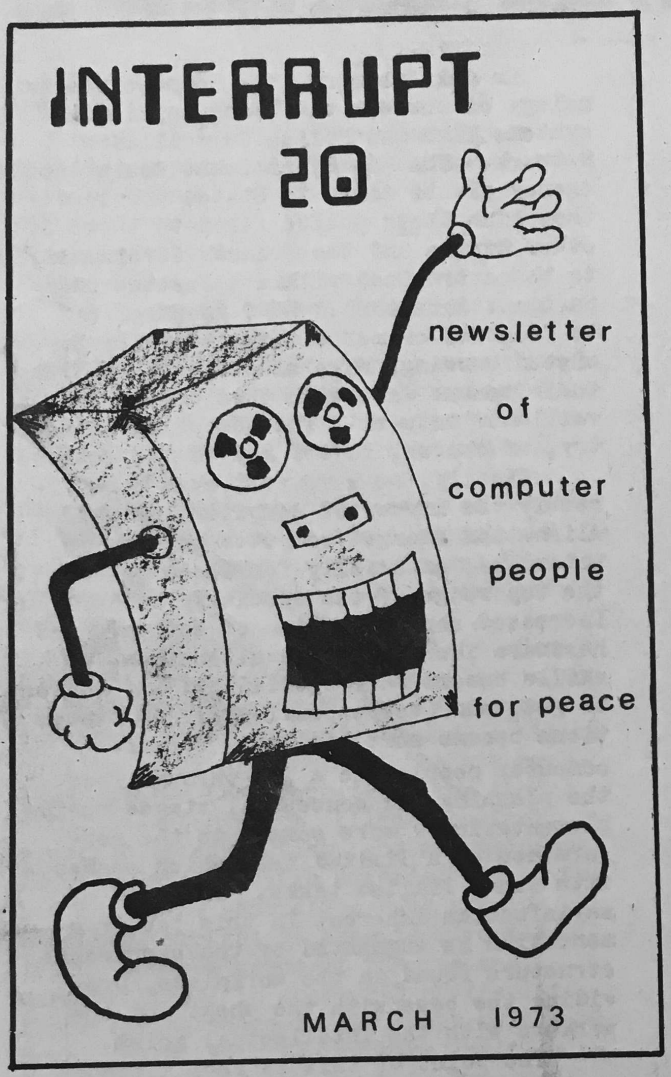


ABOUT THIS ISSUE...

This issue of Interrupt is different in two ways: it's been put together by a Chicago collective as part of an experiment in rotating responsibility for Interrupt; it covers efforts to find good uses for computers and to educate people to their uses. Interrupt has usually focused on the Man's uses of the computer- war and behavior control, for example. In this issue we explore possible ways of redirecting the marvelous technology to our own purposes, whether striking back at the ruling class or just having fun or just doing some good for the people. So you'll find articles that suggest turning information banks around and aiming them at the behavior controllers and the snoopers, and articles that discuss the potentials of computer science for the people. The computer will have to be demystified, reduced from the shadowy god that only the high priests of systems analysis can service, and made into a tool for any bright boy or girl with a good grasp of high school arithmetic; so we have included some articles on computer-oriented courses and some articles on arranging widespread access to computers. The course syllabi provide a good bibliography for anyone who wants to put his/her computer experience in a social context.

Recall a discussion that was reported in Interrupt, No. 16:

Joan:...whether society is capitalist or socialist, computers aid centralization, they aid bigness and they aid bureaucracy. They'll always be controlled in the hands of a few because not everyone is going to understand the technology, and there is no way to keep the technology from running away from us. And because they will be controlled by the few, there will always be that sense of mystification.

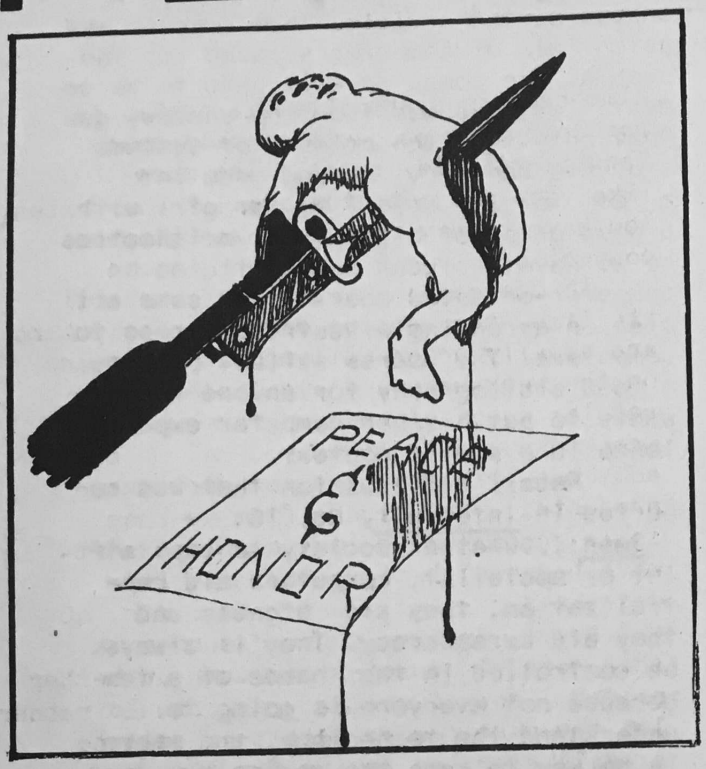
Laird: I disagree. I think that in a people's state, with priorities controlled by the people, there would be uses for the computer...

Our collective has no easy answers to the problems that Joan pinpointed. We do feel that it's worth exploring the possibility of humane people-serving uses; we hope to hear more from readers on this point. After all, once upon a time in ancient Egypt and Yucatan, in feudal Europe and traditional China, writing was used to bamboozle the masses, to put them in awe of the priests and of the kings and nobles whom the priests served. But ultimately writing, made accessible by technological innovations like printing, became a weapon for liberation. Similarly, we hope that modern information processing can become an instrument in our struggle...

A word about us in Chicago: we are a group of about ten people. The original planners of this issue work at universities, but we have been joined by some in industry or computer free-lancing in one form or another.

[contents & credits on back page]

P·E·A·C·E & [illegible]



We sour-grapers, the "peaceniks", never happy unless we've got a villain to feel more self-righteous than - we finally got P-E-A-C-E (WITH HONOR, even) so isn't that the end of it?

The popular revulsion which forced Mr. Johnson out of office was NOT from a strong PEACE sentiment, but from public unwillingness to take casualties without apparent victory.

Back in 1967, we were Computer Professionals for Peace, part of a larger movement organizing to show that it wasn't only hippies & students who were truly upset about the war; hardworking, respectable Americans were also upset.

It took us a long time to understand why, if the war was immoral and ineffective, and if most people were against it (as Gallup said they were in 1968) - - then why couldn't we get out?

Many groups found the war profitable. The government came up with a convenient compromise: the automated battlefield, which lowered American deaths and pretty effectively defused the antiwar movement.

We started considering the nature of a society which could foist Vietnam-like wars on the world. We began to see the role that computers and the computer industry play in the scheme of things. We also began to examine our own workplaces and saw that oppression was not something that always happened elsewhere.

In this country, the computer technology of the war was being applied in systems like the Police Surveillance Network. The Law Enforcement Assistance Agency grants money to States provided they link their police files to those of other States and the Federal Government, to be centralized within a Justice Department data bank. HUD, in an effort to "control crime" within Federally assisted housing, have also agreed to link their tenant data with this people surveillance network. The computing industry, of course, is the key to the action.

Finally, we have felt even more directly the impact of computers on us! Alienation amongst computer workers is notorious, expecially for those not on the top rungs of the specialty ladder. Increased sophistication of software and hardware increases this alienation, as skills become more specialized and harder to get, and (correspondingly) job functions become more limited. Very few computer people see a job through from the planning and conceptual stages to implementation - more common is the performance of a limited task which meshes with other limited tasks. The lack of satisfaction inherent in this job fragmentation is augmented by the hierarchal structure found in the workplace, providing the boss with the wheat and the workers with the intellectual grist.

The point of this is that although computers may be neutral tools, impartial low-level intelligence, we have learned that their use fits well into the dynamics of corporate life in the United States. This issue tries to show that computer usage can be turned around by computer people in liaison with others to provide beneficial results to the people of the world. The basic avenues are exposing and minimizing harmful effects of computerization, and initiating and sustaining beneficial ones.

There is much, much to do now that we have P-E-A-C-E (in a manner of speaking). In this issue, many more constructive uses of computer technology are discussed. Those of us who continue to work as computer people can provide skills, manuals, and in some cases machine time for these projects.

[Continued on back page]

time for the people!

A lot of this issue is devoted to tickling brains into thinking about new ways of using computers for people-serving purposes. But using computers requires access - and as most of us are aware - that usually means money - one of the scarcest commodities in most would-be do-gooders' bags of tricks. There are a few interesting alternatives to the standard commercial arrangements that we are aware of and that's what this article is about. What's most suitable for you will depend on how many of you there are, where you are, and the nature of the project you're considering. If you have any ideas or experiences that we should know about, please write and tell us.

OWN YOUR OWN: Not-so-old and often functioning computers are being unloaded by the U.S. Government, the large universities and industry everyday. Initial cost is small or zero, but the big problems involve transportation from the site, standing space, climate control, electricity adaptation, and maintainance. To mention a specific example, one of us bid for a 2nd generation Navy surplus computer, brought it home in a rent-a-truck, and now keeps it humming and warming itself in about 1/3 of the 1st floor living space in his south Baltimore home. As of yet, the machine isn't functioning, and the owner is involved in other projects, but the potential exists. Resource One, operating out of a warehouse in the San Francisco Bay Area gets most of its equipment as donations. (Best results come from going right to the top with requests.) It has grant monies which allow it to support some 10 full-time staff members for servicing, etc., and it does have several functioning services available. (Look elsewhere in this issue for a more complete description of Resource One's activities.) All things considered, this seems like something that one person shouldn't try to get into alone, and no group is large enough to try it until they have the capability for doing their own maintenance.

LOW-COST RENTAL: Resource One (just mentioned) is on the phone with a time-sharing system that is available for community projects at reasonable (and negotiable) rates. The more they like your project, the cheaper your rates. You have to pay for your own telephone connection.

If the company you work for rents its time, the renting company's computers are usually under-utilized at night and on the week-ends and available to regular users at reduced rates. If you are known and trusted, you may be sold some non-priority time for your own projects. One Chicago firm we know sells running time in a complete software house with big computers, tape drives, disks, a line printer, etc. at $25/hour. Another source assures us that careful shopping can turn up better prices. Many firms, however, would rather let the machines go idle than sell to a small user, so asking for time may be the worst way to get it. Use your judgment.

HUSTLING: Companies can be and have been, induced to donate computer time to "good-works" projects. Donations of this kind may make sense to the company in terms of tax write-offs and community public relations, but it depends on whether or not your project sounds as clean-cut as the Boy Scouts. Don't expect Honeywell to support a study of its war-making and policy-influencing behavior, but Playboy, here in Chicago, for example, has donated time to METRO, a city-wide network for dealing with drug-abuse. Playboy programmer-employees do the work, so that outsiders don't handle the machines.

With the growing trend towards company-ownership of computing equipment, many firms have machines which essentially stand idle for 8 hours everyday. This increases the number of potential sources for computer-time donation.

HYBRID OPTIONS: If owning and running your own installation is unrealistic, but "hustled" time is too unreliable for your purposes, it may make sense to get your own terminal and rent computer-time like anybody else. Like anybody else, too, you might think of financing your operations by running regular commercial jobs.

[Continued on page 15]

CHICAGO AREA RESEARCH GROUP

A group of people who had been involved in power structure research in Chicago saw the need for a document which would bring together the available information on the economic and political elites of Chicago. Using a computer, over 50,000 bits of information have been compiled on the officers and directors of every major economic, social, political and civic organization in the city. This data has been correlated to demonstrate the interlocking directorateships among powerful Chicago institutions.

The institutions which have been catalogued include:

1) The top 75 national corporations
2) Foundations
3) Insurance corporations
4) Universities
5) Law firms
6) Elected and appointed federal government officials (Chicago-based)
7) Appointed governmental committees, commissions and boards
8) Cook County political party organization

This information is presented in two forms. The first lists each individual alphabetically, the institutions with which he is affiliated and his position within these institutions. The second alphabetically lists the organizations, the directors and officers in each and the other institutions in which those officers and directors are involved.

This is the most comprehensive collection of such data ever compiled for a single city. The potential uses for this document are self evident.

The criterion for data selection, the resources used and the procedures necessary to compile this document will be described in our forthcoming methodology (now available). In addition, we are prepared to set up training sessions for groups wishing to duplicate this work in other cities.

We are anxious to discuss this project with those who would find it useful in their work and wish to see it expand to other cities. You can contact this "Chicago Area Research Group" at (312)787-6891 or (312) 492-3353 or write:

Chicago Area Research Group
c/o Walter van Slyke
1940 Cleveland
Chicago, Illinois

A FABLE FOR OUR TIM

In Q, a large city in the Midwest, a group of academicians committed themselves to technical work for a community survival organization operating in a poor, ethnically-diverse neighborhood. One of the projects that grew out of this cooperation was writing a program and providing storage space for a route list for distribution of the organization's newspaper; each entry included name, address, and a 6-digit code number for a variety of relevant characteristics. In theory, up to seven-hundred names could have been stored using the university's educational, easily accessed mini-system. But after about 30 names were stored a very serious breach of security occurred which led the communit organization to postpone - indefinitely further use of the file; although the breach seemed clearly the result of a personal vendetta against one of the academicians and to have nothing to do with the people's group. The morals of this story, as told by the academicians were:

(1) that they could work with a much h vier and more tightly organized moveme group than they themselves were; that such a relationship is mutually reward (they are involved in more successful technical work than the abortive route list); and that while they have not submitted themselves to the organiza- tion's discipline, they have gone bey "technical advisorship" to a more ega tarian and politically involved rela- tionship with the organization.

(2) that while university computer systems are appealingly accessible fo movement purposes, they are not par- ticularly secure.

SAM X

It turns out that probably half of the automatic data processing work done for movement organizations in the city of K____ is done by Samuel X. Sam works at the computer center at a major university. In addition to doing work for various organizations, Sam is involved as an activist with several progressive causes. Unlike a lot of computer people actively involved in "the Movement," Sam is enthusiastic about computers and the possibilities of progressive, people-serving uses for them; more about that later.

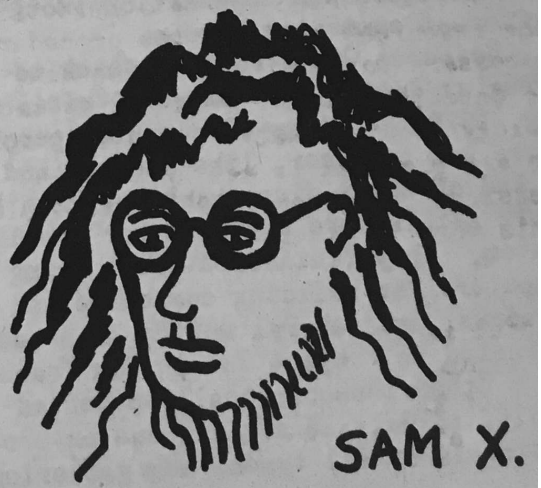
Sam finds that the groups he serves are by and large alienated by the computer and prefer as little contact with it as possible, even though it saves them much work. They are not willing to learn more than they absolutely need to in order to prepare their cards. Sam worries about their dependency on him, but finds the groups unwilling to cut the apron strings.

Sam's work with his movement clients is limited to the level of the technical service that he performs. He seems able to avoid the problem of becoming merely an "alienated technician" in the movement because 1) he believes in the importance of the work that these groups do; 2) he believes in the importance of his work for these groups; 3) he likes computers and likes to use them to save others alienating labor; and 4) he is very involved in his own political work on other levels than that of computer operation.

Sam is not involved in "organizing at the workplace"; in general, this doesn't seem to be an issue at university computer installations.

As far as alternatives go, Sam has the following suggestions:
(1) immediate - get more computer people involved in data processing for the movement; the more diversity and redundancy, the better (for suggestions on how to do this, see the "How to Get Time for the People" article, this issue).
(2) short term - until the groups themselves own and control the data-processing facility, they are goind to be unhealthfully dependent on sympathetic individuals with varying degrees of involvement/commitment to the cause. Sam feels that concerned computer people should be most concerned with getting the technology directly in the hands of the people. In a few years, he thinks, there will be a lot of used minicomputers on the market. These used computers, unlike the old 2nd generation stuff available now, won't have the liability that the maintainance is prohibitive. Sam envisions a collective of computer people who would locate cast-off minis for a group, as well as tape drives and a line printer, and instruct the group in how to program them and use them. The idea is similar to the program that CADRE (the national draft-resistance league) had a few years ago in setting up movement groups with an off-set print shop. The collective would also be involved in trying to educate the people at large to misuses of computers and possibilities for progressive uses.
(3) long term - Sam feels that the computer, like the printing press, may be potentially a tremendous liberating force in this society. He sees the possible uses of the computer for the movement for social change as far transcending mere data processing, mailing lists, etc. He sees vast extensions of projects like the research project on the facing page as well as serious simulations of community problems for use by a community organization as evidence that community services can be improved.

All in all, the interview with Sam was a stimulating experience; he feels Systems Analysis for the People is a real possibility that must become a reality, and his personal dedication was inspirational. It was a little frightening, however, to realize to what extent the movement groups in the city of K____ are dependent on one individual. It is up to us to change that.



FROM RESOURCE ONE

At a CPP meeting in New York last March (reported in Interrupt 15), the topic "The Positive Uses Of Computers--Are There Any?" was discussed. The prevailing opinion seemed to be well, maybe so, potentially, but not yet. Resource One is doing all it can to create reality from whatever potential there is.

Resource One is a collective of people from disparate backgrounds, who believe that technological tools can be tools of social change when controlled by the people. We're trying to help them become available to all people, and to encourage and assist the development of ways these tools can improve all our lives.

Our principal tool at present is an XDS-940 computer, a medium scale, second-generation timesharing machine whose capabilities seem well suited to our purposes because of the 940's ability to interact with a large number of individual or group users simultaneously (over telephone lines) and inexpensively.

Some of our primary projects are the building of a retrieval system geared to the needs of non-establishment referral services (switchboards, hotlines, etc.) enabling them to create and share large data bases, the assistance of various grassroots political and economic research projects aimed at community organizing, the cheap production of mailing lists, a community medical clinic information system, a program of computer education and demystification for the general public, and generally raising the level of communication and cooperation among different community groups.

Resource One's roots go back to Berkeley during the Cambodia Crisis of May, 1970. A group of computer people there got together, like others, and talked of their disenchantment with how their skills were destined for use in the system. They fantasized about using computers for building communication networks, and several months later were attracted to Project One in San Francisco, where other technologically-oriented people, as well as artists and ex-professionals of all types, were gathering to try out a new concept of integrating their skills and work with the rest of their lives.

Project One (or "One") was a vacant 5-story warehouse building in downtown San Francisco--84,000 square feet of bare, cold concrete, which has since been transformed into an imaginative warren of "spaces" in which 90 people live and 150 people work on a wide variety of projects. Besides Resource One, there are an experimental high school, a videotape-producing group, music and radio recording practice studios, a film processing lab, theater rehearsal space, and office and/or living space for Northern California H.Q. of VVAW, a radical welfare department workers' union, a counseling center, and numerous art and craft people.

"One's" social and physical environment was built completely by its members, to their own specifications, and in the process they shared their tools, skills and political ideas as only people who must depend on each other can. A workers' collective has been formed to further develop and profit from newly-aquired construction skills. The community is "run" by unanimous consensus; decisions are made at weekly meetings.

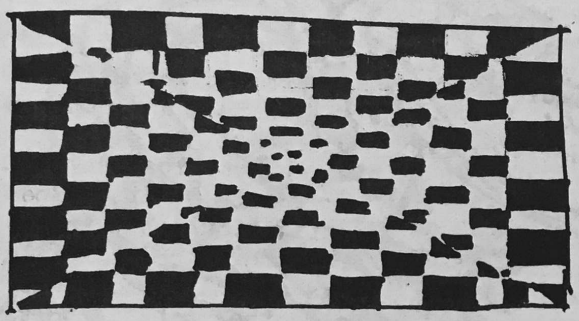
[Transamerica Computer Co., who we found in the phonebook, was willing to donate a warehoused, commercially obsolete machine--our 940.]

So, in September, 1971, we had a computer, but no money, no software, no IO equipment, no place to install the computer, no developed "program" of what to do, and very few committed people. We did, however, have the support of other members of "One"--in particular the ECOS project, with whom we presented a joint funding proposal to the Stern Foundation which netted $10,000. Using this money to build the computer environment ($5,000 worth), pay rent and telephone bills (no salaries), we developed a proposal for a full-scale community computer center with a budget of $100,000 for its first year. It took us a year of steady fundraising to raise the money, during which time the computer was installed (at a total cost of $700), and we began to

learn about our operating system, which none of us had seen before.

[A variety of people, not all in the Resource One collective, helped us get our hardware and software together.]

By April, all of our systems (including one to provide statistical reports to outpatient clinics) will be fully operational, and we will have begun accepting input of several large data bases, including referral information for switchboards and other people-oriented media, demo-graphic information and such for research projects, and "useful contact" files for a hopefully large number of community groups. The only real impediment to including some national applications of the retrieval system is the cost of telephone contact.



At that point too we plan to begin generating some money with the system; our only significant revenues so far have come from a timesharing contract with the University of California. We think it's important that everyone develop a means of support that doesn't depend on the largesse of foundations or on welfare. It follows that if we are to be valuable to our community, other groups will share their support with us (only to the extent they are able to), and that we must also find non-exploitative ways to make money in the more commercial market. That's one reason for the medical information system being readied now--outpatient clinics often having government grants with line items for data processing. As a rule, we look at any use of the 940 as potential revenue, unless the group involved is totally broke and can't even cover minimal out-of-pocket costs (which is seldom).

We are putting together an electronics shop to be used both for education (ours and others') and for designing and building hardware needed in-house and for outside contracts. One project which has wider potential is a unique intercom system we designed for "One" that links all the spaces in the building-- it could lead to more sophisticated neighborhood communications systems.

Our educational projects have been the most difficult to conceptualize, but are perhaps the most crucial to expanding the concept of human uses of technology. People we talk to seem mystified at first even with the simple mailing-list program, and we are all constantly educating non-technical people, hoping to break down their fears and stimulate creative thinking about how they can use the system. One of us, an MBA, has been giving bookkeeping and tax classes to other groups, and there is some "fallout" --people becoming exposed when they come to the class, and later getting interested in having access to the computer. Similarly, through SNOBOL classes and a series of videotapes on women's problems, two others are reaching out to the community and exposing us in the process.

As of now, Resource One's finances seem secure for a year or so, and no really difficult technical problems (but lots of opportunities) remain. Yet we are still struggling with the remnants of our professional elitism, needs for some higher authority (the boss) to define our tasks, and tendencies toward specialization, all of which restrict the collective process we want to cultivate. Our decisions are made at relatively open meetings, by unanimous consensus of a seven-person steering committee. Final responsibility for getting work done rests there. It is difficult to build a collective consciousness, where people can support each other emotionally and otherwise, when we are at different levels of political awareness, work skills, lengths of association, and commitments to the concept of community. But it's important, and we're trying hard.

It's very clear to us that Resource One could not have gotten off the ground without the highly developed sharing ethic of "One"-- and we can't afford to forget that. We want to share our experiences with others involved in similar processes, and welcome any concrete suggestions on possible applications of our tools.

TEACHING:

DEMYSTIFICATION

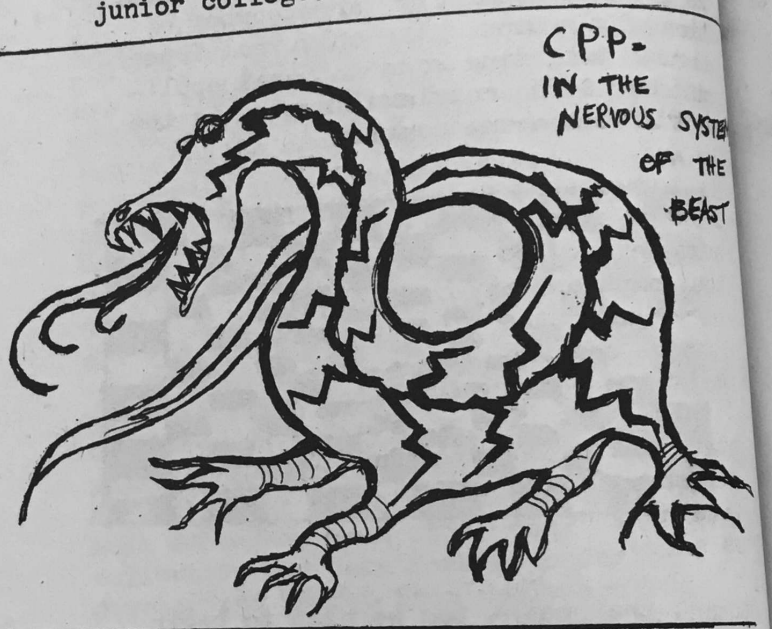
In the following columns we will present four outlines for courses that deal with computers and society. They share certain features in common:

(1) Some time in each is devoted to how computers work and at least three of them specifically teach simple programming. In other words, demystification is difficult to accomplish unless there is some "hands-on" experience. We found that a monkey-see-monkey-do approach, using more experienced students as tutors and de-emphasizing theoretical aspects of programming was most effective in rapidly covering this part of the course.

(2) All courses deal not only with the usual IBM, SRA garbage on "wow, what an impact computers will have on little old individual me" but go well beyond these "individual impact" perspectives to explore: (a) the nature of the computer industry, its relationship to American capitalism and American ruling groups, and the profit-seeking pseudo-market situation in which decisions about computers are made and (b) the consequences for <u>class structure</u> and the political system.

The courses obviously vary in reading load (which is a function of whether the school is on a semester or quarter system and the commitment of the students), in relative assignment of time to programming, and in degree of tie-in to perspectives on technology <u>generally</u> (at DePaul, where this last point is not very evident from the course syllabus, it is treated in a separate course, "Technology and Culture," taught by one of us from a largely Marxist perspective).

<u>Credits</u>: Joan G.'s syllabus is for a course proposed to the New School in New York and now likely to materialize at a SUNY branch. There is a course proposed by Don B., late of Goddard College and not heard from recently - where are you, Don? Also, a syllabus for a course taught by Al.W. at Boston University as the second semester of a year course on physics and society - lifted from <u>Science for the People</u>, Vol. IV, no. 5, pp.32-34. By the way, this whole issue of <u>Science for the People</u>, all of it on Science Teaching, is superb, and is available for 50¢ from SESPA, 9 Walden, Jamaica Plain, Mass. 02130.) We couldn't resist reprinting it, it's so good. Finally, there is our own more modest effort being given now at DePaul; it's working out fairly well and has the advantage of not depending on libraries, bookstores and student receptivity to long reading assignments, in other words, it's easily portable to the outback or the junior college.



UNDERSTANDING THE WEAPON/TOOL

--by Don B.

An overview of what and how the computer is. Definition of hardware, software, applications, economics, and politics. Lecture/readings/discussion. "Hands-on" experience at the computer terminal. <u>Heavy commitment</u>.

Computers are a multi-billion dollar industry. They pervade the military, governmental, educational, and business sectors of our society. The FBI, CIA, ITT, HEW, CID, and IRS could not exist without NCR, CDC, RCA, XDS, DEC, and IBM. The people who own the money in this country (the same ones who gave us Vietnam, ABM, Amchitka, Laos, Cambodia, Greece, Lake Erie, Attica, New York City air, the Playboy Club, and white bread) realize the incredible potential power of the stored program digital computer as a weapon/tool and its increasing application to "all

phases of modern life." The problems are that you can't run away from them and that it's your life they're talking about. Machine "intelligence" seems not too far around the corner; monitoring of people by machine and information system is already here. Nixon writes his letters by computer; political candidates determine their platforms and guage different acceptance levels for "stands" or lack of them by voter simulation and modeling by computer. Your new local gas station or MacDonald's was probably located there as the result of a marketing simulation of the area by...; your taxes are figured and checked by ...; your children will be educated by...; your driving and arrest record is stored by and available from...; your future is damned sure going to be shaped to a large extent by how people, in the next few years, learn to deal with... the computer. Operation Igloo White is no joke; the electronic battlefield is here now and the jungles of Indo-China are only the testing grounds. I think it's time we started to understand this most powerful weapon in our enemy's arsenal and determine if (and how) we can use it <u>for people</u> as a tool.

It won't be too many days after tomorrow and your color T.V. will be an inter-active computer terminal. It's not "love it or leave it"--you won't be able to get away from it.

The course "Understanding the Weapon/Tool" uses the following resources:

<u>Introduction of Computers and Computer Science</u> Richard Dorf, 1972, Boyd & Fraser (San Francisco)

<u>Computers and Computation</u>, Readings from Scientific American, W.H. Freeman, (San Francisco)

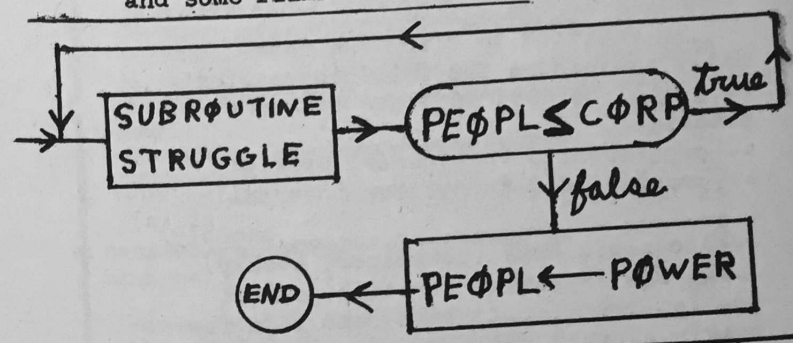
Booklets and papers from: Computer People for Peace 291 Sterling Place, Brooklyn, N.Y. 11238

Also readings from two other books in the field:

<u>The Computerized Society</u>, Martin, 1970, Prentice-Hall (Englewood Cliff, N.J.)

<u>Perspectives on the Computer Revolution</u>, ed: Pylyshyn, 1970, Prentice-Hall

As well as a set of mimeographed exerpts I prepared from various other books and magazines (about 100 pages) and some films and field trips.



COMPUTER TECHNOLOGY AND SOCIETY

--by Joan G.

Approximately one-third of the study would be devoted to an introduction to data processing, for the person with little or no prior exposure to computer concepts. The remainder of the course would be concerned with an analysis of current computer applications. Extensive use of journals and library materials will be made in order to gear the course towards the current uses. Topics to be discussed include: medical, police systems, social services, weaponry, and automation. The question of privacy versus social need will be explored.

--<u>Introduction to Computer Technology</u>

Material to be covered includes: Hardware and software concepts; introduction to number systems; explanation of commonly heard terms; stored program concepts; data storage methods;

WAR RESISTERS LEAGUE

by Dennis Brasket

Last night I had the strangest Dream
we saved our money and got a grant from the WRL
and we bought a reconditioned B-29 from Tricky Dick's used car lot
and on August Sixth we flew over Hiroshima at 35,000 feet
and we dropped Harry Truman

and introduction to flowchart techniques. Presentation of sample business oriented data processing systems will be used as examples.

--Analysis of Current Applications

It is hoped that this section of the course would better enable the student to "read between the lines" in order to make his or her own value judgment based on a sounder understanding of the application.

In addition to clippings from daily newspapers the following periodicals will be used as basic source material:

--Computerworld (newspaper, weekly)
--Computers and Automation (journal, monthly)
--Electronic News (newspaper, weekly)
--The New Scientist (British journal weekly-arrangements have been made for weekly airmail delivery)
--The Scientific American (journal, monthly)

Overriding questions which pertain to all computer systems such as: centralization of data; priority to society; worth to the individual; and control will be explored. Field trips to computer installations and films may be used to supplement the course when available.

Suggested Reading List

Hamming, Computers and Society.
Aldous Huxley, Brave New World.
Jacques Ellul, The Technological Society
John McDermott, "Technology, Opiate of the Intellectuals," New York Review of Books, July 31, 1969.
Arthur R. Miller, The Assualt on Privacy: Computer Data Banks and Dossiers.
James Martin and Adrian Norman, The Computerized Society.
Herbert Marcuse, One Dimensional Man.
Oettinger, Run Computer Run.
George Orwell, 1984.
William Rodgers, Think, A Biography of the Watsons and IBM.
Philip Slater, The Pursuit of Loneliness.
Kurt Vonnegut, Player Piano.
Norbert Wiener, The Human Use of Human Beings.
also: an annotated bibliography, Implications of Computer Technology, Research Review No. 7, Harvard Program of Technology and Society.

COMPUTER TECHNOLOGY AND ITS SOCIAL AND POLITICAL IMPLICATIONS

--by Al W.

1) REQUIRED READING

a) Norbert Wiener, *The Human Use of Human Beings*, (paperback)—a discussion of cybernetics (the science of information and control) and its relevance to many social questions.
b) Kurt Vonnegut, *Player Piano*, (paperback)—a fascinating and perceptive novel dealing with life in the totally automated society, written in the early fifties in response to the advent of the electronic computer, but perfectly relevent to the 1970's.
c) Eric and Marie Josephson, eds., *Man Alone*, (paperback)—a good collection of essays on the various kinds of alienation found in the advanced capitalistic countries, also containing several historical pieces by Marx, etc.
d) John McDermott, *Technology, Opiate of the Intellectuals*, New York Review of Books, July 31, 1969.

Bill Zimmerman *et al.*, *Censored*, available from Science for the People.

National Academy of Sciences, *Technology, Process of Assessment and Choice*, Government Printing Office.

Three articles which discuss the political context of scientific and technological advance. The first two bring out the deficiencies of the liberal analysis in the third.

2) HOW COMPUTERS WORK (in order of increasing technicality)

a) Scientific American, *Information* (a collection of articles, 1966, paperback)
b) Ronald Benry, *Understanding Digital Computers* (paperback)
c) Robert Baron and Albert Piccirilli, *Digital Logic and Computer Operations*
d) Thomas Bartee, *Digital Computer Fundamentals*

These books generally deal with the theory and machinery of the computer, beginning with binary logic and logical operations and then going on to explain the workings of the arithmetic, memory, and control sections of a computer. Some have an introduction to machine language and programming languages. Programming manuals abound on the market.

3) FILMS AND OTHER MEDIA (a virtually untapped resource*)

a) *Metropolis*, (Brandeis University Film Service)
This classic silent film made in 1926 by Fritz Lang depicts the great city of the future and the conflict which arises between the ruling and the working classes. A human-form robot is invented to replace workers but a love affair interferes, etc. Contrived resolution. Fits in well with Wiener's book.
b) *The Industrial Worker*, (Boston University Film Library)
Brings out the nature of work on the automated assembly line and raises excellent questions about the relationship of automation to working conditions, skilled labor, and job security. These remain unanswered by the fluorish of triumphant music and platitudes at the end.
c) *Assembly Line* (Boston University Film Library)
Shows the loneliness and dreariness of a young factory worker's life outside of the plant, and how all life has become depersonalized in the consumer society. Setting

is New York City in the fifties.

Productivity Key to Plenty (Boston University Film Library)
An excellent statement on the triumph of technology and industry in providing the goods. A propaganda film made in the late forties in response to labor unrest, arguing that automation and machinery are the key to growth and prosperity (and full employment).

Modern Times (pirate film)
This Charlie Chaplin classic depicts the frustration and desperation of life during the Depression, and how the people were the innocent victims of a collapsed system of industrial production. Another fine statement of life in advanced capitalist countries. Great symbolism and humor.

Right of Privacy (Boston University Film Library)
This film is an NET documentary made a few years ago. It describes the many ways information is gathered about people, from testing to various forms of investigation, and how computers will be used to set up national data banks. Liberal politics but some good informative material.

The Automated Battlefield (American Friends Service Committee)
This is an excellent slide show describing the electronic air war which is being waged in Indochina and the reasons for the development of this technology. Brings out the fundamental role of computers.

McDonnel-Douglas Film (McDonnel-Douglas Project, 4372 Westminister Place, St. Louis, Mo. 63108)
A well-done exploration of the way in which this company controls the economy and lives of the people of St. Louis. Brings out the kinds of labor practices and contract support which keep the company prosperous at the expense of the people.

*The films listed under the Boston University Film Library are generally available from other university film libraries across the country, e.g., the Indiana University Film Center. They can be ordered in advance from most any of these repositories. Many other relevant titles can also be obtained in addition to those described here.

4) ADDITIONAL BIBLIOGRAPHY

a) Material from Computer People for Peace, 291 Sterling Place, Brooklyn, N.Y. 11230—in particular their newsletter, *Interrupt*, and pamphlets such as *Data Banks, Privacy, and Repression.*

b) A useful annotated bibliography, *Implications of Computer Technology*, Research Review No. 7, Harvard Program of Technology and Society

c) Books dealing mainly with computer technology and society:

Robert Boguslaw, *The New Utopians*
Charles Dechert, ed., *The Social Impact of Cybernetics*
Martin Greenberg, ed., *Computers in the World of the Future*
James Martin and Adrian Norman, *The Computerized Society*
Plyshyn, *Perspectives on the Computer Revolution*
Tavis, *The Computer Impact*

d) Books dealing with more specific applications of computers

Ashby, *Introduction to Cybernetics*
Feigenbaum and Feldman, *Computers and Thought* (on artificial intelligence)
Hamming, *Computers and Society* (applications)
Oettinger, *Run Computer Run* (computers in education)
Donald Schon, *Technology and Change* (business and industrial use)
Edward Tomeski, *The Executive Use of Computers*

e) Books dealing more generally with technological development:

Raymond Aron, *The Industrial Society*
Murray Bookchin, *Post Scarcity Anarchism*
Tom Burns, ed., *Industrial Man*
Nigel Calder, *Technopolis: Social Control of the Uses of Science*
Jack D. Douglas, ed., *The Technological Threat*
Jacques Ellul, *The Technological Society*
Victor Ferkis, *Technological Man*
Herbert Marcuse, *One Dimensional Man*
Lewis Mumford, *The Myth of the Machine*
Robert Perrucci and Mark Pilisuk, eds., *The Triple Revolution Emerging*
Albert Teich, ed., *Technology and Man's Future*

f) Books dealing with alienation and the new working class:

Robert Blauner, *Alienation and Freedom*
Andre Gorz, *Strategy for Labor*
Roszak, *The Making of the Counter-Culture*
Daniel Singer, *Prelude to Revolution*
Slater, *The Pursuit of Lonliness*

g) Assorted articles and pamphlets:

1. Peter Barrer, "Engineers in the Working Class," *Science for the People*, Vol. 3, No. 4, September, 1971
2. Herbert Gintis, "The New Working Class and Revolutionary Youth," *Socialist Revolution*, May/June, 1970
3. Edward Nell, "Automation and the Abolition of the Market," MDS Pamphlet, No. 2, c/o Gottlieb, 411 12th Street, New York City
4. Martin Oppenheimer, "White Collar Revisited: The Making of a New Working Class," *Social Policy*, July/August 1970
5. Stan Robinson, "Fighting the Police Computer System," *Science for the People*, Vol. 3, No. 4, September 1971
6. Robert Theobald, "Cybernation and the Fulfillment of Man," *Liberation*, March, 1965
7. Robert Theobald, "Cybernation and Human Rights," *Liberation*, March 1965
8. Joseph Weizenbaum, "On the Impact of the Computer on Society," *Science*, 176, May 12, 1972.

COST EFFECTIVENESS:

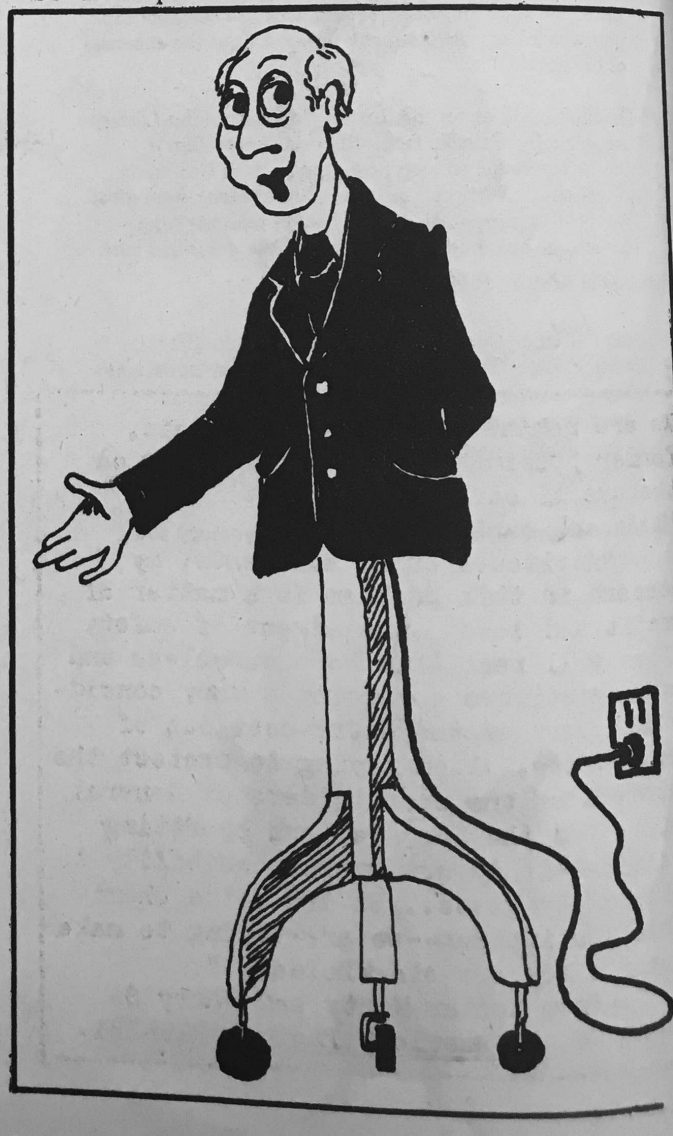
WHOSE COST ?
WHOSE BENEFIT ?

Computing - information processing - with automated electrical devices, is an essential aid for getting adequate solutions to the "physical" problems of groups of people. We have to deal with the physical problems, or the spiritual problems become academic - that is, man lives by bread, though NOT bread alone. In the society of today, COST is the criterion by which almost every social activity is controlled, regardless of whether we have a "profit" system or some other system. This is because our resources of human effort, production facilities, raw materials, and energy are limited compared to human needs. At a time when the President's new "peace" budget proposes radical reductions in funding for "civilian" purposes (except possibly, research on a supersonic transport plane), and an increase in military spending, any effort to turn our communities and our country in a better direction requires ADVANCE analyses of costs vs. benefits for US to make good decisions about how OUR resources are to be conserved or expended.

COST EFFECTIVENESS is a figure of merit, or ratio , of return to expenditure. "Most pounds per dollar" or "least dollars per pound" imply best cost effectiveness, other things being equal - which they seldom are. To enable meaningful comparisons, cost and benefit values must be express in monetary units. This is necessary, though often invalid and sometimes impossible. Thus the numbers used - the data fed into the algorithm or "meat grinder" may be extremely subjective and their validity should be checked with extreme care and skepticism. The adage "Figures don't lie, but liars figure" is the best guide. Often the correctness of the values given is less important than the identities of the values left out - the unstated premises which are so basic to the way we have been accustomed to think that they are never consciously expressed, and therefore never challenged. Getting the "whole truth" is the key. Present circumstances may be difficult to evaluate, and the objectives of those with decision-making authority may not be clearly analyzed, or simply not stated to those who must live with the consequences.

Often the apparent decision making level is not the real one; at this level all choices have been previously determined by those who pose the questions and supply the information to the decision-making "authority". Especially in the case of government spending, the ultimate user - the population at large - often has no knowledge of the criteria by which choices are being made "in its behalf" - even at the superficial level.

In the military area, the objectives of the 1972 Christmas Season bombing campaign are classified; the "benefits" are only partly known, and the costs have been concealed as much as possible. Indeed, the final costs are not forseeable at this time. For a "civilian" example, how should an individual's transportation needs be handled? Counting all costs, public transportation supplemented by taxis and rental cars may provide the cheapest transportation. But once an autombile is purchased, many additional functions can be accomplished at relatively low addi-



tional cost - the more the car is used, the lower the cost per mile. Or the individual may simply prefer the luxury of private transportation within limits, regardless of costs. So the decision of whether or not to purchase a car may be based on factors which were not in the original NEEDS, or these may be considerably modified to support the final determination. There are always two reasons - a good one, and the real one.

In evaluating the cost per mile for operation of private autos, how does one "cost" death or injury due to car design shortcomings? By the funeral and medical bills? By loss of potential income? Selective choice can affect which is the "best" car. Auto maker values are not necessarily anything like consumer values in this matter.

Cost Effectiveness is a valuable guide to the most for the money, or a shameful coverup for disaster, depending on the competence and honesty of those who make the analysis, and the understanding and acceptance of those who pay the price.

We are reminded of Alfred P. Sloan, former president of GM, commenting on the use of safety glass in the late '20's and early '30's:

"Accidents or no accidents, my concern in this problem is a matter of profit and loss...the advent of safety glass will result in both ourselves and our competitors absorbing a very considerable part of the extra cost out of our profits...I am trying to protect the interest of the stockholders of General Motors and the Corporation's operating position--it is not my responsibility to sell safety glass...We are not a charitable institution--we are trying to make a profit for our stockholders."

--from Morton Mintz and Jerry S. Cohen, America, Inc., p 319-321.

THE COMPUTERIZED SOCIETY

--by Bob O. and Robbie A.

This course is being team taught by a mathematician and a sociologist. In addition to some flow-charting and programming, the course includes: consideration of present uses of the computer, analysis of the computer industry, and work on projects for alternate uses of computers.

The most serious failure of the course was our inability to attract substantial numbers of those students who are often most alienated from computer technology: women, Blacks, humanities majors and so on.

There are 35 students in the class. We used 6 terminals of the University's mini computer.

Texts: Sharpe and Jacob, BASIC
Norman and Martin, The Computerized Society Kurt Vonnegut, Player Piano

Course Content: The course will be focused around two sets of ideas: 1) computers as an aid to a general mode of analysis, namely algorithmic thinking, the use of step-by-step approaches to problem-solving, and 2) the consideration of the impact of computers on society. Each set of ideas will be developed by texts, by lectures, and by labs.

Topic Outline:

Week one: introduction, history of computers, fundamental concepts.
Week two: flow-charting, algorithmic thinking, simple programs.
Week three: conditional transfer, looping, input-output.
Week four: games and simulations, alphanumeric problems and data retrieval.
Week five: the structure of the computer industry.
Week six: present uses of the computer, alternate uses (writing of proposals for the alternate-uses project).
Week seven: work on projects.
Week eight: guest speakers on artificial intelligence, computer music and poetry; NET "Right to Privacy" film shown.
Week nine: presentation of projects.

A PEOPLE'S COMPUTER COMPANY?

Changes in the cost, size and complexity of computers are transforming them from playthings for corporations, bureaucracies and universities into machinery that can be used more easily for the direct benefit of people. Minicomputers are becoming less and less expensive to buy or to rent. While these machines aren't as impressive as the big IBM, CDC, Burroughs, ... computers -- nowhere near as many big boxes or flashing lights or spinning tapes -- they can do a hell of a lot of work. And you don't have to memorize the contents of a six foot manual rack before you plug one in. So people can use these machines without becoming computer "experts."

One of the many things that a group with a little money and a lot of dedication could do with a small inexpensive machine is to put the computer directly into the hands of the people, creating an environment where people could actually use computers, learn what they're about, learn not to be intimidated by these machines, and decide for themselves what uses they can find for them.

A good way to go about this is to rent a cheap storefront, install a minicomputer that can drive a few terminals and invite people to come and play. Maybe some foundation could be persuaded to fund a people's computer center, since most potential users would not (or could not) help recover costs.

The little computer center should be well-stocked with interesting programs for people to use to become familiar with computers. Like online games. Lots of games. Things that are fun to do and that remove some of the fear of the strange machines. (how could you possibly be overwhelmed by a machine that you can beat at blackjack?)

Or interactive programs that show how to use the computer.

Or how about a program that would calculate how much of your income goes to pay taxes -- all kinds of taxes, not just income tax -- and how much of those taxes go to support the war machine.

Or how about a program that simulates a billing system for the phone company so you can get some idea of why you were charged $98 for a call to Upper Zambezi and why it takes six months to correct the error.

The center should also have simple programming manuals for sale or loan for people who want to learn to program. Probably in a language like BASIC. Advisors should, of course, be on hand to help users with individual problems. Maybe various computer-related courses could also be offered.

It would be nice if the whole system could be made available during off-hours to people who want to do fancy, advanced things. Like playing with assembly language or....

The whole people's computer center idea seems so obvious that we wouldn't be surprised to discover that it had already been tried many times. We know of one group that has already taken this approach. The people's Computer Company of Menlo Park California operates a computer center that is run pretty much along the lines described here. (But they evidently charge fees to recover costs rather than seek foundation support - the editors.) They also publish a groovy computer newsletter. Write:

People's Computer Company
c/o DYMAX
P.O. Box 310
Menlo Park, Ca. 94025

for a sample copy, Bet you'll like it.

Comment:

Some of us had reservations about People's Computer Company. Specifically, we were not convinced that their storefront and "computers can be fun" approach can really make inroads on the present organization of computer use. It is true that groups such as these are not putting computers to nefarious anti-people uses; on the other hand, it is unclear whether they are significantly changing patterns of access to computers. Most people, especially poor people, probably won't get many benefits or use from this facility. In broader terms, People's Computer Company

seems to be in the consumerist tradition of making expensive toys available to those who can pay for playing with them; at its worst, this is the tradition of "hip capitalism," which perpetuates inequalities and concentration of wealth and power of the present society. Lest this criticism be seen as too harsh, let us freely admit that there are no easy answers to the question of where funds for "counter-computation" can come from. (The article on Resource One does try to provide an answer.) We would perhaps be more inclined to cheer People's Computer Company if there was more evidence that the group had thought thru its "educating the public" goals to a more political conclusion and that it was using some of its income to fund specifically people-serving projects like those of Resource One.

Much of our criticism is taking place in a vacuum, and we only found out about P.C.C. midway in production of this issue of Interrupt; therefore, the P.C.C. has not had a chance to reply to our criticisms.

Also, we would suggest that our readers check out P.C.C.'s newsletter for themselves.

TIME FOR THE PEOPLE (Cont'd from page 3)

ACADEMIA: Any good-sized university has a computer facility and access is a lot easier here than in the hard-nosed business world. Many graduate students are given generous allotments of computer time which they are often willing to donate to good causes. Alternatively, your project, if not too sensitive, may be suitable for use as the basis for academic research, and your university contact can be advancing his own career while you're getting your work done. To the best of our knowledge, this goes on just about everywhere and the key to tapping this resource is making contact. This is accomplished by hanging around computer facilities at odd hours - which is the time of intensest activity in such places.

Is there anything important that we've left out? If so, let us know. Otherwise, you're on your own. The only warning we can think of is not to let any group or project become dependent on your computer skills unless you really intend to (and have good reason to believe you can) provide reliable service. The people don't need any fly-by-night do-gooders.

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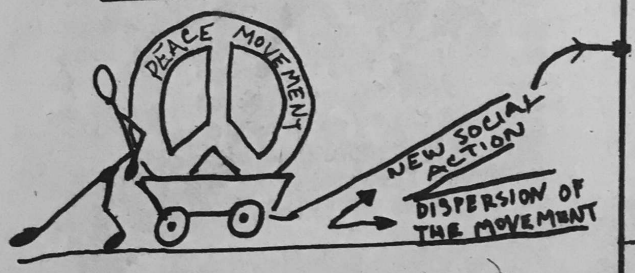

P-E-A-C-E & C.P.P. (Cont'd from page 2)

Informing the public about abuses of computer technology such as the automated battlefield and the Police Surveillance Network is still necessary, important work. Although most of the information on such nefarious uses was obtained from semipublic sources by dedicated researchers, some of it came from people inside the belly of the beast; i.e., those employed by corporate institutions involved with these projects.

We are still Computer People for Peace: the peace that can come only from a just society, based on technology developed for human need, not for corporate profit. The challenge to our organization is just beginning.

We have a little P-E-A-C-E but it is not secure. The forces for political oppression are strong (look up fascism in the dictionary). A country which was founded on our Constitution deserves better than this. Let's put our heads together right now. There's no time to be lost in securing our fragile moment of P-E-A-C-E.

ASSEMBLERS:
Bill Batko, Bob Ogden, Robbie Ash, Lynn Allen, Bill Jarosz, Don Backstrom, Arlene Ash, Marty Cornelius, Bruce Carey, Nick Maier, Dan Dougherty, Jan Reich, and contributors from Science for the People, Resource One, Chicago Area Research Group, and Brooklyn C.P.P.

INTERRUPT

**NEWSLETTER OF
COMPUTER PEOPLE FOR PEACE**

**Published by:
Computer People for Peace
291 Sterling Place
Brooklyn, New York 11238**

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