

THE NEW TECHNOLOGY



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THE NEW TECHNOLOGY

The technology of unemployment?

Digital watches and pocket calculators are now just commonplace items, but even ten years ago the idea of a cheap pocket calculator would have been something out of science fiction. It is indeed very difficult to grasp that the modern scientific pocket calculator, costing perhaps £15, can accomplish just as much as the first bulky valve computers of the early 1950s. While a moderately sized computer of twenty years ago would occupy a whole room, cost about £200,000, require special climatic conditions and still often be unreliable, its replacement today would be unaffected by changes in temperature or humidity, tolerate vibrations, be vastly more reliable and no larger than your fingernail! Its cost? Merely £20.

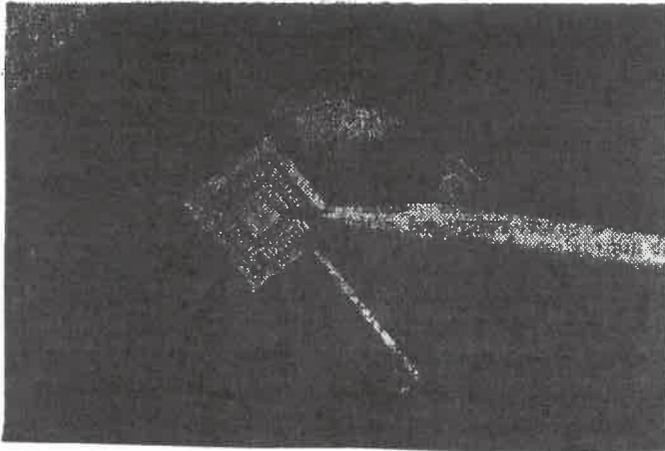
This new technological revolution based on the micro-processor is only just getting off the ground but, already it is beginning to have a marked effect on many people's lives. The office computer, word processors, computer controlled machines, robot welders and assemblers, all these are becoming part of our lives. While the media often portray a land of riches and plenty with the advent of the new technology, increasingly people are becoming uneasy with their arguments. While no one doubts the immense impact of the new technology on society - some experts believe that the silicon chip is the biggest technological development since the invention of the wheel - the question is whom it will serve.

The last few hundred years have seen immense changes in the technological base of British society. The steam age ushered in the industrial revolution, herding together hundreds of thousands of former farm labourers and peasants in the towns and cities, producing coal, iron and cotton. Employers sought continually to revol-

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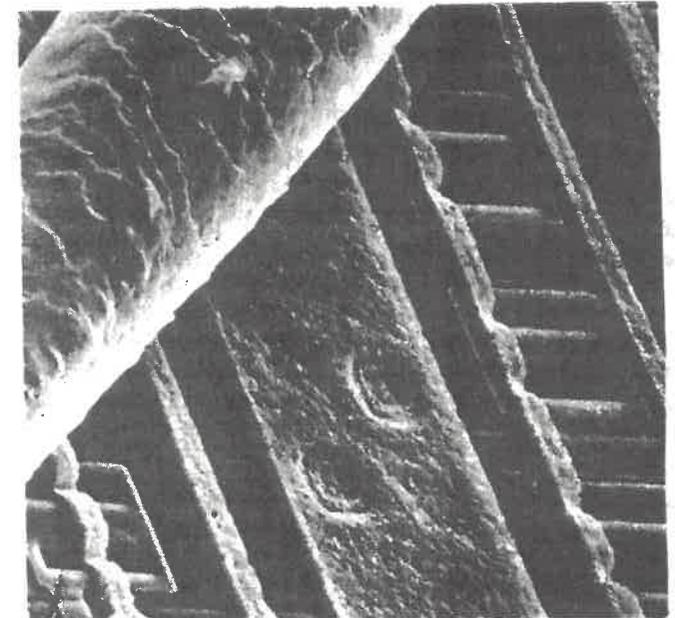
A computer
the size of
a pencil
lead.

of stock of each item and can even be given the ability to directly order new supplies if it finds stocks running low. There are some hyper-markets in the United States where even the counter assistant has been replaced, as payment is made through the machine by credit card!

By incorporating a micro-processor to the controls of a lathe or a milling machine new Numerically Controlled (N.C.) machines have been produced, capable of extremely rapid work to fine tolerances a skilled craftsman couldn't match. By using a more elaborate system, computers can not only design components but also produce them on Computer Numerically Controlled (C.N.C.) machines

If a micro-processor is incorporated into an electrically controlled hydraulic arm, we have the basis of a robot. If a T.V. camera or other sensors are attached allowing the robot to see or feel and move accordingly, we have an intelligent machine capable of replacing humans in many jobs. The advantages to the capitalist are phenomenal - a robot doesn't need to sleep, can work 24 hours a day without slackening its pace, doesn't require meal breaks that would disturb its rapid and monotonous routine, will work unconcerned in sweltering heat or blistering cold, lifting in one arm weights of 200 pounds without effort, and all with a precision no human could match.

The micro-processor will undoubtedly have a dramatic effect on the lives of working people yet, until recently, the trade unions ignored its development. Even today many unions have refused to adopt any policy towards the employment of the new technology. In 1978, however, a resolution was adopted at the Trades Union Congress expressing concern at the prospect of job losses and called on the General Council to "carry out as a high priority a comprehensive study of the employment and social consequences of advances in the new technology." Subsequently at the 1979 Congress, the General Council presented a report entitled "Employment and Technology". This report not only underestimates the impact of the new technology on working people, but suggests collaboration between workers, management and capitalists to ensure its speedy adoption. The grossly academic style of the report serves to fuzz over the really important issues. Any analysis of the impact of the new technology must begin from the concrete conditions that exist at the time, and before criticising the TUC document it is necessary to look at the concrete conditions of British industry and commerce at this time.



The human hair
in the top
left corner
emphasises the
scale of the
circuit beyond.
These very
small circuits
are tested to
such a high
degree that
virtually none
of a production
run of millions
fails.

THE BRITISH DECLINE.

During the course of this century, British imperialism, once the strongest imperialist power in the world, has suffered severe setbacks and decline. Internationally the U.S.A., Japan and West Germany have offered fierce competition. Third world countries have stood up against foreign domination. Internally the British economy can only be described as being in a chronic mess with both low investment and productivity.

In 1950, Britain's share in the world's total exports of manufactured goods was 25 per cent. By 1978 this had declined to just 9.6 per cent, and was still declining! On the other hand both Japan and West Germany were rapidly expanding their export trade at Britain's expense³. Internally, the rate of growth of British manufacturing industry has declined considerably. From 1960-73, while Britain experienced an annual average growth of output in manufacturing industry of 3 per cent, Japan was reaching 12 per cent and West Germany over 5 per cent. More recently in the period 1973-78 output actually declined by almost one per cent on average each year, while in the USA output rose by 2.5 per cent per annum, and in Germany and Japan it rose by one per cent. It is widely expected that this year output from manufacturing industry may decline by 5 per cent.

While productivity in British industry increased by 0.6 per cent per annum from 1973-78, the USA experienced an annual rate of growth of productivity of 2.2 per cent, while Japan and West Germany showed increases of 3.7 and 3.3 per cent respectively.

British industry has been noted for its lack of internal investment, with little attempt to re-tool in the way it's international competitors have done. As a result, the productivity within British industry is low compared to it's competitors, and manufacturing industry has consistently declined in importance. Today, only 30 per cent of the total workforce is employed in manufacturing industry, while in the post-war years it has been the commercial and services sector that has expanded, providing employment especially for women who now comprise

about 10 million of the total workforce of 25 million.

While the new technology is rapidly being harnessed by the stronger industrial nations, Britain remains relatively uncompetitive and less productive. This has major consequences which the TUC have chosen to completely ignore. To the TUC the problems of British capitalism are caused by bad management by the capitalist class and their successive governments. They argue that it isn't the capitalist system which is a fault, but rather that the capitalists don't run capitalism well enough; as a result, the lot falls upon the TUC to propose a series of measures which they believe will restore British industry to its former glory. As the capitalist class do not appear keen on investing in British industry, the TUC argues that the government should do the job for them, making way for high levels of growth and low levels of unemployment. This is the familiar argument of the late bourgeois economist Keynes, who called on Governments during the great depression of the 1930s to spend their way out of the crisis. If British industry could develop high levels of productivity and growth, the argument runs, then foreign competition could be defeated. In these circumstances, while the new technology would have an impact on the structure of employment, it wouldn't lead to the wholesale destruction of jobs.

This whole line of reasoning is not only fallacious, but treacherous when it comes from the TUC. Production in a capitalist society is geared towards profits, and a capitalist will only continue in production so long as profits are within sight. Investment can be increased, but new goods will only be produced if there are profits to be had. Even under reasonably good conditions a capitalist will generally only utilise 70 per cent of the productive equipment. What the TUC in fact propose is the illusion of a capitalist society producing goods at a loss! Would any self-respecting capitalist follow such advice?

Following these arguments, the TUC see the new technology being introduced in a situation of real and substantial growth in the economy. The TUC then offers no guide whatsoever as to its effect on unemployment:

"We cannot forecast accurately the net effects on employment...We reject the deterministic view that the advent of micro-electronics must inevitably be associated with a particular level of unemployment."

(Employment and Technology, page 58.)

While evading the issue in this way, only one sentence of caution is included in the entire document which would suggest that unemployment could result from the introduction of the new technology:

"If new technologies are adopted in the negative context of seeking the same output at lower costs the job displacement effects will be large-scale and very damaging." (Page 32)

This is precisely the context in which the new technology is being introduced within chronically deflated Britain.

THE DESTRUCTION OF JOBS.

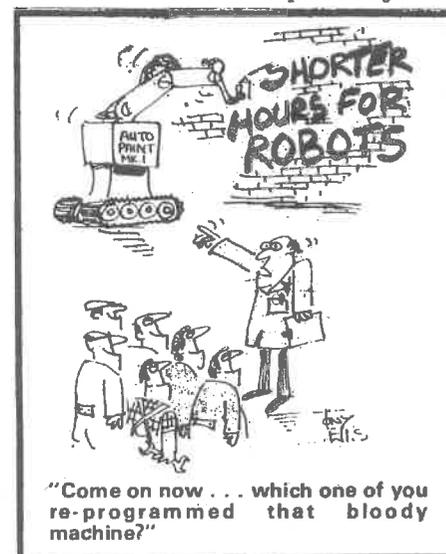
As the TUC minimises the effects of the introduction of the new technology on the unemployment level, confidential government reports indicate an official unemployment level of 3-4 millions within the next 5 years - comparable to the peak of the 1930s depression. In areas where the new technology is taken up, machines will replace human labour; in areas where the new technology is not taken up there will be major job losses as firms are unable to compete with other firms employing the more efficient techniques. Whatever the capitalist class do, they will make the workers suffer.

"IF we do not keep up with the international race in the use of microprocessor technology then we risk becoming uncompetitive in terms of world trade... if we adopt this revolution enthusiastically in every branch of our economy and make it the cornerstone of our industrial strategy, then we also risk accelerating the scale of labour displacement through the very success of this technological revolution.."

(The words of the Head of the Science Policy Research Unit at Sussex University.)

THE CAR INDUSTRY...

Microtechnology is already making considerable headway in the car manufacturing industry - an industry where frequent retooling and change of models is a matter of life or death. The car industry employs large numbers of workers throughout the world, and occupies a central position in the economy. Volvo, Saab, Volkswagen, Nissan, Chevrolet, General Motors, Mitsubishi, Ford, Chrysler, Toyota, Peugeot-Citroen, Renault, British Leyland and Fiat have all introduced robot welding techniques into their factories. In the summer of 1978 the Chrysler assembly plant in Detroit was completely renovated for the



production of the 1979 model. Welding was completely automated using robots so that 200 jobs were eliminated. Apart from this aspect, the new system provided a basis for speeding up the production line so that the paint shop, body shop and repair men were forced to work between 10 and 14 hours a day, seven days a week.

The 'Robogate' system developed by Fiat at present sets the standard in robot welding. At their Rivalta plant near Turin, and Cassino plant in southern Italy, all the welding is done by robots on two assembly lines. EACH LINE COST £7 million only £1½ million more than conventionally operated lines. The overall manning level per

line has been reduced from 125 to 25 men, including maintenance staff and supervision. The advantages to Fiat in terms of lower manning levels, costs and flexibility are enormous. Fiat have already sold one Robogate system to Chrysler in the USA, and even General Motors are interested in buying the system.

In Britain, Fords have installed robot welding at Halewood for the production of the new Ford Escort model, eliminating over 600 jobs in a shop employing 2000 workers! British Leyland have also acquired 28 Unimate robots for welding on the new Mini-Metro line, but these are less flexible than Fiat's Robogate system. Indeed, BL Executives have recently visited the Fiat plants in Italy and talked to Fiat chiefs about the prospects for installing a Fiat Robogate system in factories making the next generation of BL models.

Both Ford and Volkswagon have invested in their own robot making companies in West Germany, with Volkswagon even selling robots as a commercial sideline. They can be rebuilt and reprogrammed to do many different jobs, replacing 3 men each. While robots need no rest and don't go out on strike, it has been pointed out "that they don't buy cars either."

As a consequence of the use of robots in car manufacture the US motor industry expects to shed some 128,000 workers (over 18 per cent of the workforce) by 1985.

MANUFACTURING...

Already there are over 10,000 robots at work in the world, with 5,000 installed in Japan, 3,000 in the United States, 500 in West Germany, 400 in Italy and 150 in Britain. Indeed, using a slightly looser definition of 'robot', Japan claims to possess over 70,000 already. Robots can be relatively cheap - around £20,000 - and it is expected, according to a recent report prepared for the Department of Industry, that some 12,000 will be installed in Britain by the end of the decade. According to the 'Sunday Times' (13th July 1980), "The four classic robot applications - spot welding, plastic injection moulding, pressure die-casting and paint and power spraying - could

employ 2,000 but five other developing applications (forging and extrusion, metal-cutting machines, investment casting, press loading and heat treatment) could absorb another 3,000 robots. Other major potential robot employers are arc welding (2,000) and packaging, assembly and materials handling (3,000)."

At a new Pilkington's Float Glass Plant the workforce has been reduced from 1,200 to 400, and when fully operational the new plant will require only 40 workers - all through the introduction of the new technology.

Advances in new robot technology are making rapid headway. "Until recently, the idea that robots with 'eyes' and 'brains' could put together goods in unmanned factories belonged strictly to the pages of science fiction. Work at Westinghouse's research laboratories in Pittsburgh demonstrates that this is no longer so. In the autumn, the Plittsburgh engineers should finish a prototype production line that produces three small electric motors each minute. The unusual feature of the £700,000 system, which will assemble the motors from about 50 parts, is that there will be no humans involved. Six robots, half of them blind and half with vision, will do the work instead. The production line will be programmable, so that it is flexible enough to make different types of motors depending on the company's needs." (New Scientist, 12th June 1980). It should be added that the Japanese Industry Minister has indicated that their target is to see unmanned factories in general use by 1990!

ENGINEERING...

While robots are posing a threat to a whole range of jobs, the full utilisation of the new technology in British engineering will take a greater time to materialise. This is because although micro-processors are cheap, the equipment they might be attached to is very expensive. In industries where retooling is slow or infrequent, the high initial investment will slow down the rate of introduction of these new techniques.

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Most of the production of the engineering industry (excluding car manufacture) consists of batch rather than mass production. Currently 70 per cent of output is in this form, and half of that is in batches of less than 50 units. Until recently it has not been economically viable to computerise these short batch runs, but this is changing. Computer Numeric Controlled (CNC) machines are allowing much more flexibility than the older Numerically Controlled systems, having a computer in-built into the machine giving it new instructions. Now, it is possible to link sets of machines together under one computer, called Direct Numerical Control (D.N.C.) providing still more flexibility, and even this is being superceded by flexible manufacturing systems, where the machines - all computer controlled - can make a wide range of parts and require little attention on the shop floor, except possibly inspection! The flexibility of these various systems, and the speed at which they work, is great - at Davis of Derby a single CNC milling machine took over the work of eight different machine tools. British industry lags behind in conversion to these systems; in 1977 only 3% of lathes purchased were CNC machines, compared to 16% in Japan.

Intelligent robots could make:

- | | |
|------------------------------|------------------------|
| Pumps | Gas and oil appliances |
| Compressors | Ventilators |
| Air blowers | Vacuum cleaners |
| Speed-change gears | Refrigerators |
| Calculating machines | Washing machines |
| Typewriters | Lighting fixtures |
| Knitting and sewing machines | Radio and TV sets |
| Fire extinguishers | Semiconductors |
| Freezers | Car parts |

OFFICES...

In offices the introduction of microtechnology will certainly occur more rapidly than in industry. Until recently, office workers have escaped the massive job losses that manufacturing workers have experienced. Many office staff are women, relatively disorganised and likely to offer least resistance to the new technology, while offices have been noted for their use of labour intensive

techniques. In Britain, capital investment per office employee is only £500, compared with £5,000 for industrial employees. In the USA the situation is comparable, with £12,000 for factory workers and £900 for office workers. The introduction of word processors, accounting machines, mini-computers and other new office equipment is set to change all this.

In contrast to manufacturing industry the introduction of these new techniques to offices does not call for a massive increase in investment. As an advertisement for Philips' Data Systems puts it, "for £44 a week, Philips new computers will take over all the routine and give you more time to get down to business. That is less than the cost of a clerk, yet Philips' computers handle the work of three. All your payroll, ledgers, invoicing, stock records and VAT take minutes instead of hours - with accuracy guaranteed. At £44 a week, Philips' computers pay for themselves over and over again." (Philips' of Eindhoven, employ some 500,000 throughout the world and estimate that they too will be affected by the introduction of the new technology - they estimate that they will be 56% overmanned by 1990.)

The word processor allows the preparation of documents to be thoroughly automated, enabling one typist to produce the work of three or even more. After the introduction of 9 word processors, Bradford Council reduced its staff in one section from 44 to 22, increased productivity by 19 per cent and also managed to save £59,000 a year. Already there are over 100,000 word processors in use in Europe, with some 10,000 of them in Britain. This will increase to 20,000 by next year.

By connecting the word processor to a large computer and the Private Automatic Branch Exchange system (P.A.B.X) letters need no longer be posted. They can be transmitted from one word processor directly to another. The German electronics company Siemens has estimated that by 1990 - ten years' time - over 40 per cent of current office work will be done by computer. Ironically, the Department of Employment is at present engaged in installing mini-



The typing pool of the future?

computers in Job Centres throughout North London, cutting down considerably on paperwork and resulting in 220 staff becoming surplus to requirements. In shops, offices and stores the advent of the new technology will produce a vast destruction of jobs. According to a French government commissioned report, produced by Simon Nora, the Inspector General of Finances, there will be a 30 per cent loss of jobs during the 1980s in "insurance, banking and finance" as a result of office automation.

In the newspaper and print industry, the Royal Commission on the press estimated that 7,000 of a total of 20,000 print production workers would be made redundant by the introduction of the new technology. A whole range of very skilled jobs have been deskilled through the use of new techniques, while productivity is increasing rapidly. At the 'Nottingham Evening Post', there is now a staff of 17 compositors compared with 214 in 1967.

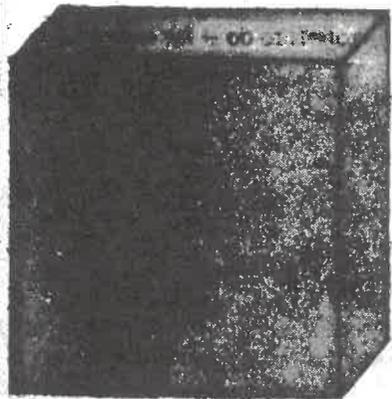
WILL JOBS BE CREATED?

Some have argued that while some jobs will be destroyed, many new jobs will be created through adopting new technologies. It is argued that while the structure of employment will change, there will not be massive unemployment created. The TUC seems to accept this position in their pamphlet "Employment and Technology". Of course new jobs will be created, but these themselves will be geared towards even more automation. The US consultancy firm Arthur D. Little recently produced a report predicting that some 1 million new jobs would be created by the microelectronics industry. Of these, some 600,000 would be created in the USA, and the remainder in Europe. However, the report did not go into any detail about the substantial job losses that would occur through the introduction of new techniques to existing processes, and its optimism must be taken with a pinch of salt.

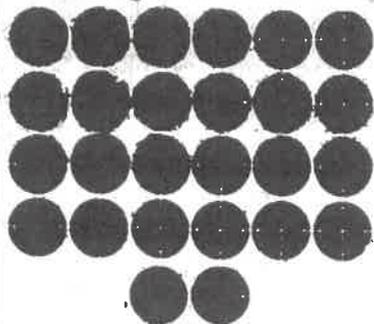
In Britain the record of the electronics and computing industries on jobs has been far from inspiring. In the computer manufacturing industry, employment reached 53,000 in 1971 and fell steadily to reach 43,000 by 1977. Similarly, employment in the production of electrical components has fallen from 153,000 in 1974 to around 125,000 today. Even though output from this sector is expanding at between 15 and 20 per cent per annum, total employment is expected to remain at this level for the foreseeable future. Over the last decade the labour force of ICL, the main British computer manufacturer has declined from 33,000 to 22,000.

Plessey who manufacture switchgear for Post Office telephone exchanges are certainly not expanding their workforce despite being at the forefront in producing new micro-processor equipment in Britain. In fact, Plessey have closed down a number of factories over the past few years with considerable job losses. For every 100 workers employed in producing the electro-mechanical Strowger switchgear, only 40 workers are needed to produce the semi-automatic TXE4 based exchange. With the introduction of the fully electronic System X exchange during the decade, only 4 of the original 100 workers will be required

Telephone Exchanges: Relative sizes and labour ratios needed to make them



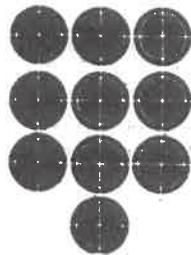
**Electromechanical
Strawger**



26 WORKERS



**TXE4 first
generation
electronic**



10 WORKERS



**System X
1990 fully
electronic**



1 WORKER

to produce it. The same order of workforce reductions are expected in the operation of this new exchange equipment. No longer will telephone engineers need to carry out skilled fault finding and rectification work. The computer system will itself be able to identify where a fault is, and all the engineer will have to do is to insert a new module to replace the faulty equipment.

INMOS, a firm set up by the National Enterprise Board to design and manufacture silicon chips will provide eventually a total of 4,000 jobs in Britain even on the most optimistic account. So far the gain in jobs is a trifle

compared to the job losses that are already happening. The experience of the micro-electronics industry itself shows that the main influence of micro-electronics has been to increase the productivity of work rather than provide more jobs. Of course new products are being created, but in Britain especially these are unlikely to have much impact on the rising trend of unemployment.

GROWING UNEMPLOYMENT.

Government figures consistently underestimate the extent of unemployment in Britain today. Added to the official unemployment figures you must add several hundred thousand of men and women who are excluded from official figures. According to a system used by the OECD (the Organisation for Economic Cooperation and Development) to standardise the various unemployment levels throughout Europe, the US and Japan, actual unemployment in Britain is approaching over 2½ million already - 500,000 more than official figures. These official government figures do not count those workers who do not sign on at the dole but are still seeking work, such as most married women, part time workers, self-employed and many others.

Ian Barron and Ray Curnow, in a report from the Science Policy Research Unit at the University of Sussex commissioned by the Department of Industry, warn of the prospects that microelectronics will put four or five millions out of work in Britain before 1990. Again at Sussex University the Institute of Manpower Studies estimate that there will be a further 2.5 million new entrants onto the British labour market by 1991. Assuming an average 3 per cent growth in the economy, unemployment would be 2.5 million in 1990, assuming a 2.5 per cent growth unemployment would be 4.75 million and with a 2 per cent growth an unemployment level of 6.75 million by 1990. When the rate of growth of minus one per cent for the period 1973-78 is considered, the picture looks very depressing indeed. The Cambridge Economic Policy Group has forecast a similar picture with unemployment rising to 3 million by 1985 and to 4.5 million by 1990. While these forecasts, based on bourgeois economic methods, individually could be unreliable, what is striking is their magnanimity. Unemployment has already passed 2,000,000 during this year.

The improvements in efficiency produced by the new technology, and the continual decline of the British market with increased and more modern competition from other countries, make predictions of 5 million unemployed acutely realistic.

Clive Jenkins, General Secretary of ASTMS, and Barrie Sherman in their book "The collapse of work" pose the problem: "Remain as we are, reject the new technologies, and we face unemployment of up to 5.5 million by the end of the century. Embrace the new techniques, accept the challenge, and we end up with unemployment of about 5 million.

Whilst there is a world of difference between the two consequences and the possibilities that can be exploited inherent in these strategies, the latter is by far the most favourable. What is clear is that whichever road we take work will collapse." (The Collapse of Work, page 113).

Jenkins argues that the 1990s will be an age where "we shall have a boom, minimal inflation, high growth and the largest unemployment in our history." (Collapse of work, page 182). He sees this because if the new technologies are adopted widely, capitalism will be able to produce commodities more efficiently and cheaply, allowing a high growth rate and cutting down on inflation. At the same time the application of the new technologies would reduce the numbers of jobs available giving rise to very high levels of unemployment. He then argues that by workers changing their attitude towards work by developing work sharing, working shorter hours, taking sabbatical leave etc, the problem of high unemployment can be overcome.

While Jenkins engages in this fantastic pseudo-science of futurology, he forgets that it is capitalism, not the new technology, that is the problem. Capitalism produces and introduces the new technology only in so far as it can increase its exploitation of the working class and continue in its search for maximum profits. THE NEW TECHNOLOGY DOES NOT CREATE UNEMPLOYMENT - CAPITALISM'S USE OF IT WILL. Already the world's markets are once again

becoming glutted with unsold commodities. The aim of the capitalist during such periods is not to produce more goods which would only serve to intensify the crisis and hold down profitability, but rather reduce the unit cost of each product by holding down wages, increasing productivity and making cuts in the labour force. Only by reducing costs can he maintain profitability in the face of mounting competition with other capitalists. The new technology does not make capitalism more benevolent towards the working people but on the contrary more ruthless and vicious. Jenkin's utopia is a mere fraud, aimed at deceiving working people about the implications of the new technology and spreading illusions about capitalism. Certainly in Britain these arguments are very hollow.

Under socialism where the working class holds power, and production is not geared towards earning the maximum profit, the new technology could be fully utilised to serve the working people. New goods could be produced lessening the burden on people's lives, houses, hospital and educational facilities expanded, the hours of work could be reduced to give more time for the family, educational and cultural activities for the whole people. In such a society where employment for all was a necessity and right, then the new technology could be utilised for the needs of society. Yet Jenkins seems to think that that type of society exists now - under the dictatorship of capital! Under capitalism, the job of Trade Unions and their leaders should be to make working people fully aware of the threat that they face, criticise strongly the utopian "super-industrial capitalist society", and organise the workers to protect their jobs and fight unemployment. This is not being done.

TUC SUPPORT FOR CAPITAL.

Far from being a force in educating workers, the TUC have kept workers in ignorance. The TUC are determined that Britain should move as rapidly as possible to accept and develop the new technology. In the TUC Economic Review of 1979, this argument is put forward very strongly.

"it must not be assumed that rapid technological change will necessarily happen in some automatic way in British

industry. Indeed a greater danger to the Trade Union movement is that it will not happen quickly enough."

"Technological change and the micro-electronic revolution are a challenge, but also an opportunity. We have to maximise the benefit and minimise the costs of the new technology. We have to ensure that the benefits are distributed equitably."

(Employment and Technology, p.56)

Inherent in this analysis is the belief that the interests of British workers rests basically on the profitability and efficiency of British capitalism. Of course a few sops about the equal distribution of benefits are included to keep the critics at bay - that is compulsory in a TUC document. As usual the TUC General Council are better representatives of the bourgeoisie than the bourgeoisie themselves. At a meeting of the National Economic Development Council (N.E.D.C.) held at the beginning of the year, chaired by Margaret Thatcher, agreement was reached by the Government, management and unions on introduction of the new technology. This is not at all surprising, given the TUCs track record. All agreed on the use of new technology agreements to provide a situation where new technologies could be introduced without providing "serious unrest".

APEX, in their pamphlet "Office Technology" state, "Improving the productive capacity of industry and the economy in general should be a major priority for all trade unionists since it is from the production of real goods and services that the ability to improve real wages and create new jobs comes..."

Lacking from this analysis is the whole notion that we exist in a class society, where the mass of the people are oppressed and exploited in order to secure profit for the capitalist. In Europe today, as in the USA, milk, bread and meat is destroyed to ensure capitalists their profits - where does this benefit the working people? Today we are witnessing the wholesale destruction of industries, with mounting factory closures - engineering, shipbuilding and steelmaking. The dynamics of capitalism not only ensure the development of new technologies but

also the massive destruction of productive power as markets become glutted - not glutted for the people, but glutted for the capitalist who can't make a sufficient profit. In a telling passage in Leontiev's "Political Economy", he quotes from Rochester's "Labour and Capital", a book describing the life of miners in the United States:

" A miner's son asked his mother: 'Why don't you light the fire? It's so cold.'

'Because we have no coal. Your father is out of work and we have no money to buy coal.'

'But why is he out of work mother?'

'Because there's too much coal.'"

If the TUC General Council and individual trades unions were really concerned about the production of "real goods and services" , they should have no hesitation in pointing out that capitalism cannot deliver the goods. It is concerned only with profitability, and the production of goods and services are just incidental to this. However the TUC choose to mislead.

David Cockcroft, the head of the APEX research department has said that "to look at microelectronics in terms of job losses is like viewing the invention of the wheel in terms of road accidents." He fails to understand that while microtechnology will not lead in itself to high levels of unemployment, under capitalism and especially in Britain today, it's utilisation in industry and commerce will lead to that situation. By presenting the case in the way he does he fudges the issues - some consolation to APEX members who are replaced by accounting machines. The attitude of the TUC, stripped of nicety, is to actively encourage growing unemployment.

THE GROWTH OF CORPORATISM.

"The Trade Union response can widen the debate about the new technology into the area of industrial democracy, including statutory rights to full involvement in the drawing up of company plans and the right to full representation on the policy boards of the enterprise."

(Employment and Technology, page 34)

Far from attacking capitalism, the TUC is its strongest

supporter. Instead of showing that capitalism cannot utilise the new technology to the benefit of the people, the TUC advocates corporate style capitalism. The Bennites, Jenkins and their like are using the issue of microtechnology to divert the working class from the real struggle with capitalism into new forms of making capitalism efficient - more exploitive and more oppressive. The TUC see the issue as one that gives them more opportunity to rule alongside capital, their master, and on behalf of capital. Already there have been murmurings of approval from the CBI towards the various schemes of "worker participation". Even Prior, the Tory Cabinet minister has given his official support. This whole notion is thoroughly dangerous for workers, for it not only cripples the struggle against capital, but actually leads to more vicious oppression and exploitation by capitalism. The appeal to national interest, the growth of social chauvinism and the eventual strengthening of fascism are all high lighted in moves towards corporatism.

With unemployment set to reach unprecedented levels, capitalism will certainly have to adopt new tactics and methods to ensure that it's rule is not contested, and the TUC seem ready to give their utmost support to this.

NEW TECHNOLOGY AGREEMENTS.

The TUC propose that New Technology Agreements are the main method by which trade union influence can be exerted over the introduction of new technologies. At the end of the document "Employment and Technology" there is a 'Checklist for Negotiators' to guide negotiators in reaching such agreements. While arguing that "The first principle should be that no new technology which has major effects on the workforce should be introduced unilaterally," it spreads the illusion that the changeover to the new technology can proceed smoothly - if there is early involvement and consultation with the unions.

However, union involvement does not necessarily guarantee results. In the 1979 agreement between unions and Ford (U.K.) a clause was inserted agreeing to the introduction of the new technology. Now, Ford have introduced

robot welders to the new Escort line at Halewood and initiated a joint union/management letter to all employees urging cooperation and better production. While stating that the use of the new technology would not lead to redundancy, the letter states, "Outside our control is the general state of the market, but again we believe that with a new, competitive product, delivered on time at the highest quality levels, we have a better chance than most of weathering a downturn in the market. If the market fails, then obviously we would need to reassess the position." The situation looks extremely grim for the 600 men that have been replaced by the new robot welders.

The TUC state that "Negotiators will be seeking to identify the adoption of new technology with greater security of employment and expansion of job opportunities rather than the negative policy of producing the same output with a reduced workforce. To this end a key demand will be for full union involvement in manpower and production planning within enterprises in order that employment opportunities are maximised." (Employment and Technology, page 66)

While all this is very laudable, it doesn't really help as a guide to action because most companies employing the new technology will do it precisely to cut unit costs not to expand job opportunities. It is extremely disarming passage, ignoring the reality of the day.

The TUC recently welcomed an agreement between USDAW, the shop workers union, and TESCO, the supermarket chain. While the agreement allows the introduction of new technology on check-outs, stock-control etc, it states that TESCO will not declare any redundancies as a result of this. Yet, on closer inspection it appears that the annual turnover of staff at TESCO is 80 per cent. All TESCO have to do to drastically reduce their workforce is to stop recruiting. So much for "maximising" employment opportunities. This particular agreement appears very cynical in deceiving the workforce into complacency.

However, it would be wrong to dismiss "no-redundancy" agreements generally. They are useful in preventing redun-

dancies, though may not maintain jobs. It is important that negotiators and the trade unions are honest about the effects of these agreements and not spread complacency among the workers about the job implications of adopting the new technologies. The POEU have signed a no redundancies agreement with the Post Office, and it looks like having a limited impact in preventing job losses.

It is of note that while the TUC point to the innumerable benefits that could be gained with the introduction of microtechnology, such as shorter working hours, better conditions at work, more pay etc., they have never attempted to lead any such struggles for these benefits. After a long and bitter dispute in 1979, the Engineering Employers Federation eventually conceded a reduction of one hour off the working week from November 1981 - this after engineering workers were demanding a 35 hour week. The agreement also stipulated that the reduction depended upon engineering workers dropping the claim for a 35 hour week for 4 years. While employers will fight tooth and nail against the reduction of the working week, the TUC has shown that it will sit idly by on the sidelines.

The micro-processor technology enables the introduction of shiftwork to areas where it would have been previously impractical, and already some office workers have been put on two or even three shift systems. The TUC doesn't oppose this:

"Where new technology produces an increase in shift-working this should be accompanied by a reduction in hours worked..." The TUC argues that "redundancy notification periods... should be lengthened... to provide retraining to affected workers in skills which will enable them to find employment in other trades or industries." While this sounds laudable it needs to be asked what jobs, if any, will be in demand. Vacancies at present are at an all time low, while over 2,000,000 are out of work even according to low government figures. Further, the government has announced its intention to close 20 Skillcentres which were specifically set up for the task of retraining. In many trades it is the exception to find a job after retraining - it mainly serves to reduce government unemployment figures. Clearly the TUC has put it's head into

the sands - what will the situation be like with 5 million unemployed?

It is often said that the new technology will produce many highly skilled jobs. But, although greater numbers of technologists will be required in the future, the main effect on most skilled jobs today is to de-skill them. This is the case where intelligent machines take over, requiring the minimum of maintenance and effort. The machine setter and operator will be transformed into the machine minder, while the accountant is taken over by a computer programme.

After proposing joint union/management study teams to monitor the effects of the new technology, the TUC proposes "As a further safeguard new technology agreements can specify a trial period of operation during which consultation and negotiations can continue in the light of practical experience of working with the new technology." Is it possible that Fords would scrap a £10,000,000 robot line, or Lucas scrap a £300,000 machining centre because of union doubts? It is sheer fantasy as the Times print workers found out. The TUC state that the objectives which unions wish to see achieved such as employment levels, hours of work and working conditions, should be specified. "Failure to achieve this may lead to technological change being brought about in a piecemeal or ad hoc fashion, and producing undesirable results, so that negotiators are unaware of the significance of these changes until it is too late to alter the employers investment plans or to place acceptable conditions on the operation of the new technology". (Employment and Technology, page 64)

Revolutions are of necessity uneven and violent in their course - the new technological revolution is no exception to this rule. Firms must adapt to the new technology fairly rapidly if they are to survive national and international competition - it is for them a matter of life and death and consideration of smooth transitions have little to do with it. Even management are unawares of the full impact and implications of the new micro-processor technology, and of necessity will introduce

it in an ad hoc and piecemeal fashion. The TUC seem intent on making that task easier by ignoring reality and spreading the illusion that only agreements are necessary to protect workers interests. The whole tenor of the checklist is one of "conciliate and arbitrate and get the best of a raw deal."

IS THERE AN ANSWER?

It seems that few of the improvements in living standards and conditions put forward by the TUC will be attained while on the other hand unemployment is set to reach unprecedented levels. While the chips are down, and the TUC pursues a disarming policy, even a militant trade unionism has no answer to the crisis we are facing. While the application of new technology may be held back in particular factories and offices, the micro-processor revolution is here to stay - and its consequences. The companies that fail to adopt the new techniques will face intense competition. Clearly if workers do not fight to get the best of the bad deal they will get the worst. While this doesn't provide a real answer to the new technology, it can mobilise workers to struggle for themselves and to get to see some of the questions, while defending their immediate interests. It is a policy the TUC does not want to see work.

FIGHTING BACK.

While the new microprocessor technology has very broad applications in many jobs from car manufacturing, engineering, assembly and even chocolate production it is likely to have its immediate impact in shops and offices, and the communications industry. Here, while the investment need not be excessively large, there are likely to be quick returns. Even though there has been a surge in trade unionism in these workplaces over the past decade they are, by and large, still relatively disorganised areas able to put up least resistance. Often there is a heavy turnover of staff, and many temporary workers - clerks and typists - employed on short term contracts. Although the office has a reputation for secure employment the

signs are that this is becoming shattered. During the period 1975-78, while unemployment rose by 32 per cent among manual workers, it rose by 68 per cent among office workers. With the prospect of greater introduction of the new technology into office work, many office workers will be forced to take the first steps in direct action if they are to save their jobs or maintain their conditions. It is of prime importance that the issues raised by the application of the new technology are understood, and that the unions actively seek to recruit and organise among these workers.

While the majority of workers directly affected by the introduction of micro-processor technology are likely to be within the offices and shops, other areas are likely to be affected directly or indirectly and cannot be ignored. The car industry, which relies on a high turnover of models and frequent retooling is a case in point. Other areas such as warehouses, light assembly, &c where investment in microtechnology could have quick returns, are also likely to be affected in the near future. Within a large part of the engineering industry however it is unlikely that there will be a major rapid move towards the installation of this technology in Britain. This is because of the large amount of capital required to re-tool even using conventional methods of production. Here, by and large, it will be the indirect effect of new techniques that will have the major impact, as Japan, West Germany and the USA are investing substantially in these processes and even further increase their competitiveness against British capital.

The introduction of the new technology cannot be separated with the decline of British capital in relationship to the other major capitalist powers. The major capitalist powers are introducing the new technology, and this is going to have a major impact whether we adopt the technology or not.

JOBS

There should be no doubt that there are going to be massive job losses. It is already clear that the unions are not giving much leadership in opposing these losses

- the TUC in typically ostrich fashion has buried its head in the sand. It has already been pointed out in this article that the new technology itself does not produce unemployment, but rather the way that technology is utilised by society. As capitalism moves into the biggest crisis since the Second World War it also is engaged in using the new technology to rationalise jobs - it will be workers who suffer on both counts.

Jobs will not only be cut through compulsory redundancies, but also by voluntary redundancies, natural wastage and early retirement. While 'No-Redundancy Agreements' are a step forwards in preventing redundancies themselves, they do not prevent a cut-back in the workforce. All too often unions seem willing to sit back on their laurels after assuring the workforce that there will be no compulsory redundancies. Workers need to struggle for guarantees from management to maintain the existing workforce - even if there is little likelihood of success.

The struggle for jobs is crucial. While many of the so-called 'Left' call for nationalisation in bids to save jobs, the record of state intervention in industry generally shows the reverse process - the mines, steel, railways, shipbuilding and more recently British Leyland confirm that there are proportionally more redundancies in the state sector. With the advent of the micro-chip, it is very likely to be central and local government office workers who will face a severe reduction in numbers.

During the 1970s, many people have seen the need to reduce working hours to have more leisure time and freedom. The last major reduction in working hours for many workers took place in the mid-sixties. While the TUC propose that the shorter working week can overcome the growing unemployment problem, it is notable that they have done little in fighting for it. So far the major unions have backed down in the struggle for a 35 hour week, after facing a hostile response from employers. In many cases it has been sacrificed for the prospect of more money on the table - but this is soon eaten up by inflation. The new technological revolution is bound to give more impetus to the demand for the 35 hour week. While the 35 hour week will not reduce unemployment, it can have

an effect in protecting existing jobs - as a defensive measure, however limited. It certainly will not be able to cure the incurable as the TUC suggest - unemployment under capitalism.

OTHER ISSUES...

The use of then new technology is likely to lead to increased demands from management for shift-working which the TUC accepts as stated earlier. When more machinery was introduced into manufacturing in the last century, the capitalist sought to fully utilise the machines day and night to maximise their profits and exploitation. Microtechnology not only makes shift-working possible in the office, but from the capitalist viewpoint even desirable. These moves towards bad shift systems, with all their disruption of life and health, must be vigorously opposed and not sold off for money. It represents a major decline in conditions for white collar workers.

By exerting control over industrial and commercial processes, the new micro-chip puts the worker more at the mercy of the machine and less able to determine the pace of work or control the working environment. The introduction of NC machines and robots has already led to speed ups along with the inevitable share of accidents and health risks. Evidence suggests that workers involved in the manufacture of silicon chips themselves are experiencing particular health hazards. According to the 'Times' of 12th March 1980,

"Eight employees in the Signetics research and development building, where manufacture is carried out on a pilot scale, complained...of various symptoms including irritation of the eyes, mouth, throat and chest; mouth and tongue blisters; nosebleeds and cough; and headaches and lightheadedness. When...investigators examined the company records of 10 other workers, they found that eight had suffered periodically from similar symptoms over the past year."

The use of word processors had led to greater intensification of labour in the office. No longer has the typist to wait, file documents or need to walk away from her seat. Visual Display units (VDUs) constitute a specif-

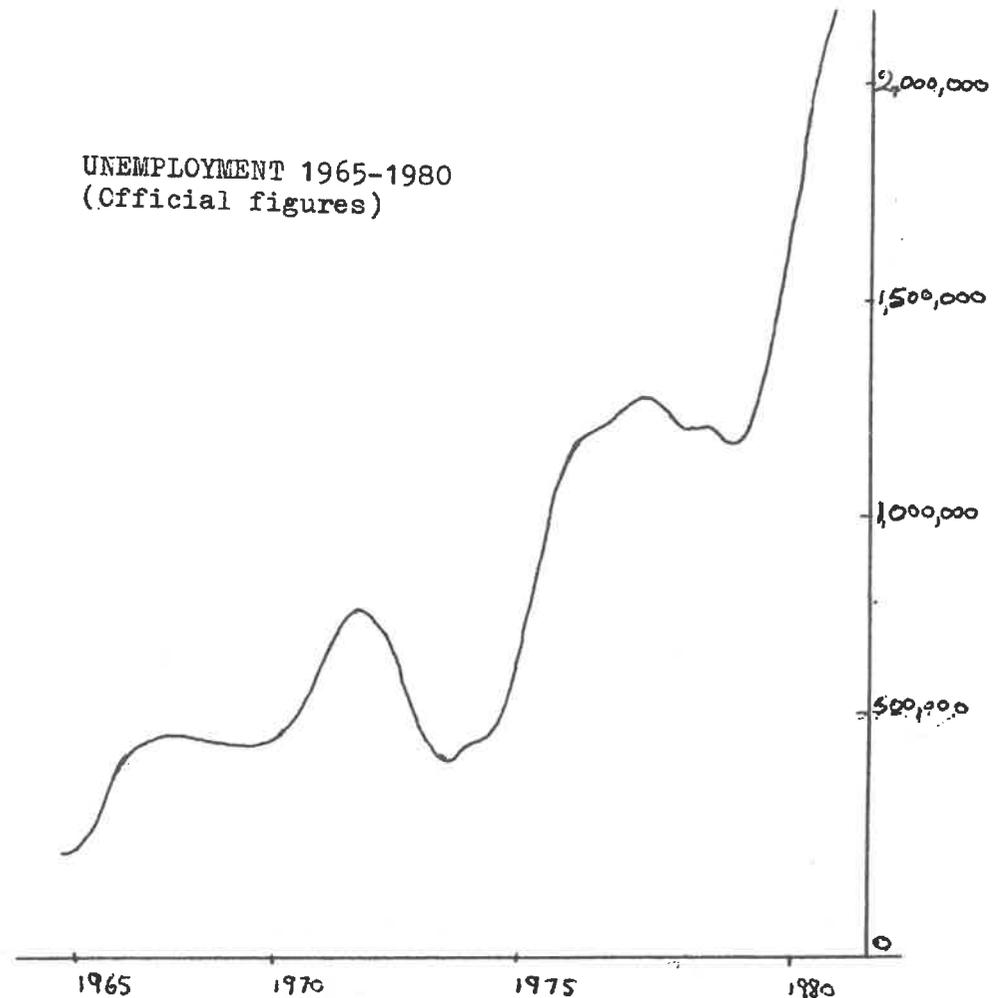
ic health hazard causing eyestrain, fatigue and nausea after prolonged exposure. There is also the possible hazard of microwave radiation. It is important that these health hazards are fully investigated and effective safeguards provided. It is clearly necessary that workers using VDUs should have both frequent and prolonged breaks in their work to minimise these health risks.

There are a thousand and one issues which are raised by the introduction of the new technology into the workplace, and they need to be understood to protect the workers and their conditions. Negotiations with management to prevent worsening conditions are needed from the beginning, and written guarantees are necessary to ensure that the new technology will only be introduced with the agreement from the membership. It is clear however, that with the rapid developments in microprocessor technology and with management still largely in the dark about the innumerable applications of this technology, it will not be introduced in a smooth and orderly way. The likelihood is that both factory and office automation will continue to develop in a haphazard and piecemeal way. In the final analysis, it is the workers themselves who must decide whether to refuse to operate the new systems until their demands are met. It is also the workers themselves who must struggle to ensure that the unions take up the struggle - so far the latter have shown a tremendous reluctance to fight. Yet, in the final analysis, trade unionism cannot offer any thorough solutions to the problems created by the new technology. No matter how militantly it is resisted in a particular workplace, city or country, no matter what assurances on use given by management, the effects of the new technological revolution will be felt very sharply by the working people.

UNEMPLOYMENT.

Unemployment has increased dramatically over the past 15 years in Britain, even according to official government figures (see graph below). Adding to these figures those excluded by the government, who are still seeking work, and unemployment in Britain in mid-1980 is close to 2,500,000.

UNEMPLOYMENT 1965-1980
(Official figures)



Unemployment seems set to overtake the record levels of the 1930s, yet there is little action by the trade unions to fight it. This is not surprising for, during the 1930s the TUC actively fought against workers organising against unemployment. Then, at every stage, they tried to sabotage and disrupt the activities of the National Unemployed Workers Movement, a mass organisation of the unemployed with a membership of over 100,000. Of course, with falling union funds as more and more members

are thrown out of work, the union leaders are aware of the problem - yet as Sir John Boyd, General Secretary of the AUEW says, these members should stay in their unions, even if they do nothing about unemployment, but certainly shouldn't organise themselves. What prompted Boyd's intervention is the growing feeling among unemployed workers that they do need to organise. Already in some cities such as Newcastle organisations are being established, and with prospects of 5 million unemployed within ten years, this mood will clearly grow and take shape.

The unemployed are a particularly oppressed group continually under attack from the government and media. The government has already committed itself to abolish earnings related benefit - further it has announced a commission of enquiry to look into abolishing all national insurance benefits to replace them with means-tested supplementary benefits. Government ministers are also proposing that unemployed workers should do voluntary work without pay - a means of cutting social service provision. The continual stream of articles in the press about so-called scroungers are familiar to everyone. It is ludicrous to put forward notions that the unemployed will obtain a reasonable standard of living under a highly developed capitalist society as the proponents of the collapse of work theory, such as Clive Jenkins, propose. The stage is set for a massive attack on the rights of unemployed workers, while at the same time the risk of unemployment is increasing among the employed. There has never been a greater need for the working class, and especially the unemployed to organise. The demand for work or a decent standard of living must be used to rally unemployed workers into action and away from the apathy of the dole queue.

Capitalism is bringing misery to the masses of people and the responsibility and blame needs to be firmly laid at its door.

THE CRISIS AND THE SILICON CHIP.

Imperialism is in crisis. The days of the long post-war boom are over in capitalist countries throughout the

world. In Britain, the oldest imperialist power, the crisis is particularly felt, for reasons given earlier. The rate of profit has declined continually since the second world war, giving rise to a mounting toll of bankruptcy among the weaker capitalists. As the economic crisis mounts, capitalists pull out of the unprofitable sectors to search for profits elsewhere and begin to rationalise and restructure industry. Capitalists are therefore compelled to look for new forms of technology that can increase the rate of exploitation of the working class, and temporarily alleviate declining profits. The new technology is utilised to ensure that workers spend more time producing surplus value for the capitalist, and less time in producing each product - it cheapens the cost of wage goods. The new technology is therefore intimately bound up in capitalism's struggle for survival.

While the stronger capitalist countries are in a better position to rationalise and restructure their economies, Britain faces enormous difficulties. Declining internal investment as a result of low profitability has led to a great weakness in competing effectively against other capitalist countries. Instead, capital has been flowing abroad to seek out higher profits in third world or other developed capitalist economies. While the USA, Japan and Germany are spending vast sums on the new microprocessor technology, Britain is being pushed further and further out of the market. The implications of this are enormous - not only will unemployment dramatically increase as British capitalists fail to compete, but those who do compete will have to adopt the new technologies and produce severe job reductions. Unlike Japan, Britain faces a double edged sword.

Even in the very short term unemployment will surpass 2 million and perhaps even 5 million within 10 years. The living standards of employed workers, to say nothing about the unemployed, are being cut and eroded in a thousand different ways. Both Conservative and Labour governments are forcing the working class to pay for the bourgeois crisis - during the term of the last Labour government there were 1½ million unemployed and wage cuts through the TUC supported social contract. Both parties, cap-

Italists and union leaders are looking towards a corporate style system to reduce the conflict that is being unleashed in society - they only disagree as to the pace and extent of such moves. Such developments would certainly cause confusion among workers and hold back their struggle.

The ruling class will try to absolve themselves from the inevitable conflict by the well-tried and trusted methods of divide and rule - to turn the employed against the unemployed, white workers against black workers, men against women, and the skilled against the unskilled. (The EEPTU has adopted two slogans, "the little industry with a big future", and "EEPTU - the union of the future": a minor but significant pointer as to their attitude towards unity) The capitalist class and their governments fear most of all the unity of working people, and aim to produce as many divisions as possible. Wal Hannington, National Organiser for the NUWM during the 1930s, said after making a request for the NUWM to affiliate to the TUC, "Unity means something more than merely bringing together the existing organisations into one body. It would have an immediate psychological effect amongst the unemployed and working class generally. It would stimulate and inspire the unemployed with a new confidence and a new hope. It would ensure proper coordination in the struggles of all unemployed and employed. It would draw the masses of unorganised unemployed into organised activity..." (Wal Hannington, Unemployed Struggles 1919-36, page 325). The request for affiliation was turned down - a similar result would be achieved from the TUC fakirs of today.

If the Trade Unions or progressive unemployed workers fail to organise the unemployed in the struggle for work or a decent standard of living, the unemployed can be turned against the working class with a vengeance. The demoralisation and disorganisation of unemployment deprives families of their livelihood and people of their dignity. forcing many to desperation. Guy Fawkes once remarked that "A desperate situation requires a desperate remedy". While the remedy of revolutionary socialism has still not been found by the mass of workers, the growth

of unemployment can be a breeding ground for fascism.

Racism is also increasing dramatically. Everyday, new evidence of systematic police harrassment against black and coloured workers is reported. The Immigration Acts produced by successive Labour and Conservative governments are used to spread racism and continually threaten and intimidate black people. Black people face higher levels of unemployment, bad housing conditions and more oppression, and this is certain to intensify with the growing crisis. Women too will be under attack, forced back into the home as unemployment increases.

If the ruling class find that the social and political problems created by the deep economic crisis create unrest, they will try to use this to their advantage, moving from bourgeoise democracy to open terrorist dictatorship to crush working class resistance.

While the economic future looks grim, the capitalist rulers are throwing down a challenge which shows dramatically the need for a revolutionary Communist party - a party capable of leading workers, employed and unemployed alike, in the struggle for socialism. The new technology will not prove to emancipate the working class under capitalism but becomes a further means of enslaving the people. Even the most militant trade unionism is unable to provide any answers.

Perhaps the most telling point is that even though capital moves rapidly ahead in developing the new technology, it is unable to use it to its full capability - under capitalism that would only result in overproduction, declining profitability and exacerbated crisis. We may not be Luddites but we do desire to smash capitalism. It is only in a society free of the shackles of profitability, rationally planned and organised by the working people, that the new technology could be utilised to its full potential producing the needs of life in a plentiful and cheap way. Unemployment could be abolished by utilising all available labour to provide more goods and services, while workers themselves could have more time for leisure, cultural and sporting activities. It is only

the working class that has the power to build a society of this sort - a socialist society. The new technology is at once a weapon for the bourgeoisie to further enslave, oppress and exploit the working people, and at the same time provides the technical basis for the full development of a socialist society into a communist classless society and the super abundance of all the needs of life.

The implications of microprocessor technology need to be thoroughly analysed so that the working class is able to struggle more effectively against the capitalist system. Today there are still many false prophets, like Jenkins and his ilk, and the TUC, who refuse to come to grips with the reality of moribund capitalism. As long ago as 1887, Engels wrote exposing the pseudo-scientific theories of Eugen Duhring and vividly describing the dynamic contradictions of capital:

" The fact that the social organisation of production within the factory has developed to the point at which it has become incompatible with the anarchy of production in society which exists side by side with and above it - this fact is made palatable to the capitalists themselves by the forcible concentration of capitals which takes place during crises through the ruin of many big and even more small capitalists. The whole mechanism of the capitalist mode of production breaks down under the pressure of the productive forces which it itself has created. It is no longer able to transform the whole of this mass of means of production into capital; they lie idle, and for this very reason the industrial reserve army must also lie idle. Means of production, means of subsistence, available workers, all the elements of production and of general wealth are there in abundance. But "abundance becomes the source of distress and want" (Fourier), because it is precisely abundance that prevents the conversion of the means of production and subsistence into capital. For in capitalist society the means of production cannot begin to function unless they have first been converted into capital, into means for the exploitation of human labour-power. The necessity for the means of production and subsistence to take the

character of capital stands like a ghost between them and the workers. It alone prevents the coming together of the material and personal levers of production; it alone forbids the means of production to function and the workers to work and live. Thus on the one hand the capitalist mode of production stands convicted of its own incapacity to continue the administration of these productive forces. On the other hand, these productive forces themselves press forward with increasing power towards the abolition of the contradiction, to their deliverance from their character as capital, towards the actual recognition of their character as social productive forces.....

"The forces operating in society work exactly like the forces of nature - blindly, violently and destructively, so long as we fail to understand them and take them into account. But the moment we have recognised them and understood their action, their trend and their effects, it depends solely on ourselves to increasingly subject them to our will and to attain our ends through them. This is especially true of the mighty productive forces of the present day. As long as we obstinately refuse to understand their nature and their character - and the capitalist mode of production and its defenders resist such understanding with might and main - these forces operate in spite of us and against us, (and) dominate us"

(Engels: Anti-Duhring - pps 356 & 361 FLP edition.)