This column is an attempt to list all those organisations, newsletters and networks which may be of interest to readers of Black Chip. If you know of any other new technology orientated groups who should be included in this column please let me know. I exchange copies of Black Chip with everyone who exchanges copies of their publication with me. What I would like to hear is whether you would like me to list a similar listing of anarchist and related journals, groups etc, to add a political dimension to the paper. This would be a alternating list. If any of the details are wrong, please accept my apologies and tell me of any corrections !!!

#### International

Australia : John Englart, 33, Dickson St. Newtown 2042, Sydney, Australia

Canada : INPUT, (Initiative for the Peaceful Use of Technology), Box 248, Station B. Ottawa, Canada, K1P 6C4 (613-230-6678)

France : Libertarian Computer Association C.L.I., c/o Dusanter, BP 427-16 75769: Paris, Cedex 16, France (This sounds daft out is this a postal address, or a telex, or telephone number !!!>

U.S.A. : Computer Professionals for Social Responsibility, PO Box 717, Palo Alto, California 94301. (415-322-3778).

U.S.A. : North American Green Network, Russell Braen (202-265-0680)

U.S.A. : Overthrow / Y.I.P.I.S, PO Box 392, Canal Street Station, New York, NY 10013 (212-533-5028)

U.S.A. : Processed World, 55, Sutter St., 829, San Francisco, California 94104

#### England

Archives for Fortean Research, 1, Shoebury Road, East Ham, London, E6 240

Communications Campaign, The Communications Unit, The Showroom, South Block. County Hall, London, SE1 (01-633-5958)

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Community Computers UK. Inter-Action Trust, Royal Victoria Dock, London, E16 1BT (01-511-0411/2)

Community Computing Network, c/o Gable Cottage, 6, West End, Great Broughton. Cockermouth, Cumbria

Electronics for Peace (London group), c/o Louis Barman, 89, Acre Road, Kingston upon Thames, Surrey, KT2 6E5

Electronics for Peace (National), Townsend House, Green Lane, Marshfield. Chippenham, Wiltshire, SN14 8JW (0225-891710)

Leeds Soft, PO Box 84, Leeds LS1 4HU. (Also contact address for Sheffield Computers for People).

Magination Software, 47, Clifton Road, Elswick, Newcastle upon Tyne, NE4 6XH. (091-273-7362)

Microsyster, Women's Computer Centre and National Women and Computing Network and Newsletter : all c/o Wesley House, 70, Great Queen Street, London WC2. (01-430-0655) PLEASE NOTE THAT THESE ARE ALL WOMEN ONLY

Radical Science Journal, 26, Freegrove Rd, London N7 9RG

Science for People, c/o BSSRS, 25, Horsell Road, London, N5 1XL (01-607-9615)

#### CONTACTS

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## SPOT THE DIFFERENCE





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WISH YOU WERE INFORMED ?

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THEN YOU SHOULD SUBSCRIBE TO BLACK CHIP ! SEND É 2.00 FOR THE NEXT 4 COPIES OF YOUR FAVOURITE MAGAZINE.

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SEND YOUR MONEY TO RICHARD ALEXANDER, 55 DUPONT ROAD, LONDON SW20 8EH

The first "decision" to come out of the meeting was a stated desire to expand both the political range of the paper and also the range of technologies covered. It was felt that the issues being raised were so important that the paper should not confine itself to the anarchist movement, although that milieu is where we will remain being involved. Similarly it was felt that other new technologies, in particular, video, should be featured in the paper, although articles will, of necessity, reflect what is sent in and what I feel happy with printing. Having said which, if anyone sends in articles they are almost certain to be printed, subject to the usual constraints. In view of this, the title will remain the same, but the sub-title will be "a radical journal of new technology".

7) There was talk of possibly setting-up

WHITHER

I'd like to get the print run up to 500+, to do which I'll need to get more money together. According to one estimate 500 copies of a 16 page magazine (A4) will cost £170.16, just to print. On top of this there is the postage on a 20kg. parcel. This does not take into account any typesetting (optional), artwork, collating/stapling/folding. So 500 copies will cost a minimun of £200, which means that each copy will need to return 40p on every copy to break even. This is reduced if we do 1000 copies of an issue, as the printing cost is £257.56 (total £300 max) where 40p a copy need only be returned on 750 copies to be viable financially. The problems then reduce themselves to 1) Can the money for the initial print run be raised (actually we'd need to raise for 2 issues, as the money wouldn't come in from sales of the first issue until the second hits the shops (i.e. £600)) and 2) Would it sell 800 copies or so every other month, as I'd like to go bi-monthly if possible. Other problems may include : getting the paper typeset - comrades have mentioned getting the paper set on a daisywheel, and I'm sure the comrades at Bread and Roses would love to typeset the paper - but I'm afraid there's no money for that as yet. It may however be to our advantage to appear more professional if we want sales to increase.

 There is another consideration, our place in the market. At present there is already the BSSRS "Science for People" which covers a range of issues and has the backing of an organisation (captive sales). Their perspective tends towards the use/abuse view of technology. In contrast, there are the Labour Process Marxists of "Radical Science Journal", which again has been moving into the new technology area. There seems little point in trying to compete with these papers. Certainly there used to be a market, as the magazine Undercurrents, a liberatrian technology periodical, had a respectable print run for many years, but eventually it went under finacially, as the market seemed to disappear as alternative technology became either financially viable, and therefore co-optable, or was totally marginalised.

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On the other hand there are a large number of existing computer-orientated newsletters. For my money (literally) I feel there is much to be gained by a pooling of resources of the existing network of newsletters. The problem would be both financial and political. However there already exists a large market for anarchist/feminist/peace/green/community/ etc newsletters which rather than printing eachother's articles, could jointly put together a well-produced magazine, with an editorial board covering this wide range of interests. I have already started to try and sound-out other editors to see how they feel about the idea. Certainly the need is there, but I don't feel that I can singlehandedly pull all the pieces together. In the meantime I shall continue to produce Black Chip as best I can, but until I can raise £2-300 I don't think that it will be sold outside of the existing (but still expanding network that is predominantly anarchist in nature). Confused ? So am I, and I'll probably change my mind again by the time I do the next editorial !!!

One final point, as you can see I've made the print larger so that you can actually read the paper.

> Railton Road, London, SE24. Richard Alexander

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Firstly I would like to thank all the people who participated in the first Black Chip readers' meeting, to Pan for arranging the meeting, and the people at 121 Bookshop for having us. Inevitably, given the very wide range of interests and experiences of those present, the meeting was not totally coherent, which . (my) lack of chairing did nothing to improve. My apologies to everyone who went if it didn't quite live up to your expectations. However the meeting did result in many valauble contacts being made, and from it I hope several important projects will evolve. I also got a much clearer picture as to who you (the readers) are and what you want from the magazine.

READERS

I'll briefly outline what each of the projects might entail. Given that this is written from memory and that there were quite a few decisions taken in small groups when the meeting petered-out, I may be guilty of misrepresenting other people's ideas. Anyway if you are interested in co-operating in any of the projects, please write to the relevant project c/o Black Chip. Also if you are co-ordinating a project please let me know so that I can pass on any offers of help !!!

1) "Computing for Beginners" : Although there is a possibility that Readers and Writers may be publishing a book with this title, it was generally felt that a non-patronising libertarian introduction to computers (and other new technology ?) would be most valuable. This would take the form of a printed pamphlet, distributed through movement bookshops. The exact content has yet to be finalised. So if you want to help write, or want to suggest topics to be covered, write to the "Pamphlet Project" c/o Black Chip.

2) Although not discussed properly at the meeting, I know that Pan is nelping DAM produce a pamphlet on the New Technology at the workplace. I presume this will cover health and safety, staffing levels, overall economic and social effects, etc. If you have anything that may be of help on this project please send them to : Pan c/o Black Chip or c/o 121 Bookshop, -121, Railton Road, London, SE24.

3) Following Jack's article in the last Black Chip, there was a discussion on the setting-up of an anarchist network. This seems to be dependent on Jack getting his equipment and the rest of us getting our modems (and computers, T.V.s and phones). However there seems little doubt that such a network, especially one that was linked with other radical networks could prove a' valuable political tool. I think that Jack is undertaking some research as to the best/cheapest gear for comrades to get, so that we can standardise sufficiently to be able to talk to eachother. With modems costing as little as £30.00 and computers for £100, there seems to be an excellent propect of this project becoming a reality within the next year. If you want to contact Jack regarding this project, please write c/o Black Chip

4) New Technology Conference/Workshop : Although there seemed to be a degree of agreement on holding some form of gettogether where comrades could get their grubbies on some hardware and see how it works, the details have yet to be workedout. However if you would like to help organise the conference or would like to co-ordinate specific discussion sessions/ workshops, please come to the planning meeting at 121 Bookshop (address above), on Saturday 7th December, 2.00pm. If you can't make the meeting please send any relevant contributions to Richard Alexander, c/o Black Chip.

5) Comms : There was a lot of interest in co-operating on various comms projects. but I am not aware of the exact nature of this project. I suggest those of you with the relevant gear keep an eye on the bulletin boards.

6) Bibliography : There were several pleas from comrades for accessible books and other print media on a variety of new technology subjetcs. I'd certainly be pleased to collate any recommendations that readers have for relevant titles. I would also like to hear of titles to avoid. Given the wide range of interests, levels of knowledge and experience shown by participants at the readers meeting, I'd like to hear of both "beginners" and more advanced titles. Both practical and theoretical works are welcome. Contact : Richard Alexander c/o Black Chip.

MEETING

7) There was talk of possibly setting-up some form of link between the already existing networks (eg Microsyster, Peace Net, Green Network, Electronics for Peace Community Computing Network, ourselves, etc). The exact form this might take was not clarified (to be fair it couldn't be, as it can not be a unilateral decision by a single group), but certainly co-operating makes a lot of sense. Areas were this may prove valuable include an on-line net work or a large circulation "radical new technology" magazine, which could reach out into the world of both hobbyist and professional computer people, where there exists (so I'm led to believe) a vast number of people who would be very pleased to buy such a mag. Certainly Black Chip is reaching a barrier, mainly in the sense that I feel that 150 copies of this is the limit as far as photocopying goes (although this could be expanded if everyone did a few extra copies). I'll discuss this further in the editorial "Whither Black Chip ?". But if anyone from any of the others networks feels that the above idea is viable, then please contact Richard Alexander, c/o Black Chip.

8) Video : Although in some sense outside the original ambit of this journal, there were several people at the meeting who expressed an interest in video (ie they were actively involved in it). I'm not sure whether anyone is actually contemplating an anarchist video project (isn't there one already somewhere ?), but if you want to be put in touch please write to the "Video Project" c/o Black Chip.

As you can see there are a lot of avenues that we can explore, and I'm sure that other readers could add as many again. Please feel free to use this paper to contact people.

Richard Alexander

Sometimes the noise of that



#### MEETING (CONT'D)

DHSS COMPUTER

#### BID BY ICL

The Department of Health and Social Security has asked ICL to tender for a contract for supplying mainframes for a computerisation scheme for local offices. dealing with supplementary and sickness benefits. The deal is expected to be worth £60,000,000 over 10 years.

The DHSS already has two large-scale sytems, using ICL 2900 series mainframes, one for unemployment benefit, based in Reading and Livingstone; the other for pensions and child benefit, based in Newcastle. At present local offices operate entirely manually which means they are very labour intensive.

The new system will be based on Series 39 Level 80 twin processors (formerly known as Estriel), which are the largest machines that ICL produces.

The planned system is based around, what Norman Fowler calls the "whole person concept". This entails everything to do with one person's various benefits being dealt with at a single by the same official. One of the prime purposes of this plan is to cut-out "fraudulent" claims that people could make using different offices. Another target is staffing levels, which are a considerable proportion of DHSS costs. In the short term there will, of course, be an increase of staff, 150 being needed for the development centre alone. If anyone is interested. I'd recommend that readers bone up on their Cobol and Fortran, as these are the standard programming languages that ICL's VME operating system runs.

For increased "security" it is expected that plastic cards will be introduced. It is also expected that the national insurance number will be used as a unique identifier for claimants. This identifier seems to contradict the Lindop committee recommendation against allowing such an identifier being introduced because of the possibilities it offers of interlinking computer systems and consequent loss of privacy. Doubtless the DHSS will be well aware of this, and go ahead anyway, as this system will bring "Big Brother" another, large, step closer.

Original article written by Rory Johnston

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Source : Computer Talk 23/9/85

## Strategic computing

The Department of Defense Advanced Research Projects Agency (DARPA) was formed in the late 1950s to promote basic research. Indeed, DARPA's Information Processing Techniques Office, headed by distinguished computer scientists, has established itself as the principle government sponsor of computer research at universities and industrial laboratories. Much of this research has been generic in nature-applicable to a large variety of military and nonmilitary problems. But in October 1983, DARPA launched a new "Strategic Computing Plan" with the express purpose of focusing research on specific military applications. Because of the broad influence that DARPA exercises on the direction of computer research in this country, such a pronounced shift of purpose deserves public scrutiny. The authors contend that the Strategic Computing Plan is dangerously misleading, because it blurs the distinction between straightforward progress in computer science and mere wishful thinking. The plan's suggestion that "artificial intelligence" will enable strategic nuclear weapons to be handled almost entirely by computer illustrates the serious consequences that could result if policy makers begin to depend upon technological fantasy.

### by Severo M. Ornstein, Brian C. Smith and Lucy A. Suchman

IN THE 1940s, atomic physics was about 25 years old. L Building on the discoveries of the new field, scientists were able to produce a weapon more powerful than had ever before been conceived. In the 1980s computer science -which also happens to be about 25 years old-has become the critical field underlying modern weapon systems. This is not yet widely recognized. When we think of nuclear weapons, we tend to envision the warheads and the explosions; forgetting about the complex computer technology that supports the decision to fire the missiles and directs them to their targets. Computer systems are by now used throughout the military, for early warning, communications, weapons guidance and in the simulations with which targets are selected and battles planned.

DARPA's Strategic Computing Plan aims to develop a new generation of computing technology for military applications. The plan initiates a five-year, \$600 million program, and there is good reason to believe that this is just the beginning. The proposal contains plans for developing an underlying technology base of new hardware and software. The hardware emphasis will be on microelectronics and multi-

Severo M. Ornstein is a computer scientist and chairman of Computer Professionals for Social Responsibility, based in Palo Alto, California. Brian C. Smith, who teaches computer science and philosophy at Stanford University, and Lucy A. Suchman, an anthropologist, are members of the research staff at the Xerox Palo Alto Research Center.

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processor architectures, from which the Agency hopes to obtain at least a thousand-fold increase in net computing power. The software component focuses on artificial intelligence - particularly on what is known as expert systems to provide machines with "human-like, intelligent capabilities" including natural language understanding, vision, speech and various kinds of automated reasoning.1

On top of this technology base, three specific military applications are to be developed. For the Army, the plan proposes a class of "autonomous vehicles," able not only to move around independently, but also to "sense and interpret their environment, plan and reason using sensed and other data, initiate actions to be taken, and communicate with humans or other systems." For the Air Force, the suggestion is a "pilot's associate" to aid aircraft operators who are "regularly overwhelmed by the quantity of incoming data and communications on which they must base life or death decisions," in tasks ranging from the routine to those that are "difficult or impossible for the operator altogether" and require the "ability to accept high-level goal statements or task descriptions." Finally, the Navy is offered a "battle management system," "capable of comprehending uncertain



data to produce forecasts of likely events, drawing on previous human and machine experience to generate potential courses of action, evaluating these options, and explaining the supporting rationale." These three applications are intended to illustrate the power of the technology; we are also asked to imagine "completely autonomous land, sea, and air vehicles capable of complex, far-ranging reconnaissance and attack missions."

Two facts stand out: · The Strategic Computing Plan proposes the use of artificial intelligence technology in military systems in order to provide a radically new kind of flexibility and adaptiveness. Referring repeatedly to the increasing speed and unpredictability of modern warfare, the plan promises that computing technology can be developed capable of adapting to "unanticipated enemy behavior in the field."<sup>2</sup> This will require "a new generation of military systems" that could "fundamentally change the nature of future conflicts." The change involves both increasing the amount of computation and enlarging its role to include automation of military decision-making.

• There are specific proposals about how to direct computer science research. Rather than letting researchers follow their own course, the plan aims to focus them on military objectives. Various mechanisms are suggested to do this, such as a close coupling of fundable research goals and military needs, adherence to strict development timetables and the selection of specific development projects intended to "pull the technology-generation process." (The Army, Navy and Air Force projects cited above are the first examples.) In assessing the Strategic Computing Plan, our concern is not with the underlying technology base or with military projects as such. Nor do we question the power of artificial intelligence as a new and important technology. Our concern is that increased reliance on artificial intelligence and automated decision-making in critical military situations, rather than bringing greater security, leads in an extremely dangerous direction. Specifically, the plan creates a false sense of security in the minds of both policy-makers and the public. Like all computer systems artificial intelligence systems may act inappropriately in unanticipated situations. Because of this fundamental limit on their reliability, we argue against using them for decision-making in situations of potentially devastating consequence.

#### Automation and uncertainty

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Modern warfare is marked by three interacting trends: increasingly powerful weapons; more separation, in both time and space, between planning and execution; and a faster and faster pace. The first means that the consequences of our actions, intended or unintended, can be greater than ever before. The second means that we rely on increasingly large, complex and indirect systems for command, control and communication. The third means that any miscalculation can quickly lead to massive ramifications which are difficult, perhaps impossible, to control. It is easy to see the dangerous potential of the three in combination.

They are all the direct product of technological developments in offensive and defensive weapons systems. And they have brought us to the situation that we live with now: twid nations confronting each other with forces that, if un! leashed, would destroy both in less than an hour.

This danger is recognized on all sides; people differ only in what they think we can or should do about it. But if anything is universally accepted, it is that the current state is precarious. And into this situation the Strategic Computing Plan proposes to introduce artificial intelligence as a new ingredient:

Improvements in the speed and range of weapons have increased the rate at which battles unfold, resulting in a proliferation of computers to aid in information flow and decision making at all levels of military organization. . . . A countervailing effect on this trend is the rapidly decreasing predictability of military situations, which makes computers with inflexible logic of limited value. . . . Confronted with such situations, leaders and . planners will . . . be forced to rely solely on their people to respond in unpredictable situations. Revolutionary improvements in computing technology are required to provide more capable machine assistance in such unanticipated combat situations. . . . Improvements can result only if furure computers can provide a new quantum level of functional capabilities.

What this means in plain English is: Faster battles push us to rely more on computers, but current computers cannot handle the increased uncertainty and complexity. This means that we have to rely on people. But without computer assistance, people can't cope with the complexity and unpredictability, either. So we need new, more powerful computer systems.

In observing that increased uncertainty and confusion are critical problems of modern warfare, the Strategic Computing Plan accepts the situation as inevitable, embracing artificial intelligence and automatic decision-making as a means of coping with it. The decisions to be automated, furthermore, are not minor; the Plan makes clear that reliance on automatic systems is meant to include the control of strategic weapons. For example:

Commanders remain particularly concerned about the role that autonomous systems would play during the transition from peace to hostilities when rules of engagement may be altered quickly. An extremely stressing example of such a case is the projected defense against strategic nuclear missiles, where systems must react so rapidly that it is likely that almost complete reliance will have to be placed on automated systems. At the same time, the complexity and unpredictability of factors affecting decisions will be very great.

The Plan offers no argument to warrant this reliance on automatic decision-making. Although computers have contributed to more effective weapon systems and will continue to do so, it doesn't follow that we can automate the complex

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processes of assessment and judgment. There is a long and still unresolved debate within the computer profession about what we should expect of artificial intelligence. But there is agreement that it is still in its infancy. The first systems based on the technology are just beginning to be used, in highly controlled and delimited circumstances. But the problem isn't just one of immaturity. Rather, it is that the Plan expects reliable decision-making in circumstances where there may simply be no way to achieve it, with computers or with people.

#### The limits of reliability

Any computer system, however complex, and whether or not it incorporates artificial intelligence, is limited in the scope of its actions and in the range of situations to which it can respond appropriately. This limitation is fundamental and leads to a very important kind of failure in reliability beyond the obvious troubles of transistors shorting out or systems breaking down. Those failures are serious enough in and of themselves, but there is a much more intractable kind of failure, having to do with limitations of design. Computers are maddeningly literal-minded; they do exactly what we program them to do. Unfortunately, except in trivial cases, we cannot anticipate all the circumstances they will encounter. The result is that, in unexpected situations, computers will carry out our original instructions, but may utterly fail to do what we intended them to do.

The ballistic missile warning systems of the United States (and presumably those of the Soviet Union) regularly give false alarms of incoming attacks.3 Although most of these alerts are handled routinely, on a number of occasions they have triggered the early stages of a full-scale reaction. These false alerts stem from causes as varied as natural events, in one case a moonrise, in another a flock of geese; failures in the underlying hardware, such as a faulty integrated circuit chip that started sputtering numbers into a message · about how many missiles were coming over the horizon; and human errors, such as when an operator mounted a training tape onto the wrong tape drive, thereby causing the system to react seriously to what was intended to be a simulation. The primary insurance against accidents resulting from this kind of failure has been the involvement of people with judgment and common sense. So far, there has always been enough time for them to intervene and prevent an irretrievable, and perfectly real, "counterattack."

Despite these lessons, the Strategic Computing Plan promotes the view that the human element in critical decisionmaking could be largely, if not totally, replaced by machines. This would require that computers embody not only "expert knowledge" but also common sense and practical reasoning. Such capabilities, however, are beyond the state of the art. Expert systems are so called because they capture some of the specialized knowledge that an expert has acquired—not because they surpass the abilities of the rest of us generally. Despite much work, there hasn't been much progress in automating plain old common sense.

What distinguishes common-sense reasoning is the ability

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to draw on an enormous background of experience in the most unpredictable ways. In directing a friend to your house, for example, you don't have to give instructions about all the possible things that might happen along the way: fallen trees, accidents, flat tires. Similarly, if you were to say "The city council didn't give the demonstrators a permit because they feared violence," you would expect your audience to know "they" refers to the councillors, not to the demonstrators. The point is that a vast range of knowledge and experience may be relevant; we never know what we'll need, or when we'll need it. Nor do we usually even novice that we are using this background knowledge. These facts undermine any attempt to codify common sense and practical reasoning. Current expert systems don't have the common sense of even a small child.

In terms of their fundamental limitations, artificial intelligence systems are no different from other computer systems. Computers carry out, with lightning speed and unparalleled accuracy, rules that a human programmer has coded in advance. It is the job of programmers and system designers to try to anticipate the range of situations that a computer system will encounter, and to provide recipes for all the possible actions that it should take in those situations. This planning is designed so that the computer can recognize the particular situation that does in fact arise and select an appropriate response. Because of its great speed, the computer will typically be able to select a response very rapidly.

This all sounds very promising. Designers plan carefully so that the computer can respond instantly when it matters most. And it often works very well, as in the case of the computers that control the phone system, help to land aircraft and provide missile guidance. But the behavior of the system depends entirely on the structure of the program-on how it is put together. Classical computer systems not only have rigidly pre-specified rules, but put them together in brittle and inflexible ways. What distinguishes artificial intelligence and expert systems, and gives them the "flexibility" so touted by the Strategic Computing Plan, is that they facilitate more productive interaction of the rules. But they continue to rely on the programmer's ability to state the rules in advance. And to do so, the programmer must first develop a conceptual structure appropriate to a given problem area.

The rules on which all computer systems are based, in other words, treat the world as if it were built from a stock of pre-defined building blocks, assembled in carefully prescribed ways. Artificial intelligence systems are particularly good at dealing with very complex configurations of these building blocks, often better than more traditional compurer programs. But they are ill-equipped to respond appropriately to new kinds of blocks. They work best in areas that are well understood, highly constrained, predictable and easily controlled.

In more complex environments, unanticipated events are liable to trigger anomalous reactions. That is why the radar reflections off the rising moon fooled the North American Air Defense system; moons were not among the pre-defined building blocks. The system had no way to say "Oh, yes, I forgot about the moon," because it had no common sense to underlie its set of domain-specific rules. Even worse, computer systems don't "know" that they are encountering an event outside the scope of the assumptions on which they were built; they merely sort every event into the prespecified set of categories. Not only was the moonrise not recognized as such; it was mistaken for something quite different.

All complex systems, including artificial intelligence systems, have to evolve for a substantial period before they are reliable enough to be used. Any first version will invariably contain flaws, some of which will be obvious as soon as the system is installed. Other more subtle problems will surface only after it has been used for some time in a wide variety of situations. During this evolution, the system makes many, often serious, errors, some of which require substantial modifications to correct. These errors, furthermore, may interact; the "fix" to one problem will often introduce another, more subtle problem. In this process, perfection is never achieved; the best one can hope for is to reduce to an acceptable level the rate at which new flaws reveal themselves. The system will then be described as "reliable" and may lead us to a sense of security. Even in the most reliable systems, however, residual flaws, although improbable, may still surface with dramatic effects.

The 1965 Northeast power failure demonstrates how a large system containing hidden design flaws can run troublefree for years and suddenly collapse under unexpected circumstances. In that case the problem stemmed from simultaneous lightning strikes affecting separate parts of the system. By design, the system tried in each case to absorb the load elsewhere, causing a series of further overloads that eventually interacted to bring down the whole Northeast power grid. On October 27, 1980, a similar problem in the nationwide computer communications network known as the ARPANET brought all communication to an abrupt halt.<sup>4</sup> While they usually have less dramatic consequences, such problems arise in all computer systems.

Computer systems that achieve a sufficient level of reliability to be used in real applications do so because they have been heavily tested beforehand in the laboratory. After being installed in their particular domain, they are observed, extended and corrected to meet real-world conditions. No amount of simulation can replace the testing that comes from embedding the system in the actual environment for which it was designed. The reason is straightforward: simulated tests exercise exactly those circumstances that the designers expect the system to encounter. It is the designers, after all, who build the simulators, based on the same understanding of the problem area used to build the system in the first place. But all experience with complex systems indicates that it is the circumstances we fail to anticipate that cause the serious problems.

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One obvious solution is to provide ways for human operators to intervene and override the default system behavior. intelligence.

higher level, beca?e they could learn

carry their views in a live TV brokikele that.

But this too is a problem; we just don't know yet how to build large systems with enough human interactions to make the combination reliable. Given a person capable of perfectly adequate performance in a domain without machine assistance, and a supporting machine capable of adequate performance on its own, the performance of the combined "system" is often quite poor because of problems in the interaction. Three Mile Island is perhaps the best known example.

Finally, when a computer system is intended for use under crisis conditions, all of the standard problems are likely to be highly aggravated. The behavior of any system is only as predictable as the behavior of the people and technology that make it up. Yet human behavior in situations of fear and confusion—such as war—is notoriously unpredictable. Systems designed for use in a crisis should be thoroughly tested before one begins to rely on them. Yet there is no way that military systems—especially nuclear 'systems—can be fully tested in advance; nor can crisis conditions ever be fully simulated. As the Strategic Computing Program points out, it is the unpredictability of war that poses the gravest threat.

#### The myth of technological solutions

If the uncertainty of battle is so serious, and if computer systems are so unreliable, why should the Computing Plan propose computer technology as a solution? The easiest explanation seems to be a version of "If we can do it, we should do it." If there is some possibility that we can build new military systems, especially powerful new computing systems, we must try to do so.

There are also more subtle answers. Sophisticated artificial intelligence systems are scientifically intriguing; they enable us to explore areas of human capability in which we have enormous interest, including those areas that are relevant to coping with uncertainty. The hope that these systems could cope with uncertainty is understandable, since there is no doubt that they are more flexible than traditional computer systems. Understandable, but wrong, because in the end the increased flexibility is limited by the same inexorable facts that limit all computer systems.

Over the years, the lure of artificial intelligence has led to a growing appetite for research funding. The appetite, in turn, has led the professional community to make promises, many of which have turned out to be more difficult to fulfill than was anticipated. For example, it was widely believed in the 1950s that we would soon have fully automatic machine translation, an accomplishment that still eludes us. These unfulfilled promises are frequently a combination of ordinary naivete, unwarranted optimism and a common if regrettable tendency to exaggerate in scientific proposals. Shortcomings are often masked by subtle semantic shifts. When we fail to instill "reasoning" or "understanding" in our machines, we tend to adjust the meaning of these terms to describe what we have in fact accomplished. In the process, we obscure the real meaning of our claims for artificial intelligence.

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When these claims are taken literally, without appropriate qualification, they give rise to unrealistic confidence in the power of the technology. Policy-makers, even those close to the profession, are not immune to such misconceptions. Witness the following discussion of Defense Department research on space-based weapon systems, as reported in the Los Angeles Times on April 26, 1984:

The fireworks began when a panel that included Robert S. Cooper, director of the Defense Advanced Research Projects Agency, George Keyworth, Reagan's science adviser, and Lt. Gen. James A. Abrahamson, director of the Strategic Defense Initiative, acknowledged that a space-based laser system designed to cripple Soviet longrange missiles in their 'boost' phase would have to be triggered on extraordinarily short notice.

To strike the boosters before they deployed their warheads in space would require action so fast that it might preclude a decision being made in the White Houseand might even necessitate a decision by computer, the panel said.

At that, Sen. Paul E. Tsongas (D-Mass.) exploded: 'Perhaps we should run R2-D2 for President in the 1990s. At least he'd be on line all the time.'

'Has anyone told the President that he's out of the decision-making process?' Tsongas demanded.

'I certainly haven't,' Keyworth said.

Sen. Joseph R. Biden, Jr. (D-Del.) pressed the issue over whether an error might provoke the Soviets to launch a real attack. 'Let's assume the President himself were to make a mistake. . . .' he said.

'Why?' interrupted Cooper. 'We might have the technology so he couldn't make a mistake.'

'OK,' said Biden. 'You've convinced me. You've convinced me that I don't want you running this program."

Cooper's final comment betrays a belief that computers are competent to take over critical decisions and might correct deficiencies in human judgment as well. As the discussion shows, common sense suggests that these claims are implausible. It might have been that common sense was wrong-that the underlying science had advanced beyond the layperson's expectations. But we believe that the skepticism is in fact well founded.

To cope with problems of complexity and speed in modern warfare, the Strategic Computing Plan proposes a quantum leap in computer technology, comparable to the advent of nuclear weapons technology in the 1940s. Ironically, the problems arise in part from the very technology that is proposed as a solution. Past attempts to achieve military superiority by developing new technology, rather than increasing our security, have brought us to the present untenable situation. The push to develop so-called "intelligent" weapon: as a way out of that situation is another futile attempt to find a technological solution for what is, and will remain, a profoundly human political problem.

1. Unless otherwise noted, quotations are from Strategic Computing. "New Generation Computing Technology: A Strategic Plan for its Devel-

opment and Application to Critical Problems in Defense," Defense Advanced Research Projects Agency (Oct. 28, 1983).

3. See, for example, the Hart-Goldwater report to the Committee on Armed Services of the U.S. Senate: "Recent False Alerts from the Nation's Missile Artack Warning System" (Washington, D.C.: U.S. Government Printing Office, Oct. 9, 1980); Physicians for Social Responsibility, Newsletter, "Accidental Nuclear War," (Winter 1982), p. 1. 4. Eric Rosen describes this event in ACM SIGSOFT, "Software En-

gineering Notes," 6, no. 1 (Jan. 1981).

Since the article above was written, there have been some interesting developments reported in the computer press.

Apart from the political and military arguments, between those who argue that the "Star Wars" system will benefit every one because it will make nuclear weapons obsolete (but weren't nuclear weapons supposed to make wars impossible ?) and those who argue that the system is inherently destabilising and more likely to lead to nuclear war, there has also been a lively debate between those computer specialists who say it is impossible to actually create the necessary software to run the massive computerised network with any degree of success (and it would have to be 100% to be effective).

David Parnas has resigned from the Strategic Defence Initiative panel on computing support in battle management, and is now engaged in a public campaign against SDI.

Also in the States a section of the University research establishment. 15 attempting to organise a boycott of SDI research. A major success for the boycott has been the vow by an overwhelming majority of the faculty at the University of Illiniois, considered to be one of the most prestigious physics departments in the country not to undertake SDI research. Similar actions are Deing organised in other universities. Doubtless our great leader would be only too pleased to offer the facilities of British universities to do the dirty work so all comrades in educational establishments are invited to try and organise a boycott in this country too.

Compiled from various sources (Thanks to David)

2. Electronic News (March 19, 1984), p. 18.

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(Lifted, with corrections and additions, from The L.A. Times News Service:)

LA JOLLA, Calif.-On April 24, the same day 2,000 University of California-San Diego students marched on campus in protest of the April 16 arrest of 159 UC-Berkeley students, an international group of greens entered the anti-apartheid fray, making their computer net available to link students here at the UCSD with campus protesters across the country, spawning a vast, new level of coordination for the movement.

What the network offered, like CompuServe or any commercial computer service, was to allow any subscriber to sign on and exchange messages and information. "We use it mostly for tactical coordination," said Mark Phillips, 27, a UCSD bookstore employee and one of 20 organizers heading the protest in La Jolla. Phillips' job is "outreach" to other campuses, hence his position: computer controller.

"It's a very creative use of modern technology," said Phillips, who isn't a student but rather a salesman at the Groundwork Bookstore, which specializes in underground literature. "One advantage it gives us is instant communication.

"We don't have to wait two days to find out what the opposition is doing. We also share lots of advice."

When students at the University of Florida were getting their movement under way, they used the network to ask what could be done, if anything, to affect-some would say disrupt-graduation ceremonies. Students at the University of California -Santa Cruz replied immediately, Phillips said. Anyone using the system can see what one school says to another simultaneously. The advice from Santa Cruz to Florida: March in with a coffin, "the most fitting symbol of apartheid," Phillips said. Graduation exercises in Gainesville, Fla., featured

students marching in with a coffin.

## Generating, Escalating Protests

Phillips sees nothing wrong with using the network as a vehicle of civil disobedience. "The Pentagon has access to the same technology," he said, "and you can bet their intentions aren't noble. Not at all." "To my knowledge, it's the first time in history that a protest movement such as ours has all had access to the same information," Phillips said. "I don't see that as bad. Law enforcement agencies have always had access to the same stuff. Why shouldn't

we?"

Via the network, campus protesters have been considering renting satellite time to carry their views in a live TV broadcast that might offer, in Phillips' words, "the most devastating statement of all." "Let's face it," he said "TV has that kind

of impact."

Sitting in does too, he said, especially if orchestrated at more than one campus at more than one state. The network gave UCSD the tip that 50 students sitting in each night would be more manageable and just as effective, Phillips said, as 250. The tip came, via a 'bulletin board' message bank which is another feature of GreenNet, from Santa Cruz.

"They suggested we rotate the number," Phillips said, so people wouldn't get bored or tired out, and everybody could get their homework done. One of the problems of the '60's was burnout. People missed classes, never got a break, and just lost their effect.' So far, the UCSD administration has taken a quiet approach to the protest and to the network. Phillips said the tactic of Chancellor Richard C. Atkinson seemed to be "to bore us to death."

Phillips said that as far as he knew, "hardly anyone" connected with the school knows that university computers sometimes are used. Most of the time, he said, a student's home computer is used.

Phillips said that UCSD students heard of the network from students at Santa Cruz, who gave them the names and number of the Wisconsin Greens at their "office" at the State Capitol Bldg, in Madison. 5 out of 9 University of California campuses use the network.

On a number of quieter campuses, developments followed closely the pattern in Gainesville, with activists first getting linked up to the computer net, then getting into the action as they learned hourly of events in Berkeley, Madison, etc. In Iowa, for instance, campus activists had just sustained a defeat (see pg. 1, OVERTHROW, Vol. 7, #1) in elections for the student government. Contact via GreenNet with the national wave of student strikes, etc., turned their entire situation around, and the the U. of Iowa activists were soon leading the student body out on strike.

At Northwestern University in Illinois, where nothing much was happening till they got on-line, a May 9 rally ended with a sit-in of administrative offices and the arrest of 91 students. 200 others then blocked police buses taking them away.

#### On Line With Madison

The University of Wisconsin at Madison -long a bastion of campus protest-is unofficially the network headquarters for the moment. Contacted for purposes of an anonymous interview, Madison agreed to share one or two anecdotes via the network's conferencing mode.

Less than a day after Madison Greens led an anti-apartheid takeover of the Governor's office at the State Capitol Building (accepting and occupying an antiapartheid office off the rotunda in return for letting the Gov. have his desk back), they learned of the Berkeley Anti-Apartheid Coalition's frustrated attempts to do a pirate anti-apartheid conference via the big computer the Defense Dept. furnishes all the universities. Why not have all the campuses use the Green Network account on the Delphi Service, which already had all the bottlenecks taken out?

Once on-line, GreenNet took the entire campus anti-apartheid movement to a higher level, because they could learn

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everything everybody else was doing without having to wait several days or a week to get a censored version in the Media. Next they got all the campuses around' the country on-line with the the African National Council (ANC). It was Madison Greens who phoned the ANC in Manhattan. Would they like to be linked up directly by computer with all campus protests around the country? The ANC wanted to know if anyone in Manhattan could come over and demonstrate the computer-net at their U.N. offices. Ironically, the well-publicized student strikers at Columbia, in contrast with schools in California and elsewhere, had adopted a central committee-type structure, and for a period of time the Central Committee (heavily influenced by the [Castroite] Youth Against War & Fascism) wouldn't "recognize" the GreenNet. That is why the Greens, understanding the threat horizontal communications pose to central committees, had decided to make computer-net capabilities available to the entire anti-apartheid movement without them first "becoming Greens"-as an experiment in the kind of GreenNet participation we may expect in other movements. Thus the terminal first used by the ANC was from an office down on New York's Lower East Side set up by the GreenNet to relay information to Hamburg, London, San Franscisco, etc. During the initial session, the ANC used the net to transmit a lengthy document; but by the next day they understood that the network is to talk on, and they spent it answering political queries from one campus group after another. Madison, meanwhile, isn't accumulating the bureaucratic airs of an anti-apartheid "national office." In the new post-centralcommittee mode, every terminal is equally the "national office." Madison's status as GreenNet HQ is subject to sudden change, depending on who holds the network account, which must be used initially to access the network by students in almost every state. Though the system operates at the rather low cost of \$6-an-hour per terminal, it's been rough saddling one account with the on-line expenses of schools on different coasts. and the second For about a day in May GreenNet was cut off due to the efforts of a Berkeley hacker named Alan, who got the network passwords by hanging around the Berkeley Anti-Apartheid Coalition. Late one night, Madison discovered Alan on line, using the GreenNet ID. The Sys-Op dropped down to modify his user ID only to find Alan, seconds ahead of him, changing the passwords so he could have the GreenNet's capabilities all to himself. Screw the Anti-Apartheid Movement, in other words. To dump Alan, Madison had to have the account shut down and turned back on again. Meanwhile, GreenNet has been frank about asking for outright donations to fund this service to the Anti-Apartheid movement. As well as encouraging new terminals to pay their own way (a \$30 one-time charge to get on, via the Delphi Service,

1-800-544-4005), they're asking that those who understand the strategic impact of computer conferencing against Apartheid to make their checks or money orders payable to Delphi System (General Videotext Corporation), c/o the J: Entwistle account. the second se

(I'm in contact with John Englart in Sydney, Australia who works in an anarchist bookshop. This part of his letter discusses some important practical problems relating to computer use in collectives)

LETTER

I'm mainly using my computer (Commodore 64) to help administer the bookshop. Most of my time so far has been (taken-up) in developing mail order and distribution catalogues, and an address programme for mail-outs. I am limited by the collective in what I can use the computer for. I can only use it to administer the jobs I've been delegated with. For example, I can't .computerise any of the manual paper work systems, like accounts, which the collective relies on.

Part of the reason for this situation, is that all jobs are periodically rotated so that all collective members ultimately do all jobs - an attempt to share power and knowledge. Some members in the collective fear using "high technology" (even calculators in one case) and some have an ideological position against using "high technology". Therefore computerising the accounting systems was never possible because of ideological differences, and the way we have structured the bookshop collective.

There is a danger in one person using a computer to assist in delegated tasks. Because it provides an efficient information base which builds up progressively over a period of time, it means I will have easier access to more areas of knowledge of the bookshop office systems. This easy access to information can give me more power in the collective.

While I am the sole user of a computer in the collective this danger will remain despite my efforts to share information it can provide. This is my dilemma at the moment. Continued use of the computer by one person in a structured collective situation will result in an inbalance of Power within the collective.

This danger is not very great at the moment, and would take a couple of job rotations and further application of the computer before it became a large danger to the collective. But see the potential is there for creating an unequal power relationship within the collective.

I would like to see/hear about other collectives' problems and experiences in applying computer technology and effects on power within collective structures.

Anarchy and Peace,

John Englart.

AUSTRALIA

If anyone wants to write to John, please write c/o Black Chip. John has agreed to distribute Black Chip in Australia, so the Network spreads ever outwards !

We'd also like to print other comrades experiences in this area.

. Why I would rather have been around at the time of the Roman Empire (to be read to the tune of "Riders on the Storm" by the Doors).

by Marcel Vomit

I watch a flock of lifeless shells. Now that the future sells. The population flying high On their own consumer lie. I see a sea of dampened souls Striving towards obsessive goals. What are they working for ? Don't they know there's nothing more ?

If we turned the words into actions, The bitter self pity against the state And if the inhibitions became exhibitions Then our tomorrow wouldn't be a day late.

I know for myself that I am always mute When forced to depend on a substitute To hide the horror we call today: Concrete death, grey bullet spray. Technologic autonomatic, synthetic choice Is the freedom of talking without a voice Where all hope of tomorrow is surely dead When the only liberty is inside the head.

So if we turned the words into actions. The bitter self pity against the state And if the inhibitions became exhibitions Then our tomorrow wouldn't be a day late.

higher level, because they could learn

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#### FROM

POEM

Dedicated to Richard A.

The search for non-violent computer work goes on. Having managed to break loose from full-time employment with a multinational supporter of the arms race. where the only way to have any influence was to lick the boss's boots, I spent several months enduring the penury of hardly any income while writing educational programs and operating a Prestel database.

The problem of working for myself was although I could produce the goods, I couldn't afford to advertise them and couldn't wait for the public to beat a path to my door. My main achievement during that time was to acquire some good technical skills which have turned out to be useful.

I am now treading a middle road, doing contract work for an instrument company. The rates are quite reasonable and the payment is prompt. I have achieved a greater degree of independence by doing contract work, but still haven't got away from the arms race. The products I am working on (frequency response analysers, signal generators and other sophisticated stuff) have all sorts of commercial applications, although the MOD is one of the main customers. I suppose that if I sold boot polish the situation would be the same.



EMPLOYMENT AGENCY FOR NON-VIOLENT COMPUTER PEOPLE ?

> However, I was greatly encouraged by Electronics for Peace, who decided at their AGM to set up an employment agency with an emphasis on the social implications of electronics and computer work.

There is supposed to be a "skills shortage" which means that many socially useful projects must be abandoned because managers don't know where to find the right people. Collectively we can do more than we can as individuals and if company managers can be shown that there is a large pool of skilled people who want to use their skills on socially useful projects, they might be persuaded to . revive some of their ideas which were stifled when the arms race took over.

Now that Electronics for Peace is taking this initiative, I would like to hear from anyone who wants to be on the skills register. If you want a socially useful, non-military job, send me your CV.

Mike Gascoigne,

Interface Associates. 5,Christchurch Drive, Blackwater, Camberley, Surrey, GU17 OHA

THE LONDON GROUP OF EFPISON THE IST THURSDAY EACH MONTH AT 7.30 PM AT: LONDON NEW TECHNOLOGY NETWORK, 68-100 ST. PANCRAS WAY (off Camden Road) LONDON NW1 9ES

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TUBE: CAMDEN TOWN B R : CAMDEN ROAD

LOUIS BARMAN



Electronics for Peace is a network of people, . principally working in the electronics and computing industries, who are concerned about the military implications of their profession. It is open to all those with an interest in electronics or computing.

FOR MORE INFORMATION PLEASE CONTACT: 89 ACRE ROAD KINGSTON UPON THAMES SURREY KT2 6ES TEL: 01 541 1825

# BRAVE NEW WORLD

Living in the brave new world of the micro-computer, dazzled by the light of publicity on the triumphs of the micro software entrepreneurs, it can be hard to catch a glimpse of the shadow-world of commercial computing.

Behind the myth of securing your child's future with a micro, there may be nothing but the activities of a transient labour-elite, the computer-programmers, whose own industry is now working to replace even their jobs.

Rather than the image of the happy, smiling family gathered round the screen of their micro while Dad lectures them on the significance of some pie-chart, the commercial reality is closer to one of clerkesses and word-processor operators isolated in front of their incessantly-questioning 'conversational' screens.

And whatever the rhetorical over-statements in the above, it is just this reality which we increasingly occupy, whether as office-workers, computerprogrammers, or social-security 'clients'....

The computer did not enter the world and society as some kind of neutral scientific advance. Quite apart from its birth as the child of the military, the emphases which have been made in the course of its developments have had the main 'rational' aim of the saving of labour, the removal of the uncertain element in the work situation.

The process began with the introduction of large batch-based systems for taking over laborious clerical calculations (such as payrolls for example): with some grumbling, the staff who had previously done these things adapted themselves to preparing input data batches and receiving computer printouts in return. In recent years, however, there has been a change of tack, so that terminals running 'conversational', 'userfriendly' systems have intruded into the offices themselves, with the ultimate aim being the (mythical) paperless office, with everything reduced to standardised procedures. Such a system will have no place for informal communication between people. It is instead something like the victory of office protocol, with all communication done through 'the normal channels'. This ideal is 'rational' only to the extent that it is seen as desirable to prevent people from seeing the full picture and using their initiative in any way; in short, it accords with management's aims.

To judge from the above this would seem to be the perfect situation for programmers, a way for them to become more and more powerful as the agents of this formalisation of work. What then is the situation of the programmer in a commercial organisation?

If one of the main attractions in writing a computer program is that of pitting your own skills against your own intentions, this sense of measuring yourself

'objectively' can also return against you when your whole working life is taken up by building such programmed structures around you. It is probably impossible to cater for all possibilities in any program, but when it does go wrong, whether after one day or three years, it is your own fault. Therefore a programmer can be left in an inwardly uncertain state, constantly waiting to be 'found out' by his or her programs.

Over recent years, the most noticeable thing has been the way in which the programming process has been subjected to an increasing number of controls. If it was once enough for the firm that a one-off quantity of programming would dispose of a certain amount of clerical labour for ever, this period is now · over, and the programmers are now being subjected to similar pressures to those placed on the clerks who they are working to replace.

Anything unpredictable was out, structured programming, which would allow people to be interchangeable, was the way ahead. The day of the beardedweirdos in the data-processing department was over. Programmers themselves would do nothing to oppose this, because it appeared in the guise of their own rationality. How could they object to anything which made it easier for them to understand and amend a program written by some long-departed programmer? This process has continued, with the major emphasis now being placed on development of formal definition procedures which could replace programming altogethe altogether, perhaps even removing systems analysts, leaving only a computer user specifying the system he

wants in some formal way.

Ironic then that the discarded idea of programming skill should return, combined with the dregs of popstar culture (courtesy of Virgin Records diversification) in the idea of the games programmer as genius. Whatever developments there may be in humanlanguage and logic-based software, the real problem presented is that the formalisation of life, even in hierarchy-riddled work practices, is always a closure rather than an opening, and is invariably a restriction on any possibility of initiating some other social

activity.

Learning about micros, then, may give some increase in self-confidence when faced with those who mystify with its jargon, some insight into the ways in which things work, some enjoyment even (for the satisfaction in solving a problem, even in some very limited sphere, is not inconsiderable), but would seem to me to stop short of the social processes in which these techniques evolved and are inscribed.

REVIEW

Labour Research Department : VDUs. Health and Jobs. LRD. 78, Blackfriars Road, London, SE1 8HF. October 1985. £1.10. (ISBN 0 900 508 82 5)

This pamphlet is a firmly trade union (as opposed to management) orientated publication. It contains the most up-todate summary of the research into potential health hazards associated with the use of VDUs (and keyboards). It is, in part, based on an analysis of replies to a questionnaire that the LRD circulated, and covers 206 workplaces, using 7.000 VDU screens used by 17,000 workers. This looks a very impressive sample, but tends towards the better organised (ie they've heard of the LRD) workplaces, so how representative of the estimated 2,000,000 VDU work-stations currently in use is difficult to say.

The pamphlet covers known and suspected health hazards (which tend to caused more by bad work-station design and work practices): health and safety solutions (which tend towards arouing for greater on the job control by workers) and the impact of the new technology on jobs (which confirms trend of overall job loss but on a smaller scale than originally feared, together with a surprising increase in the interest shown in the job coupled with a less surprising greater increase in perceived stress levels.

The survey shows the vital importance of trade union organising. Without it workers are more vulnerable to redundancy and on the job monitoring, and are less likely to derive any benefits in terms of cuts in working hours or increases in pay or holidays.

I would say that this is the best and cheapest guide of its kind, and certainly one that anybody who works with VDUs would be well advised to not only buy but also to take action with. Even if you only use a micro at home then there are still benefits to be gained from following the recommendations relating to workstation design, in particular seating (although it is admitted that the perfect chair has vet to be invented !)

Richard A.

#### Data Protection Act 1985

This act has got to be one of the worst drafted, ill-conceived, misinformed pieces of legislation to have been passed in years. Why this particular act you may ask (or may not). Well, this particular, act was originally intended to prevent the baddies from keeping data on computer. files about us without us being able to see or correct it, and was aimed at credit agencies and the like. Trouble was that both the Parliamentary draftspeople (them that actually write the laws) and the M.P.s (them that tell the draughtspeople what they want : written) had no ' idea about what this act should actually cover, and I suspect none actually understood the terminology either. So what we've been lumbered with is a law which lets the really big data storers off the hook (ie the Government, police, armed forces, civil service etc etc) and clobbers everyone who uses even the smallest home micro (ie this one) to store data of living persons (ie you), forcing me to Register with the State, at a cost of £22.00, telling them exactly what I'm keeping on my files. Note that periodical subscription lists and lists kept for personal research (ie not for publication - ie showing to anybody else) are exempt but should you be compiling a bibliography of anarchist pamphlets that records the names of the writers of those pamphlets then the state will want its £22.00 for the privilege, or it's knock, knock, big fines and even confiscation of equipment and files - so that they can prove you were breaking the law . I am not amused, I mean its enough to bring the whole system of the law into disrespect, even make one an anarchist.

Queen Victoria.

P.S. If anyone would like to refute any of the following or suggest ways round this registering business, 1 would really like to hear from them, QUICKLY !!!!!

P.P.S. If you think all that above is daft, spare a thought for all the storekeepers who'll have to register if their computerised "Graham system records Gooch's Test Cricket". "Frank Bruno's Boxing", "Daley Thompson's Supertest". not to mention all name-branded goods in supermarkets, shops everywhere. Crazy !!!