Happy Smutites 1978
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.

In This Issue: Vision '77 (Part II)
Ed Gottschall concludes his account of what took place at the ITC symposium in Rochester last spring—a 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—assisted by an overall view of the ITC symposium in Rochester last spring—an overall view of (as is said) "the state of the art." Page 2.

On The Couch
Lou Myers takes off into the empyrean again, this time from the psychological vantage point of the divan. Page 18.

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
Letters from far and wide continue to reach our offices accompanied, most often, by ingenious illustration. Herein are some random samplings from the newest batch. Page 25.

Happy New Year.
Jan Sawka, one of Poland's outstanding designers/illustrators, combines both of these abilities with remarkable virtuosity in our 1978 monthly calendar. Page 26.

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.
No, U&lc isn't going porno. The title refers to examples of outstanding calligraphy from a booklet recently put out as a private edition by the Society of Scribes. Page 30.

Face To Face.
From time to time in earlier issues, we've featured photographs of such natural phenomena as "Nature's Alphabet:" The present emphasis is on naturally created "faces." Page 32.

Arrivederci Aroma.
Presenting word experts among our readers with an Italian Food Crossword Puzzle by Al McGinley and Martin Alter. Page 36.

The ABC's Of Coloring.
Get out your magic markers, as prolific French designer Jean Larcher comes up with still another variation in his never-ending approach to alphabets. Page 38.

Letters To Giorgio.
Most people save letters. Happily for us, however, Giorgio Soavi saved all the envelopes he received from his Parisian illustrator friend, Folon. Page 40.

What's New From ITC.
ITC Benguiat in Roman and Italic in three weights is the new typeface series, which licensed ITC subscribers are authorized to reproduce, manufacture, and offer for sale. Page 44.

Something For Everybody
Our regular feature of frothy minutiae and fribble inconsequentials makes way for this issue for John Alcorn's charming version of the 12 days of Christmas. Page 48.
to the processing center for transcription of the changes. This cycle of editing and changing con-
tinues until you get a final approved document. This is a text handling system. It has led to other con-
ceptualizations and streamlining of text handling—
for our consideration here today it is the text han-
dling system that's really important. That's the el-
ement with implications for connecting up with
theftposing, 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
even just the start of what if typists have answering
the introduction of newer equipment though. We are
seeing video screens added to the automatic typewrit-
er 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
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 typ-
ing element. We're seeing special capabilities for
building and maintaining files programmed into the
machines. Word processing is moving towards explo-
sive 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 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
own video 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 thesetting tradition, which is the rea-
son for this meeting today. Our origins were Fifty years
ago when we first got moveable type, it can go back
even further than that. In 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 de-
velopment to approach it—heavy machinery, and in-
dustry type operation with development of highly
specialized skills. This work was done in manufactur-
ing plants because of the capital investment. The
lighter computer-type machinery of today is chal-
ing plants because of the capital investment. The
嵋 of aesthetics, and the use of typography for more effi-
cient communication and greater economy in the communications process. At the same time, the
ypograph technology, even though it grew out of an indus-
trial plant tradition, has developed a great deal of
sophistication in the office systems of its own—the
kins of things that you hear about in newspapers
where the editorial staffs work on video terminals
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
current decision is the one between making
and using these kinds of equipment in their offices—
have developed a very sophisticated level of copy pro-
tessing technology. This technology is fundamentally
parallel to the concepts of word processing. It's going
to be very interesting to see how these very sophisti-
cated 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 process-
ing equipment, which is coming from a relatively
simple base into more sophisticated types of products. I'd like to look at this in a little more systematically in
several areas.

Information management

First the larger picture. Word processing and typeset-
ing 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 is information management is that the
cost of managing information in a large organiza-
tion—almost any organization for that matter, but
especially in large organizations like governments,
big corporations, foundations and so forth—is ad-
tonomical 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 organiza-
tion into information, out going out the other side to some-
one you want to influence. And in between is a tremen-
rous amount of information processing. For example,
think about the kinds of departments in
company that are concerned with the han-
dling of information, not with manufacturing or
selling the product. There is the market research de-
partment, it brings information into the company,
and the accounting department, it is an information
department. On the output side there are the sales
promotion, advertising and public relations depart-
ments. 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 galaxy of support de-
partments—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 massengers who run around bringing things
back and forth. There are the telephone switchboard,
the computer data processing department, the rec-
ords section and retrieval department. And there is the
information 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 informa-
tion from the outside, you come up with some rather
astronomical totals. And this whole information
enterprise is almost totally unmanaged in organiza-
tions today.

A new management discipline

We mentioned the phrase “information manage-
ment” below. What is beginning to emerge is a new
management discipline, and it's going to be called
information management. You will have informa-
tion managers in corporations. They will have re-
honability for word processing and in-plant print
shops, but they will have a lot of other responsibilities
as well. Their responsibility is that they never discolay
of disorted information techniques and opera-
tions and put them together into an operating, func-
tioning information-managing system.

Flow

Let's explore some of the characteristics of informa-
tion 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 every-
thing.
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 characters. Relatively unexplored in terms of systems development are facilities for generation of impressionistic 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 — may 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 mediums involved for each kind of communication/media tie together in different kinds of communication/media links. 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 media, 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 of 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 improve 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.

5. Decisions are made at the front end of the process.

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 disks 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.

There are a variety of memory forms, such as tapes, and magnetic cards. You can have some of these wired into the system. Others can be on disk, on-line, 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 of 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 improve 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 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 phototypesetting output in the microforms field. It involves special CRT machines which set type in minute 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 goes through 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 Lockheed 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 workflow? It allows us to change a great deal—and this is where we make the payoff in this system.

Editorial/composition

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.

8. Corrections can be made and makeup done before setting the type.

Here, in the top bar, is the conventional composition department workflow: one that is very traditional. You keyboard and set the type, proofread it, correct it, make it up into pages, proofread those 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, proofread it, and correct it right there. This is more efficient than correcting the type after you have it set.

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 proofsheets 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 workflow.

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 safety 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 a separate function, not part of the typesetting. The correction function becomes part of the copyediting as well, because the editor has already made the corrections in the stored copy. Tag 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 makeup pages and eliminate manual markup 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 do the writers write material or 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 lower bar of diagram 10. 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 extensively 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 beginning 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.

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 cassette backups. 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 the data back and edit. Here you have original input capability on the keyboard, and some processing capability. You also have manipulation capability 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 usual word processing systems with this approach.

The stand alone

Another popular kind of machine is the stand-alone phototypesetters 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 you can feed the data back through the typewriter. Many such machines have now been expanded to take floppy disc memory capability as well, and they can be learned with 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 Squier.

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 judgment 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, oh yes, a phototypesetting equipment. But, standing at a bench in the corner someone was reading a tape. Toting it down on what seemed to be a broadsheet, razer cutting-in the corrections and sticking them together with Elmer's glue. "Hey," I said to my guide, "what's going on here?" He said, "Look, we can 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 typettesetters 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 typettesetters hooked up to electronic systems with video display terminals. Some keyboards, of course, are connected directly to 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 typesetter-keyboards is their familiar key layout familiar to anyone who has taken an elementary course in typing. There isn't that much to learn, at least about the basic keys. You have OCR and OBR (Optical Character Recognition and Optical Bar Code Identification) typettesetters as well as strike-on composition, such as the IBM 904. 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 typettesetters. They show 32 or 64 of the last characters graphed. This is a form of cold type or strike-on composition.

Input media
The one that is probably the most popular and most likely to remain viable 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 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 store and recall material on a cassette. 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 reel tape 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 usable...this can be a most effective way to communicate with your typesetter.

Magnetic discs
There are hard discs and flexible discs, or floppy's, as they are known today. There are even mini floppies and half floppies, 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 discs cost less than $10.00. Hard disc packs enable you to store up to five million characters, sometimes more, while floppy's range from 250 to 500,000 characters per disc. Like cassette formats, hard discs may differ in different devices.

Computer (Core) memory
This is the form of electronic storage into which you can directly store your data. Besides core memory, there are RAMs, ROMs, and RABMs (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 typettesetting 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 devices. The OCR device has the ability to read type... to interpret and change what you have typed into a computer readable form. The OCR device can be used interactively, actually are quasi-interactive. The computer can be fed a variety of words, and information, which is retained (usually temporarily) until you enter new information. Besides core memory, there are RAMs, ROMs, and RABMs (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.
Your typewriter adjusted. Accurate, clean copy is a 7.5-10 minute. A first generation phototypesetter strings of codes (format the text) that will command generation machines were very expensive. They cause we see them in grocery stores today. The values needed a justifying keyboard because computers needed a justifying keyboard because computers were put in the typesetter later on. You write the codes into the VDT for both input and editing. Some VDTs even have some relatively high speed devices have been developed.

The Visual Display Terminal The use of the VDT for input and editing has increased significantly since the first generation. It has become a necessity. Back in 1970, an inscrutable VDT unit cost $71,800 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 above. 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.

The fourth generation phototypesetter The Intertype Fotoprinter was little more than a linecounter with a photographic unit in place of the laying mechanism. Its mats look like line-counting 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 photo-typesetting, electronic, mechanical, in which characters are photo-scanned instead of being photographed, 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 190 eight-point, 11-pica lines per minute.

The second generation With the exception of the Alpscope, the early second generation machines were very expensive. They needed a justifying keyboard because computers weren’t around, and they were relatively slow. The year 1960 was a 60,000, 10,000, 10,000 models were about $500.00. 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 $9,000. With some slight (computer-driven) versions for under $5,000. In 1970-71 came the Dymo /Princeton. Photon (now Dymo) virtually automated (reduced to computer code) form. You can store these units to become more cost effective. The cost of the CRT is coming down. Most CRT typesetting devices a few years ago were in the $100-$250,000 range. About two years ago we started seeing machines in the $75,000 range. Compugraphic took another leadership role with this kind of device and came up with a machine that range from $20,000 to $40,000. 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 digital 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 own the photographic fonts of the CRT, you have astronomical speeds. From 2000 to 3000 newspaper lines a minute.

If 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 and how wide the scan lines should be to form a character. Many CRT phototypesetters will have more than one mode. One higher speed will give you fewer scan 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 text, 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 new phototypesetters or CRTs is not intense enough for most plate materials.

Page makeup We used to talk about page makeup as the manual pasting 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. As the text blocks input into pages, we have performed electronically the same function as in doing traditional page makeup. 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 all 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 for $50,000. 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 all 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 weaknesses of many of the present display 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 proofreading and probably for many kinds of work, the most cost effective. The copy holder, reader turns 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 copypool holder, 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 proof. But think about it. Why does that have to fail? All the work must be filtered and understood. Punctuation isn’t obvious, and it takes as long (or longer) to retype the text as it does to read it.

Another machine approach to proofreading, used for numeric or highly technical work, is double keyboarding, this term input with computer programs that attempt to match the lines of the two input, and if, and if 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. A combination of computer printout and an interactive VDT (or page makeup system) is the most potential for combining the editing and proofing requirements with the typographic output. You can proofread right on the terminal. However, this can be at 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 VDT issues, you’ll be able to sort out all the confusing aspects will be sorted out. However, it will still not be enough. You will have to visit, touch, examine, review and interview just to determine what, if any, equipment or method is the best choice. It takes a great deal of homework. Good luck!
The Word: OCRs & VDTs

Ralph J. Squire
Special Projects Director
Frank E. Gannett Newspaper Foundation, Inc.

Wouldn't it be nice to talk to a device and output our copy directly from it for all the work we go through? It really hasn't come to that yet, but we do have some effective pieces of equipment now and I am 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 typewriter).

OCR and VDTs, then, were designed for reporters as well as for skilled typsetting people and thus became essential. We use the one-time carbon ribbon and, of course, the special typing element that the scanner requires to reproduce itself. The coding can be designed for the scanner, not for the typewriter.

OCR was first introduced in 1970. It takes typewritten copy and translates it into 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 that the scanner can read. When you type for OCR you require a little better quality paper than scrap newspaper, which newspapers have used in the editorial environment. A 28 lb bond would be the minimum. 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. We have also seen good results with a correction film ribbon. This permits the keyboard to eliminate errors and go to the scanner with corrected copy. Scanners are not as fuzzy as everyone seems to think.

We use a standard forty-four key IBM typewriter with duplicating 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 typewriter to distinguish commands from copy.

Mnemonic coding

If your manuscript requires pi characters and your typewriter has the ability to reproduce them, you can put the 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 typewriter can reproduce for you is a key to 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 used, and not those peculiar to the word processing environment. Our special characters can be put in to specify typsetting functions, like bold face, italic, etc. Headlines, /24, 'IBM' would give you a 2.4 pt Helvetica Medium. 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 extraordinary 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 this. If you strike out a line and look for the correction, so when you type in the correction you type it above the line and look for the correction, so when you type in the correction you type it above the line. And there are keys which allow you to insert corrections between the lines you type in as you appear in the copy line above. If there is more than one correction in a line, you type 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 to cope with is 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, playwright, 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 these aheading and editing, you say, "That would make a better lead from 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 re-copying 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 area. The trend in VDTs

(Editors 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 medium copy (classified ads, and capturing wire service copy.)

VDTs

Video Displays. Terminals allow us to manipulate our copy on the face of a cathode ray tube. 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. A cursor is a computer oriented term. Some cursons 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. Then you 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 Barron's, 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. You can also move the cursor across the page. 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 the start of the copy. Other keys can remove a character, word, or 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 reversion in respect to the word, sentence, paragraph and blocks 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 blink, 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.

After the remove character key there is a key called the insert key. This enables you to go out of what we call the normal overwrite mode of operation. When you strike it and then strike a character the character overwrites 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, you never delete until you put in what you want. Don't write over what's there. Just put in an 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 Interpace Corporation. The 1100, by Harris Interpace, Inc. was the red felt tip pen method, described later, and designated by the author, not the production people. You must look at every character in the typewriter in terms of if 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 blackout the entire area. Just a single black line will do the job effectively. After that done you put the copy back into the typewriter and type in your corrections. In correcting the word, "family," for example, one would type... Delta, space, FAM, Delta. This causes the scanner to drop down 21/2 spaces below the line and look for the changes. There are other situations, but the point is that anyone who can type can produce copy for a scanner.

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didn't edit. You had to take it as it was and chop off certain paragraphs and edit it journalistically. The Harris 1000 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 25 lbs. and fit under an airline seat. Cassette drives that can transmit some lines to a central computer or put out 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 only that way can you synchronize. 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. Keyboards layout another. Too often, in the 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 oriented people.

How many journalists and authors are really very good typists? In the newspaper industry, I would say 20% of the people are really very good typists. There are people who do not even know how to key in the home row of the keyboard. They must alternately watch the keyboard, then the screen. We find there are some people who write by scribbling. 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, what 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 flirt at a very exciting time in which to be alive and, we hope, well.

WP/typing 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. 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.)

Formating 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 hallgame which has to do with the large computer configurations, and the typesetting industry has to address that problem. We need to go further than to find some method of accommodating which it embraces, strictly speaking, typographic-type word processing functions, typesetting functions and file

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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 inter-relationship 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 super-system, 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 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 it as it is 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 circumspect proof flow. They are written by a scholar, who is someone else, and must be proofread by that scholar because he or she may be the only one who understands the book.

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 in 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 starting savings. This strike-on composition produced typelike characters, more legible than typesetting, 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 Compugraphic II, a direct-entry phototypesetter. We composed 19 books on the Compugraphic, again at a great savings, the over-all result being significant. 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 for 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 Compugraphics 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.
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 that Times Roman is satisfactory and that Bembo—the Janson ‘A’ (8). The great contrast between 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 typed typeface is proofread before the galley 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 phototypesetter, bypassing the expensive editing terminal.

**Comparing proof 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 typeset 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 rearranging of the galleys through both the editing terminals and the VIP processor.

We then modified our methods dramatically. The typeset simply reprinted the manuscript, the only codes used were paragraph and italic codes. Our idea was setting step. This made sense functionally.

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In 1939, one young German artist and two young New Yorkers, comparing philosophies, found certain kinships. At the last of a series of meetings, bewildered by what, even then, commercial graphics had wrought, the visitor bewailed, "Why is it so bad?"

By the 1970's, that young man, born in the baroque of Austria, his leitmotiv a symbol for the sound "eh": "Exquisitely tailored in green tweed, the Bauhaus, Gropius called on the crafts to do away with writing one sound with three letters "sch" in the German language."

"This idea derived in part from previous studies of geography 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 have designed multi-digit money for the Thuringian government."

"I might concentrate more on free speculative work—painting, sculpture, designing the geometrically constructed sans-serif typeface, "Bayer-type"; designed the multi-digit money for the Thuringian government."

"I'm still looking..."

"I don't know what he means by success commercially."

"I don't want to redesign the alphabet, dispense with capitals."

"This is the case even to a larger extent in the metric system."

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

"Do you have plans? Would you like to leave it to me to do as I want?"

"Yes, it's always amaze..."

"I've done all the simple work here..."

"I've done all the simple work here..."
Bill Golden was a complex man. Bill Golden, one of the handsome men, was a contributing entity who dealt from a base of simplicity. Bill Golden was a complexity whose simplicity rested on an ability to— in Lou Dorfman'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 had been a different man, h -v Miller... avoided having to say something un- 

"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 set it. 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 'Hey, 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, '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'd had 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 ADC. 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 said in no way avoiding having to say something un- unpleasant. When the industry was attacked, he attacked. Bill felt strongly that criticism of radio or television was a 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 mass media."

"Which brings us to the story of the TV show. How did he stuck 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 simple 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 the minute you begin to ask yourself 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 promotion?

"He was an avid reader. When we moved to the country, we 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 Dorfman:

"To the "real Bill Golden," quality was the concept. His thinking was simple and brilliant: execution was beautifully simple. Once, I asked, "Bill, but how do you do it?" Answer: "If you disagree, make it your 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.

Inably, 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 success of those on staff who "hung around" Lou Dorfman, George Lois, Kurt Wehls, Mort Rubinstein, Tom Courtois, Joe Schinddleman, Irma 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.


He died later that year. suddenly.
ANYONE possessing information about the case of Rees Mathry, an innocent man convicted of murder, contact Mathry at 611 River Street...

DISTRESSED GENTLES, SXK'S AND ASSOCIATION appeals for widow of professional man aged 77 living alone, fractured spine...
ON THE COUCH:

"SMITH... GO IN FOR KAPLAN."

by Lou Myers
"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."

"I am risk taker."
Some Good Old-Fashioned Greetings:

- New Year's Day—January 1st
- Lincoln's Birthday—February 12th
- St. Valentine's Day—February 14th
- St. Patrick's Day—March 17th
- Washington's Birthday—February 20th
- Mother's Day—May 14th
- Easter Sunday—March 26th
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
For Vice President
Hon. James S. Sherman

Columbus Day—October 9th
Veteran’s Day—November 11th
Halloween—October 31st

Election Day—November 7th

Thanksgiving Day—November 23rd
Christmas Day—December 25th

The Nations Choice

For President
Hon. William Howard Taft
Of Ohio

For Vice President
Hon. James S. Sherman
Of New York

From Uncle and
Carol Wald

COLUMBUS DAY
Oct. 21st
1492 1892

Thanksgiving Day—November 23rd
Cowlitz Cowlitzing.

There is a maid for every man
And every man be free
At this last hour of Pilgrim
By him to find the Sea.

There is a maid for every man
And every man be free
At this last hour of Pilgrim
By him to find the Sea.

The Nations Choice

For President
Hon. William Howard Taft
Of Ohio

For Vice President
Hon. James S. Sherman
Of New York

Thanksgiving Day—November 23rd
Christmas Day—December 25th

Lest We Forget
Introducing the Questpersand (pronounced "And?")

GEE-011-METIEILS

Mosamifoes aside, our week at the lake was super!

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

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?

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...

Iontype, Inc.
22 S. New Jersey
Indpls. Ind.
46204

We eat at seven - so hurry!

---

Dear U&lc:

Vouchsafe to etrifice my name to thy mailing list.

Steven Schwarkes

---

We have been avid readers of "U&lc" for some time and feel that this publication is definite 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 prohibitive. 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
Graphic Designer
Mt. Hood Community College
Gresham, Oregon
97030
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 blond 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. While, after much deliberation, 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.”

LINDA DANNHAUSER

Learning to manipulate your nib will greatly enhance your skill with the letters. Take the time to play and experiment. Try twisting the nib from step one angle to flat back again. Move the nib on the paper from side to side. Let the freedom you discover more into your more formal work.

JACQUELINE SWAIN

The yuf so short, the craft so long to learn.

GUILLERMO RODRIGUEZ BENITEZ

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GUILLERMO RODRIGUEZ BENITEZ
The art and craft of lettering

The letterer puts the puddles of ink on very wet paper very dry in the best way he can

He leaves the world. Call it caligraphy or lettering, loose upright, written or built-up, creative or slashing, as it pleases. He is only concerned with making beautiful forms and arranging them well.

Arnold Bank

A tribute to the great humanist scribes of the fifteenth century

Gordón H. Davies

A brief visit to sixteenth-century Italian writing masters

Sanne David

Calligraphy

LaBogie as the task... with the heavens opened.

G. R. L. Hyland

This article was set in ITC Eras

H. M. Johnson
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 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 cigarette" 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."
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.
ZALUT!
uppa! Zabaglione! Pizza! Pastas! Thousands of delicious
calories from Italy, 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. Sniff-
ing, savoring, twirling the fork. (But only if you’re eating spa-

Zuppa di spinaci:
Zuppa di pomodori:
Zuppa di piselli:
Zuppa di pesce:
Zuppa di patate:
Zuppa di funghi:
Zuppa crema di polio:
Zuppa de cozze:
Zucchini:
Zuppa inglese:

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.”

By Al McGinley and Martin Alter
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.
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 Scervi, 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 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-
Illustration 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
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 unflagging 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.

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.

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ITC Benguiat Bold

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ITC Benguiat Medium Italic

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ITC Benguiat Bold Italic

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

On the 2nd day of Christmas, my true love gave to me, two turtle doves.

On the 3rd day of Christmas, my true love gave to me, three French hens.

On the 4th day of Christmas, my true love gave to me, four calling birds.

On the 5th day of Christmas, my true love gave to me, five golden rings.

On the 6th day of Christmas, my true love gave to me, six geese a-laying.

On the 7th day of Christmas, my true love gave to me, seven swans a-swimming.

On the 8th day of Christmas, my true love gave to me, eight maids a-milking.

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

On the 10th day of Christmas, my true love gave to me, ten lords a-leaping.

On the 11th day of Christmas, my true love gave to me, eleven pipers piping.

On the 12th day of Christmas, my true love gave to me, twelve drummers drumming.
On the 1st day of Christmas, my true love gave to me, a **partridge** in a pear tree.

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

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

On the 4th 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 5th 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.

On the 6th day 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.

On the 7th day of Christmas, my true love gave 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.

On the 8th day of Christmas, my true love gave to me, **eight maids 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.

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

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

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

On the 12th day of Christmas, my true love gave to me, **twelve drummers drumming**, **eleven pipers piping**, **ten lords a-leaping**, **nine ladies dancing**, **eight maids 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.
CONTINUED FROM PAGE 11

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 retyping and proofing what we have retyped.

**Word processor input**

There is some hope with a system which uses word processor input. 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. Several 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 conversion 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 provide 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 perceive what he reads. The loss of ligatures with the rectangular stage is rarely overseen by the type designer. Hermann Zapf is happy to be free, in this electronic age, from mechanical cutting of punches. This crucial electronic 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 baseline 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!

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**U.S. News & World Report, Inc.**

Harold Fine Cherualier
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 digitizing of letterforms is equivalent to the translation of a designer's drawings to metal patterns prior to the mechanical cutting of punches. This crucial electronic 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 baseline 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!

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**The Videocomp's tube face.**

The typesetters

The Videocomp 500, made by Information Interna-
tional, Inc., is ideal for typesetting half tones because its recording medium (87 paper or positive film) is stationary while paginated files are being set. Half-tone dots cannot be laid down with any accuracy of the recording medium is moving. When in line-byline (galleys) mode, the electronic beam writes over a 500-line 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 of 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**

With tables for all fonts are stored in the Videocomp system. English language versions of these may be called up on a VDT screen if we need to check set widths or description of any character. We can also typeset our fonts so that all characters appear in a table showing side bearings. Digital stroking information 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, 8-16, in range three, 16-32, and in range four, 32-64. By overlapping these size ranges and sizes 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:

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.

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 derives 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 name 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 files, files may be merged, copied, deleted, or stored via the save-get keys. 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 a scriptshift H&J).

Electronic editing
The Atex system gives us a window into disc storage via a "infinitescroll," 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 a scriptshift 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 snapshot H&J command to which the system responds by displaying in pixels 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 initials, 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 scanned in the text of 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, undefined, 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 redifined 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 to 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 worst period for brokers in the United States. The market was going through the roof, and everyone was making money and things looked great. 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 been using in late 1967-68. By January 1976 we had three full-time operators and a wide configuration of MT/ST typewriters, copiers and so forth. Our annual rental for MT/ST equipment was running $25,000; our three full-time operators another $36,000.

We formed a three-person team to study how to decrease the turnaround time and, secondly, cut costs. Our annual rental for MT/ST equipment was running $25,000; our three full-time operators another $36,000.

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We were not to consider a typing pool. Whatever system we came up with we had to maintain nine secretaries. Whatever the search system we came up with we had to maintain nine secretaries. Practical, 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. Secondary, 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 $19,200. 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 percent.

**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, they went along the three MT/ST operators that we already had. I think this was a bad mistake.

Secondary, 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 reports 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 in a day." This is the way things are setup.

**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 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 typewriter copy for the balance of the report. We do not do our own in-house printing. Our printing firm runs the original text with the edited changes and makes the changes right on the screen. We have a full-time 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.

**Typesetting**

As John Seybold mentioned earlier, if anyone is interested in putting in a system, maybe they ought to rent a system instead of buying 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.

**OCR typing and scanning**

We replaced all the Executive typewriters with the IBM Selectric II's (Fig. 3). We use a golf ball, OCE 173. We type everything on plain white paper, double spaced, and we type only one. 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 OCE screen, but the way the system was set up for us we scan the material into our memory sub-system. This happens to be a Data General Nova 1200. We can add it 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.

**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.

**Formatting**

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 heard described in this conference at 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, set 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 Rothschild's orientation, two things: one, the increasing integration of the sequential steps of print manufacturing; and two, the shift of operations and decision making throughout the production line towards the front end.

I was reminded of some things you can do with cold type that you can't do with hot type. I also saw the possibility of creating a new line in this business—now they're suddenly realizing that power bills for the computed laboratory are almost as much as they pay to run their entire press operation.

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

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 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 Doobler we learned about the relationship of word processing and typography. Ralph Square gave us an equipment review and showed us a word-rewiring array of hardware. From Don Goldman we learned, among other things, the state of lineformers. A tour through the KTI printing plant showed me the role of an educational institution can play in a technological society. It can do things industry cannot do...I don't want to underestimate the motivation of that half of the human race, composed entirely of women, out to prove that they're 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 I'm worried about this. Today's computer equipment is so powerful. We have an equipment review and showed us a bewildering array of equipment. 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 computed laboratory are almost as much as they pay to run their entire press operation.

From Paul Doebler we learned about the relationship of typographic services to magazine and newspaper plants with typographic requirements.

I learned, among other things, the state of letterforms. Klein also acknowledged print's advantages.

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

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

Three case histories by Joyce Kachergis, Harold Peltier and Peter Lang 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 an amazing skill and caring than I have seen in some of the faster working rooms. Let's not underestimate the motivation of that half of the human race, composed entirely of women, out to prove that they're as good as the other half.

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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 find 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 to glory.

As Noel Martin once remarked about art school programs, because of the scholarly attributes of its teacher, was offered by Harvard’s Graduate School of Business Administration in the period 1911-1914. The instructor was the Boston printer Daniel Berkeley. Lehmann-Haupt urged that teachers and students should develop awareness of technology in the graphic arts, journalism and teacher training.

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 Heibl, chairman of UTAs 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 art, 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 rational standards of practice.

Three educational levels

While there were beneficial aspects in the ordinary technical manual which were detrimental to enlightened progress. But it may also be seen that the typesetting machine could be used to produce typesetting machines which, between 1900 and 1920, were reluctant to be accepted as a replacement for old-fashioned composition. In this respect composition was the last of the major printing procedures to become automated.

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 spur printing industry leaders or those educators who established the printing course to service the new technology. It was during this time, you remember, that the Willam Morris revival with its re-emphasis on craft ideas had nearly run its course, and, under the direction of a number of most able typographers, there had emerged a rational matching of craft principles to technological demands.

Such renowned designers as Bruce Rogers, T.M. Cleland and William Addison Dwiggins professed 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 Morrisian 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 explosive capabilities of current technological advances.

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

I firmly believe that some will ride the computer to glory.
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 backdrop of skilled craftsmanship expected from the journeyman printer. It so happens that typography 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. It is typographically necessary by the demand of the businesses 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 school's themselves are far too quick 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 there will be shattering depends upon the circumstances of who we are, where we are going, and the direction in which we are headed.

It is increasingly evident that typographic designers must begin to assume some measure of primary 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 to 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 from the implacable mechanization of the craft of printing. While sufficient 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 upon the shoddiness of so much printing presently being produced, look back with some nostalgia to William Morris rising in back with some nostalgia to William Morris rising in yellow pages for Bell Canada and rate manuals for insurance companies. On the other hand, ad work and brochures, etc. which require keming, 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 '80s. With all of Vision '77's emphasis on office operations, one may wonder if there is a role for the typographer and how he fits with all these new innovations. Well, the type shops are aiming just fine. There is a role for the typography of communication—a technology which appears increasingly imperative to such an awareness.

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 photographic and, more currently, the many systems that accompany phototypesetting—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 repress or the type itself. Today, the typographer sees 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 outputs. 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 cope along with new technology and new thinking by the customer.
He provides camera techniques such as fine 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 output should the client want to provide the front end of the typesetting process.

The type shop must provide services such as plateless color proofing for labels, packages, and corporate catalogs, 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 dials for visual presentations.

Overnight service

A service must be able to do schedules and deliver—as we do for one account—to 21 original 8½” x 11” pages of typeset, 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 typographic 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 $5.20—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 Info 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 typography. 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 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 input 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 setting down. They’re related, but so are ice picks and acupuncture.

There are three different ways of setting type photographically: photocomposition, phototypesetting and photocomposition. Photocomposition refers primarily to the setting of headline type. The kinds of machines in this category include the Linotype Phototype, the Steeplechase, the Alphatype, the Alphacomp 7200, the Singer photo display, the old Photostat Master, 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 process. 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 sell the buyers line. They tell the buyer that they buy this little $10,000 typesetting machine and they sit down with Sales secretary and she’s going to turn out all those reports that they’re having 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 these devices.

Direct entry typesetting

There are now three different ways of setting type: photocomposition, 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 Monophiler LineComp 1 and 2, the LineComp, the Berthold Diatyp and Diastar, the Vartegraphic Division of Adressograph-Multigraph’s Complete series (the 500, 530, 520, 550, 560, 570, 580, 3510, 3520, 3530, 3560, 3570, 4530, 4560, 4580, 4530, 4540, 4550, 4560, 4570, 4700), Compositorca Corporations’s Composer series, the 2-2 Junior, the 2-2 Junior, the 4-4 Junior, the 4-4, the Ed-Write 7809 and the Renovator 1, 2 and 3, and the Ink Quadrant 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 $2,000. The average price is probably 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 four fingers and their designers 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 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 paying 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.” 0.8. 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, magnetic tape, magnetic tape cassettes, and magnetic cartridges, and there’s the big flopy which only records on one
And splash guards on urinals. So the typesetting.

"Where do they punch the holes?" Because I can't see one reason: it's the cheapest way to start. Unfortunately, the suppliers don't make it easy for you to upgrade to the next level. What we really need is more modularity.

**HJ:**

So, it's more economical to expand with an input/tape-output operation. Tape operation does a really bad job of hyphenation and justification. Tape typesetting does a really bad job of hyphenation and justification. The classic case is Dr. Jones was a therapist, and it was hyphenated rapidly "Dr. Jones was a therapist." It's really just as important to 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二级son 3 or before a "," 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 walk-through. So you've got a large list of words that don't follow the rules.

And there are all sorts of little tricks for storing dictionaries as roots and stems and then putting prefixes and suffixes on them. All the manufacturers have written 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 the making the decision—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 it to get into hyphenation, and some of them are doing a pretty good job. The Mergenthaler V-F-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.

**Need 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 saw the answer. "Most of the time the user is 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二级son 3 or before a "," 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 walk-through. So you've got a large list of words that don't follow the rules.

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So you haven't gained intelligence, you've just added more with it. Mergenthaler has shown us that they created a hundred thousand dollar, a million dollar composition system. We call this. The system computer systems can display the copy and make the type and/or graphics in areas and pages. And that is the third method for setting type. Three different methods: direct input, tape orientation (tape linking input to output) and photo-composition or the computer system. You can see how this is not just the output end, and if you've seen a project, 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.

**Buying a computer system?**

One reason is to be a bigger computer. You can do more with it. Mergenthaler has shown in that they have been able to do a heck of a lot with the computer inside the V-F-P, for example. The V-F-P has all these 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.

An 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 these terrible gaps. We read words using our eye lenses every few characters. It's called a sacadic jump and it tells us that the closer the characters are together the faster we can read a sequence. Of course you can go too far. We used to start with minus one unit. But when you take a direct input machine and you put a stop to that. But the problem became one of ability to use the tape machine. We worked on this.

When you do that, typesetting now becomes what? It becomes peripheral to a computer system. 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. 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 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 typesetted 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 tagger? What do you do? Well, the manufacturers give you a little card. And on that little key you've got a single-digit number that tells the superposition of the position of the Q is the tagger. So when you need a special character, you look through this card. Is it a Q? No. Try 3. 3 should be the superscript position of the Q in the tagger. So when you need a special character, you look through this card.

**Code conversions and mnemonics**

Optical character recognition taught us about code conversions. OCR required something that no other device had—to be able 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 character "I", which is a very common combination in the English language, automatically output this new ligature for the "i". 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.
We created a language called mnemonics—memory oriented. And we said to the system, "Whenever you see a word, you're already computing, you're putting an asterisk in front of it because that will make it stand out from all the other DIs in the English language. And if I need a bullet, it's $B. So I'll give you a little rule—now, if there's only one word you give, 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 memory arrangement? We get to the command side. I have an asterisk followed by an "A." That's an asterisk left. What's an asterisk right? It's a rgged. RG.

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 system. And you go about 50 companies, substrates, or is recorded on a medium that the system understands.

Word processing

Word processing is the big buzz word right now. I think some once got up in the middle of the night to get to the bathroom and said, "All 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 Selectic 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 on each one of the numbered letters. 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 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. Some people think, "This is a fantastic idea. All I have to do now is when I'm typing is record it. Then, when the boss wants to change his mind, and his boss changes his mind, I can play it back and correct it. And I don't have to rewrite 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. Whatever you type is what you type. That's your input. Copying machines, that's word output. God knows what the water cooler is. Word liquefaction? So word processing is dictation. It includes the volume of information that you could type. If you don't read them and throw them away. IBM has a machine called the 66/40. It's an ink jet printer. It prints ink at a piece of paper. Supper. For $20,000 it'll spit ink at a piece of paper so it'll look somewhere like a typewriter did it. The important thing about that device is that it doesn't use so much ink, 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 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 4000. It costs about $200,000, a quarter of a million dollars. It can do something like 4000 sheets a minute. It operates from a computer. And it takes a laser beam and activates a drum and then thermopically 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 this device and put them together and see what we get. In the office of the future can the secretary of what they call gnats out there—people who just type. But we must have somewhere in the system a 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 words on, or on, 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, some time learns what typography is.

Why film?

Why is film used at all? First of all, film is considered the highest quality output medium. If you want the sharpest character that you can produce, both on the typewriter system and on the negative that will be made from the medium, film will produce a slightly sharper image than will typesetting papers. Where the difference can really be seen is in the resulting negative. If you're exposing phototypesetter paper and processing it and then using it as a 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 essentially 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

Output Media

John Stoy
Specialist, Marketing Planning
Eastman Kodak Company

Let's assume that you or your photographic supplier has recently decided to install a new sophisti-
if you set on paper somebody else has to make the negative for platesmaking.

Another reason for using film is that diazo proofs, rather than off-paper proofs, can be made. For large quantities of multiple proofs, diazo is 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 offset copier. DIAZOS 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 offset 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 runs around and do vertical column justification, and to actually lay out and put together the preliminary page work on editing terminal or correction devices—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 proofs you can go directly to a positive 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 processing concept. It is completely different in its physical conditions than the chemicals. Processing becomes extremely simple. Where an image has been exposed, the developer is developed, fixed, washed and dried. Because the stabilization paper doesn't use water and plugs into a 110 volt outlet, it is completely different in its manufacturing and in the way that it is processed. Where an image has been exposed, the developer is developed, fixed, washed and dried. Because the stabilization paper doesn't use water and plugs into a 110 volt outlet, it is completely different in its manufacturing and in the way that it is processed.

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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 conditions 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, the type of paper, how long the image is in storage, and how dry the paper was before it was exposed. You should consider means of processing other than stabilization.

Digitalized 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 passed can be scanned and digitized for phototypesetting along with camera and contact line and halftone work and duplicating work.

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 200 to 500 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 films 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 life processor and press phototypesetting film along with camera and contact line and halftone work and duplicating work.

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Vision '77 opened with reference to Gutenberg—hand of the conventional composition and printing a wide variety of equipment was reviewed. But the one-and-a-half day conference, the value and aesthetic awareness and the outlook in 1971 for the graphic arts output device or typesetter. We looked at 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.

I think of it as printing with a hose—squirting out ink, and in effect, making a single jet. This method can be quickly turned on and off under computer control and you can see how an image can be created.

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. The ink jet press is still very much in its embryonic form, but consider some of the products that are doing work in this area. In the United States, patents are issuing at the rate of more than 100 a year.

Ink jet printing 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 ink jet machines are available in widths of five, eight and ten inches—about the width of a typesetter.

This is a piece of a 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 50 plus feet. It's first the text of this piece. I've 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 handset and all simulations of handwriting and various forms of script. The press/typewriter operates at 600 feet a minute. It really is setting a standard for the world. If you count patents, technical papers and the like, you can easily identify 50 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.

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Vision '77 has presented a snapshot view of change and that's what Vision '77 is all about. The secret to managing change is to anticipate it, and that's what today's copywriters and designers are being asked to do. The conference presenters have tried to look into the future and alert you to changes about to happen. Conference attendees and the readers of the meeting summaries need to think—study—plan and act to manage change.

Generating the whole form

We can also generate the entire form by ink jet, and 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 right away. That's coming down the pike in the future.

Book production

Ink jet is getting its feet wet in book production. Today, in 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 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 in 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 printing system. By definition, a digital press really includes a typesetter. It is the output end of the composition process. It incorporates a computer. It eliminates the typesetting device as a separate unit as it moves into commercial applications. It is responsible for creating change. And that's what Vision '77 is all about.

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Graphic Design in Europe

Americas 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 be 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 are Europeans communicating 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 identity program—some 30,000 bars and caves 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 advertising 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. Really, he wanted a Belgian for chorinositic 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, Serurat who were followed by poster artists McNight-Kaufder, Lepain, Casadre.

2. The Dutch-German influence

Particularly in London there has been a strong American influence, due to the presence in London of the late '50s on of such American designers as Robert Brownjohn, Bob Gill, Tony Peladino and others. Another American whose work influenced British graphic design is Lou Klein who has stayed in London. 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 Casadre and Lepain. There's a story that's told about Casadre and Lepain. In the war, when neither of them was as successful as he had been, and the star of the poster designers was winning, Lepain 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.

Herb Lubalin:
President, LSC&P Design Group, Inc.; Executive Vice President, Lubalin, Barnes & Co., Inc. and International Typeface Corporation; Editor and Designer of 11&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 Communication Primer," reminded us that machines and systems, the very best of them, can be negated by off-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. There are a number of short films but there also happens to be a 271/2-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, in fact, is 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 Blackman and Jim Sant Андреа.
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 today.

We expect the interest in and use of quality typesetting products will have a positive effect on their printing, production, collating and mailing costs, as well as on 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

The next five years will see the development of terminals for interactive composition and markup 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 microfiche, live TV transmissions, or recorded 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.

Donald Haas
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

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want it long before he was not only a glowing picture of health but was again a business success. Perhaps phonotypography deserves the credit.

That was nearly two decades ago. Eddie Phillips of Phillips Catalogs was a pioneer in print-on-demand with a machine that was first contemplated in 1944 by A. H. Higgins, a French engineer who worked for International Telephone and Telegraph (ITT), and who then joined Lithocon 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 test preparation in finished form at the point of origination and are less concerned with setting 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 across the spectrum. Our efforts are directed toward providing the right answer for consistently satisfactory results for every user.

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 assures our customers 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, Itek expects the volume of commercial printing to exceed 30 billion dollars. Coupled with the enormous increase in in-plant printing, Itek 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 computertized composition; and
3. Improved software to handle real-time processing, augment current pagination features and further simplify the handling of complex tabular and multicolored material.

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 films.

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 plate making.

We must continue to identify better the needs of the smaller reproduction and graphic arts firms so that we can develop advanced technological products which will offer the greatest value to the consumer at the lowest possible cost. Ink 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 plate making, for electron beam and scanning type systems, in video disc memories, in optical communications—all technologies which have the potential to revolutionize the phototype-setting and word processing fields as we know them today. Expansions of these systems will make a significant contribution to this revolution.

Itek's move into the higher end of the typesetting field is characterized by the entry phototypesetter—the Quadritek 1200 system. Our scientists incorporated the latest technologies in such diverse fields as ultramicrophotography, 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 Ink 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 market. It 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.

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

John E. Preischlaub
President
Itek Graphic Products

Information International is a leader in computertized 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’s R&D will continue to enhance the manual page makeup operation.

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

Another unique Information International product is 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 PR-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 films.
- The GRAPHX 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 plate making.

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/compositor system was delivered to Norfolk, Virginia in March of 1975. Since that time, Raytheon has sold over 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 newspaper publishers with 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 width in sizes ranging from 1- 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 ofphototypesetters are increased, the RAYCOMP equipment will be ready to meet any and all demands.

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 nonpage by assigning story allocations and sizes to fit the available overhead. Once the stories are released by the copy editor, 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 technical leader in the development of electronic composition systems.

(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 interrelated number, word, picture and voice information;
(4) the growing use of compressed communications languages.

Video display editing typesetters have already eliminated the need for typesetters from the meeting of electronic page production. Phototypesetters now accept word processing cassettes as input media, and as phototypesetters drop in price and size they will do for typing and printing what the Brownie camera did for photography. What this means for the future is that the first hard copy version of a document will be the final one, and in printed form. With word processing typesetters 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 concern developments in the computer, 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 computer and memory functions for data processing has shifted the focus from the large central computer to a distributed environment of small computers. The output from these small computers will be processed locally and not transmitted to a central processing department. And of considerable importance, small computer capability will extend beyond direct 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 antenna 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 1989, according to some research groups, fully half of all office text will be prepared using editing typesetters, creating magnetic media in great volume. Communicating typesetters have already begun to disseminate some of this information electronically to computers, teletype terminals and other communicating typesetters.

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 the printed image is defined in a way that is a perfect partner with that of CRT. Also, the Lasercomp type-faces 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. ACC (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 intensive 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 in 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 Meywald
J. Behol et Fils S.A.
Excerpt from a Speech During UKPA 1977
As far as the new line of Robt phototypesetting is concerned, I have to emphasize that these are all the first fruits of our collaboration and others are already reaping on the brand. 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.
If clarity, integrity and persuasion are the essence of printed salesmanship, typography is the ultimate concern.
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!
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 phototypesetter 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 VarTyper 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 312-467-7111
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.

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 groundwork in type history, classical and modern letter forms and specification methods. They are assigned a broad range of original typographical design projects.

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 Augé 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 AIT, encourages students to enter major competitions as part of their preparation for the working world.

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 inanition 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 Schultman, NASA; Bob McLaury, 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.

The Design Schools graduates have had 24 months of intensive, specialized preparation in a variety of skills, including: advertising design, typography, photography, illustration, drawing, perspective, lettering, airbrush, package design, multi-media, photo laboratory, animation, mechanics, pre-separation and many others. They are prepared to work productively for you.

Edward A. Hamilton, Design Director
The Design Schools
Time & Life Building, Suite 777
1271 Avenue of the Americas
New York, N.Y. 10020

I would like to know more about The Design Schools graduates. ☐
I don't have immediate need, but please keep me advised. ☐
Include me on your invitation list for seminars and programs. ☐

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Position:
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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 2546, using Track 1.

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 Galliardc. 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.

*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.
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ITALIC

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BOLD ITALIC

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1234567890.-;'?!?$£€()[]

BLACK ITALIC

ABCDEFGHIJKLMNOPQRSTUVWXYZ

cdefghijklmnopqrstuvwxyz

1234567890.-;'?!?$£€()[]

ULTRA ITALIC

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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.

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My name is Dick Coyne. I'm the editor and publisher of CA and I have a lot in common with you and most of the readers of our magazine. I graduated from art school. I was an agency art director and a corporate art director and the founder of a major West Coast design studio. CA was started in that studio nineteen years ago. But don't let that type us as a West Coast magazine. I am just as familiar and concerned with what's happening in New York, Boston, Chicago, Atlanta, Cleveland or other cities as I am with San Francisco or Los Angeles. We also have a very large Canadian and foreign circulation.

I am backed by a great staff and a network of contributing editors around the country, and the world, who are all knowledgeable pros in the business. Allen Hurlburt, for example, the former art director of Look, was one of the most honored people in the business, including the NSAD Art Director of the Year when that organization was still functioning. Allen is living in London at this time and covering that part of the world for CA.

Between us we try to plan interesting issues with diversity and balance. We feature outstanding designers, design firms, art directors, agencies, illustrators, photographers, and sometimes we will take a broader overview of a specific area of the business. Our content stays close to professional interests because that is our audience. We assume that our reader has a working knowledge of the business and present the material accordingly. Our format is geared to a flexible layout to best display the work, not to fit the work into a rigid format.

There is a reason why CA can deliver more editorial content, more color and the finest reproduction—size and growth. We are bigger, over twice the paid circulation of the next largest U.S. design magazine and one-and-a-half times the circulation of the leading European magazine. And we are the only design publication showing any real growth. As our revenues have steadily increased, we have plowed a major portion of that money back into the product. It has paid off handsomely. Our paid circulation has doubled in the last six years—from 16,400 to over thirty-three thousand. Much of this is due to a remarkable 83% renewal rate.

If you aren't already a CA reader, I hope you will join us.

A year's subscription is $26.

If you subscribe now, the 1978 ART Annual (Jul/Aug) and the CA-78 Annual (Nov/Dec) will be included in your subscription.

If you'd like to purchase the CA-77 Annual or the 1977 ART Annual, copies are still available.

The CA-77 Annual was juried from 15,000 entries and presents the best in design and advertising. Eight nations are represented. 262 pages, 829 illustrations, 664 in color. Indexed. $14.

The 1977 ART Annual was juried from 4,000 entries and presents an outstanding selection of illustration and photography. Eleven nations are represented. 166 pages, 290 illustrations, 257 in color. Indexed with addresses of the artists. $9.
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.

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24-28 August 1972
The American Printer
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 typesetted 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&I by Edward M. Gottschall
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