now. I think someone once got up in the middle of the night to go the bathroom and said, "Ah! Word processing!" There is no such thing. They've been giving you a line. *There is no such thing as word processing.* It has been made up. It refers only to a machine. The machine is the IBM MT/ST, the Magnetic Tape Selectric Typewriter. In 1964, IBM took that machine from Germany, where it was developed for only one purpose—to store paragraphs on the magnetic cartridge so that the operator, when given a form letter, could write it using paragraphs numbers 25, 32, 41, for example, could personalize it to some degree. When it came to the United States, people weren't interested in that. They didn't have to use form letters. They wanted to have very personal kinds of correspondence. So IBM called this machine a word processor, saying that it did what data processing systems did, what computers did, and that therefore the operator not only could type with it, but also could store, retrieve, edit, and correct the material without fluids or correction stuff. This turned a lot of people on. Someone thinks, "This is a fantastic idea. All I have to do now when I'm typing is record it. Then, when the boss wants to change his mind, and the boss always changes his mind, I can play it back and correct it, and I don't have to retype everything over and over again." That is all that word processing is. It is no more. But there are people out there who took this machine and made it into a movement, into a philosophy. They said that word processing is dictation equipment. That's word input. And copying machines, that's word output. God knows what the water cooler is. Word liquification? So word processing began as a machine and became a philosophy. Forget the philosophy. It's meaningless. The important thing is that people are putting text editing typewriters into business offices. And there are approximately 180,000 of them right now in North America, and there are projections by 1985 of over a million. And you've got about 50 companies supplying devices, including IBM, who has 89% of the market. And there are companies like Xerox, Burroughs (with the Redactron division), and 3M's word processing division. NCR is going to get into word processing. But what are these suppliers into? They are into a device that is primarily a typewriter connected to some form of recorded media that lets you input, edit and correct. Zero.

WP—a potential input to a typesetting system

Now here's the important point. Every one of these devices is a potential input device for a typesetting system. You've already done the input. In typesetting, everything we have always done has been re-input. Re-keyboarding. We took the information from the originator, we brought it back, and we retyped it. We made new errors. We had to find and correct these errors. With word processing, there are some advantages, but there is a very serious disadvantage. The person sitting down at the typewriter doesn't know anything about typesetting and never will know anything about typesetting. He or she will only know about typewriting. All the typist can do is give you the characters. Now you must take the characters and somehow put in the commands to establish the format that you want.

Needed—Specialists

We will need specialists, people who understand and can apply typographic principles. We can have a lot of what they call grunts out there—people who just type. But we must have somewhere in the system a knowledgeable person to set typography. Supposedly a typographer has highly specialized knowledge but the problem is that nobody's teaching these people anything. There's no school for them. There's no place to go. There's no book to buy. And even Vision '77 doesn't help because it's only three days—three years, maybe. It's a very serious problem. And before we can apply all this stuff in the business office, we're going to have to teach someone, not everyone, *someone* what typography is all about.

The office of the future

Let's consider the office of the future. It will have a copying machine that takes your originals, copies them, collates them, staples and stacks them. The only thing it doesn't do is read them and throw them away.

IBM has a machine called the 66/40. It's an ink jet printer. It spits ink at a piece of paper. Spppp. For $20,000 it'll spit ink at a piece of paper so it'll look like a typewriter did it. The important thing about that device is not so much how it does it, because I think ink jetters are for the birds, although there's another guy at Vision '77 who's going to tell you that they're pretty good. The important thing is that that magnetic card or device you take from your word processing system can plug into it. And you know what it does? On the magnetic card you tell it what size you want. It has only two, pica and elite. You tell it what line you want, what spacing you want. For all intents and purposes you are directing a machine to set type. Only it's setting typewriter.

IBM has another device called the 3800. It costs a quarter of a million dollars. It prints at a speed of something like 4000 sheets a minute. It operates from a computer. And it takes a laser beam and activates a drum and then xerographically transfers the toner onto the paper. There's no reason why the mechanism with the laser could not be adapted to almost any xerographic copying machine.

Let's take these devices and put them together and see what we have. In the office of the future the secretary will take a magnetic tape cassette, or other medium, saunter over to the copying machine and plug it in. It will set and makeup the type, make the copies, collate them, staple them, stack them, and probably pack them. That's the office of the future. And once they get that recorded medium, they don't have to set type with it, by the way. They could go to a microfilm system. They could transmit it over a telephone line to some other office.

Typesetting saves space, saves money

Last year, one of the fastest growing industries in the United States was the manufacturing of filing cabinets—places to put paper. There are companies that spend millions of dollars a year for filing. There are limestone caves in upstate New York where companies store their records. They have to be stored for seven years. Imagine the volume of information that is produced by any major Fortune 500 corporation. They can no longer cope with all this paper. That is why the market for typesetting is increasing in the business office.

Because typesetting puts more information on a piece of paper, and cuts storage, distribution and paper costs by as much as 40 percent. That's all those office people want right now. They don't give a damn whether it is in Souvenir or Cooper Black. They don't know the difference.

So there's the office of the future. We've got our typesetting machines and we're going to use digitized typography. That's the newest one: little dots created on a tube of some sort. There is a tremendous potential in digitized typesetting. Some devices today are in the $100,000 range and can do an excellent job but some are outputting garbage and at those prices that's inexcusable. As a class, they are very high speed and can modify typeface weight and slant as well as size, and can condense or expand, all from one master.

Quality

I cannot close without telling you what quality is but I don't know what quality is. I think there's only one guy that does and he lives in the Himalayas. I don't think the suppliers know either. And I don't think the buyers know anymore. Because what one man calls quality, another man does not. I find some machines which have a reputation for very low quality and I find typographers using them and I find people buying the stuff and they're very happy with it. And I find typographers setting on what are considered very high quality devices. I find typographers setting on all kinds of devices, including hot metal. The IBM Composer is the most ubiquitous typesetting device ever known. There are more of them out there than of any other typesetting machine ever made.

What is quality? It could be the density of the image. It could be the clarity of the image. But, more importantly in my mind, quality has to do with the person who handles the type, who works with the type. It has to do with the spacing of the type; whether you have three hyphens in a row or four hyphens; whether you have widows or orphans; the way you've oriented it.

We have a terrible time differentiating between type and design. And maybe that's the problem because typography includes many aspects of design. So all of these technologies, all of these machines are totally useless until someone, somewhere, somehow, sometime learns what typography is.

Output Media

John Stoy
Specialist, Marketing Planning
Eastman Kodak Company

Let's assume that you or your photocomposition supplier has recently decided to install a new sophisticated whump-de-dump system with a computer of umpteen megabytes of storage, OCR, VDT or perhaps keyboard input, and a phototypesetter with the ability to set about 6.3 zillion characters per second. How do you process this output once you have purchased the equipment, or how does your supplier process it? And how do you work with your supplier if that supplier is the firm who is making equipment changes?

These are the sorts of questions that many of our representatives in the field are asked, and unfortunately it's not too uncommon when they're asked by a customer who says, "By the way, next week I'm going to be getting this new system. How do I process the output?" I would suggest that that sort of decision takes a great deal more time and thought than looking for a processing system after the decision on input, editing, and phototypesetting output equipment has been made.

The basic decision that most of you will be making will be whether to set type on film or on paper.

Paper is by far the most common medium in typesetting, primarily because of newspaper and in-plant printing applications. (Commercial typographers are much more likely to be film oriented.) One of the reasons why some people prefer to set type on paper is that it can be pasted up—not only by itself, but along with sized artwork on paper, paper from photolettering, and halftone screened paper prints. The whole pasteup can then be photographed on a one-piece negative, and a printing plate made from that negative.

Another advantage of photographic papers over films is that proofing can be done on a typical office copier. For firms who don't need many proofs this becomes a pretty easy way to proof.

The third reason that people use paper rather than film is that there is a considerable difference in the material cost; a factor of about three-and-a-half or four to one, depending upon the particular configuration that your typesetter uses. It's important enough to take into consideration. I don't mean to say that film is more expensive to use than paper, because in many cases, depending on your production operation, it can be less expensive. But it is more expensive to purchase.

Why film?

Why is film used at all then? First of all, film is considered the highest quality output medium. If you want the sharpest character that you can produce, both on the typeset medium itself and on the negative that will be made from the medium, film will produce a slightly sharper image than will phototypesetting papers. Where the difference can really be seen is in the resulting negative. If you're exposing phototypesetting paper and processing it and then using it as part of a pasteup, you will normally make the negative from it on a process camera. Process cameras always have slight differences in terms of lighting, focus, and dust and dirt on the lenses or on the copy boards. A negative from a film positive would normally be made by contact, and you would eliminate most of these variables and drawbacks. Therefore, the film negative made from a film positive is generally sharper than the film negative made from a paper positive.

Another reason for using film is for firms who don't have a process camera. You set type on film, contact to negative and you're ready to make a plate, whereas

if you set on paper somebody else has to make the negative for platemaking.

Another reason for using film is that, for some films, processing can be varied. A film positive is produced with conventional processing—that is, black characters on a clear background. But it's possible, with reversal processing equipment, to produce a film negative rather than a film positive. For many types of work, such as directories, where input is not only correct but paginated, it's very feasible to set type on film and produce a negative rather than a positive, in processing.

Another reason for using film is that diazo proofs, rather than office-type proofs, can be made. For large quantities of multiple proofs, diazos are less expensive. If your client requires upwards of half a dozen proofs, and we see cases of fifty or sixty for some types of work, it's a lot less expensive to use diazo equipment than to use an office copier. Diazo proofs are also used when large proofs are needed. Two 8½ x 11 pages for magazine work are often set side by side. You want to proof the two of them together. Many office type copiers can't handle that size proof.

Film bypasses production steps

As the sophistication in the industry has increased and the ability to place elements on pages has increased, as we've become able to set in various sizes and faces of type, to set run arounds and do vertical column justification, and to actually lay out and put together the preliminary page work on editing terminals or correction devices—as these abilities have increased, we have seen more people become interested in film because it can bypass steps. Furthermore, most of the typesetting equipment now on the market can set either right- or wrong-reading. With wrong-reading films you can go directly to a positive working plate, bypassing the negative step entirely. That can be quite useful in book and single color magazine work.

Conventionally processed papers

There are two kinds of papers on the market and the differences between them relate to the processing. These are called stabilization papers and conventionally processed papers.

A conventionally processed paper is one in which the paper is developed, fixed, washed and dried. Because of this complete processing, conventionally processed papers are able to be stored for long periods of time.

Processing equipment can cost from several thousand dollars up to perhaps $25,000 depending on its speed, flexibility and size.

Stabilization paper and processing

Stabilization paper uses a completely different processing concept. It is completely different in its manufacturing and in the way that it is processed. The primary difference is that stabilization paper has the developer right in the paper: it is contained in the paper's emulsion, rather than being supplied with the chemicals. Processing becomes extremely simple. All that's required is a small tabletop processor that doesn't use water and plugs into a 110 volt outlet. Generally its cost is $800 or less. It uses two chemicals. One is an activator that reacts with the developer in the paper. Where an image has been exposed by the phototypesetter the image is produced on the paper. The second chemical is a stabilizer. This neutralizes the developer and coats the paper to keep it from further development after it comes out of the processor. This is necessary because the silver on the paper remains on it after processing. Without the stabilizer, the paper would continue to develop once it is out in the light.

Processing is extremely simple but there are some disadvantages in this system. The paper is not considered permanent—the stabilizer stabilizes the image but does not make it permanent. The length of time that the image will remain varies according to a number of things. One is the physical condition of the processor, particularly the last two rollers in the processor. Another is the relative humidity at the time of processing and afterwards. Others are storage conditions, and how dry the paper was before it was waxed and used. The typical life of stabilization paper would perhaps be a few weeks or a few months, but it's guaranteed for only a few days. If you have output requiring longer life than just a few days, you should consider means of processing other than stabilization.

Permanizing

If you have only a few jobs requiring long life and storage, and most of your paper only needs a few days' life, it is possible to fix, wash and dry the stabilization paper, and then it becomes permanent.

Stabilization paper comes out of the processor slightly damp and air-dries in three to four, or five minutes under most conditions. However, it is possible to purchase an optional drier which is used on the back of the processor.

Film processing for phototypesetting, even positive film processing, is a little bit more complex than processing of stabilization paper and of conventionally processed paper.

Developers, processors

Developers are designed specifically for phototypesetting films and papers. If you are using stabilization paper, you need a stabilization processor. But if you, or your supplier, are not using stabilization paper, you have two choices. One is to purchase a processor which would be basically dedicated to phototypesetting work, or perhaps to phototypesetting and camera and contact work. If the processor that you or your supplier wants to purchase is to be dedicated to phototypesetting work only, it can be relatively inexpensive...down in the several thousand dollar range. The throughput time on such a processor is generally fairly slow. Most of the phototypesetting-only processors are from about 8 to 13 inches wide.

If the processor is also going to be used for camera and contact work, the price becomes a little higher. Most of these processors are a minimum of about 20 inches in width, in order to process 20 x 24 film, and start at about $9,000. Generally they work on a batch system where you process so many square feet, perhaps a thousand square feet, through a given volume of developer and fixer. And when that's done you simply dump the chemicals, start over and process another 1000 square feet through more chemicals, and then dump them again. These processors can also handle camera line work, contact and duplicating work and contact prints on papers. But if they're going to be used to process phototypesetting paper, it generally is not recommended that halftones are processed through the same processor at the same time.

For firms who don't have a need for phototypesetting paper but do have a need for phototypesetting film

and camera and contact work, where the accent really is on the lith films, it is possible to buy a conventional lith processor and process phototypesetting film along with camera and contact line and halftone work and duplicating work.

Digitized art

As the industry has grown more sophisticated in terms of its input and editing, we've heard new terms discussed, such as logotype scanning where artwork that has been created and pasted up can be scanned and digitized for phototypesetting. We've also seen preliminary efforts toward, and now the beginning of a system which scans black and white continuous tone prints, digitizes—that is, computerizes—those prints, and outputs them in halftone form on phototypesetting film. As this sort of thing becomes more feasible, it pays to look more and more at how this work will be processed, because there are a tremendous number of short cuts you can take.

"Off the Drawing Board"
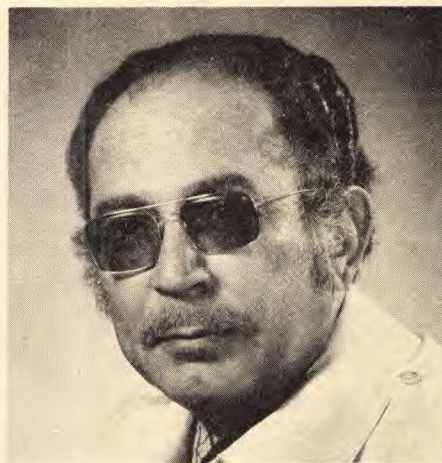
Sam Blum
Publisher/Editor
TypeWorld

Lasers and KC film

A lot has happened this last decade. The first practical application in the graphic arts of a VDT was in 1968. The first practical application of an OCR device was in 1970 or 1971. The first practical application of the laser beam in the graphic arts was in 1972. Lasers. *Light Amplification by Stimulated Emission of Radiation*. There are a variety of them. They're used quite a bit in making color separations, in scanning, and in OCR devices, platemaking and, to some degree, in printing. Their largest use, however, is in alignment of sewers. There's been a problem with lasers because the output energy doesn't really match a recording medium. However much power they put on the laser, there isn't a matching paper or film or emulsion to go with it. But there's one that's just coming off the drawing board. It was demonstrated publicly at DRUPA in June and is called KC film. It's a non-silver kind of imaging process. I think they call it electrophotographic. It has a vastly superior resolution: 10,000 lines per millimeter. It's ten times the speed of lith film. To understand it we have to learn a whole bunch of new words. A micron is very small. It's a millionth of a meter. (A meter equals 39.37 inches.) Now we have to learn what an Angstrom is. It's a lot

smaller—one ten-thousandth of a micron. We have to learn words like anisotropic, morphology, stoichiometry.

Being a non-silver process, KC film doesn't require chemicals. Being so fast in terms of emulsion speed it will allow you to use a helium-neon source of power that's low-cost, like the laser, for under $100. That's one of the things that are coming off the drawing board.

KC film also has the potential of being used like a selenium drum. You set your type on this film and then transfer the image from the film to a piece of paper, film, whatever. You just print as many copies as you want. It's like an intelligent copier and the only consumable is toner.

Digitizing photographs

Another new product is something that fits into all of this. It's called a photograph reader. Two engineers in California have developed a device which will read a photograph, digitize it, store it, let you look at the picture on a screen, enlarge it, reduce it, enhance it. If you push a button and it's connected to a typesetter, such as an APS 4 with a font on it made up of a bunch of variable size dots, it will let you produce fully made up pages, with your halftones in position. It's sort of a missing link in our production chain and it's priced surprisingly low. They're listing it now for on-line operation at under $30,000. Very interesting.

The engineers are not going to let us relax. Several important new families of typesetters were marketed in 1977. They're coming at us from another direction, too. Up in New Hampshire Roy Sanders has developed a new line printer, also digital. It will have an impact in that it will raise the quality level of line printer output up to the graphic arts level. It's just in the infancy stage now, but like the laser and the KC paper and the ink jet printer and all the new typesetters, graphics digitizers, electronic platemakers and automated makeup systems reviewed at Vision '77, it presages an unending stream of interrelated graphic arts developments in the 1980's.

The next decade offers a real challenge to the in-office, commercial, or even newspaper plant manager to keep up with it all.

Roundup and Forecast

William C. Lamparter
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Digital Systems Division

Vision '77 opened with reference to Gutenberg—hand set type—hot metal and cold type. During the two-and-one-half day conference, the value and aesthetics of type design were discussed; the flow of information from author to composition was traced; and a wide variety of equipment was reviewed. But the focus of attention was on electronic composition and its future developments, both within and outside of the conventional composition and printing industries.

During the conference, I made it a point to circulate and talk with as many people as possible. The conference attendees represented a wide spectrum of interest and were brimming over with a composite of present-day problems and future hopes. Both the old and the ultranew were represented.

I found people who set hot metal type. Comment was made in one of the sessions that *Fortune* magazine, for example, is still being set in hot metal. Undoubtedly, hot metal is still around and will be for many years. Yet, we certainly do see hot metal declining as print manufacturing goes electronic.

And it is going electronic not only in the composition area but in many, many places across the graphic arts spectrum including platemaking, copying press controls and even in the printing process itself. All that was touched on in the opening presentation (See "Perspectives" by Edward Gottschall, U&lc Vol. 4, No. 3). But as print has gone electronic, certainly the lead has been in the composition area.

Word Processing

I don't think we were ten or fifteen minutes into Vision '77 when the word "composition" seemed to disappear from the scene and the phrase "word processing" took over. What is "word processing"? Frank Romano clarified it for me this morning when he said that there really is no such thing.

If you are reading this because you have an interest in word processing, you certainly ought to reflect and ponder... "What is it? What is my definition of word processing? What do I believe it to be? What do I expect from it if I'm going to put it in place in my company? Why? What are my objectives? How? What am I going to do with it?". Word processing is a vision of the future—but that vision is a bit cloudy.

Vision '77 started out by putting things in a basic schematic form so that you could look at the varieties of typesetting machines and systems and see where they fit into the big scheme of things. (See Paul Doebler's report in this issue of U&lc.) At Vision '77 there seemed to be an unending procession of pictures of equipment. I didn't know there were so many keyboards—we saw keyboards and then more keyboards and then even more keyboards. There were also all sorts of equipment including the word processors and interfaces—linking the word processor to the graphic arts output device or typesetter. We looked at a variety of input devices and at page make-up terminals including the soft typesetter. We reviewed machines from the simple to a variety of complicated equipment. We've considered full pages being made up on tubes, and advanced equipment such as the APS-22. With a parade of varied equipment one does reflect and wonder about the cost effectiveness of some of these machines.

A systems approach

We had discussions on programmed design and comments made on the need to develop standards.

Technical innovations and product innovations were explored. In many ways, without really fully understanding it or knowing it, we've been talking about a systems approach to automation in our particular fields and areas of interest.

Cost effectiveness

One of the things that seemed to me to be lacking in many of the discussions was a concern for dollars.

What is the cost effectiveness of all this equipment? And how much of it is technology for technology's sake alone? How much of it is installed to be cute? What concern are you really giving to the cost effectiveness of the equipment?

Concern for cost effectiveness seems to have been a missing or understated element at Vision '77. But if you are considering putting some of this equipment into place, I'd suggest that you be very sure about the cost effectiveness of the installation that you're proposing.

Supplier backup

And be concerned about supplier stability. How successful is that supplier that you're dealing with? What's his dollar situation? Will he be around after you put that system in place and become heavily dependent upon him and his service operation? We recall Perrin Long who discussed a certain amount of service that his equipment needs. He attacks it himself with his own screwdriver.

The outlook in 1971

Looking back to 1970 and '71 we see that just a few years ago the users of the new electronic composition systems were having difficulty. There were a lot of interesting questions being asked about whether or not computerized composition in its variety of forms, real and proposed at that point in time, would in fact ever make it in the marketplace. The printer and publisher were unprepared to accept the ramifications of computerized typesetting. There were all kinds of troubles. Technology seemed to be ahead of the industry's ability to use it and properly market the end products. Software was visioned as a huge problem. In many ways the software problem has been solved now, but those of you who deal with software know that it is not yet problem-free. Progress was being made in the early 70's despite those that thought electronic composition would not make it. Many things have happened, and progress is still being made... but today it is clear that electronic composition has made it.

Predictions

ComPrint (a 1971 printing industry conference) predicted that phototypesetting, abetted by software, was to become the dominant composition method by 1980. Another key prediction was that systems automation of the electronic printing process overall was going to spread forward from composition systems to the rest of the printing production process. The computerized composition output would eventually lead to the control of image creation on press. In the early 70's there were several technologies that were viewed as the likely technologies to fulfill that prediction.

Ink jet printing was one of the technologies being developed. Since then major progress has been made in ink jet imaging as a process.

Ink jet typesetters

Today ink jet printing is perhaps turning into the fifth generation of typesetting equipment. Basically, there are two forms of ink jet printing. One approach is done with a single jet. This method can be quickly understood if you will think of it as printing with a hose—squirting out ink, and in effect, making a character by causing the stream of ink to paint the character.

Secondly, there's the multiple jet approach. It's a binary approach. You turn many jets on and off as a web of paper is moved underneath the jets. Just visualize thousands of tiny jets, all squirting ink towards a piece of paper, being turned on and off under computer control and you can see how an image can be created.

In 1971 some predictions were made about ink jet imaging. A detailed prediction backed up the generalization that ink jet would find its way into the marketplace as a specialty device in the 1975-80 time frame, and be a printing press in 1980-1990. In 1971, no one said that it was a typesetter but it did have some of the elements of being a typesetter. Actually, as we look at what is going on with ink jet, progress is somewhat ahead of the detailed schedules that were predicted for it in terms of its growth. Like many imaging processes, growth in this area is a long term kind of proposition. In 1971 when these statements were originally made, there were very few people working in the area of ink jet. Today many major companies are conducting extensive work in this area. There are several varieties of ink jet imaging being worked on in laboratories around the world. If you count patents, technical papers and the like, you can easily identify 30 substantial companies that are doing work in this area. In the United States, patents are issuing at the rate of more than 100 a year.

Some ink jet equipment can be mounted on standard business forms or commercial web. The ink jet linkage to the press includes a tape drive, a mini-computer, system controls and the ink jet imaging bar and associated electronics. The ink jet imaging apparatus is on the top of the press. Multiple array ink jet imaging bars are available in widths of five, eight and ten inches—about the width of a typesetter.

This is a piece of typesetting equipment even though it is a special unit mounted directly on a press. If you think of it as a press it's a strange phenomenon because it comes with 30 plus fonts. It's the first time I've ever seen a printing press that comes equipped with fonts. Some of those fonts emulate line printer fonts. Some look like standard typesetting fonts. There's also Handscript and all simulations of handwriting and various forms of script. The press/typesetter operates at 600 feet a minute. It really is setting type, because each and every image that it creates can be different from every preceding image. This is nothing more than another output device for all that front end composition stuff that Vision '77 has been reviewing.

What can it produce?

This typesetter/press is still very much in its embryonic form, but consider some of the products that are being produced on it already. It started out doing relatively simple label work. From one-up labels it went to two-up labeling and then went to labeling directly on the product. It also does jumbo labels that might be pasted down on the front of a mail order catalog. It has text and embedded in that text is a

personal message. It's addressed to an individual. It highlights his hometown. It uses his name. It gives him a specific telephone number to call. Now, this is one of the things ink jet imaging does as it sets type, in that it takes from the computer a fixed file and a variable file, mixes these two on the fly, inserts the variable data in the appropriate places, creates a personalized message. And does it all at an output rate of 600 feet per minute.

It can also produce label-badges on pressure sensitive paper. The badge is torn off and pasted on your pocket as you enter a trade show and it becomes your badge of admittance. This is another personalized product, in this case using all variable data.

Ink jet printing does magazine and newspaper addressing of all sorts, some of it quite specialized, as well as advertising reply or bingo cards. I'm sure you're familiar with their use in the trade publications. They have the number of the ad or items about which you want more information sent to you. The publisher in these cases has found out that by not requiring you to write your own name and address on the bingo card, more people use it. He gets more requests for his ads. He loves it. And his advertisers love it. This kind of labeling is also produced at the rate of 600 feet a minute.

Magazine cover-wraps still used by some of the high-class magazines. Instead of just pasting a label on the wrap, all the information can be printed by ink jet. This enables you to put all sorts of personalized messages on the outside of that wrapper. Newspapers can be addressed by putting your name and address so it gets the product delivered but ink jet printing can also print such messages as, "Hey Sam —yesterday was your wife's birthday. Did you forget?" Or the circulation manager can say, "Your subscription expires next week. Please fill out the form and renew." There are a variety of personalized messages that can be communicated in this fashion. As for sampling letters and subscription renewals, they too can be personalized. And the fact that it is personalized gets more people to respond and so we move the merchandise. So there are many ways ink jet is being used in direct mail as well as in labeling. Examples include dunning letters and personalized promotions. A Newsweek Magazine promotion totaling approximately 50,000,000 copies was produced by ink jet. Its hook, too, was personalization. If you could see the type as it was set, you would see, for example, that the names Mr. Anthony and Ms. Commiskey, had different counts, and therefore different line lengths and that to accommodate this, each ink jet moves the characters around.

A typesetting mode

We're functioning in a sense, in a typesetting mode as we do that because in setting these individual, personalized pieces of literature, we do function much like a typesetter and move words, paragraphs and copy blocks around in accord with the program that had been established for that particular piece of work.

Bar codes

Variable bar codes can also be ink jet printed so it can be read by a hand-held OCR bar reader, part of taking inventory in supermarkets, for example. Every shelf label that goes on the supermarket shelf has a different bar code to identify the particular merchandise; therefore they have variable bar codes. Bar codes are

also used for warehouse picking tickets where merchandise is being assembled.

A ticket is put on the piece of merchandise when it is picked from the storage bin. The merchandise is then thrown in a conveyor and the conveyor runs along in the plant. A bar reader reads the bar code at the bottom, which is different from any other bar code, because it identifies that customer and that merchandise. The reading of that variable bar code says dump the merchandise off in bin #37 where a particular order is being assembled. Bar codes can also be used to track coupons by zip code.

In printing forms on a conventional forms press we may want to change a portion of the heading. An ink jet printer can be mounted on the forms press to personalize or customize parts of the copy, as by name, phone number or address, for example. Ink jet is able to add low cost variable information to a standard form.

Generating the whole form

We can also generate the entire form by ink jet when that makes more sense. A form can be generated by taking data and having it encoded on punched cards and running it through a computer program. That's really a nonsense step because the real way to go is to create the form on a CRT and to pick the information off digitally and use the digital information to drive the ink jet printer directly. That's coming down the pike in the future.

Book production

Ink jet is getting its feet wet in book production. Today books in scroll form are being produced and being used in special readers by the handicapped. The books are mounted on the reader and an operator controls the rate of scrolling with special devices. Without picking up a book, the operator can read it. Copy, today, is set in large type, fully hyphenated and justified.

For a look into the future, consider these possibilities. On a belt press used to print books, for the belts we substitute an ink jet imaging head. That begins to take the shape of an ink jet book press of the future. A personalized ink jet ad can be run on the inside of a newspaper. It's a gimmick. But it's a gimmick that has powerful advertising possibilities. The point is that the type is set in a completely variable mode so that each and every ad in each and every copy of the newspaper could be different from the other.

Ink jet has the capability not only of setting type but of generating graphics. Ink jet is a non-contact process, and so has the versatility of being able to print on a wide variety of surfaces. What we are really considering is a digital press. By definition, a digital press really includes a typesetter. It's the output end of the composition process. It incorporates a computer. It eliminates the typesetting device as a separate unit as you and I would know it. It incorporates the front end, and it eliminates cameras, film and plates.

Today ink jet typesetting is an embryonic, but growing kind of technology. It has moved into commercial applications. It is responsible for creating change. And that's what Vision '77 is all about.

Vision '77 has presented a snapshot view of change today. The conference presentors have tried to look into the future and alert you to changes about to come. Conference attendees and the readers of the meeting summaries need to think—study—plan and act to manage change.

Graphic Design in Europe

Colin Forbes
Partner
Pentagram Design, London

Americans see Europe as a single entity. Well, of course, it really isn't like that. Europe is a collection of different countries. Americans have been working towards a political and cultural identity for the United States for 201 years. As a united Europe, we haven't had the same amount of time. For example, when England, the United Kingdom, was having a referendum in order to join the European Common Market, those who were opposed had a story that showed the disadvantages, the nightmare of Europe with the worst characteristics of each country. They said, "The Germans will be police. The Italians will run the army. The Swedes will be the comedians. The Irish will be the professors. The Spanish will run the railways. The Dutch will be the beauty queens. The Belgians will be town planners. And the British will be the cooks."

A cultural common denominator

Nevertheless, when I'm in the United States, I feel European. I feel that I have common cultural links with Germans and Swedes and the French. That is not anti-American; it is different from American. In some way we Europeans communicate with each other culturally and I can see a definite cultural difference between Europeans and Americans. So there's my first point—there is a separate European culture.

The urban role

My second point is that graphic design seems to thrive in a major urban community, and of course, an industrial complex. That is obvious to me in the United States. While there are a lot of things that happen elsewhere, the real action seems to be in New York City. The same is true of London.

I have another little anecdote, about a Belgian brewery. Stella Artois. The president decided he wanted a corporate indentity program—some 10,000 bars and cafes identified for the product that he sold. He asked around. He read Graphis Magazine and this, that and the other and he ended up with 12 European consultants. He wrote to all of them. He was a very polite man. He wrote to them in a way that they thought that they were the only people that were being asked for the jobs. He didn't realize that it was like advertis-

ing for an endowment policy. And so, as you might guess, the next day everybody got on airplanes and they all arrived in Brussels with their slides and portfolios. Ideally, he wanted a Belgian for chauvinistic reasons and the problem really wasn't international. Secondly, he wanted a Frenchman because, as you know, Belgium is primarily a French speaking country. But he ended up with a short list of three and they all came from London and paradoxically the winner was a Swede who ran the London office of Unimark of Chicago at the time. I think that illustrates the point that London has become the largest single graphic design center in Europe. Now there's one exception to that. Armin Hofmann says that cuckoo clocks and watches used to be the biggest export of Switzerland, but now it's graphic designers.

Four major influences

There are, in my view, four major influences which affect European graphic design.

1. The artist who did posters

For example, Toulouse Lautrec, Seurat who were followed by poster artists McKnight-Kaufer, Leupin, Cassandre.

2. The Dutch-German influence

This comes primarily from the Bauhaus. They were architecturally or design based. They were not artists as much as they were architects or designers going into graphic design. This group includes Kurt Schwitters and Jan Tschichold and also Moholy Nagy and Herbert Bayer who came with others to the United States and, to bring you more up to date, Müller Brockman and Karl Gerstner who also work in this tradition.

3. The classic craftsman's influence

The classic craftsman's influence is present in the typographic scene. You know that the Times typeface was designed by Stanley Morison and of course there is Eric Gill. In Switzerland Adrian Frutiger and in London Matthew Carter have developed this tradition. An American confirmation of this is that Paul Rand said to me once, when he came to London there were two things he liked to do; to go to the city (downtown) because he couldn't believe all those men in bowler hats and Marlborough suits and to walk around the streets because he felt there was a better sense of lettering in London than in any other city in the world.

The American influence in Europe
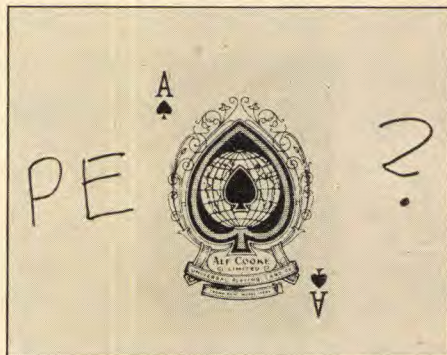
Particularly in London there has been a strong American influence, due to the presence in London from the late '50's on of such American designers as Robert Brownjohn, Bob Gill, Tony Palladino and others. Another American whose work influenced British graphic design is Lou Klein who has stayed in England. Some of you may not know Bob Brownjohn but he was a partner in Brownjohn, Chermayeff and Geismar. He was probably most famous for the work he did in England, for example, the James Bond film titles: 'Doctor No' and 'Goldfinger.'

A new design generation

The design scene in Europe has changed since the previous generation. Probably the two greatest poster designers from 1928-1938 were Cassandre and Leupin. There's a story that's told about Cassandre and Leupin that Leupin, after the war, when neither of them was as successful as he had been, and the star of the poster designers was waning, Leupin said to

Cassandre, "How much do you charge for a poster now?" and Cassandre said, "Oh 5000 francs," or whatever it was. Leupin replied, "Well, that's strange. So do I." Then Leupin said, "And how many have you sold recently?" And Cassandre replied "None." Leupin then said, "That's strange, neither have I."

It's different now that the designers in Europe are more organized. And there are a number of us that run quite big offices that are fairly efficient, and we have large industrial clients. But you can't do that without costs, and it's a pity that many of the big personalities and the big individual names who were larger than life have disappeared.

EDITOR'S NOTE:
At this point Colin Forbes showed slides of the work of people he knows, all of them his friends and people he admires. If this was not a totally representative selection of today's European graphic design, it was a collection of much of the best.

He showed representative examples of the work of the following:
From England—Derek Birdsall, John Gorham, Alan Fletcher, Colin Forbes, FHK Henrion, David Hillman, Lou Klein, Mervyn Kurlansky, John McConnell, David Pelham, Arnold Schwartzman, Herbert Spencer, and Brian Tattersfield; from France—Michel Folon and Jean Widmer; from Italy—Franco Grignani; from West Germany—Otl Aicher, Frieder Grindler and Anton Stankowski; from the Netherlands—Pieter Brattinga, Wim Crouwel and Willem Sandberg; from Poland—W. Swierzy and H.Tomaszewski; from Sweden—E+U Hiestand, Armin Hofmann, Hans Rudolf-Lutz, Georg Staehelin and Wolfgang Weingart.

Essential: The Creative Touch
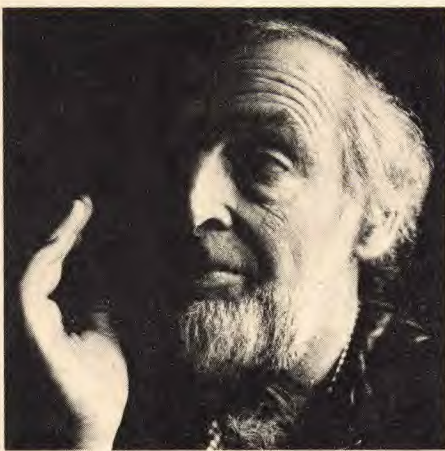
Herb Lubalin
President, LSC&P Design Group, Inc.;
Executive Vice President,
Lubalin, Burns & Co., Inc. and
International Typeface Corporation
and Editor and Designer of U&lc

Editor's note: Vision '77 was dedicated to the proposition that to make the new technologies convey our messages most effectively, we must fully understand their capabilities, not their engineering; not *how* they work so much as *what* they can do for us and how we can maximize their value to us.

The Eames film, "A Communications Primer," reminded us that machines and systems, the very best

of them, can be negated by off-line as well as on-line noise and static. Our technologies, incredible as they are, are but a means to an end.

To complement the technology-oriented presentations, Vision '77 presented an evening of visual joy and stimuli as a reminder that the most static-free message and the most appropriate system for conveying it are not enough. Essential is the creative touch that adds distinction, flavor, memorability, understanding, strength and often joy or poignancy to messages that might otherwise be merely precise and dull.

The films shown were selected by Herb Lubalin and Lou Dorfsman. Herb Lubalin's tongue-in-cheek introduction preceded the films. He "didn't see very much graphics" in the films... A certain amount of creativity. And no experimentation at all. Actually, the term experimental comes about when you do a film for somebody and he *doesn't* buy it. All the films you'll see tonight were *bought*. Therefore, no experimentation. This evening was advertised as an evening of 'visual joy and stimuli.' I don't know. Might stimulate some people. I was stimulated by King Kong. Maybe somebody will be stimulated. I don't know. As far as visual joy, well, good luck. It says, after stimuli, 'in short films.' There are a number of short films but there also happens to be a 27½-minute opus by Saul Bass. So they're not all short. But, as it says here, they are by far the country's most innovative and expert creative producers. Including such people as Saul Bass, with whose filmwork I think we're all familiar; Robert Abel, with whom I'm sure none of you are familiar although you've seen his work all over television; R.O. Blechman, who resents being called Bob, but that's his name, and who has the most delicious and understated humor in the graphic arts. What you will see are three one-minute TV spots that he did. Then, of course, there's Charles Eames. I think everybody knows Charles Eames...a renaissance man. He is the only living genius in our business. Everything that he does turns into a piece of art sooner or later. And we also have some fantastic films by Charles Braverman and Jim Sant'Andrea."
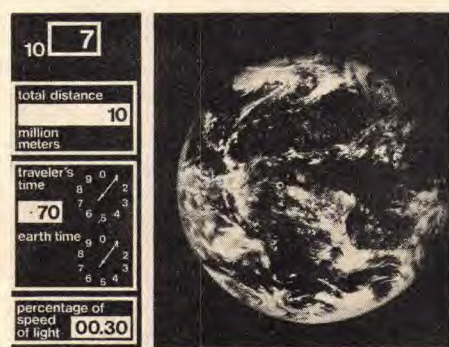
SAUL BASS

AN AMERICAN TIME CAPSULE

SAUL BASS

R.O. BLECHMAN

CHUCK BRAVERMAN

CHARLES AND RAY EAMES

R.O. BLECHMAN

CHARLES AND RAY EAMES
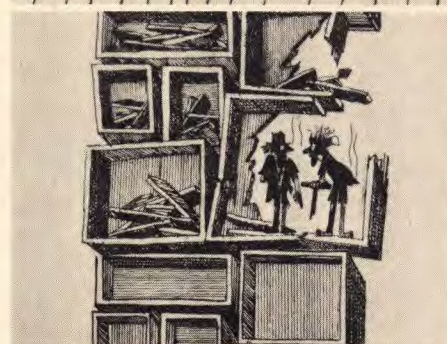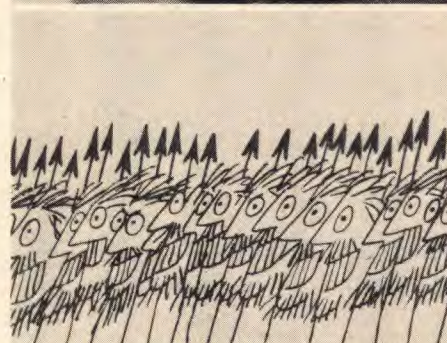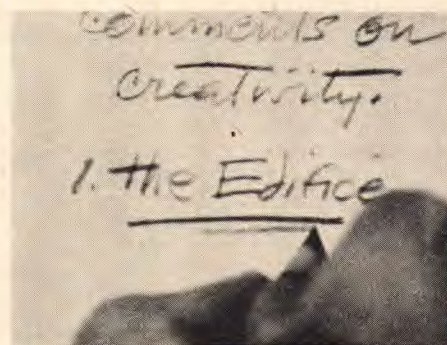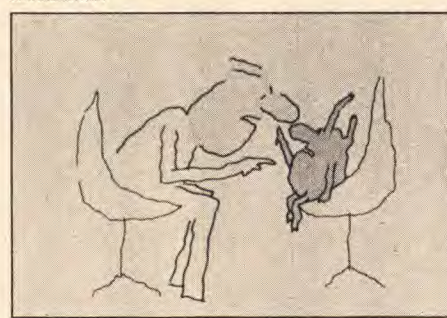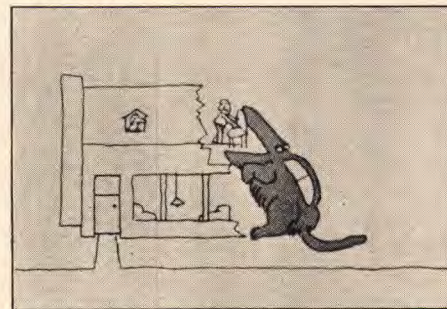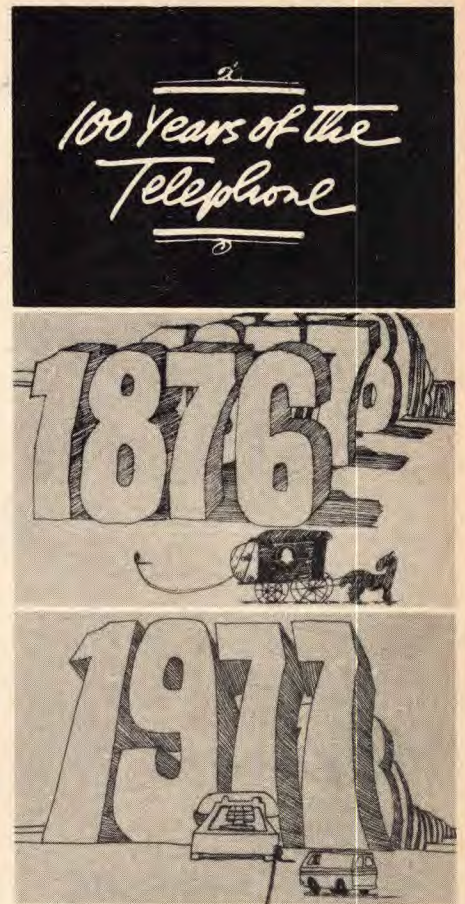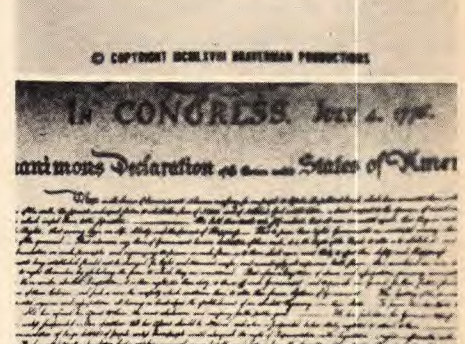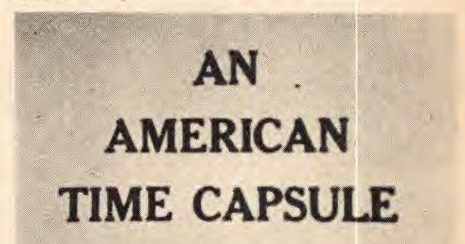
R.O. BLECHMAN

JIM SANT'ANDREA

The Art Directors Club 56th
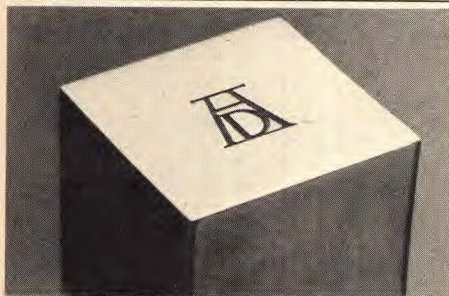
HERB LUBALIN AND BERNARD OWETT

Projections by Industry Leaders

Where we are heading...

Editor's note: U&lc asked the presidents and other top executives of the leading manufacturers of word processing and typesetting machines, supplies, and materials for a summary of the way the near future looks to them. Their collective comments, read in context with U&lc's report on Vision '77, shed further light on where we are heading.

Donald Hase
President
Alphatype Corporation

In our opinion the future development of typesetting systems will follow closely the needs of the word processing market. Word processors are being aggressively marketed throughout the world and will soon be found in the small office environment as well as the large corporate office. These relatively low cost systems, designed to manipulate and store text, will make it easy for a company to justify economically the conversion of stored text to a professional typeset product.

We expect the interest in and use of quality typesetting to increase as companies develop an awareness of their ability to produce typesetting as an automatic by-product of their word processing system. This ability will have a positive effect on their printing, production, collating and mailing costs, as well as on their corporate image. In turn, we expect this will

have a positive effect on the typesetting industry, both equipment manufacturers and services alike.

AlphaComp, our direct-input phototypesetter, is already being driven on line by the Xerox 800 Word Processor. AlphaComp models will be developed for use with other word processing systems. In the not too distant future we expect to see phototypesetting machines as common in the office as copiers are today.
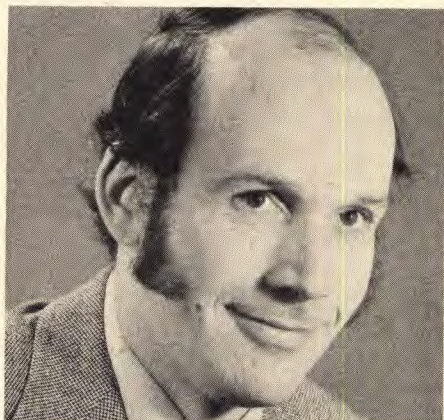
Michael Limburg
Sales Director
H. Berthold AG

With reference to new products we may say that Berthold of North America is taking special action to introduce to the US market "diatext", a low cost phototypesetter with an automatic hyphenation program for 11 languages included therein. After almost a thousand installations all over Europe since October 1976, this machine has already proved to be one of the most successful products within the phototypesetting field. Diatext is the basic component of a text setting system developed by H. Berthold AG. To complete the diatext system there is a new proofreading unit, "diamat," first shown at DRUPA '77. Diamat is operated in combination with either traditional tape punch and reader or the new magnetic tape cassette recorder "mcr 2," a twin drive model.

The second novelty the Berthold company intends to introduce to the US market shortly is "diasetter," an additional peripheral component to the known diatronic system. Diasetter stands for a fast input keyboard for straight text setting, with correction work also being done by the diamat proofing unit via either punched or magnetic tape.

Finally, the Berthold company's start of a complete series of new products is "ads 3000"—abbreviated from Akzidenz-Dialogue-System which was first presented to the US public in Chicago in October 1977, during Graph Expo '77. Ads 3000 represents Berthold's total concept for composing origination for at least five years to come. The machine is capable of being extended in hardware as well as in software. "Ads 1000" is a compact modular system consisting of input keyboard, visual display screen, single or twin magnetic cassette recorder for input/output storage and an extension module positioned on the side to house up to three floppy disc options, the computer incorporating two microprocessors with a total capacity of 90 kilobytes.

Berthold will offer a considerably extended assortment of international typefaces, including the latest creations, with continuous updating of this assortment, including Berthold's own creations and the entire ITC program.

For the years ahead, Berthold will put particular em-

phasis on the text setting sector, at the same time continuing our R&D work in the lower job composition field.

George White
Vice President
CAMEX, Inc.

The next five years will see the development of terminals for interactive composition and makeup of type, line art, and photographs into complete pages on a display screen. As a visual page image is being put together on the screen, a digital page image will simultaneously be assembled in a computer.

As soon as complete page images can be produced in this way, there will be a strong impetus to bring the whole process of page creation into the publisher's office where it has always logically belonged.

Page images in computer form produced by the publisher will be made available to readers through a wide variety of distribution channels; either by the publisher directly, or through intermediaries.

Printed copies will be made either from computer-produced plates or by direct image via ink jet presses. Electrostatic printers will be used for single or small numbers of copies. Page images will be recorded by computer on microforms. Live TV transmission, or recording on videodisc for selective playback on TV, will also be available.

Partial automation of the page production processes has not radically altered traditional relationships between publishers, printers and their distribution channels. Complete automation will change these relationships completely and forever.

Seldan A. Lazarow
Vice President, Marketing
Dymo Graphic Systems, Inc.

Dymo Graphic Systems is a single source supplier of typographic systems for the graphic arts market—

including input devices, editing terminals, computer processors and phototypesetting output devices, and the first fourth generation phototypesetter, the Dymo Laser Composer. It is our belief that the past concentration on new and unique hardware will give way to an emphasis on developing modular systems of a wide variety of possible configurations. These will, in fact, accommodate the real needs of the varying users, rather than a percentage of their peripheral needs.

Word processing and typography are somewhat synonymous with input and output. Dymo Graphic Systems has been proud of its contributions to date in both these areas, individually as well as in combination with each other.

The output area encompasses more than the phototypesetter—it includes the ability to set type with the composition techniques available. Dymo has a dynamic library of typefaces and has taken a progressive position in augmenting this library. We have a high level of expertise in the creation of new typography. All of these factors provide Dymo with a proven single source supplier capability.

Tying the input to the output with a central processor and data management system, while maintaining the requirements of setting type consistently yet with a wide variety of typography, will steadily improve. These parameters will blend with industry requirements for typesetting even more easily than in the past, coupled with a better understanding of typography...creatively, qualitatively, and quantitatively. Dymo is in a particularly good position to offer such performance characteristics in that it has been involved synergistically with all these areas for years. We would expect word processing and typography R&D to meld together in the near future and that Dymo will be a significant contributor to satisfying these industry needs.
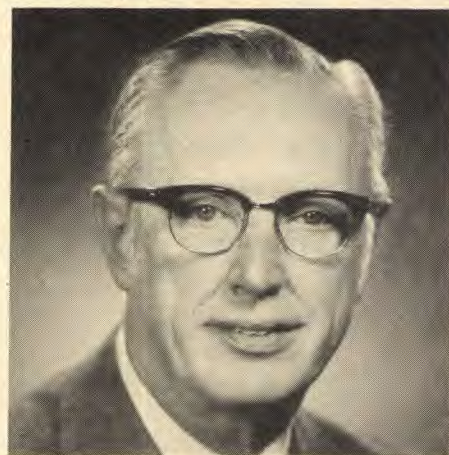
Paul A. Barbee
Assistant Vice President
and General Manager
Graphics Markets Division
Eastman Kodak Company

It's worth mentioning at the beginning of this monograph of phototypesetting-related concerns at Kodak that it wasn't until the late 1950s that I first saw a phototypesetting unit in operation.

A good friend of mine was in the dealer catalog publishing business in New York and, for health reasons, decided to move to Sedona, Ariz., hundreds of miles from civilization and to what many of his friends figured to be an early and tragic retirement.

And to complicate matters he invested heavily in a Photon 200 series phototypesetting unit. Well it

wasn't long before he was not only a glowing picture of health but was again a business success. Perhaps phototypesetting deserves the credit.

That was nearly two decades ago. Eddie Phillips of Phillips Catalogs was a pioneer in prairie dog country with a machine that was first contemplated in 1944 by Rene A. Higonnet, a French engineer who worked for International Telephone and Telegraph (ITT), and who then joined Lithomat Corporation, which became Photon.

Even though this is nearly the third decade since phototypesetting equipment was first marketed in 1949, the industry is perhaps still in its infancy. There are still many advances to be made and many problems to be solved.

The advanced technologies in phototypesetting today dictate that each advance result in a greater degree of specialization as to the segment of the market to which it can be applied.

The whole marketplace is a finely divided spectrum of businesses with different requirements. In the upper strata there are those who will be attracted to new and sophisticated methods offering the ultimate in full pagination speed for a tight deadline. And at the other end of the scale are those who want the convenience of text preparation in finished form at the point of origination and are less concerned with writing speed. All applications have their specific requirements, beyond speed, for image quality, processing access time, permanence, reproducibility and so on.

Eastman Kodak Company's position in the phototypesetting field is not only to stay abreast of the most sophisticated and complicated equipment introductions, but to look for the right combinations of materials and processes to satisfy needs all across the spectrum. Our efforts are directed toward providing the right answer for consistently satisfactory results for every user.
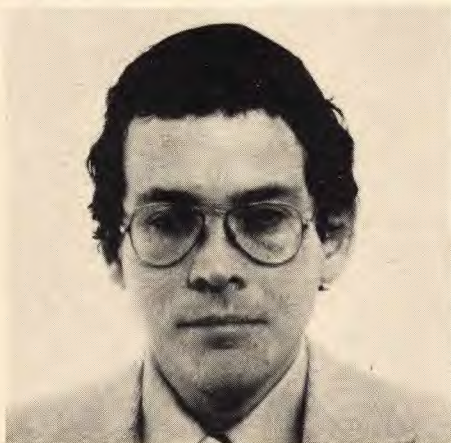
Stuart H. Charter
Product Marketing Manager, Graphic Arts
IMLAC Corporation

IMLAC Corporation was founded in September 1968 with a primary function of designing, manufacturing, installing and servicing computer-based graphics display systems. Since 1971, IMLAC has served both the commercial and in-plant graphic arts markets with the COMPOSER line of interactive composition systems. These products are configured with a variety of data storage and peripheral devices such as rigid and floppy disc drives, nine-track magnetic tape units, impact and nonimpact printers, optical scanners, and word processing and typesetting interfaces.

The company, in an attempt to reach the broadest market, plans to retain its current posture as a supplier of general purpose rather than dedicated systems. This approach insures our customer base the following advantages:

(1) Relative independence from state-of-the-art changes in typesetting or copy preparation equipment;

(2) Capability in handling a wide spectrum of jobs from complete tabular material, as in financials, to book pagination; and

(3) High degree of interaction and feedback between system and user.

Within the next five to ten year period, IMLAC expects the volume of commercial printing to exceed 30 billion dollars. Coupled with the enormous increase in in-plant printing, IMLAC expects that this work volume will precipitate a restructuring of present printing facilities into larger, more diversified establishments. Consequently, the company plans to enhance its present COMPOSER systems in the following areas:

(1) Expanded terminal configurations;

(2) Additional word processing interfaces to current in-house text capability and to computerized composition; and

(3) Improved software to handle real-time processing, augment current pagination features and further simplify the handling of complex tabular and multicolumn material.

John E. Preschlack
President
Itek Graphic Products

Itek recently introduced the latest concept in a direct entry phototypesetter—the Quadritek 1200 system. Our scientists incorporated the latest technologies in such diverse fields as ultramicrophotolithography, electro-optics and computer sciences to provide a low-cost typesetter, innovative in design and extremely versatile in use.

This type of product development, I believe, is indicative of the direction that research and development for companies like Itek must take during the next five years to serve our customers. We must extend the availability of advanced technology at reasonable cost to all areas of the graphic arts markets. This is especially true for the in-plant and small commercial printers as well as for the art and design and typographic studios—that is, for the majority of users of graphic arts equipment and suppliers whose businesses are labor intensive. It is these customers who have not benefited from the array of labor-saving products which have been introduced for the large, more capital intensive graphic arts firms.

We must continue to identify better the needs of the smaller reproduction and graphic firms so that we can develop advanced technological products which will offer the greatest value to the user at the lowest possible cost. Itek began in the photocomposition area. Additional systems will be developed that will interface with each other and with word processing equipment.

Over the next five years, we should begin to see the development of less costly, user-oriented systems for projection and laser platemaking, for electron beam and scanning type systems, in video disc memories, in optical communications—all technologies which have the potential to revolutionize the phototypesetting and word processing fields as we know them today. I expect that Itek will make a significant contribution to this revolution.

D.G. Gerlich
Director, Product Planning
and Technical Sales Support
Information International

Information International is a leader in computerized image processing. Our expertise includes the ability to digitize gray-scale and line art illustrations and to manipulate the illustration data along with text data and produce complete pages, including halftones, on a variety of output media (microfilm, microfiche, true-size paper and true-size film). Information International equipment can produce combined illustration and text pages at a quality level required by commercial typographers and printers. At present we have a Model 3600 Scanner and a VideoComp 500 typesetter installed at *U.S. News & World Report* in Washington, D.C., which are used to make the master copy of the weekly magazine. After editorial sign-off, the pages, which are then in digital form, are transmitted to three locations—Connecticut, Chicago and Los Angeles—in a matter of several minutes per page over a 9600-band Western Union Satellite system. At these distant locations, Information International's computerized typesetters recreate the original pages, including halftone illustrations, which are then ready for the printing process.

This is *not* a facsimile system which merely scans and plays back an image with some resultant loss of quality and of the requirement for broad band transmission facilities. In the Information International system, the text is prepared on conventional computerized text editing systems. The illustrations are scanned and stored as gray-level data for each halftone dot position in a binary format. When the page is typeset, a single character code is converted to

the true graphic arts character representation and the illustration data is converted to halftone dots in a binary format over the desired density range. Therefore, each location generates an original page of the highest quality. Since the text is not scanned, it requires, in comparison to facsimile, only a fraction of the data for storage and transmission. The text and the illustrations may be transmitted independently, then stored and merged during the output typesetting operation.

The advantages of this system are threefold: elimination of manual illustration screening and manual page makeup at each site; elimination of cumbersome shipment of page elements; and greater centralized editorial control with the freedom of last minute changes.

Other unique Information International products include:
· The 2000 Page Layout System, which displays text, halftone illustrations and line art which has been digitized on the 3600 Scanner and provides a complete interactive capability of sizing and positioning page elements prior to typesetting on the VideoComp 570.
· The FR 80 and COMP 80 microfilm recorders which are used for detailed engineering drawings and technical documentation. These products are also capable of recording continuous tone color film.
· The GRAFIX I multi-font/multi-format OCR system. This also reads unconstrained mixed alphanumeric handprint.

These state-of-the-art products provide a total automated means of producing graphic arts quality pages without the conventional manual art preparation or the manual page makeup operation.

Information International's R&D will continue to interface these systems into front-end procedures such as text editing and color illustration separation, and into pre-press operations such as automatic platemaking.

Janice A. Vaghini
Marketing Communications Representative
Raytheon Company

Raytheon Graphic Systems offered its first product, RAYCOMP-100, to the graphic communication industries in June of 1974. The first RAYCOMP-100 full page display ad composition system was delivered to Norfolk, Virginia in March of 1975. Since that time, Raytheon has sold one hundred and five RAYCOMP terminals to daily and weekly newspapers all over the United States and Canada.

Most recently, Raytheon Graphic Systems responded to the needs of the small and medium sized newspapers, and at the ANPA show in Anaheim, California, introduced a new ad composition system, the RAYCOMP II. This system is a low-cost, simplified, easy to operate version of the RAYCOMP-100. Both systems allow electronic makeup of display advertisements on a 200 square inch TV Screen. RAYCOMP equipment can display 255 different fonts in their actual set widths in sizes ranging from 5- to 96-point. Also, RAYCOMP can output page positioned copy for any selected page width up to 100 picas. It can drive today's most sophisticated typesetters. As the capabilities of phototypesetters are increased, the RAYCOMP equipment will be ready to meet any and all demands.

These two products which address ad makeup are just the beginning for Raytheon Graphic Systems. New products, now under development, stress text entry, scheduling and production control. A Raytheon Ad Data Entry System being developed has been sold to *The Washington Post.* The Ad Data Entry System will facilitate and improve the method of controlling, scheduling and entering raw ad copy to be composed on the RAYCOMP.

At the ANPA show, Raytheon also presented the RAYCOMP News Page Layout and Makeup System (RAYCOMP-NEWS), a major step towards the newspapers' goal of total pagination. It allows the layout editor to lay out a newspage by assigning story allocations and sizes to fit the available newshole. Once the stories are released by the copy editors, the actual page is automatically made up and can be displayed on the screen. The output will be page positioned when it comes from the phototypesetter.

These products indicate Raytheon's ability to meet the needs of the graphic arts industries. They are designed not only to solve the problems of today, but also as a first step in solving tomorrow's problems. Raytheon Graphic Systems will continue as a technological leader in the development of electronic composition systems.

Evelyn Berezin
President
Redactron Corporation

In twenty years the typewritten document will be a thing of the past...printing with its inherent economy will be substituted...distributed communications and information processing networks will conserve energy and create new work and work-place structures.

The office of the future will feature:

(1) the complete amalgamation of in-plant printing and word processing;
(2) the development of a distributed information (not words or data or pictures or voice, but all together) processing environment, which in turn will foster smaller, decentralized and non-hierarchical work structures;
(3) the proliferation of mixed media systems capable of interleaved number, word, picture and voice information; and
(4) the growing use of compressed communications languages.

Video display editing typewriters have already eliminated the need for typewritten copy during the draft stages of document preparation. Phototypesetters now accept word processing cassettes as input media, and as phototypesetters drop in price and size they will do for typesetting and printing what the Brownie camera did for photography. What this means for the office is that the first hard copy version of a document will be the final one, and in printed form. With word processing typewriters feeding information directly into phototypesetters and printers, the distinction between the in-plant print shop and the word processing center will blur, and the two functions will be amalgamated, not in a central location but in a distributed network of keyboards, printers, number, picture and symbol handling equipment. Printing is intrinsically less expensive than typewriting, because it compresses more information in the same space.

As paper, time, postage and energy costs escalate while concurrent developments in the computer, copier, facsimile and voice communication technologies come together and become less costly, they will impact the office more strongly. The tremendous drop in the cost of computation and memory functions for data processing has shifted the focus from the large central computers to a distributed environment of small computers. The output from small computers will be used locally and not transmitted to a central processing department. And of considerable importance, small computer capability will extend beyond strictly data applications to include text and other kinds of information processing.

As communications costs begin to drop due to the widespread deployment of satellites, home rooftop antennae and fiber optic cables, the full-scale realization of a true information processing network will occur. The office of the future will have many work stations equipped for text, number and picture communication. Information will be disseminated electronically and "reconstituted" at the receiving end. Such a decentralized work environment will not suit today's hierarchical work structures, and these will change to take advantage of the available technology. Persons in smaller, decentralized environments tend to work more productively because information does not have to be filtered through some central office or structure before it reaches its ultimate audience. They can also have more autonomy in decision-making, if the information needed to make decisions is available to them.

By 1980, according to some research groups, fully half of all office text will be prepared using editing typewriters, creating magnetic media in great volume. Communicating typewriters have already begun to disseminate some of this information electronically to computers, teletype terminals and other communicating typewriters.
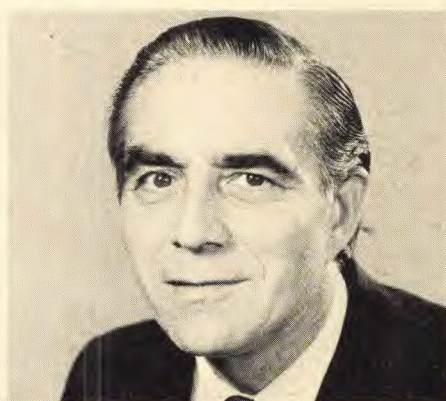
John Latham
Group Typographical Manager
Monotype International

This last year has been an exciting and fruitful one for Monotype International. It has seen the introduction of three new high-speed phototypesetting systems, the Monotype 1000, 2000 and 3000 with Lasercomp. The last has been hailed as the first truly fourth-generation phototypesetter. By using the parallel concentrated beam of a laser, the sharpness of character definition is vastly improved in comparison with that of CRT. Also, the Lasercomp typefaces are digitized and stored for quick access on floppy discs, ensuring a constant high quality without wear and tear. To complement these advanced phototypesetting systems, Monotype has provided a number of keyboards, ranging from the ultra-simple TC perforator to the sophisticated programmable/ edit machine. ACE (Ancillary Composing Equipment) has been further developed as a cluster which can provide editing facilities for up to four operators using a single, shared, central processor.

All these developments have shaped, and will further shape, the Group's attitude to type design. There is intense activity and the basis of all that is being done is "from the printing machine back through production to the drawing board," for unless the type designer really understands what happens to his type on the way to the printed page, his time will be completely wasted.

So the future means the ongoing development of these new systems, and the providing of workable type designs to meet the new technology—and here Monotype's long experience of good type design and realization, coupled with a deep understanding of the new methods, will add considerably to the already high reputation Monotype has for typographical excellence.

Louis Moyroud
J. Bobst et Fils S.A.
Excerpt of a Speech During DRUPA 1977

As far as the new line of Bobst phototypesetting is concerned, I have to emphasize that these are only the first fruits of our collaboration and others are already ripening on the branch.

And then—and this will be an answer to those who might perhaps reproach us for not reaching out far enough for something new—I'd like to say that a research policy, like every policy, is the art of what's possible and that it must take account of certain economic and social realities of which every potential client is prisoner.

We have therefore deliberately tried to satisfy the present needs of three categories of printers in offering

them models which guarantee a maximum reliability with high graphic quality. We could easily have made more sophisticated machines, which run faster, but this would have cut down the quality of the image, and the price increase involved would have considerably reduced the number of potential buyers.

But rest assured we are not stopping here. Other things are coming forth from my collaboration with BOBST GRAPHIC, but I can't give details just yet.

Paul E. Huber
President
Mergenthaler Linotype Company

Economic pressures and the information explosion have pointed up the need for all businesses to lower the cost and improve the appearance of their printed communications. The advantages of the typesetter over the typewriter have become apparent in an environment of rising labor costs, higher prices for paper and postage, and increasing competition for the reader's attention.

For these reasons, we see an extraordinary growth in the number of firms and individuals who will become involved in typesetting—many for the first time. They will stimulate sales of what we call "Unified Small Typesetting Systems," such as our recently introduced Linotronic and Linoterm.

These new systems are more "approachable" than conventional equipment, both in terms of price/performance and in the important area of simplified operation. They feature one or more microprocessors and software designed to assist and inform the operator. These new systems are versatile and flexible. They can be customized to special applications and adapted to changing needs through reprogramming. Composition aids and formats stored on diskettes will put good design and refined typography within reach of every user. Low-cost off-line terminals are available that can multiply the productivity of these new typesetters at a fraction of the initial investment.

Reduced costs in producing photocomposition typefaces allow us to equip these small systems with an expanding array of options—greater numbers of type families, more faces within each family, availability of customized designs, design aids to the less skilled operator. Easy access to expanded typographic service should further encourage the growth of these small systems.

The growing market for typesetters has stimulated intense competition among equipment manufacturers. Products will continue to be introduced that will offer more capability at lower cost. This, in turn, will attract more users into the market. This pattern of increasing demand matched by constantly improving, lower-cost products presents an exciting future to both the new typographer and the responsible manufacturer.

If clarity, integrity
and persuasion
are the essence of
printed salesmanship,
typography is the
ultimate concern.

AKRON, OHIO	The Akron Typesetting Co.
ATLANTA, GEORGIA	Action Graphics, Inc.
BENTON HARBOR, MICHIGAN	Type House, Inc.
BLOOMFIELD, CONNECTICUT	New England Typographic Service, Inc.
BOSTON, MASSACHUSETTS	Berkeley Typographers, Inc. Composing Room of New England
CEDAR RAPIDS, IOWA	Type 2 Inc.
CHICAGO, ILLINOIS	J. M. Bundscho, Inc. Frederic Ryder Company Total Typography, Inc.
CINCINNATI, OHIO	Typo-Set, Inc.
CLEVELAND, OHIO	Bohme & Blinkmann, Inc.
COLUMBUS, OHIO	Yaeger Typesetting Co., Inc.
DALLAS, TEXAS	Jaggars-Chiles-Stovall, Inc. Southwestern Typographics, Inc.
DAYTON, OHIO	Craftsman Type Incorporated
DETROIT, MICHIGAN	Willens + Michigan Corp.
GRAND RAPIDS, MICHIGAN	Central Trade Plant of Grand Rapids
HOUSTON, TEXAS	The Type House, Inc.
INDIANAPOLIS, INDIANA	Typoservice Corporation
KANSAS CITY, MISSOURI	Lettergraphics / Kansas City, Inc.
LOS ANGELES, CALIFORNIA	Andresen Typographics Typographic Service Co., Inc.
MEMPHIS, TENNESSEE	Graphic Arts, Inc.
MIAMI, FLORIDA	Wrightson Typesetting, Inc.
MINNEAPOLIS, MINNESOTA	Dahl & Curry, Inc. Duragraph, Inc.
NEWARK, NEW JERSEY	Arrow Typographers
NEW YORK, NEW YORK	Advertising Agencies / Headliners Artintype-Metro, Inc. Franklin Typographers, Inc. Royal Composing Room, inc. Tri-Arts Press, Inc. TypoGraphics Communications, Inc. Volk & Huxley, Inc.
ORANGE, CALIFORNIA	DeLine-O-Type, Inc.
PHILADELPHIA, PENNSYLVANIA	Walter T. Armstrong, Inc. Typographic Service, Inc.
PHOENIX, ARIZONA	Morneau Typographers, Inc.
PITTSBURGH, PENNSYLVANIA	Davis & Warde, Inc. Headliners of Pittsburgh, Inc.
PORTLAND, OREGON	Paul O. Giesey / Adcrafters, Inc.
ROCHESTER, NEW YORK	Rochester Mono / Headliners
ST. LOUIS, MISSOURI	Master Typographers, Inc.
SYRACUSE, NEW YORK	Dix Typesetting Co., Inc.
TAMPA, FLORIDA	Century Typographers
MONTREAL, CANADA	McLean Brothers, Ltd.
TORONTO, CANADA	Cooper & Beatty, Ltd.
WINNIPEG, CANADA	B / W Type Service, Ltd.
BRISBANE, QLD., AUSTRALIA	Savage & Co., Pty., Ltd.
SOLNA, SWEDEN	Typografen AB
HEADQUARTERS	Advertising Typographers Association of America, Inc. 461 Eighth Avenue New York, N.Y. 10001 Walter A. Dew, Jr. Executive Secretary

Advertising
Typographers
Association of America

Typography and the ATA are one.

type

ITC Kabel Book
ITC Kabel Medium ITC Bauhaus Light
ITC Kabel Demi ITC Bauhaus Medium
ITC Kabel Bold ITC Bauhaus Demi
ITC Kabel Ultra ITC Bauhaus Bold

ITC Korinna Kursiv Regular
ITC Korinna Kursiv Bold
ITC Korinna Kursiv Extra Bold
ITC Korinna Kursiv Heavy

We are really excited about a new series of ITC typefaces available from Compugraphic in January, 1978. We'd like to share our excitement with a preview of these three new families: ITC Kabel, with its larger x-height, adds distinction to text and display settings; ITC Bauhaus, a strong geometric design which makes it unique among the sans-serif faces; and ITC Korinna Kursiv, the long awaited italic mate to the roman design of ITC Korinna. Looking ahead, the future forecasts selections from a collection of such designs as: ITC Avant Garde Gothic Oblique, ITC Zapf Book, ITC Benguiat, ITC Quorum and Italia. There you have it . . . sampling of Compugraphic's on-going commitment to contemporary needs in typography. More reasons to make our type library *your* type library!

Cg compugraphic
Compugraphic Corporation, 80 Industrial Way, Wilmington, Massachusetts 01887, (617) 944-6555

Introducing the Comp/Set® Profitsetter.

It's easier and more economical to get into quality phototypesetting than ever before.

From our wide range of proven phototypesetting systems, we now recommend the ideal profit-making combination for printers and typesetters.

The Comp/Set Profitsetter System.

At the core of this optimum system is the Comp/Set 4510 direct-entry phototypesetter. It sets type at 50 lines per minute, with 16 styles and 70 sizes on-line from 5½ to 74 point. And it includes an impressive array of Comp/Set features. Big CRT screen. Simple, typewriter-like keyboarding. Hundreds of available typefaces. High-quality output. And many others.

The Profitsetter System includes our floppy diskette record/playback unit, which captures keystrokes and provides extensive editing capability.

Rounding out this profit-making package, we recommend our Video Display Input units. The unique 50-lines-per-minute speed of our direct-entry photo-typesetter will support five or more of these off-line units, which can be added as your workload increases. Because they're virtually identical in design to the Comp/Set on-line keyboard, your operators will perform equally well on both.

So whether you're upgrading your present system, or making your first move into phototypesetting, the Profitsetter System will help you build new profits for your business. We even help out with a full range of direct-lease, lease-purchase, and rental plans.

Call your local AM Sales office to see the Profitsetter System in action. If you like, we'll bring our demo van to your door. Or write to VariTyper Division, 11 Mount Pleasant Avenue, East Hanover, New Jersey 07936.

The Right Choice in Phototypesetting.

ADDRESSOGRAPH MULTIGRAPH

All the type in this ad was composed on the Comp/Set phototypesetter.

In the next few weeks, you'll be seeing a new logo on the envelopes you get from RyderTypes.

We could say that the reason we changed our corporate identity was to appear more aggressive, more dynamic, more sophisticated, or maybe even more contemporary than we already are.

But the real reason we changed our corporate identification is the same reason you bought a new winter coat, rearranged the furniture in your living room, or considered a new hairstyle.

We thought it was time for a change.

Frederic Ryder Company, 500 N. Dearborn, Chicago, Ill. Telephone 312-467-7117.

NEWSLETTER

SKILLS FOR HIRE*

STUDENTS HONORED BY *AMERICAN ARTIST* COVER CONTEST

PITTSBURGH—Two Visual Communication majors at the Art Institute of Pittsburgh are semi-finalists in the annual *American Artist* magazine cover design competition. John Auge and Karen Rinehart will have their artwork featured in the April '78 issue of the magazine. The competition, open to art students all over the nation, awards honors each year based on originality and professional quality. 200 designs were submitted in this year's contest. John Winberg, Director of Education at AIP, encourages students to enter major competitions as part of their preparation for the working world.

COLORADO TOASTS NOTED ILLUSTRATOR, OPENS NEW BUILDING

DENVER—The Colorado Institute of Art moved into a striking new building, and in honor of the grand opening in November, nationally-known illustrator Bart Forbes (above) was the special guest. It was the happy combination of a great talent visiting a vital and growing school. Enthusiasm ran high among the students as Forbes gave informal workshops and held informative question-and-answer sessions. The Denver school, with 356 students from 39 states and several foreign countries, is unique in the western U.S. It is one of the important resources for training career-minded artists, designers and photographers.

Markham
Park Zoo

A mythological beast is the logotype for the Markham Park Zoo in Fort Lauderdale, Florida. It is a design detail from a poster created at the Art Institute of Fort Lauderdale by three talented Advertising Design instructors: Walter Delaney, Jon Craine and Peter Myers.

ATLANTA INSTITUTE EXPANDS TRAINING IN TYPOGRAPHY

ATLANTA—With the recent addition to its staff of Sharon Johnson, a young graphic design instructor from Minneapolis (above right), the Art Institute of Atlanta places increased emphasis on professional-level training in typography. The school's Visual Communication students are given a thorough ground work in type history, classical and modern letter forms and specification methods. They are assigned a broad range of original typographical design projects.

PAUL RAND, LEFT, AWAITS HIS TURN AS MILT GLASER ADDRESSES WASHINGTON CONFERENCE

DESIGN FORUM IN D.C. DRAWS CAPACITY CROWD

WASHINGTON—Milt Glaser, Paul Rand and *The New York Times* Art Director, Lou Silverstein, provided outsiders' viewpoints about Government Design at a Washington conference in November. The four-hour forum, sponsored by The Design Schools, was attended by 150 designers and art directors from the D.C. area.

The voluble audience spoke freely—at times heatedly—about the opportunities and limitations of their work. In particular, they emphasized the Government's production limitations and inept administration that often restrict the quality of their design efforts. They were vocal in criticizing Senator Cannon (Nevada) and his recent measure that prohibits the use of coated paper in Government printed matter as a step toward "conserving energy." The meeting called upon Glaser, Rand and other eminent non-Government designers for support in dealing with these obstacles.

Other members of the panel included Howard Paine, *National Geographic*; Bob Schulman, NASA; Bob Mulcahy, the National Zoological Park, Smithsonian Institution and Dave Hausmann, the National Endowment for the Arts. The program, held at the American Institute of Architects, was presented through the cooperation of the Federal Design Council, the Art Directors Club of Metropolitan Washington and the AIGA, Washington.

Now... a phototypesetting processor with a built-in repro camera system.

Copy set on your phototypesetter using RC (resin-coated) paper gives you the clearest, sharpest, most permanent image. Now, process the RC material *speedily and automatically in normal room light* with the processor that is part of the Pos One® 8000 System.

With the flick of a switch, convert instantly from RC processor to the famous Pos One system and you can now have *complete in-house*

POS ONE® 8000

It's an automatic processor for resin-coated (RC) phototypesetting materials.

It's a complete daylight operating repro camera system. All for the price of an RC processor alone.

reproduction capability. Make extra proofs of your typesetting—enlarged, reduced or same-size—on paper or film; produce type modifications and reproportioning, positive or reverse stats, screened veloxes, special effects screens, VGC Color Cells™ slide enlargements, positive or negative transparencies, posterizations, etc., etc. —and do them all for pennies apiece. (One model even makes offset plates!) *Positive to positive single-step automated process requires no negative, darkroom or plumbing.* Simple to operate. Anyone—including the person

who sets your type—can run it!

Before you commit $4000 or more to an RC processor alone, you owe it to yourself to investigate the full capabilities of the Pos One Photocomp 8000! If you already own an RC processor as part of your photocomposition system, the Pos One 8000 provides a perfect back-up RC processor in addition to full camera capability. Want to know more?

CALL TOLL FREE 800-327-1813.
In Florida call (305) 722-3000. In Canada call (514) 739-3325.
LOW COST LEASING PLANS AVAILABLE.

Galliard: The return of Robert Granjon

Mike Parker, Director of Typographic Development, has wanted to see the Granjon faces in contemporary type libraries since he first saw them in the four-hundred year old Plantin-Moretus Museum in Antwerp. Matthew Carter has captured the 'dynamic style' of Robert Granjon and redrawn it for the twentieth century. An innovator himself, Carter has used the computer to add weights which, in the italic, only became possible with photocomposition.

This text was set on the Mergenthaler V-I-P phototypesetter in Galliard and Galliard italic with the Mergenthaler ATP I/54, using Track I.

The lost romans of Robert Granjon are a typographic enigma. The most vital designs of the sixteenth century, they are immediately recognizable by their elan, their verve and their dynamic style. Strangely, they have never received the recognition they deserved. Nor have they been produced in a modern version.*

Not only are the romans extraordinarily beautiful, they are remarkably attuned to today's taste. They have the large 'x' height and close fit Granjon innovated—trends in type design that have regained popularity. Granjon's music, Greek, Syriac, Arabic, Italic and Civilite (handwriting) type, all introduced new forms in design. His type flowers—a first—have never been equalled. No one before or since has captured as many pen-written forms in typeface design.

While Garamond, a contemporary of Granjon, was the archetype of the classical designer, seeking purity and silence in the perfection of impersonal form, Granjon was a baroque enthusiast. He traveled throughout Europe, cutting faces for anyone who wanted them. The Antwerp printer, Plantin, carefully worded his contracts to keep Granjon in one place long enough to complete each project! His personality shows in the pet names he gave his faces: Nonpareille, Immortelle, Jolie, Granjonne, Giubilate and Galliarde. Names as surprisingly playful then, as today's Harry Fat and Harry Thin.

Granjon's masterful creative ability made his italics the standard throughout Europe for three centuries, the form used for the Galliard italic was less common, as he used this chancery form rarely.

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*The typeface Plantin, was based on a face of Granjon's. It was unfortunately made from an over-inked proof of worn type and has a wrong font eighteenth-century 'a'. The typeface called Granjon is derived from the late Texte Roman of Claude Garamond. It was called Granjon after its italic, which was a form of Granjon's Courante.

ROMAN

ABCDEFGHIJKLMNOPQRSTUVWXYZ&
abcdefghijklmnopqrstuvwxyzfiflctsta e n r 123
4567890.,-:;"'!?*$£¢/()

BOLD

ABCDEFGHIJKLMNOPQRSTUVWXYZ
&abcdefghijklmnopqrstuvwxyzfiflctsta e h
n r t 1234567890.,-:;"'!?*$¢£/()

BLACK

ABCDEFGHIJKLMNOPQRSTUVWX
YZ&abcdefghijklmnopqrstuvwxyzfiflct
sta e n r t 1234567890.,-:;"'!?*$¢£/()

ULTRA

ABCDEFGHIJKLMNOPQRSTUVW
XYZ&abcdefghijklmnopqrstuvwxyz
fiflctsta e h n r t 1234567890.,-:;"'!?*$

The lost romans of Robert Granjon are a typographic enigma. The most vital designs of the sixteenth century, they are immediately recognizable by their elan, their verve and their dynamic style. Strangely, they have never received the recognition they deserved. Nor have they been produced in a modern version.*

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Mergenthaler, Linotype, Stempel, Haas

ITALIC

ABCDEFGHIJKLMNOPQRSTUVWXYZ&ab
cdefghijklmnopqrstuvwxyz fifl ct st sp e k n t v z
1234567890.,-:;''!?$£¢()[]

BOLD ITALIC

ABCDEFGHIJKLMNOPQRSTUVWXYZ
&abcdefghijklmnopqrstuvwxyz fifl ct st sp e k
n t v z 1234567890.,-:;''!?$¢£()[]

BLACK ITALIC

ABCDEFGHIJKLMNOPQRSTUVWXY
Z&abcdefghijklmnopqrstuvwxyz fifl ct st sp
e k n t v z 1234567890.,-:;''!?$¢£()[]

ULTRA ITALIC

ABCDEFGHIJKLMNOPQRSTUVW
XYZ&abcdefghijklmnopqrstuvwxyz
fifl ct st sp e k n t v z 1234567890.,-:;''!?

Mergenthaler,   Linotype,   Stempel,   Haas

By popular demand   In   response

to many requests, Mergenthaler   Linotype   Company is pleased

to announce that   the   popular typeface,

*Folio,   * Licensed from Bauersche Giesserei, Frankfurt

is now available for the   V-I-P   phototypesetter.

The first weight of Folio was designed by
Dr. Konrad F. Bauer and Walter Baum
for the Bauersche Giesserei of Frankfurt,
Germany in 1956. Several weights followed,
and the publicity that greeted the new
designs firmly established Folio as a favorite.

Folio Light, Folio Light Italic, Folio Medium,   Folio Bold, Folio Extra Bold

new to the   Mergenthaler, Linotype, Stempel, Haas
                                         library.

Mergenthaler   Linotype   Company   Mergenthaler Drive

Plainview, New York 11803

type

ITC **Benguiat Book**

ITC *Benguiat Book Italic*

ITC **Benguiat Medium**

ITC *Benguiat Medium Italic*

ITC **Benguiat Bold**

ITC ***Benguiat Bold Italic***

We are proud to announce ITC Benguiat as another sampling of Compugraphic's on-going commitment to contemporary needs in typography. This refreshing new typeface gives an informal and modern feeling to any typeset page. Available from Compugraphic in January 1978, this family will be offered in six versions: ITC Benguiat Book, Book Italic, Medium, Medium Italic, Bold and Bold Italic. These three weights with matching italics are sure to make ITC Benguiat one of the most versatile designs in typography today. The vitality and individuality reflected by this face brings the same distinction to your text and display settings as Ed Benguiat's previous typographic success, ITC Tiffany.

ITC Benguiat...six more reasons to make our type library *your* type library!

Cg **compugraphic**
Compugraphic Corporation, 80 Industrial Way, Wilmington, Massachusetts 01887, (617) 944-6555

the system fit
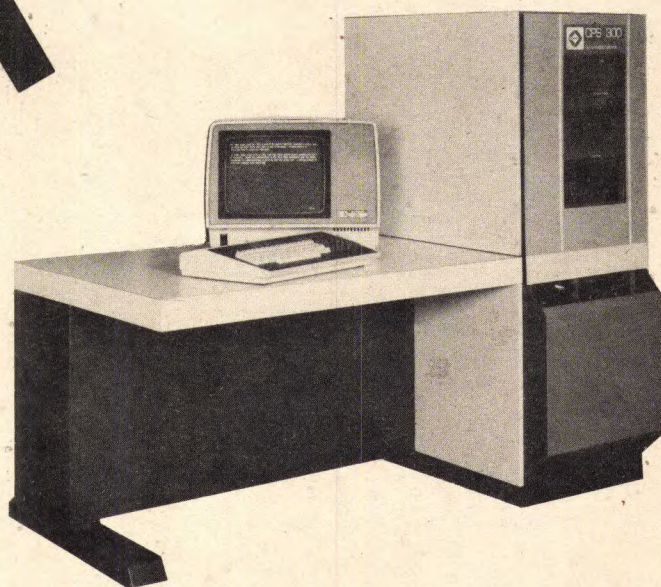
Introducing CPS 300

Dymo's newest text management and composition system designed to "fit" the special operational requirements of: magazine and book publishers, daily and weekly newspapers, financial and statistical printers and ad-type and trade typographers.

That may sound like a bold and farfetched statement, but think about it for a moment.

Composition and typography, as we know it today, is much more than just the arrangement and appearance of type. Better defined and more important, it has become a means of recording, storing, retrieving and handling information.

Whether this information is defined as "commercial" or "newspaper", both share similar production procedures. Certainly layouts and formats will differ, but common tasks still exist: input, manipulation of copy and output.

CPS 300 is a cost effective, labor reducing composition system that will assure you of faster, more efficient production cycles, greater accuracies and less proofing. It is modular in design, so that it can be custom fitted — at any time — to your ever changing needs . . . **at Dymo, it has to be right for you!** Write or call toll free, (1-800-225-0945, except Mass.) for brochure or demonstration appointment.

Dymo Graphic Systems, 355 Middlesex Ave., Wilmington, MA. 01887;   Tel. (617) 933-7000

Arrow

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For People Who Need Four Hands

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If you're spending too little time on developing your layout ideas and too much time specifying type and handling mechanical details, we can help.

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Arrow has the most complete and up-to-date type library in the country. If you like modern, professional typographic quality and good, old-fashioned dependability repeated job after job, try us.

Using Arrow leaves you more time for truly creative work.

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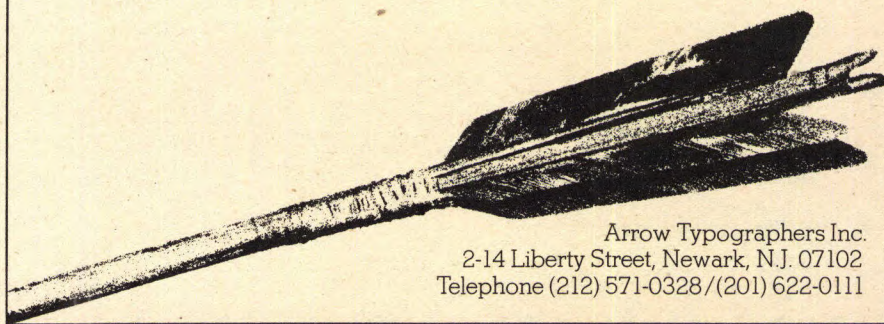
Arrow Typographers Inc.
2-14 Liberty Street, Newark, N.J. 07102
Telephone (212) 571-0328 / (201) 622-0111

fy(t)i
for your (typographic) information

Direct-entry typesetters —
no longer direct, but...

It seems like only yesterday, and in fact it was only the past few years, that most of us learned about the truly remarkable typesetters that were so low in cost that offices could afford them and so easy to operate that typists could run them, yet very versatile and typographically capable. We called them direct entry because input and output were in the same unit, like the once-upon-a-time Linotype.

Today's news is even more exciting and it is wonderfully detailed and interpreted in The Seybold Report, Vol. 7, No. 3. It's must reading if you are in the market for one of these machines or just want to be really up on your typographic toes.

We'll summarize some of the Report's major findings here, but for more data and a 14-page chart comparing the newest machines and models, feature for feature, write to The Seybold Report, Box 644, Media, Pennsylvania, 19063, for information on how to get a copy. Here are just some of the things happening in the direct-entry field.

• Input is being separated from output so that many so-called direct-entry machines no longer handle input and output in one unit.

• The new machines feature editing, correcting and updating capabilities. They are fast becoming word processors that output typography instead of typewritten copy.

• More and more units directly interface to word processors. WP output becomes typesetter input.

• Speeds have been upped from 16-17 newspaper lines to 50 lines per minute, significant for machines that can play back.

• On some machines one operator can simultaneously typeset one job while editing another.

• Since these machines can now run faster than an operator can keyboard them, many now offer auxiliary input and/or editing stations to feed the more productive typesetting unit. With multiple, separate input, the system is no longer a true direct-entry system.

• All this sounds as though they are becoming no different than the more expensive commercial and newspaper units. Not so. These machines, while stepping up their speed, editing, storage, and in some cases make-up capabilities, only partially close the gap between their capabilities and those of the higher priced machines.

• On the other hand, the new generation of direct-entry machines, despite their tremendous advances, are still low-cost units. The values added far exceed the added cost and make them better buys than before for the office and other low-cost markets.

An editorial feature prepared for U&lc by **Edward M. Gottschall**

The complete library

Mergenthaler Linotype Stempel Haas

as typeset on the V-I-P

Nine type specimen books

1 **General Typefaces**
2 **Text Typefaces**
3 **Display Typefaces**
4 **ITC Typefaces**
5 **News and Classified Typefaces**
6 **Special Typefaces**
7 **Non-roman Typefaces**
8 **54 unit Text Typefaces**
9 **54 unit Display Typefaces**

These books show a total of nine hundred typefaces.

Each typeface book sheet shows up to four weights of a family, at 18 pt (the complete alphabet), and a paragraph of text, set at 10 pt.

Each display typeface book sheet shows one weight of a family, at 36 pt (the complete alphabet), and seven lines of display text in seven sizes up to 72 pt.
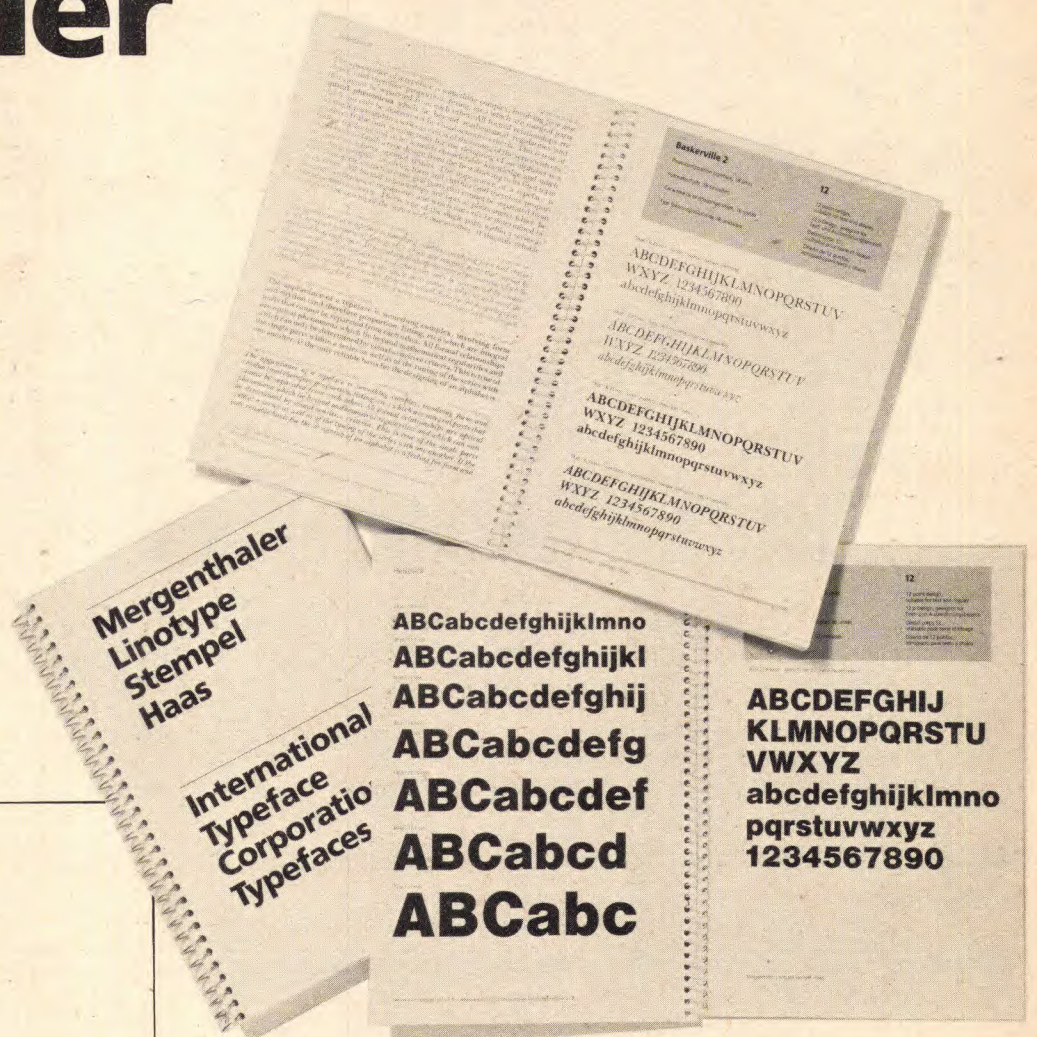
The sheets are in four languages and carry pica/didot, and millimeter sizes, for international use.

Publication of this series is to be completed by the end of 1978. Each edition will be mailed to you as each one is published.

The complete
Mergenthaler, Linotype, Stempel, Haas library in 9 bound books. Purchase this series now, today!

The entire series . . . **$50.00**

A I G A ACTIVITIES

The American Institute of Graphic Arts is well known for the exhibitions which it sponsors each year.

Regular AIGA activities include: competitions resulting in six major exhibitions and related (recorded) seminars and slide archives, small exhibitions of influential work by individual artists and designers, numerous book clinics, career clinics for students, spring and fall plant tours, traveling exhibitions, and the publication of a catalog for each major exhibit and a variety of reference materials.

What is not commonly known is that AIGA has been expanding its activities through grants. Three interesting and far-reaching assignments are presently being developed:

A Graphics Standards Manual for Non-Profit Institutions. This project, sponsored by the National Endowment for the Arts, will culminate in a most useful tool for institutions who desire good design but must operate on a low budget.

Symbol/Signs. This continuation of the massive study for the Department of Transportation deals with the standardization of informational symbols and signage in America—from expressways to air terminals.

Cost/Efficiency Benefits from a Design System. This research project being developed for NEA will demonstrate the efficiency of design systems which are properly conceived and managed. The results can be as beneficial to a corporation as to a federal agency.

You can avail yourself of the benefits of the AIGA with considerable savings in time and money through membership in the organization. Members enjoy reduced fees and access to all AIGA facilities and programs. Send in the coupon below to join or receive more information.

Make all checks payable to:
The American Institute of Graphic Arts
1059 Third Avenue
New York, N.Y. 10021

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Company

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City   State   Zip

☐ Professional Sponsors (includes non-profit organizations): $100
☐ Resident New York City and Suburban: $75
☐ Non-resident, U.S. and Foreign: $40
☐ Please send further membership information

BirthdayBook

Valentine Mixed **A**: 12 Hearts with Env. $5. **B**: 12 Squares with Env. $5. (No Substitutions) ½ Doz. any Number $3.

A 1 Back: "Another Reason"

2 Back: "YoYo"

3 Back: "One More Time"

4 Back: "You're Gonna Get It."

5 Back: "But You Can't Rent It"

6 Back: "Valentine"

7 Back: "Rejoice in Our Love"

8 Back: "Guess Who"

9 Back: "It's My Heart"

10 Back: "Sweet Heart"
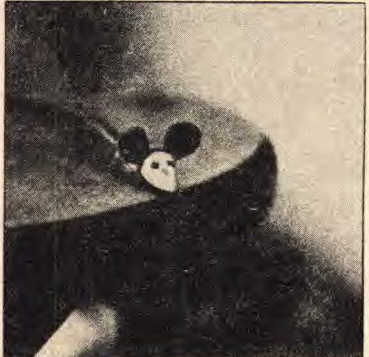
11 Back: "I Love You"

12 Back: "Year After Year After…"

B 13 No Greeting on the Inside.

14 On Inside: "You're My Flavor"

15 Inside: "I Give You My Mouse"

16 Back: Kiss Kiss! Bang Bang!

17 Turn: "With Anyone Else But Me"

18 Back: "Zing Went the Strings…"

19 Inside: "Pitapat"

20 Inside: "Who Loves You"

21 "Be Careful—It's My Heart"

22 "Hearts is Trump in…Love"
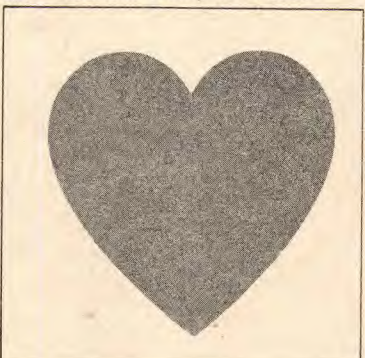
23 On the Back: "Me"
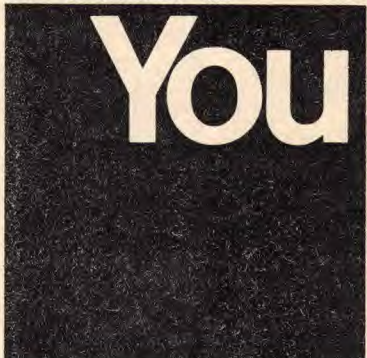
24 Inside: "For Old Time's Sake"
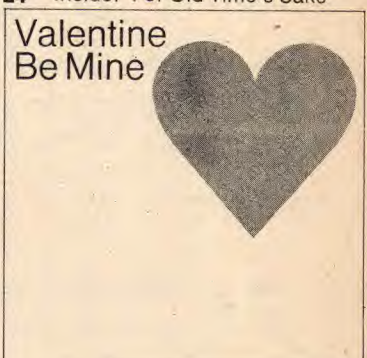
T. Shurtz: long sleeve (LS) $15., short sleeve (SS) $10.

BirthdayBook's DesignGraphics translated into T. Shurtz. Specify (SS or LS) on order form.

The following Sizes are available:
X Small: Women 4-8; Men 14-14½
Small: Women 10-12; Men 15-15½

Medium: Women 14-16; Men 16-16½
Large: Women 18 Up; Men 17 Up

25 Scarlet Shirt with Electric Turquoise — A Definite Statement. **SS&LS**

26 Kelly on Golden Yellow **SS**
Kelly on Gold **LS**
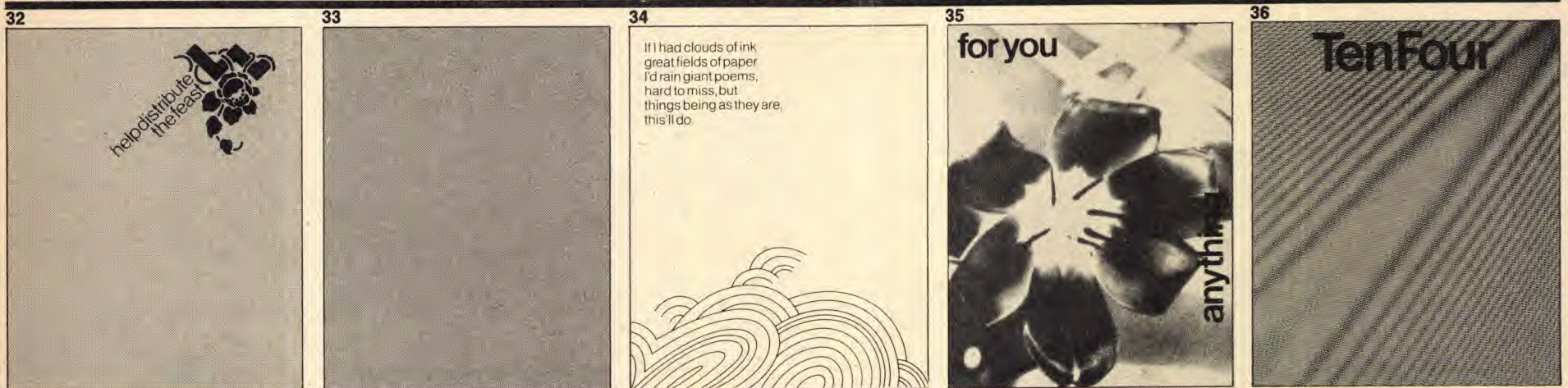
27 White Calligraphy on Royal Purple **SS**

28 Pink with Red **SS** Strawberry on Tan **LS**

29 WriteNow!: New Mix of 12 Turnovers (5x5) Mixed Colors . . . $5.   30 WordPlay: New Mix of 12 Turnovers (5x5) Mixed Colors . . . $5.   31 Tissues: 2 for $3. (13x19)
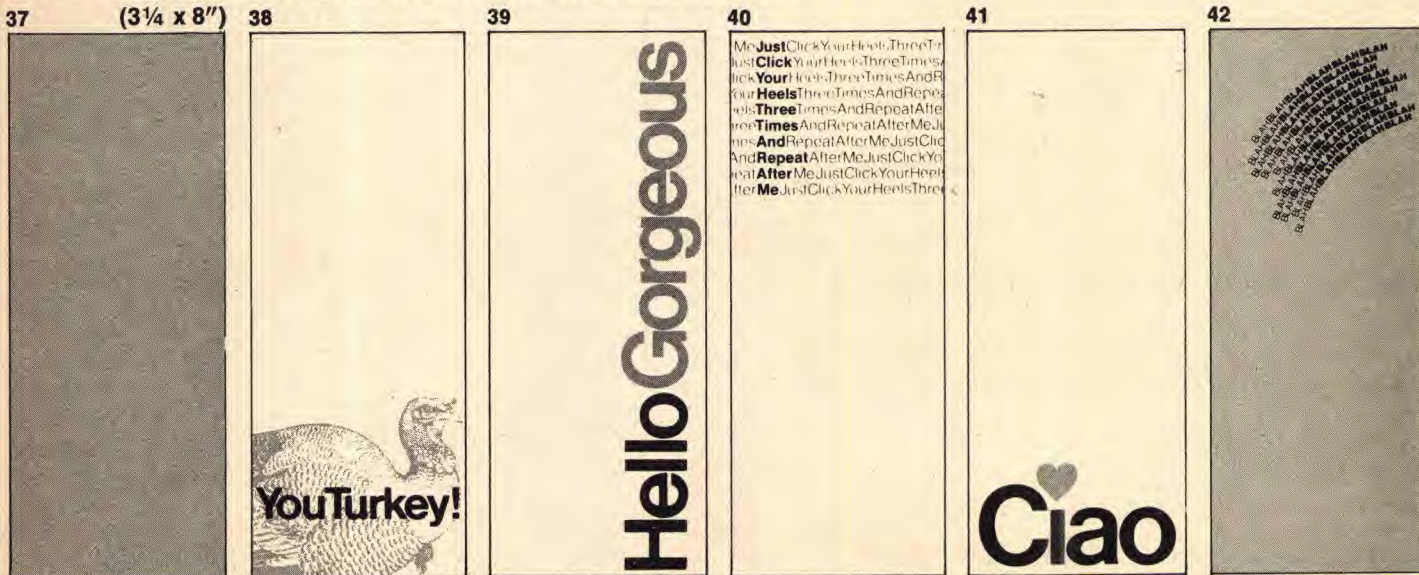
LotsaHearts
LotsaFlowers
LotsaLove
LotsaLaughs

nobody's perfect   DearYou

Happy Birthday   ps: I love you

Gotcha   Thanks!   shine   forSure

OhWow   At last   Ciao

unforgettable   InShort   Cheers!   Really

You're My 11ever

BirthdayBook WritingPapers: 30 Sheets 20# Grey Bond in Rust and Charcoal with Matched Envelopes . . . $6.00

32   33   34   35   36

help distribute the heat

If I had clouds of ink
great fields of paper
I'd rain giant poems,
hard to miss, but
things being as they are,
this I'll do.

for you   anything!   TenFour

BirthdayBook NotePads: 100 Vellum Sheets Gift Boxed . . . $5.00 Rust, Black & Greys on Creme #43 25 Boxed Envelopes . . . $2.50   MailOrderForm:

Note—25 Envelopes: Code **#43** on OrderForm! Fold note in half, insert and mail.

37   (3¼ x 8")   38   39   40   41   42

YouTurkey!   Hello Gorgeous   Ciao

Me Just Click Your Heels Three T
Just Click Your Heels Three Times And R
Your Heels Three Times And Repeat Afte
Three Times And Repeat After Me Ju
And Repeat After Me Just Clic
Repeat After Me Just Click Yo
After Me Just Click Your Heel
Me Just Click Your Heels Three

BirthdayBook NoteCards . . . $4.00   **Black & White Notes . . . $4.00**   **Greetings . . . $5.00**

44 Bits & pieces of the songs & movies of our time in bright mixed colors on smooth white. Each a different 3x4½ Foldover "ThoughtNote." The Thoughts: All Things are Possible—Pass the Word, Lions and Tigers and Bears. Oh My!, Another Season,—Another Reason, Rice Pudding in Egypt,—You never know if it's Raisins or Flies, Free Again—Back to being Me Again, Old Friends sit on the park bench like Bookends, I won't Dance—Don't ask me, Forget your Troubles—come on Get Happy, I want to Be Happy but I won't Be Happy 'til I make You Happy too!, and more!

The Moon belongs to Everyone

45 20 "Snazzy" little Foldover Notes in Black, White and Greys on White Vellum. 3x4½ Design Thoughts with the Special BirthdayBook Twist. Very Personal! Acetate Gift Boxed with Envelopes. The List: call it a dream, ps: I love you, absent minded me, get lost with me, jungle drums, and for my next trick, forget the donut, send money, this is your hypnotist, guess what, me again, to make a long story short, lights! action! camera!, knock on wood, just click your heels three times and repeat after me, heavy duty, hoo malimali (string em' along), forever blowing bubbles, and more!

forget the donut

46 A new 3½ x5½ BirthdayBook mix in mixed colors. 12 different everyday-greetings for birthdays, anniversaries, valentines and "keep in touch" notes All turnovers. The expressions: All Things are Possible; BeWell; Message for the Month; Another Season, Another Reason; This is Your Hypnotist—Go to the Phone and Call Me; You're on My List; Happy Birthdaze— Sparkle Plenty; Your Day—Have a Happy One; High Hopes; Hello Gorgeous; L'amour Toujours L'amour; Hiya! Great to Have around for those special occasions that always seem to come up!

January	Winning is Better
February	On Your Toes
March	Throw Caution to the Wind
April	Get Ready! Get Set!
May	Go! Go! Go!
June	Clasp Hands
July	Sing and Shout
August	Lots of Loving
September	Take Deep Breaths
October	Clear Your Head
November	Soul Search
December	Gold, Frankincense & Myrrh

U&lc BOOK SHOP

There are eight new titles in the U&lc Book Shop: #184-Creative Selling Through Trade Shows; #185-Legal Guide for the Visual Artist; #186-Animal Kingdom; #187-The Art of Advertising; #188-Brush-Strokes & Free Style Alphabets; #189-Florid Victorian Ornament; #190-Historic Alphabets & Initials; #191-Borders & Frames. To order any of these books, complete the order coupon or a copy of it and forward it with your payment to the U&lc Book Shop.

ART DIRECTORS ANNUAL
56th Edition. Featuring
First-time Winners
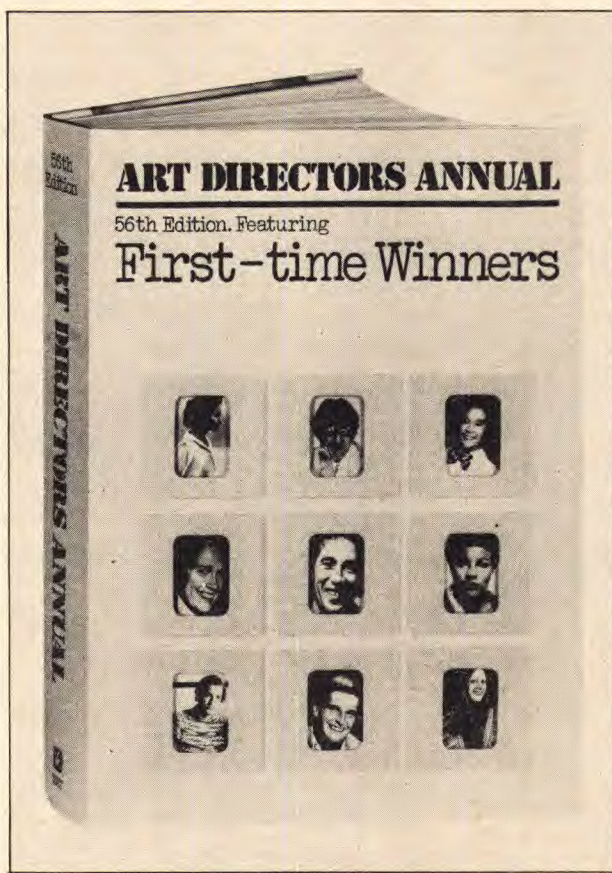
#177—The 56th Annual of Advertising, Editorial & Television Art & Design. The complete visual record of the most important competition in the communication arts industry. A record of the year's best and an exceptional idea source. Produced by the Art Directors Club of New York. Over 700 entries in virtually all media, including print, TV, and film... ads, editorial pages, film titles, logos, promos, booklets, brochures, sales kits, annual reports, house organs, packaging, albums, calendars, letterheads, posters, books and jackets, corporate identity programs, illustration and photography.
Over 500 pages, 8¼ x 11. 16 color pages. $25.00.

#153—Film & TV Graphics 2
Ed. Walter Herdeg

A thorough, international examination of all essential aspects of film and TV graphic design, including entertainment films, TV films, sponsored films, commercials, titles, captions, experiments, new techniques. A unique professional and artistic guide in the field of animation.
22 pages, 9¼ x 9¼. 1264 illustrations, 160 in color. $28.00.

#149—Art in Society
by Ken Baynes, preface by Milton Glaser

A definitive statement on how art and society inter-relate. Considers commercial, high and folk art in relation to work, worship, sex, and war. Spans many centuries and cultures. Assumes art resides in the kitchen as well as the museum. An exciting thesis, beautifully presented.
288 pages. 10 x 8¾. 530 illustrations, 44 in full color. $35.00.

**#103—Production for the Graphic Designer**
by James Craig
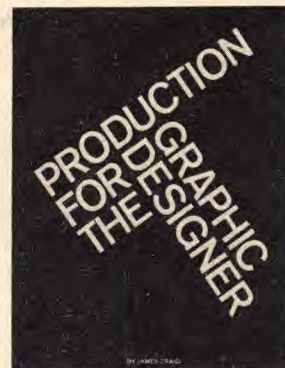
Written by a designer for the designer. Covers typesetting, printing, paper, inks, binding/folding/imposition, and preparation of mechanicals.-A basic fact book. Glossary of 1100 entries. Paper section lists papers by generic names, describes their characteristics and uses. Type specimens. An excellent table of comparative typesetting systems. Bibliography, index.
208 pages. 8½ x 11. Over 400 illustrations. $18.50.

#132—Designing With Type
by James Craig
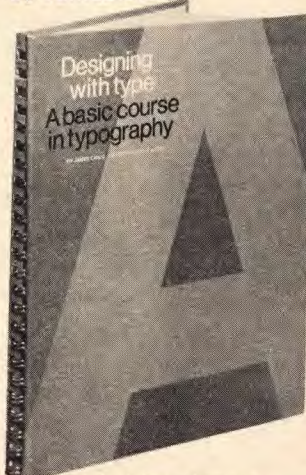
Aimed at the design educator and the student working with type, this is at once a book and a working tool. It is basic, clear and contemporary in viewpoint and content. As a book on this subject should be, it is heavily visual, with over 180 typographic illustrations. It is not simply a schoolbook but of much value to anyone in the graphic arts who wants a clear concise understanding of typefaces, typesetting systems and procedures. It has a good selection of display type showings and in-depth coverage of five basic text type families. Design projects at end of each chapter.
176 pgs. 9 x 12. Semi-concealed Wire-O Binding. Glossary. Index. Bibliography. $12.95.

#183—How to Establish a Cold Typesetting Department & Train Operating Personnel
by Marvin Jacobs
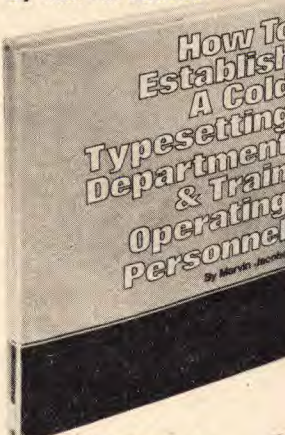
A management-oriented guide to planning and operating a cold typesetting department or shop. Reviews objectives, work area, equipment, tools, supplies, selection and training of personnel.
280 pages. 8½ x 11. $34.50.

#156, 157, 158—Encyclopedia of Source Illustrations
Ed. Johann Georg Heck

A faithful facsimile reissue, in two volumes, of The Iconographic Encyclopedia of Science, Literature and Art published in Philadelphia in 1851—presenting in astonishingly detailed steel engravings the scope of man's knowledge up to that time in every important field.
Complementing the 11,282 steel engravings reproduced are clear descriptions of each plate, and an almost incredibly complex index for locating any subject—or any individual picture under that subject—immediately. Pictures are of reproducible quality.
300 pages, 12 x 9¼. Each volume, $27.50. Boxed set, $55.00. Vol. 1, # 156; Vol. 2, # 157; boxed set, # 158.

#150—The Picture Reference File Volume 1—A Compendium

VOLUME I · A COMPENDIUM
THE PICTURE REFERENCE FILE
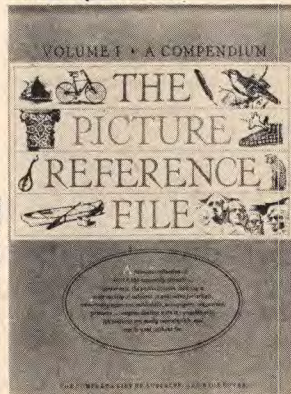
The first in a 25-volume series. A master swipe file of reproducible art all in the public domain. Vol. 1 has 2,200 pictures culled from 131 sources including private collections. Good size illustrations, clearly printed on 80 lb. glossy coated paper. All pictures captioned with identification and source. Extensively indexed.
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#154—Graphis Packaging 3
Ed. Walter Herdeg
Foreword by Karl Fink

GRAPHIS PACKAGING 3

Shows and comments on the best of the latest packaging graphics. Covers food, beverages, textiles/clothing/accessories, household, sports/tobacco products, stationery, cosmetics, pharmaceuticals, promotional and industrial packaging.
250 pages, 9½ x 12. 801 illustrations, 154 in color. $39.50.

#159—Pasteup
by Rod von Uchelen

Rod van Uchelen
PASTE-UP
Production Techniques and New Applications

A how-to especially helpful to offices and personnel with duplicating and reproduction centers. Explains functions and mechanics of paste-up at three levels of complexity: office duplication, professional and art production. Includes basic data on tools, materials, methods, and what the artist needs to know about typography and printing processes and such special areas as assembly, markup, retouching and lettering.
132 pages. 200 illustrations. 8 x 9¼. $12.95.

#178—Photographis '77
Ed. Walter Herdeg

PHOTO 77
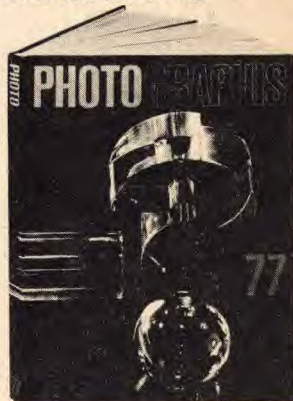
The international annual of advertising and editorial photography. Covers 30 countries and a wide range of print media and TV. It is a definitive, comprehensive, stimulating, and beautifully reproduced record and idea source. Many full-color reproductions. Indexes for photographs, art directors and designers, agencies, publishers, and advertisers.
228 pages. 9 x 12. 727 illustrations. $37.50.

#172—Illustrators 18
Ed. by Robert Hallock
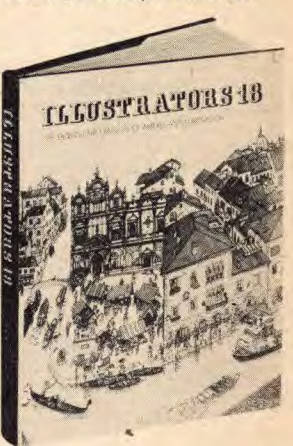
ILLUSTRATORS 18

The award winners and the almost 500 juried selections of the Society of Illustrators Annual National Exhibition. A visual guide to top talent, source of ideas, a graphic record of the best contemporary styles and techniques. Index includes artists' addresses.
320 pages, 8⅜ x 11¾, with 80 pages in color. $24.50.

**#168, #169—The Picture Reference File, Volume 2- Humor, Wit & Fantasy**
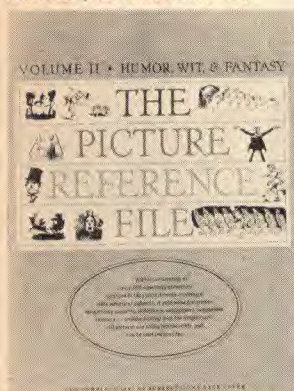
A fabulous collection of over 2000 especially attractive pictures in the public domain. Culled from 130 sources including private collections the world over. Collated into 70 categories for easy reference. Large size, clean pictures, almost all can be reproduced in line and will take enlargement or reduction. Pictures run gamut from whimsy to the grotesque.
432 pages, 9½ x 12½. Hard cover, #168 $29.50. Looseleaf, #169 11 x 12⅛, $45.00.

#184—Creative Selling Through Trade Shows by Al Hanlon
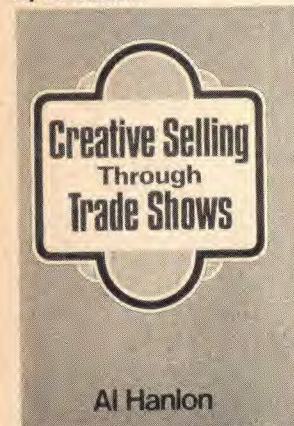
A handbook telling how to use trade shows to boost sales volume. Covers suiting the exhibit to the show, setting sales objectives, increasing staff incentive, manning exhibits, booking orders, and creating exhibits that will attract attention and display the product effectively.
224 pages. 5⅛x8¼. $10.00.

#180—Fundamentals of Modern Composition by John W. Seybold
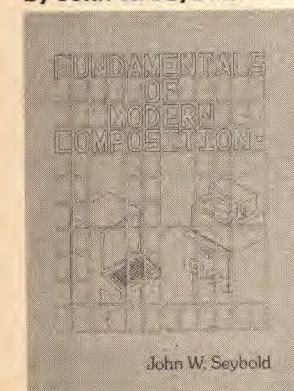
Author John Seybold is one of the most knowledgeable and articulate experts in this field. He has written this book for a broad audience of writers, editors, publishers, typesetters and printers, those planning to install or expand their installation of typesetters in offices or typographic services, and for all purchasers of composition.
Subject matter runs the gamut of word processing/typesetting technologies and systems and covers alternative methods of input, storing and retrieving, makeup, and output with economic, technological, typographic and personnel considerations. A masterful coverage in one volume. Illustrated and indexed.
402 pages. 8¾ x 10⅜. Softcover. $20.00. This book available to United States residents only.

#171—Graphis Posters '77 Ed. by Walter Herdeg
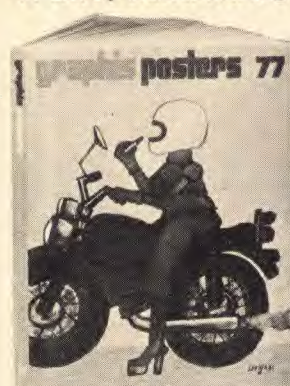
The world's best advertising, cultural, social, and decorative posters. A beautifully designed and printed record and idea source.
220 pages, 9½ x 12. 759 illustrations (108 in color). $35.00.

#179—Layout by Allen Hurlburt
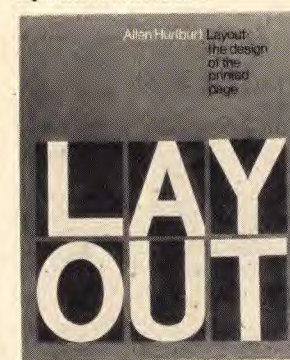
Presents the keys to successful graphic design by tracing the history of 20th-century design, analyzing basic principles, explaining content of the printed page and the psychology of graphic communications. Deals with major art movements, ways of dividing space on the page, from the Golden Mean of Greece to Le Corbusier's modular system and the Swiss grid system. Relates content to photography, illustration, typography, and all to the communication's purpose and to achieving the desired response. A thoughtful and articulate analysis of applied graphics by a master practitioner.
160 pages. 8½ x 10½. 200 illustrations. Bibliography. Index. $17.95.

#182—Handbook of Operating Costs and Specifications for Photo-typesetting Equipment by Thomas Hughes
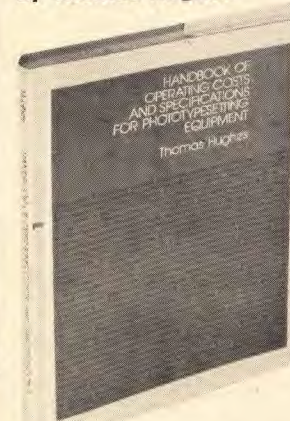
Which keyboard, terminal, typesetter, OCR, or computer system is best for you? To help you find the answers, this book analyzes the operating costs, including labor, tax, depreciation, factory and other costs involved in purchase and use. Budgets hourly costs for one- and two-shift operations. Outlines systems studied and includes equipment-buying decision checklist. Illustrates and gives specifications data for all machines analyzed—231 models from 71 manufacturers. Does not include most of the recent low-cost direct-entry typesetters or other machines introduced in 1976-77.
280 pages. 8 x 11. $34.50.

#185—Legal Guide for the Visual Artist by Tad Crawford
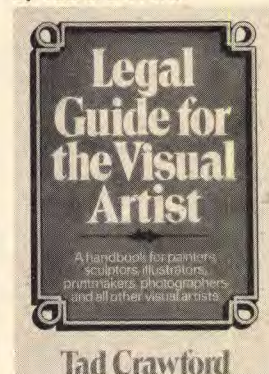
A handbook for designers, illustrators, photographers and other artists. Covers tax problems including deducting cost of working space and materials as well as the new copyright law, rights of the artist, sales problems, reproduction rights, leases, estate planning, donations to museums, contracts, artists groups, etc.
288 pages. 6⅛x9¼. $9.95.

#186—The Picture Reference File—The Animal Kingdom
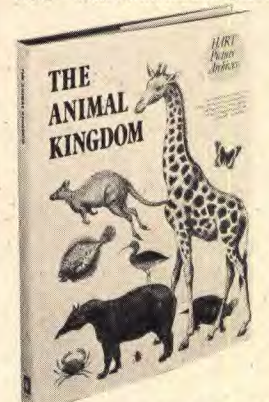
A fabulous collection of more than 2,000 pictures covering quadrupeds, crustaceans, birds, fish, worms, butterflies and reptiles. Pictures in alphabetic order. Good size pictures, clearly printed to take enlargement or reduction. Indexed. Hardbound.
400 pages. 9½x12½. $44.50.

#191—The Picture Reference File—Borders & Frames

Over 500 truly unique and widely varied styles. They are clearly printed, reproducible and copyright-free. Indexed. Hardbound.
400 pages. 9½x12½. $29.50.

#181—A Book of Art Nouveau Alphabets and Ornamental Designs

Art Nouveau in the

#187—The Art of Advertising —George Lois On Mass Communication

This may well be the most beautiful book on advertising you ever saw but don't let that fool you. It's not for your coffee table. It's not only too heavy, but too informative, too stimulating, too downright provocative and useful to be out of your reach. Here are exquisitely reproduced large-size color reproductions of some of the most successful advertisements and campaigns of recent times. Accompanying each are succinct Lois-comments stating the message problem and the reason-why of the solution. All together, a fabulous mixture of graphic beauty, revealed strategies, and a post-graduate course on how to use mass communications effectively. This book focuses on advertising but its revelation of strategies and tactics extend its value to all people involved in mass communications—in promotion, print and writing, print or television, point-of-sale, or whatever. This is a showcase of graphics and words harnessed and focused to achieve specific results. As Dick Schaap said, "To read George Lois on advertising is to read Caesar on warfare, Da Vinci on art, Ted Williams on hitting, and Clifford Irving on fraud."
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