

# **Workers' Control Bulletin**

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- THE 35 HOUR WEEK NOW!
- SHOP STEWARDS' CORPORATE PLAN FOR LUCAS AEROSPACE
- C. A. PARSONS: UNIONS EXPLAIN
- THE ALTERNATIVE TO CUTS

# **1,613,956 ON THE DOLE**

## **Campaign for Full Employment Launched to Save Unions from Defeat**

*Earlier this year it became clear that official opinion had surrendered all hope of the restoration of full employment within any tolerably near future. In May, the IWC launched an appeal for a campaign to restore full employment*

*This Appeal attracted widespread support in the trade unions and the Universities. A large number of Members of Parliament also endorsed it. The text which follows has been discussed by many organisations and every day the organisers learn of new support*

Most of the major social and democratic advances which have been made in Britain since 1945 have been directly founded upon the fact that relatively full employment has prevailed for almost three decades. Upon this basis has been built a considerable development of social and community services, a notable advance of trade union organisation and influence, and a marked growth of self-confident democratic aspirations among large sections of the people.

For many years, also, there has been a fairly large area of ostensible political consensus, in which all major parties have insisted that they were firmly and permanently committed to the maintenance of a fully employed economy.

Today, all this has changed. When the present Government came to office, unemployment stood at approximately 600,000. Now it is nearly 1,400,000. But this fact, bad in itself, is not as serious as the more sinister underlying fact that the very idea of full employment has been officially abandoned as a practical option for the entire foreseeable future.

Levels of unemployment between 1 million and 1,500,000 are now assumed to be inevitable by all the forecasts of economic performance, while more pessimistic predictions exist which anticipate levels reaching two million.

The Government has clearly based its current policy on the notion that this is now "acceptable", and has taken a whole series of measures which, unless they are reversed, will ensure that it becomes unavoidable. In its agreement with the International Monetary Fund, and in subsequent related policy decisions, the Government has directly withdrawn every major positive undertaking given to the trade unions during the negotiations which established the existing social contract, so that all the burdens accepted by wage-earners at that time will now be augmented by further heavy imposts as a direct result.

During the negotiations on the second stage of the contract, the Government had committed itself to a growth rate of 4 per cent. In the event, growth was restricted to 1 per cent. Informed estimates consider this shortfall to be the equivalent of 400,000 jobs.

Partly because the defensive strength of the unions makes dismissals and redundancies difficult to enforce, an extremely high proportion of the new unemployed are young people who have not been able to secure either jobs or union membership. To this circumstance may be traced a whole series of regressive pressures on the educational system, which unwind behind the unjustifiable reproach that, in some way, schools are responsible for the shrinkage of the job-market.

At the same time, although the unions have registered disquiet at the failure of the Government to honour its side of the social contract, the TUC as a whole has, so far, failed to present a clear balance-sheet to its affiliates, and has not given the lead which is needed to help unions face up to the problems which result.

Beyond doubt, the unions did not believe in 1976, that they were accepting a contract based upon rising unemployment, and they *cannot* ratify such a contract now.

Cuts in public expenditure — particularly severe in 1977 and 1978 — aggravate all these problems at the very moment when a controlled expansion and shift of public spending is necessary to ameliorate them.

At the level of the social polity, all kinds of harmful reactions are thus encouraged. Racism and ultra-Right-wing demagoguery are stimulated. The centre of gravity of conventional politics is displaced away from liberal, socialist or democratic standards towards increasingly oppressive and arbitrary presumptions.

As the trade unions find themselves caught in the effect of a drastic shift of public policy, they will discover that many of their traditional powers are eroded. A weakening of trade unionism, were it allowed to pass unchallenged, would mean a weakening of all other forms of community action and self-defence, and an undermining of the democratic vitality of a far wider population than that immediately affected by savage cuts in public spending and increases in enforced idleness.

At the international level, the crisis has generated high unemployment levels in many other countries, including some which have previously been more or less committed to welfare policies. The institutions of the European Community have not been mobilised to make any concerted attack on the social problems which arise from unemployment, still less to concert serious attempts to enlarge the number of job opportunities.

While European trade unions have agreed in principle on important and relevant measures, such as the need for the 35-hour week, much remains to be done to advance such objectives in an urgent and practical way.

Regardless of the attitudes of the Brussels Commission, unions need to consider, at national and international levels, how far collective bargaining can be employed to generate new jobs. Among obvious solutions are the reduction of hours without loss of pay, the establishment of drastic reductions in the hours of workers on anti-social shifts, earlier retirement on generous terms in heavy industries, accelerated recruitment and improved training of new workers in order to maintain capacity in the face of such reforms, and bargaining for more apprenticeships, training and work experience, under union conditions and supportive union supervision, for the young.

Distressed by the social consequences of unemployment, and convinced that full employment remains a key political priority, the supporters of this appeal call upon democratic organisations, local political associations, trade unions and pressure groups to join in a widespread and careful discussion of the problems involved in the struggle for full employment, with the intention of agreeing upon an adequate programme of action to eliminate unemployment. Such action should include not only feasible policies for implementation at the level of Government, but also appropriate responses by trade unionists, local authorities and other associations. It should include remedies which can be pressed upon the authorities at both national and international levels.

To help to focus this discussion, we shall convene a national seminar during the month of July, which will commission a series of specialised reports from authorities, interest-groups, and qualified researchers, and establish a number of working parties to develop practical proposals within particular fields.

We invite those who are able to help in this work to write to: Full Employment Seminar, c/o Institute for Workers Control, Bertrand Russell House, Gamble Street, Nottingham.

## Signatories to Full Employment Appeal

Norman Atkinson MP, Sydney Bidwell MP, Norman Buchanan MP, Robin F. Cook MP, Bryan Davies MP, Geoff Edge MP, Martin Flannery MP, Brian Gould MP, Eric S. Heffer MP, Neil Kinnock MP, Joan Lester MP, Max Madden MP, Jim Marshall MP, Joan Maynard MP, Ian Mikardo MP, Brian Sedgemore MP, Renee Short MP, Ron Thomas MP, Stan Thorne MP, Audrey Wise MP.

Colin M. Barnett (NUPE), Bernard Dix (NUPE), Jack Dunn (secretary, Kent Area NUM), Moss Evans (general secretary elect, TGWU), Alan Fisher (general secretary, NUPE), Ken Gill (general secretary, AUEW-TASS), Gerry Gillman (general secretary, SCPS), Walt Greendale (TGWU), David Hall (SCPS), Danny Harris (TGWU), P.E. Heathfield (secretary, Derbyshire area, NUM), Bill Jones (TGWU), Peter Jones (AUEW), Max Morris (NUT), Brian Nicholson (TGWU), Reg Race (NUPE), Ernie Roberts (AUEW), Alan Sapper (general secretary, ACTT), Bob Wright (assistant general secretary, AUEW), George Wright (regional secretary, Wales TGWU: general secretary, Wales TUC). (All in a personal capacity).

Michael Barratt Brown (Sheffield University), Stephen Bodington, Ken Coates (Nottingham University), Frank Field (Low Pay Unit), Ken Fleet (Institute for Workers' Control), Denis Gregory (Trade Union Research Unit, Ruskin College), Peter Hain (Young Liberals), Professor Royden Harrison (University of Warwick), Simon Hebditch (Young Liberals), Michael Hill (University of Bristol), Geoff Hodgson (Manchester Polytechnic), Stuart Holland (Sussex University), John Hughes (Ruskin College), Dennis Marsden (University of Essex), John O'Malley (Canning Town Community Development Project), Eric Preston (ILP), Raphael Samuel (Ruskin College), Bill Silburn (University of Nottingham), Adrian Sinfield (University of Essex), E.P. Thompson, Dorothy Thompson, A.J. Topham (University of Hull), Professor Peter Townsend (University of Essex), Alan Walker (National Children's Bureau), Frank Wilkinson (University of Cambridge), Raymond Williams, Barry Winter (ILP).



*Picture: Delegates to recent TGWU Annual Conference vote overwhelmingly for implementation of the 35 hour week.*

There could not be a better time to go over to the 35 hour week. Not only in Britain but in other major industrial economies.

Modern technology in manufacturing means that even with major increases in the stock of productive capital and major increases in output, there is only limited scope for employment to increase — if actual working hours do not fall. This is particularly true for manual workers. In Britain the manufacturing capital stock grew nearly 40 per cent between 1965 and 1975 while the total hours worked by “operatives” (manual workers) fell 24 per cent. A recent article on the Federal Republic of Germany (in the Department of Employment Gazette, April 1977) says:

“In spite of the gradual lifting of the recession unemployment levels are expected to remain high in the Federal Republic because of increased rationalisation in industry. This is, in effect, reducing the number of jobs available and increased investment tends to be geared towards further rationalisation rather than creating more jobs.”

Given the size of public sector financing deficits in many major economies, and further efforts by the authorities to curb such deficits, it is unlikely that further large increases in public sector employment will be forthcoming —

**John Hughes:**

# Now's the time for a 35-Hour Work-week

if working hours do not fall.

Yet the number of people seeking to enter the labour market continues to grow. The age structure is such that particularly large and still increasing numbers of young workers are seeking jobs. (In England and Wales the annual number of school-leavers was 620,000 ten years ago, is now over 750,000, and is expected to rise to above 810,000 by 1979/80.)

The latest unemployment figures for European countries (mainly for spring 1977) are sombre. France and Germany, with registered unemployment near one million, have already experienced over two years of unemployment at such high levels. The United Kingdom figure has more than doubled its unemployment since 1974, and a seasonally adjusted level of one and a third million has persisted since mid 1976; most expert forecasts anticipate further increases in UK unemployment. The latest data for Ireland and Denmark show unemployment as 12 per cent of the total number insured. The sample survey in Italy showed unemployment over three-quarters of a million from the second quarter of 1976 onwards. (The North American figures reveal an unemployment rate there of over 7 per cent of the total labour force.) There is clearly serious danger of “structural” unemployment persisting at high levels in 1977

and after, particularly for young workers, and not least in the case of Britain.

Those resisting the possibility that a reduction in the normal or "basic"<sup>1</sup> working week could contribute positively to restoring full employment argue somewhat contradictorily that it would be damagingly inflationary, and that it would not have much impact on employment because employers would counter by reorganisation of work to increase productivity.

On previous experience, a major and widespread reduction in working hours, without loss of pay, has *not* been the cause of a major increase in unit costs. Part of the "cost" is likely to be offset by higher efficiency; part by the greater willingness of organised labour — in return for the shorter week — to settle for moderate advances in weekly pay. That seems to be the lesson of past hours reductions. At the same time an increase in employment required in the economy *is* created. This is the more obvious if actual hours fall more or less in line with the reduction in normal hours. Here, too, earlier experience suggests that a fall in actual hours does occur, and with more joint planning of manpower and control of overtime this effect could be enhanced.

It can be shown that on reasonable assumptions, a phased transition to the 35 hour week could in Britain have a larger effect in reducing the present mass unemployment and avoiding long period unemployment<sup>2</sup> than any other measure or combination of economic measures that has been proposed. Assuming the employment effect were 40 per cent of the total change in basic hours, the full transition to a 35 hour normal week in Britain would create about 750,000 jobs, nearly 400,000 of which would be for manual men (who

represent the highest unemployment rate). Probably this would mean a reduction of half a million or slightly more in registered unemployment. Depending on the bargaining approach adopted, this might be largely achieved within two to three years.

Previous post-war reductions in hours of work were launched in periods of high economic activity, and involved more problems of costs and employment than would a planned move to the 35 hour week in 1977-79. Even so they were managed without undue strain. The 35 hour week, pursued *now*, would offer a strategy to return to full employment; without that, the British "industrial strategy" through which the government aims at the strengthened development of productive industry is incomplete and unbalanced.

But the critics of the 35 hour week raise the danger of damage to our comparative cost position, the danger of weakened competitiveness. The right answer to this from the British trade unions is to recognise the need for — and the opportunity for — a massive exercise in trade union solidarity and co-ordinated action internationally. This can prove in practice the reality of a European trade union movement. Through the European TUC, and through direct contacts with particular European trade unions and TUCs, we must raise the challenge of achieving a 35 hour week across the continent — and beyond; not as an aspiration for the future but as a practical programme for today. It was as long ago as 1935 that the ILO came forward with the 40 hour week objective. Over 40 years later it is the right time to ask the world labour movement to take the next major step forward.

## 1. Earlier Reductions in Hours

The previous reduction in normal hours in Britain brought hours down from 44 to 40 in two stages. Most of the fall from 44 to 42 was concentrated in the years 1959 to 1961; the reduction from 42 to 40 was mainly bunched in 1964-66. In each period the official index of normal hours for manual workers fell by 3.7 per cent.

At the time the fall in "actual" hours was less pronounced in 1959-61 (— 1.9 per cent) but continued into 1962. Economic activity was rising strongly in 1959 (so that cyclically "actual" hours would have been likely to rise with increased overtime being worked); by 1960-61 there was a very high level of activity and a low level of unemployment, but a recession developed in 1962. In the circumstances it is interesting that hours actually worked fell as much as they did. In 1964-65 labour market conditions were similar to those of 1960-61 — a low level of unemployment which may have encouraged firms to maintain actual hours as normal hours fell. But the year 1966 saw a recession developing and a more marked reduction in actual hours worked.

The years in which reductions in normal hours were concentrated were not the most suitable in another respect. 1960-61 were years of very limited increase in labour productivity; so were 1964-66. This is typical of British experiences of "peak" and immediate post-peak years in the trade cycle. Consequently there was little productivity offset to the rise in unit labour costs caused by the shortening of normal hours. (From this point of view the best timing for a major reduction in normal hours is immediately after the recession stage of the trade cycle; for the first years of resumed economic expansion are most favourable to a high rate of increase in both labour and capital productivity.)

Even so, neither of the two previous periods of reductions in normal hours caused any noticeable problems of acceler-

ated cost of inflation. In 1959-61 income from employment per unit of output rose just over 7 per cent; this was distinctly *less* than in the equivalent years in the previous trade cycle (1954-56) when no hours reduction occurred. In 1964-66 wages and salaries per unit of output rose by 9½ per cent across the economy; this compares very favourably with the steeper rise (nearly 15 per cent) in the equivalent years of the following economic cycle when no hours reductions occurred. Thus, despite the timing of the reductions in hours in relation to the trade cycle making it more difficult to achieve direct cost savings, there is no evidence that pay costs (per unit of output) rose faster than they would have done had there been no reduction in normal hours.

Although many other factors are involved, it is useful to note that in the recessions in the British economy following each of the sets of years in which reductions of normal hours occurred, the unemployment peak remained below 600,000. By contrast, in the two most recent trade cycles, in neither of which has there been a reduction in normal hours, unemployment peaks moved very much higher (to over 900,000 in 1972 and over 1.3 million in 1976-77).

Over the longer term the fall in actual hours has been more closely in line with the reduction in normal hours. The official index of actual hours of operatives in manufacturing industry shows a fall of 9.5 per cent between 1956 and 1974 (these years occupy equivalent positions in terms of the trade cycle). We should discard the myth that if normal hours were reduced actual hours would not respond and overtime would rise.

The last major official analysis of hours of work, overtime, and shift-working in Britain was a National Board for Prices and Incomes Report in 1970. (Though each year there is a statistical survey.) This report was not able to draw



on any very extensive studies of the effects of reducing *actual* hours, but it did report some interesting experience from *France*.<sup>3</sup>

In the French case, following the industrial unrest of 1968 a number of agreements with provisions for limiting overtime and reducing actual hours were concluded. Late in 1969 a survey was made as to the effects of the reduction in actual hours. Among those firms that had reduced hours the average reduction was 3.4 per cent; the loss of production attributable was only a little over a third of that. Among the industrial firms reducing hours of work 48 per cent hired more labour and 27 per cent introduced or extended shiftwork (the shiftwork extension was more noticeable among larger firms).

Perhaps the lessons of this recent British and French experience might be summarised as:

- i. A reduction in normal hours is associated with some reduction in actual hours.
- ii. Reduction in actual hours *in the short run* would be more pronounced where there is still considerable unemployment and additional labour can be recruited; in the longer run, the fall in actual hours is likely to be as great as the fall in normal hours.
- iii. Reduction in actual hours could also be tackled by collective bargaining on manpower policies, setting limits to overtime, etc. (It would be important both for employment creation reasons and to reduce cost inflation to prevent reduced normal hours leaking away into increased overtime working.)
- iv. A substantial part of the reduction in normal and actual hours might be handled by firms without major loss of production (i.e. there would be sizeable efficiency gains).
- v. A fairly high proportion of firms would hire more labour as part of the process of adjusting to reduced working hours. A considerable number of firms would also seek to extend shiftworking in such a context.

## 2. Background Analysis: Basic and Actual Hours in Britain

The British pattern of normal and actual hours differs from that in other countries in two respects. (i) in Britain normal hours for non-manual workers are generally below those for manual workers. (Whereas on the continent the 40 hour week is widespread for both manual and non-manual categories.) (ii) The majority of leading countries have laws which lay down normal and/or maximum hours of work and provisions covering the working of overtime as well. This is not true of Britain, in general, though some degree of protection applies to certain categories (juveniles and women workers in some circumstances; transport drivers).

The New Earnings Survey shows the overall position for Britain in 1976 (for full time workers).

	<i>Basic Hours</i>	<i>Over- time</i>	<i>Total Hours</i>
Manual men	39.9	5.4	45.3
Manual women	38.5	0.8	39.3
non manual men	37.2	1.3	38.5
non manual women	36.2	0.3	36.5

It is obvious from the table that only in the case of manual men is overtime a significant element. As for non manual workers, their basic hours are already more than half way (measured from 40 hours) towards the 35 hour week.

Consequently:

- Only limited further change in working hours is needed to bring non manual workers to the 35 hour week.
- This contrasts to some extent with the situation in other countries where the scale of adjustment involved for non manual workers would be greater.
- Differences in normal hours have been one of the elements of differentiation in Britain between manual and non manual workers; therefore, to reduce hours to a *common* level (such as 35) would imply the reduction of this hours differential.
- The main scope for reducing both normal and actual hours is concentrated on manual men. It is on this occupational category that most unemployment is concentrated: on the last official figures just over 60 per cent of male employees are manual, but manual workers account for over 80 per cent of male unemployment (nearly three quarters of a million male manual workers registered as unemployed).

To measure more exactly what would be involved in reducing normal hours, it is helpful to look in more detail at the pattern of normal hours in Britain.

### The Distribution of Basic Weeks

(Full time workers. Percentages relate to each occupational category, i.e. each column sums to 100.)

<i>Basic Week</i>	<i>Manual men</i>	<i>Manual women</i>	<i>Non-manual men</i>	<i>Non-manual women</i>
Up to 35	1.7%	16.8%	20.7%	30.8%
Over 35, up to 38	10.7%	13.5%	54.1%	47.4%
Over 38, up to 40	81.2%	67.6%	19.7%	20.6%
Over 40	6.4%	2.1%	5.5%	1.2%

Factors which may be noted:

- a. Around half the non manual labour force is on a basic week of between 36 and 38 hours.
- b. Only a fifth of non manual workers are on or near a 40 hour week; this contrasts with two thirds of manual women and over four fifths of manual men.
- c. Some 30 per cent of non manual women, 20 per cent of non manual men, and one sixth of manual women are already working a 35 hour week or less; but this applies to very few manual men.

Using the detailed information available from the New Earnings Survey enables an accurate estimate to be made of the proportionate reduction in basic hours required to reach a 35 hour week *for all workers presently above that*.

- For manual men an average reduction of 12%.
- For manual women an average reduction of 10%.
- For non manual men an average reduction of 7%.
- For non manual women an average reduction of 6%.

Over the whole economy (and estimating for juveniles, as well as allowing for part-time workers whose hours would be unchanged) the reduction in all basic weeks in excess of 35 hours to no more than 35 hours would require an average reduction of 8.7 per cent in basic hours.

It would, however, be very unrealistic to translate this

statistic into an assumed increase in employment required. That unreality could be put as follows: if there were *no* changes in output, *no* changes in productivity, *no* changes in overtime worked, then the 35 hour week in Britain would require a 9½ per cent increase in employment. This point only serves to indicate the importance in reality of influencing accompanying changes in productivity, and in overtime. It suggests that phasing a major reduction over two or three years may be important; it should be noted that the labour force in Britain is expected to expand to the early 1980s.

The statistics so far presented have concentrated on "normal" hours. But it is helpful also to know about characteristic features of "actual" hours worked. From the New Earnings Survey the following relevant facts stand out:

- i. Very large numbers of workers do work actual hours at or very close to their normal hours. In the latest survey over half of all full-time employees were working actual hours per week in the range of 36-40. This is not merely a feature of non-manual work. Over half of manual women workers were working actual

- hours of 39-40, and so were a third of manual men.
- ii. The proportion of manual men working very extended hours has already been falling in the 1970s, despite the lack of any change in their basic weekly hours. In 1970 28 per cent worked over 50 hours, in 1975 this had fallen to 21 per cent.
- iii. It might have been expected that shift workers would tend to work to a shorter actual week as some compensation for the social and other disadvantages of shift work. In fact 23 per cent of manual men received shift premia. But 58 per cent of them worked overtime and those that did work overtime averaged 10½ hours overtime in the survey period (these figures are slightly higher than for manual men generally). It might be argued that shift-workers could claim some priority in the reduction of both normal and actual hours of work.

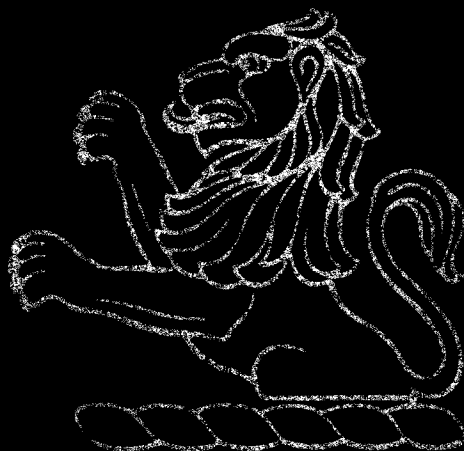
This brief survey does suggest that both reductions in normal hours would be quite widely transmitted into reductions in actual hours, and that bargainers would need to consider both dimensions of the working week — "normal" and "actual" hours of work.

### 3. A Possible Strategy and its likely Effects

In order to evoke a sharper discussion of the real economic and organisational issues involved in a planned and co-ordinated reduction in the normal week, the following section sets out the basis for a feasible plan of action. The approach is designed to minimise any economically harmful "costs" of the reduction in the working week. But even more imperatively it is designed to help remove the scourge of persistent and excessively high unemployment in 1980.

- i. On the basis of constructive collective bargaining and support from related economic, manpower, and fiscal policies, the objective should be to reduce the basic working week in Britain to 35 hours in 1980.
- ii. This programme could be thought of as involving two stages — the first of which would reduce normal weeks to 37/38 hours (for many bargainers this might naturally appear as 37½ hours) and the second to reduce normal hours to 35.
- iii. The first stage of such a programme would in total involve approximately *half* the proportionate reduction in normal hours (and associated requirement for increased employment) set out above, for the complete transition to the 35 hour week. But its effects would be disproportionately important for manual workers. Reducing normal hours to 37 a week would involve a fall of nearly 7 per cent in the basic week for manual workers, but only around a 2 per cent to 2½ per cent fall in basic hours for non manual workers. The second stage would affect manual and non manual workers more or less equally.
- iv. The approach should not be concerned to maintain existing differences in normal hours as between manual and non manual workers. But studies of work requirements and arrangements might be needed in a number of cases when determining what constitutes the recorded working day and working week (miners and teachers might be examples of the need for such studies).
- v. It would be helpful if the phasing of agreements for reduced normal weeks were subject to TUC guidelines. This is particularly relevant if other elements of TUC guidelines (such as the rule involving a 12 month interval between settlements) persist.
- vi. The target should be set for each bargaining unit of offsetting one-third to one-half of the cost of the transition to the 35 hour week by improved practices and overall increased efficiency. The one-third yardstick might be more appropriate where equipment, etc. remains substantially unchanged; the one-half target where improved equipment etc. could enhance performance. The context of bargained reduction in the working week would enable constructive "productivity bargaining" to go ahead in a way which it can hardly be expected to in the present context of mass unemployment and unchanged hours of work.
- vii. Companies should be helped in direct connection with the planned phasing of particular agreements on the 35 hour week to build up in advance the additional training and recruitment programmes needed. Such recruitment could be particularly directed at younger unemployed workers, and the Manpower Services Commission should assist in accelerated training provision. The aim should be to minimise resort to increased overtime as a way of meeting needs for additional labour beyond the normal week of the existing labour force.
- viii. The bargained agreements should include provisions for monitoring and joint regulation of overtime, and for avoiding any general increase in overtime working beyond its previous levels. It would be helpful if special surveys were made of firms or industries where a significant number of manual men are working excessive overtime.
- ix. There should be particular attention to reduction of both normal and actual hours in the case of shiftworkers. This might include more widespread provision for giving time off in lieu where overtime (or overtime beyond an agreed level) has been worked.
- x. It would be reasonable to ask the state to assist the creation of additional employment through relevant fiscal policies. The state has an interest in the employment creation that could be set in train by a reduction of both normal and actual hours; each worker removed from the unemployment register and put to work represents a reduction in public expenditure on unemployment benefit and an increase in public revenue from taxes on earned income. The state would also

*Continued on page 19*



# LUCAS

## An Alternative Plan



This Corporate Plan was prepared by the Lucas Aerospace Combine Shop Stewards' Committee for that section of Joseph Lucas Industries which is known as Lucas Aerospace.

If a brief description of Lucas Industries is provided this gives an economic, technical and company background against which the performance and potential of its wholly owned subsidiary, Lucas Aerospace, can be viewed. It was also felt desirable to do so as some of the alternative products proposed elsewhere in this report, although emanating from aerospace technology, could more appropriately be handled, at the manufacturing stage, by production techniques and facilities available elsewhere in the Lucas organisations.

## Lucas Industries Ltd.

Lucas Industries is a vast and complex organisation with design, development, manufacturing, sales and services activities in the automotive, aerospace and industrial sectors of the economy.

The Company which was formed in 1877 now has some 80,000 employees and an annual turnover of approximately £300,000,000 and capital investment of £110,000,000.

A discernable feature of the Company's mode of operation during the past few years has been to shift large quantities of capital, resources and technological know-how into overseas activities. This raises a whole host of fundamental, political, economic and industrial questions, as is the case with the operation of any Multi-National Corporation. It is not the purpose of the Corporate Plan to analyse these. Suffice to say that this tendency is causing deep rooted concern amongst large sections of Lucas employees and they will clearly have to consider appropriate means of defending themselves from the likely repercussions of these developments. These views and anxieties are reflected in the Aerospace division.

Lucas Industries hold a monopoly, or near monopoly position, in respect of a number of product ranges both in the United Kingdom and in Europe. However the present economic crisis, itself a reflection of the inherent contradictions of the market economy, is having serious repercussions within Lucas Industries. At the time of preparing this report the Company is attempting to shed large sections of labour in some of its plants. There has also been a serious cut in the living standards of all Lucas workers both by hand and brain since 1972. The attitude of the Company to its employees and society at large is however no worse than that of its international competitors and it is certainly better than some of them. However, a sophisticated industrial relations set up and a relatively elaborate network of consultative devices simply provide a thin veneer of concern, beneath which is concealed all the inevitable ruthlessness of a large corporation involved in the frantic international competition of the 1970s.

## Lucas Aerospace Ltd.

Lucas has been in the aircraft equipment field since 1926 when it acquired a subsidiary Rotax. Prior to World War II Lucas set up a parallel aircraft equipment company known as Lucas Gas Turbine Ltd. This was formed initially to design, develop and manufacture the fuel system and combustion chamber for the Whittle gas turbine engine. Through this Company close collaboration was established with Rolls Royce and that continues to this day. Thus, since the end of the War and up to the late 60s Lucas had, in practice, two distinct aircraft component operations. Rotax, which supplied electrical generating systems, starting systems and small gas turbine driven auxiliary power units, whilst

Lucas Gas Turbine Equipment supplied engine fuel systems and larger fabricated components.

During the 1960s Lucas had three major competitors in the electrical aircraft field namely, Plessey, English Electric and AEI. Lucas Gas Turbine Equipment division did not have a competitor and Lucas, at that stage, was not engaged in the design of flying control and actuating systems. Paradoxically the turmoil in the UK aircraft industry of 1965, when the Labour Government cut back a number of major products, provided the objective circumstances in which Lucas could establish itself as the dominant force in these fields.

In 1968, through Rotax, it took over the AEI interests at Coventry and then the Special Products Division of English Electric at Luton, Bradford and Netherton in 1969. Lucas further extended its influence in the aircraft equipment field by moving into the flying control and actuation systems side by acquiring Hobsons of Wolverhampton in 1969.

The 'Internationalisation' of Lucas Aerospace followed closely the pattern of Lucas Industries described above. Through its acquisition of English Electric it acquired a 40% stake in Auxilec of France and 34% stake in PLU of Germany — a joint company set with Bosch (15%) and Pierburg (51%) to produce hydro-mechanical fuel systems particularly for the MRCA. The result is a Lucas Company achieving the same dominance in the field of aircraft components as other sections of Lucas have achieved in the automotive industry. Lucas Aerospace is now the only company in the world with the capability of producing, within a single organisation, a complete range of aircraft electrical generating systems and switchgear, engine starting, de-icing, flying control, fuel management, thrust reverse and combustion systems, instrument lighting and cockpit transparencies.

Lucas Aerospace also produce a range of equipment for defence applications on both land and sea. The current major commitments include extensive systems work on the RB.211, Concorde, the TU144 supersonic airliner, the Lockheed Tri-star, the A300B Airbus, the European Multi Role Combat Aircraft (MRCA) and the Anglo French Jaguar.

Approximately 20% of Lucas Industries resources are now devoted to the Aerospace industry. Lucas Aerospace now has just over 13,000 employees. This is a highly skilled and talented workforce, comprising a very wide spectrum of technological ability both in the manual and intellectual field. With a high design and development content it is inevitable that there is a large proportion of technical staff and there are 2,200 engineers, designers and draughtsmen of various kinds. Aerospace deploys some 5,000 machine tools and approximately 250 of these are advanced machine tools which are numerically, automatically or digital display controlled. This is supported by extensive research and development facilities and laboratories.

In consequence of this, Lucas Aerospace is now Europe's largest designer and manufacturer of aircraft systems and equipment.



## The Combine Committee

The five years from 1964 to 1969 saw a very rapid monopolisation of large sections of British Industry and the emer-



gence of massive corporations such as British Leyland and GEC. This process was actively supported by the government, which, in many instances, was providing the tax payers money to lubricate this process. Within Mr Wilson's philosophical framework of 'the white heat of technological change' many thousands of highly skilled workers found that the consequence of the 'White Heat' market economy was that it simply burned up their jobs and gave rise to large scale structural unemployment. The 'logic' of the market economies and rationalisation programmes in these vast corporations resulted in the illogical growth of the dole queue with all the degradation and suffering and loss of economic activity of hundreds of thousands of highly skilled men and women.

The Weinstock empire, that is GEC, was the pacemaker in this development. The work force was reduced from 260,000 to 200,000 whilst during the same period the profits went up from £75,000,000 to £108,000,000 per annum. Thus whilst it was profitable for Weinstock to cut his work force, society at large had to pay the price, firstly in social security payments for those involved and secondly in the loss of productive capacity which these people could have made available to the economy of the nation as a whole. Weinstock's attitude to the work force, summed up by one of his managers in a statement to the *Sunday Times* "he takes people and squeezes them until the pips squeak" was seen as some kind of virtue. Indeed it is a measure of the deep rooted economic and political sickness of our society that a person like Weinstock was then, and is still, held up as the pinnacle of managerial competence.

When Lucas acquired parts of English Electric in the process described above, the lessons of the Weinstock escape were not lost on Lucas workers. It was clear that Lucas Aerospace, if it were permitted, would embark on a similar rationalisation programme. Strangely enough it was recognition that this attack would be made upon the work force that provided the objective circumstances in which the Combine Committee was formed.

Its formation resulted in the first instance from fear of redundancy, and the recognition of the need to provide an organisation which could fight and protect the right to work. It was realised from the onset that the Combine Committee could itself become another bureaucracy and that there were real dangers in centralising activities of all factories through one body. Accordingly a constitution was carefully worked out and widely discussed at all sites which provided adequate safeguards.

Development of the Combine Committee, now known as the Lucas Aerospace and Defence Systems Combine Shop Stewards Committee, took approximately 4½ years. In its early stages it lacked cohesion and strength. The Company was, as a result of this, able to embark on a rationalisation programme in which the work force was reduced from 18,000 to the present 13,000. However, at the last attempted sacking of 800 workers in January/February 1974 the Combine Committee was well enough organised to resist this. The Combine however has no illusions that the right to work can ever be guaranteed in a market economy.

Gradually the Combine Committee set up a series of advisory services for its members. These include a pensions advisory service which has recently negotiated a complex pension structure for manual workers<sup>2</sup> and the campaign for the election of trustees for the staff pension fund in order that information could be available as to where this pension fund money is being invested. The importance of this development may be judged by the fact that the staff pension fund has a market value of something like

£80,000,000 and the works one £40,000,000 at a time when the capitalisation value of Lucas as a whole on the stock market has been as low as £36,000,000.

Other services included a Science and Technology Advisory Service which provided technical information on the safeguards to be campaigned for when new equipment was being introduced<sup>3</sup> or when health hazards were possibly involved.<sup>4</sup>

The Combine Committee is also a reflection of the growing awareness, of those who work at the point of production, that the traditional trade union structures based on geographical divisions and organised on a craft basis are incapable of coping with the new and complex problems of these large monopolies. However the Combine Committee should not be seen as an alternative to the traditional trade union movement rather it is a logical development from it, and complementary to its aims.

The Combine Committee produces its own four page illustrated newspaper approximately bi-monthly, 10,000 copies of this are circulated amongst the 13,000 manual and staff workers.

In practice the Combine Committee has become the voice on a number of subjects for the 13,000 manual and staff workers who now work throughout Lucas Aerospace in the United Kingdom. It has also taken a series of steps to establish close links with those employed by Lucas Aerospace abroad. The significance of its development has been included in lectures at the TUC<sup>5</sup> on the training courses for shop stewards and for full time TU education officers.

## Corporate Plan

The object of the Corporate Plan is two-fold. Firstly to protect our members right to work by proposing a range of alternative products on which they could become engaged in the event of further cut backs in the aerospace industry. Secondly to ensure that among the alternative products proposed are a number which would be socially useful to the community at large.

The idea of proposing alternative products on which the work force could be engaged as an alternative to the redundancy arising from cut backs in the aerospace industry is not new in Lucas Aerospace; as far back as 1970 when the Company was attempting to close the Willesden site a number of projects were put forward at the negotiations which took place on that occasion. However the idea of preparing an overall Corporate Plan for Lucas Aerospace arose in the first instance at a meeting in November 1974 with Tony Benn, the then Minister of Industry. That meeting took place at the request of the Combine Committee to discuss the nationalisation of Lucas Aerospace. In the course of the meeting Mr Benn suggested that there was the distinct possibility of further cut backs in certain aerospace and military projects. Even if this did not occur the rate at which new projects would be started was likely to be reduced. Accordingly he felt that the Combine Committee would be well advised to consider alternative products, not excluding intermediate technology on which our members could become engaged in the event of a recession.

The problems of the aerospace industry have of course been further compounded by the 'energy crisis'...

It is also likely that in order to make its austerity measures somewhat acceptable, the government will at least make a gesture towards cuts in defence expenditure. As the Defence Secretary, Mr Roy Mason, stated in the House of Commons 'even before the Defence Review it was clear that with few new projects coming along there

would be a marked reduction over the next decade in the level of activity in military aerospace projects, particularly on the design side'.<sup>6</sup>

These reductions we regard as both inevitable and desirable. Indeed it is the national policy of almost all of the unions the Combine Committee represents that there should be cuts in defence expenditure. However when these cuts are made our members are placed in the position of being made redundant or fighting for their continuation. We ourselves have done this in the past and will support our colleagues in the rest of the aerospace industry in doing so in future. Indeed, recently when the campaign to protect the HS146 was at its height our members at the Wolverhampton plant seized drawings in support of their colleagues at Hawker Siddeley's.

It has to be recognised however that the traditional method of fighting for the right to work has not been particularly successful. Between 1960 and 1975 the total number in the aerospace industry has been reduced from 283,000 to 195,000 workers. Apart from this internal problem in the aerospace industry there is the more general problem in which all industries are tending to become capital intensive rather than labour intensive with structural unemployment in consequence.

Over the past eight or nine years there has been some 5,000,000 people permanently unemployed in the United States. The same sort of structural difficulties are now manifesting themselves even in West Germany where there are 1,000,000 people out of work and some 700,000 on short time working. These structural problems are likely to be further compounded by the rationalisation of the European Aerospace Industry within the Common Market. Finally it is to be anticipated that Lucas Aerospace will attempt a rationalisation programme with its associated companies in Europe.

It is not suggested in this report that Lucas Aerospace is suddenly going to cease to be deeply involved in the aerospace industry. We recognise, whether we like it or not, that the aerospace industry is going to remain a major part of the economic and technological activity of the so-called 'technologically advanced nations'.

The intention is rather to suggest that alternative products should be introduced in a phased manner such that the tendency of the industry to contract would firstly be halted and then gradually reversed as Lucas Aerospace diversified into these new fields.

It is also evident to us that when the three sectors of the aerospace industry are nationalised the relationship between them and Lucas Aerospace may well change. We have clear indications from our fellow trade unionists in those bodies that they will not be prepared to see the lucrative parts of the industry hived off by the component manufacturers; in this we fully understand their motives and support them.

As trade unionists we do not wish to see a relationship between the aerospace component firms and the nationalised sector of the industry which would be similar to the relationship of the equipment manufacturers to the National Coal Board. Such a relationship would provide the opportunity for those forces in society hostile to nationalisation to point out that nationalised industries were economically unsuccessful, whilst in practice they would cream off the research and development which was paid for by the taxpayer into component companies. It has already been stated to us therefore, that our colleagues in the nationalised sectors of the aerospace industry will be demanding that these industries diversify such that any potential contraction is at least in part countered by those industries engaging in the manufacture of some of the components which they now buy from outside.

The desire to work on socially useful products is one which is now widespread through large sectors of industry. The aerospace industry is a particularly glaring example of the gap which exists between that which technology could provide, and that which it actually does provide to meet the wide range of human problems we see about us. There is something seriously wrong about a society which can produce a level of technology to design and build Concorde but cannot provide enough simple urban heating systems to protect the old age pensioners who are dying each winter of hypothermia (it is estimated that 980 died of hypothermia in London alone last winter, which was a particularly mild one).

Further it is clear that there is now deep rooted cynicism amongst wide sections of the public about the idea, carefully nurtured by the media, that advanced science and technology will solve all our material problems.

As Professor Jung recently said to an international trade union gathering "the deterioration in the quality of life is already noticeable in the highly industrialised areas of the world, and this, presumably still accelerating trend, makes it increasingly difficult for scientific and technological thought and planning to enjoy the blind trust it received in the past decades".<sup>7</sup>

Of particular significance in this connection is the much publicised rejection by capable sixth formers of the places that are available for science and technology at British Universities. Science and technology is perceived by them to be de-humanised and even brutal and the source of a whole range of problems, not only for those who work in the industries themselves but also for society at large.

It is our view that these problems arise, not because of the behaviour of scientists and technologists in isolation, but because of the manner in which society misuses this skill and ability. We believe however, that scientists, engineers and the workers in those industries have a profound responsibility to challenge the underlying assumptions of large scale industry; seek to assert their right to use their skill and ability in the interest of the community at large. *In saying that, we recognise that this is a fundamental challenge to many of the economic and ideological assumptions of our society.*

It is certainly not the assumption of this Corporate Plan that Lucas Aerospace can be transformed into a trail blazer to transform this situation in isolation. There can be no islands of responsibility and concern in the sea of irresponsibility and depravity. Our intentions are much more modest, namely to make a humble start to question these assumptions and to make a small contribution to demonstrating that workers are prepared to press for the right to work on products which actually help to solve human problems rather than create them.

It remains our view that no matter how many sections of workers in other industries take up these demands the progress can only be minimal so long as our society is based on the assumption that profits come first and people come last.

Thus the question is a political one, whether we like it or not. Perhaps the most significant feature of the Corporate Plan is that we trade unionists are attempting to transcend the narrow economism which has characterised trade union activity in the past and are extending our demands to the extent of questioning the products on which we work and the way in which we work upon them. This questioning of basic assumptions about what should be produced and how it should be produced in one that is likely to grow in momentum.

In July 1970 the United Automobile Workers of America (UAW) issued a statement to General Motors Corporation asserting that UAW members had a direct legitimate concern in pollution caused by the automobile industry and claim-



ing the right to raise the issue in collective bargaining. The union asked to know about future programmes of General Motors 'designed to eliminate pollution, both from within the plants and outside the plants caused by waste emitted by the Corporation's factories and by internal combustion engines'.

In September 1972 Douglas Fraser, the head of UAW Chrysler Dept., announced that the union had asked Chrysler Corporation to begin talks on how to 'humanise' jobs on the assembly line. He said that if the Corporation refused the request, the issue of workers boredom and dissatisfaction would be one of the unions most important bargaining goals.<sup>8</sup>

Activities of this kind will, in our view, be far more significant in the long term than campaigns for worker participation or worker directors. This Combine Committee is opposed to such concepts and is not prepared to share in the management of means of production and the production of products which they find abhorrent. Indeed at times of Company crisis the real role of the so-called directors becomes self evident. Thus in spite of one third of the seats on the Volkswagen board being filled by union representatives and these voting with socialist politicians on the board, which in practice is said to give a 50:50 say in the running of the plant, this in no way helped the workers during the massive redundancies which took place in Volkswagen recently.<sup>9</sup>

There cannot be 'industrial democracy' until there is a real shift in power to the workers themselves.

Trade Unionists at the point of production through their contact with the real world of manufacturing and making things are conscious of the great economic power which workers have. This growing sense of confidence by working people to cope with the technological and social problems we see about us is in glaring contrast to the confusion and disarray of management, particularly in the highest echelons of industry.

## Corporate Social Responsibility



It is clear that even amongst the supporters of private industry there is a growing recognition that things will have to change. Issues such as the 'quality of life' and the harnessing of the productive forces to meet human needs are likely to be issues of major political importance during the coming years. Even those whose policies have given rise to the present economic and social crisis now admit that change is inevitable. Fifty per cent of the key policy makers in Europe agreed "the 1970s will see an economic crisis provoking a re-examination of economic aims, the pursuit of growth will give way to a search for 'quality of life' for social justice and solidarity".<sup>11</sup>

The motives of the "large scale corporations are quite correctly perceived to be anti social". The growth of large scale corporate industries during the past century appears to furnish additional evidence of businessmen's anti-social behaviour, first in the trust problem and the treatment of labour and more recently in racial discrimination, pollution of the environment, contribution towards low levels of public taste, inability to achieve stability in the economy and inadequate consumer service and protection. The rosta of accusations viewed over the past decade seems to be leng-

thening and the intensity of antagonism appears to be rising.<sup>12</sup>

The rosta could indeed be lengthened to include the de-humanised forms of work in the plants of these corporations and even the interesting contradiction for them that they are unable to provide the right to work for our members in order that they can exploit them! All of this, it seems to us, arises because the motive force behind industries of this kind is the maximisation of profit.

In order to retain some kind of public credibility the large corporations are even denying that profit is now the main motive. The manager of the French subsidiary of the American corporation Singer is quoted as saying "profit remains vital to our survival but it cannot any longer be our sole aim. Human related goals must be advanced, the satisfaction of wage earners and consumers and the protection and upgrading of the environment".<sup>13</sup>

Peter Parker, Chairman of Rockware Group, told a conference of the British Institute of Management "the social dimension is for me the most demanding and decisive of the decade. Its scope includes relationships with government and institutions, organisational adjustments to the ages, social priorities of classlessness and of establishing consent to the exercise of industrial power, of a decent environment and of personal and moral attitudes towards the question of efficiency to what purpose and at what price".

He went on to state "with social responsibility we are dealing with an idea whose moment has come at last".<sup>14</sup>

Social responsibility has been defined as 'the commitment of a business or business in general to an active role in the solution of broad social problems such as racial discrimination, pollution, transport or urban decay'.<sup>15</sup> Some Companies are even putting forward social responsibility audit check lists.

It remains our view that businesses will look at social responsibility purely in terms of profits, indeed as Maguire has pointed out, social auditing represents "a crude blend of long term profit making and altruism".<sup>16</sup>

*We believe this Corporate Plan will provide an opportunity for Lucas Aerospace to demonstrate whether it is really prepared to take its social responsibility seriously or not.*

## Job Redesign



The past 70 years have seen systematic efforts to de-skill jobs to fragment them into small narrow functions and to have them carried out at an increased tempo. This process which oddly is known as 'Scientific Management', attempts to reduce the worker to a blind unthinking appendage to the machine or process in which he or she is working.

In Scientific Management as its founder, Fredrick Winslow Taylor tells us "the workman is told minutely just what he is to do and how he is to do it and any improvement he makes upon the orders given to him is fatal to success".<sup>17</sup> Taylor was not unaware of the implications of what he was doing and once said "that the requirements of a man for a manual job is that he shall be so stupid and so phlegmatic that he more nearly resembles in his mental make up the ox than any other type".<sup>18</sup>

The tendency to destroy skill and job interest is now evident in all fields of manufacturing including in Lucas



Aerospace; but human beings are not oxen and are rebelling against such a system in many ways. In Volvo in Sweden, the labour turnover in 1969 was 52% and absentee rate reached 30% in some plants. In the United States the reaction has been even more dramatic; in General Motors Lordstown's plant the computer-controlled production line and the products on it have been directly sabotaged by workers who felt completely oppressed by their working environment.<sup>20</sup>

This is of course inevitable in a society which views workers merely as units of production and tries to treat them accordingly. Moral arguments will certainly not change the situation, in fact Griener — a leading academic in this field — suggests that successful change does not begin until strong environmental and internal pressures "shake the power structure at its very foundation. Until the ground under the top managers begins to shift it seems unlikely that they will be sufficiently aroused to feel the need for change, both in themselves and in the rest of the organisation."<sup>21</sup>

Nor are these problems confined to the shop floor. The past ten years have seen the extension of various forms of 'Taylorism' into the fields of white collar and mental work.<sup>22</sup>

Behavioural scientists and others are now making vast fortunes advising management of job enrichment schemes and group technology. *These of course are simply devised to get more out of each worker.* In fact workers have always known that is far better if people work in teams and know what each other are doing. They know that if they are engaged on work which is challenging to them this results in better products of higher quality.

However modern industry continues to move in the opposite direction: a gradual replacement of human beings by machines, a change in the organic composition of capital in which industry is made capital intensive rather than labour intensive. Not only does this give rise to serious problems of structural unemployment but it also causes serious problems as far as quality of products is concerned, and more importantly 'quality of life'.

It is clearly evident from some of the Lucas Aerospace plants that attempts to replace human intelligence by machine intelligence (e.g. over emphasising the importance of numerical controlled machine tools as against human skill) have had quite disastrous results. It is intended to campaign for quite radical job re-design which will protect our members from this.

The idea of a Corporate Plan of this kind is an entirely new initiative by industrial workers. It is, to our knowledge, the first time that such a plan has been proposed in the United Kingdom. There has, of course, been some developments of this kind abroad, notably in Italy where at Fiat the work force put forward a series of social demands in addition to the straight forward economic ones (such as wages).

Whilst the Combine Committee is unanimous in its desire to have the Corporate Plan produced, there is by no means universal agreement on the tactics for its introduction. This is because of the industrial dangers which arise in a project of this kind. There is obviously the danger that the discussions with the Management about the implementation of the plan, (if it were agreed that such discussion should take place), could gradually degenerate into a form of collaboration. There is also the danger that, even if collaboration were carefully avoided, the Company might simply take parts of the Corporate Plan and have all this technology on the free. The plan has taken a very considerable length of time to prepare and involved many evenings and weekends of

work. It has also meant that outside experts have been prepared to give generously of their detailed knowledge in order to help the development of the Corporate Plan.

In these circumstances the greatest care will have to be taken to ensure that the Company does not succeed in drawing off the 'money spinners' from the plan, and perhaps even having these produced abroad, whilst declining those products which would be socially useful. It is even conceivable that whilst the Company would take sections of the Plan, our members may still be confronted with the perennial problem of redundancy. Because of these dangers it is suggested that the correct tactic would be to present only part of the plan to the Company, and then to test out in practice the manner in which the Company will attempt to deal with it.

Approximately 150 products were proposed for the Corporate Plan. Twelve of these were selected for presentation at this stage and are suitable for use in the following six major areas of technological activity.

1. Oceanics
2. Telechiric Machines
3. Transport Systems
4. Braking Systems
5. Alternative Energy sources
6. Medical Equipment

Each of these major areas is supported by a file of some 250 pages of detailed technical and economic supporting information. Only that on alternative energy sources is provided at this stage. A summary of the products chosen is included at the end of this section of the Corporate Plan.

While the Corporate Plan was being prepared, unemployment problems arose at the Hemel Hempstead and Marston Green plants. Separate mini corporate reports were prepared for these plants and they are being handled by the local shop stewards committees.

## Employee Development Programme



The prosperity of Britain as a manufacturing nation depends to a very large extent upon the skill and ability of its people and the opportunity to use that skill and ability to produce commodities.

During the past five years the Lucas Aerospace work force has been reduced approximately 25%. This has come about either by direct sackings or by a deliberate policy of so-called natural wastage, i.e. not replacing those who leave, or encouraging early retirement. The net result has been that highly skilled teams of manual workers and design staff have been seriously diminished and disrupted; we cannot accept that such a development is in the long term national interest.

Coupled with this development has been one inside the Company in which attempts have been made to replace human intelligence by machine intelligence, in particular the introduction of numerically controlled machine tools. This has, in a number of cases, proved to have been quite disastrous and the quality of the products have suffered in consequence.

In many instances the Company has fallen victim of the high pressure salesmanship of those who would have us believe that all our problems can be solved by high capital equipment. We have allowed our regard for human talents

to be bludgeoned into silence by the mystique of advanced equipment and technology, and so forget that our most precious asset is the creative and productive power of our people.

When we reviewed the work force we now have, our concern centres on four points. Firstly, very little is being done to extend and develop the very considerable skills and ability still to be found within the work force. Secondly, the age group in some of the factories is very high, typically around 46-50 years average. Thirdly, there is little indication that the Company is embarking on any real programme of apprenticeships and the intake of young people. (It is in fact sacking apprentices as they finish their time.) Fourthly, the Company is making no attempt to employ women in technical jobs, and apart from recruitment of these from outside, there are many women doing routine jobs well below their existing capabilities. Quite apart from the desirability of countering these discriminatory practices, the employment of women in the male dominated areas would have an important 'humanising' effect on science and technology.

In that section of the report dealing with specific recommendations we propose a number of steps which should be taken in this direction. The section of this report is concerned with development and retraining facilities for the existing workforce, this we regard as important at two levels, firstly retraining and re-education would mean that we were developing the capabilities of our people to meet the technological and sociological challenges which will come during the next few years. Secondly, in the event of work shortage occurring before alternative products have been introduced the potential redundancy could be transformed into a positive breathing space during which re-education could act as a form of enlightened work sharing.

During the past ten years a number of social, political and economic factors have become clearly discernible which suggests that the traditional pattern of education/work/retirement will grow increasingly inappropriate in the fourth quarter of the 20th century. For the purpose of the Corporate Plan the most important of these factors are:

1. The exponential nature of technological change<sup>23/24</sup>
2. The rate of knowledge obsolescence and break up of skills associated with 1 above.<sup>25</sup>
3. Structural changes in manpower requirements.<sup>26/27</sup>
4. The movement towards equal employment and education opportunities for women.<sup>28</sup>
5. The political and social unacceptability of structural unemployment as a feature of advanced industrial society.<sup>29/30</sup>

There are some indications that the trade union movement, educational institutes, and even some managements are beginning to respond to this new situation. The growing interest in adult and recurrent education and retraining is an indication of this.<sup>31</sup> It is also encouraging to see international bodies, such as the OECDs Centre of Educational Research and Innovation, proposed recurrent education which permits 'educational opportunities to spread out over the individual's life time'.<sup>32</sup>

Some countries have already well established and co-ordinated retraining and educational programmes. In Sweden for example, apart from all training within industry, and the individuals own initiative, the state recognises an annual training need of 1% of the total work force.<sup>33</sup> Even in the United States, where the short sightedness of private enterprise is at its worst, some large corporations now include training and education as part of the corporate

social responsibility activities.<sup>34</sup>

In general, however, the tendency is to discard older employees and engage younger ones 'with new knowledge'. This, unfortunately, is likely to remain the predominant business attitude for some time to come. It is an attitude which we cannot and will not accept. In our view there is a need for a blending of the dynamism and drive of the young people, to be counterbalanced by the experience and knowledge of older workers, who should also have the opportunity of having their knowledge updated.

More attention is now being given to the importance of 'human assets', although the terminology used reveals the real motives of many of the companies, for example reference is made to 'human capital'.<sup>35/36/37</sup>

However, there are some indications that the value of re-training employees 'who know the company system' is beginning to be recognised. The growing pressure from the international trade union movement for retraining and re-education of older workers (which can frequently mean a little over 40 in some fields) is likely to be a significant factor during the next decade.<sup>38/39/40</sup>

It is to be anticipated that these international tendencies will be reflected in the United Kingdom, although to date the emphasis has been on compensation and unemployment payments rather than re-education as an occupational form of 'work-sharing'.

Unemployment is a social evil which need not occur in advanced industrial society and should not be tolerated. It represents a tragic wastage of the nations greatest asset, its people's creative and productive power. Whilst it may seem feasible from an accountant's viewpoint to balance his books by sacking a few hundred workers the loss to the nation as a whole can be very considerable. This loss arises firstly because the individuals involved are denied the right to produce, hence the commodities that they would have created are no longer available. Secondly, the state is involved in vast sums of money which are paid as earnings-related unemployment benefit and in compensation to the individuals who lost their jobs.

For the individuals involved there is the indignity and degradation of the dole queue; for the tax payer there is the expenditure on these social benefits. It is our view, therefore, that even in a narrow economic sense it would be feasible to propose that part of the money that would have been available had these people been redundant, should be provided as a basis for part time education, thereby protecting the individual from the dole queue whilst at the same time investing in the nation's future manpower . . .

It should be emphasised that we are not, in this context, talking about retraining for white collar and technical staff only. It is our view that the entire work force including semi-skilled and skilled workers are capable of retraining for jobs which would greatly extend the range of work they could undertake. This would provide opportunities which they may have been denied, for a number of reasons, at an earlier stage in their lives.

Such courses could best be organised in local technical colleges and polytechnics. It is our view that universities are too rigid in both their entrance requirements and teaching methods. The courses would have to take into account that many of those involved would not have had traditional forms of education and paper qualifications, but could bring to the course a wealth of experience through actual work in industry.

It would further mean that those teaching on these courses would have to develop new teaching methods and have a real respect for people who had industrial experience. Such an arrangement would not be without its advantages for the



polytechnic and technical colleges involved, as such trainees could bring to these institutions a much more mature and balanced view about productive processes in general, but also about wider political, social and economic matters.

## Oceanics— A Brief Review



The ocean beds cover over 70% of the earth's surface. It is clear that during the coming years there will be an ever increasing use made of this vast area. Judging by the irresponsible manner in which human beings have used the first 30% of the earth's surface the prospect is one which we view with considerable trepidation.

The exploitation of the ocean bed is likely to take at least three forms:

1. Exploration and extraction of oil and natural gas.
2. Collection of mineral bearing nodules.
3. Submarine agriculture.

### Oil

It has been estimated that 15% of the world's oil is already drawn from coastal waters and this figure will be increased to 33% by 1980. The significance of this in the United Kingdom has of course been underlined by the work on North Sea Oil.<sup>41</sup> The scale of this activity may be judged by the fact that the total capital expenditure on process industries is forecast to amount to £8.6 billion pounds in the three years up to the end of 1977. Of this some 40% is likely to go on North Sea Oil production development.<sup>42</sup>

Five years ago, efforts to interest Mr Rivett and Mr Clifton-Mogg in the possibility of using existing Lucas Aerospace valve technology, and the manufacturing facilities of the ballscrews to provide a complete valve operating and controlled system were ignored. It is perhaps not surprising therefore that Sir Fredrick Warner, Chairman of the NEDC process plant working committee maintains that process plant and equipment manufacturers are missing out to overseas companies on much of the North Sea Oil work. He stated in presenting the NEDC report on the 9 June 1975 'I wish we were getting half the business'.<sup>43</sup>

Although such valve work would represent only a minor part of the capital investment in such installations it would have been of major significance to Lucas Aerospace. However the real growth area would be in a whole range of automatic and electronically controlled remote equipment. 'It is easy to envisage a time when all facilities now used in processing and distributing oil are put in the sea bed in vast plants manned by men living in atmospheric conditions, or handled by robots and automatic systems electronically controlled from the shore.'<sup>44</sup>

It is significant that Westinghouse and Lockheed are both actively engaged in these fields, and Lockheed are concentrating their efforts on developing sub sea working chambers which can be approached by diving bells.<sup>45</sup>

These activities will require a wide range of submersible vehicles which in turn will need generating and actuating systems on board. Lucas Aerospace should be entering into working agreements with the manufacturers of these in particular with Vickers Oceanics. In fact they should consider entering into an agreement with Vickers which would

establish the same relationship which they have in the aerospace field with Hawker Siddeley or BAC.

### Metal Bearing Nodules

One of the richest sources of mineral resources is the metal bearing nodules to be found on the sea bed. They exist virtually everywhere and are usually 20mm to 40mm in size and average 17% manganese and 11% iron. They also contain considerable quantities of trace elements of nickel, copper, cobalt and zinc, together with lead and phosphates. By the year 2000 the land sources of some of these metals will have been exhausted, whilst the marine reserves are enormous. The quantity of copper in nodule form for example is 150 times greater than the terrestrial reserves.<sup>46</sup>

Although this field of activity is only in its infancy three large companies in the United States, including Hughes Tool, has already put \$100 million into the project to exploit the seas off California. In Europe both France and Germany have carried out initial experiments of deep sea retrievers. The initial investment of projects of this kind is likely to be enormous and as a consequence international co-operation is likely to be the pattern. In fact a spokesman for the German company said 'the technical development is so expensive that exploitation of these metal bearing nodules is out of the question for one firm alone, or even a national group of companies. It can only be done by international co-operation as through cross frontier consortia'.

### Marine Agriculture

During the coming ten years there is likely to be a growing interest in marine agriculture. Products of the sub aqua farms are likely to range from directly consumable vegetables to those producing by products which can be processed on land. This type of farming will require a whole range of special purpose small vehicles to take the 'farmers' down to the work areas. There are also likely to be requirements for a range of submersible vehicles and telechiric machines which could carry out both the sowing and reaping by remote control. It is our view that oceanics provides very important long term outlet for Lucas Aerospace as manufacturers of complete aircraft systems. We are in a unique position to provide total systems for the vehicles and equipment which will be required in this field. It would also be a logical point of entry for Lucas Aerospace into the wider and developing field of control systems as a whole. This is likely to be one of the leading growth areas during the coming years and a very considerable use of mini computers and micro-processors are likely to be involved. The predictions are that this will have a profound effect upon the whole nature of our technology during the coming years.<sup>47</sup> This field would also provide a logical framework in which Lucas Aerospace could get involved in micro-processing systems. It is significant that some of Lucas' leading competitors such as Plessey are already making considerable advances in the micro-processor field.



## Braking Systems

The increased speed of both road and rail vehicles and the larger payloads which they will carry, both of passengers and goods, will give rise to stringent braking regulations

during the coming years. This tendency will be further increased by Britain's membership of the EEC. The EEC is now introducing a range of new braking regulations. These specify, not only stopping distances, but calls for minimum standards of braking endurance over a continuous period. In addition, the regulations lay down conditions for 'braking balance' between axles in order to prevent a dangerous sequence of wheel locking.

Many individual EEC countries have, in addition, their own national braking requirements. In France for example, since the mid 1950s auxiliary braking systems have been compulsory for coaches operating in mountainous terrain.

A fundamental weakness of normal mechanical brakes is that when subjected to long braking periods they overheat and the braking linings, at elevated temperatures, tend to temporarily lose their 'gripping qualities'. This problem can be greatly reduced, if not totally overcome, by using a retarder. A retarder is basically an electro magnetic dynamometer which is fitted usually to the prop shaft between the engine and the back axle. To reduce speed its coils are excited by an electrical supply direct for the vehicle battery, thereby inducing a braking force as the disc rotates in the magnetic field.

At the Willesden plant some 25 years design experience exists in this field of dynamometry. Attempts by the design staff some 10 years ago to get the Company to develop and simplify these eddycurrent dynamometers for mass production as retarders failed. It is felt, however, that the time is now opportune to reconsider this whole project.

In Britain public attention has been dramatically focused on the weaknesses of existing braking systems by the Yorkshire Coach disaster which claimed 32 lives in May 1976. The *Sunday Times* (1.6.75) stated "last week's crash might have been avoided if the coach had been equipped with an extra braking device, such as an electro-magnetic retarder which is being fitted to an increasing number of coaches in this country". In fact it would appear that only 10% of Britain's 75,000 buses and coaches actually have retarders fitted to them. There is, therefore, clearly a vast market available to Lucas if it adopts an imaginative approach to this problem. It is not suggested that Lucas should simply produce dynamometers, rather what is proposed is that they should analyse the whole nature of braking systems through a wide range of vehicles, including buses, coaches, articulated lorries, underground and overhead trains as used by British Rail.

It is proposed that a braking system analysis and development team should be set up to take an overview of this problem. The team should make an analysis of the actual requirements for the different applications, and at the same should analyse any patent problems which might arise with respect of the French Labinal retarder which is marketed in this country as 'Telma'. Simultaneously a development team should develop an existing Lucas Aerospace dynamometer, using a unit capable of being fitted in the conventional position, i.e. in the prop shaft between the engine and the back axle, capable of absorbing 600 brake horse power and the weight approx. 200 kgs. Once this unit has been designed and developed, discussions should take place with Giralings to arrange for its mass production under a licensing arrangement from Lucas Aerospace. Although a vast potential market exists for dynamometers of this kind this unit should be seen only as the first step in evolving a total braking system capability.

The second stage would be a combined electro magnetic braking system coupled directly to a traditional mechanical brake based on a Giralings disc. The control system would have to be designed such that by moving the brake

pedal the dynamometer would initially operate and the further depression of the pedal will gradually increase the current and hence the braking load until finally the mechanical brake could be applied if necessary. Use of the dynamometer between the prop shaft and the back axle clearly limits its range of application. To overcome this, discussion should take place with manufacturers of gear boxes to arrange to have them fitted on the output side of the gearbox such that they could be used on the tractors of articulated vehicles.

A further development would be to design and produce units which could be fitted to each individual axle. Work in this field is already being carried out in France, but based on traditional dynamometer units.

An elaborate control system would be necessary to ensure that as each of the individual axles is braked it still meets the new EEC requirements concerning the sequence and the effects on individual axles and their proper synchronisation to remove the risk of unstable skidding or 'jack knifing'. This work would dovetail in conveniently with existing work being undertaken by Giralings on anti-skid systems. It is important that this programme should not be carried out in the usual piece-meal short term manner. A long term overall plan should be worked out, and each stage of the development programme should be a tactical step towards a long term strategy.

Part of that long term strategy should be the provision of radar applied braking systems. All the necessary components should be designed to produce a flexible range of system options. Dynamometers lend themselves ideally to this as the load is applied electrically. The 1975 Society of Automotive Engineers Congress held in Detroit, reported that the National Highway Safety Association's 71 statistics showed that 8% of the vehicles on the road were involved in rear end accidents. They represented 25% of accidents or 8½ million vehicles. The medium to long term aim should be to provide radar applied braking systems particularly for use on motorways.

The *Financial Times* (7.5.1975) stated

"in the longer run electronic station keeping devices which use a form of radar to apply brakes automatically to cars travelling along motorways when they approach too close to a slowly moving vehicle ahead may be adopted. If they were introduced compulsorily for traffic they would certainly lead to a substantial reduction in the number of lives lost through motorway accidents in fog."

R.A. Chandler and L.E. Woods of the US Department of Commerce Institute for Telecommunication Sciences have said at the conference quoted above "while significant problems exist in the development of generally acceptable radar sensors for automobile braking, no insurmountable difficulties are evident". Applications more complex than mere station keeping should also be considered, but these give rise to a series of technological problems which, although they could be overcome, may only be soluble with very expensive equipment. However both Chandler and Woods had the following to say "both pedestrians and the cyclists are detectable, radiation hazards are minimal, small radius corners give a problem in false alarms, inter-system blinding is a problem and that the effect of rain scattering are serious". Spokesmen for the National Highway Traffic Safety Association have stated that research in radar braking fields warrants continuation, but the decision to implement such devices should be made only after cost benefit studies and acceptable hardware performance had been verified. It is clear that now is the stage for Lucas to become involved in these developments.

It is proposed that a similar long term overview should be



taken of braking requirements for rolling stock railways and underground. Already British Rail has introduced, on an experimental basis, velocity monitoring systems, which indicate to the driver if he is travelling at a velocity considered to be dangerous for an oncoming curve, junction or other impediment. With these velocity sensing devices already installed, it would be a logical step to use this information to feed into braking systems such that the train was automatically slowed down to meet the travelling requirements already determined for other sections of the track if the driver fails to respond due to illness or whatever. Such overall braking systems would require many computers and micro processors. The use of these would fit in with suggestions made elsewhere in the Corporate Plan.



## Transport Systems

### Road Vehicles

There will be an increasing requirement for battery powered vehicles during the next 20 years. However the numbers involved are not likely to be substantial until alternative forms of battery power storage and battery production have been developed, and until means of charging these, other than using conventionally produced electricity have been developed.

In the meantime there is likely to be a growing interest in hybrid systems which make the best use of battery storage and couple that with the optimum performance of internal combustion engines. It is therefore proposed that a hybrid system be evolved utilising the IC engine running at a permanent and optimum power setting and connected to a generator. The generator would charge the batteries which in turn supply the power to the electric motor driving the vehicle. Viewed in the wider company context it may be desirable to use the diesel engine with its inherent advantages of better fuel consumption characteristics. Initial calculations suggest a 50% fuel saving in such a hybrid.

The Ground Support Equipment Group of the Aerospace division already has considerable experience in the packaging of coupled prime movers and generators. In addition it has developed considerable expertise in the silencing of units of this kind without greatly impairing the efficiency of the engine. This would mean, not only could atmospheric pollution be greatly reduced, in that the toxic emissions would be reduced by some 70 to 80% by the permanent power setting, but the noise pollution could be greatly reduced as an added advantage.

The existing Lucas battery powered vehicles could be used as a test bed for this generator package. It is therefore proposed that designers from the Ground Support Equipment Group liaise with their colleagues in the Lucas Electrical Co. and CAV, so that a specification can be drawn up for the 'hybrid package'.

A prototype should then be built by the Ground Support Equipment Group and tests carried out in the vehicles already in existence.

### Air Transport

In Western Europe the pressure of urbanisation and the density of population will mean that transport systems, other than rail and road, will increasingly be sought. There

is a growing and understandable public hostility to conventional air traffic systems with the problems of air and noise pollution in the immediate vicinities of airports. These considerations and ones of economy are likely to give rise to a growing interest in airships. Explosion hazards associated with hydrogen are likely to continue to make that an unsuitable lifting source, helium is extremely expensive. Docking, loading and unloading problems are considerable. To release a load of 250 tons would require a release of nearly 9 million cubic feet of helium and cost something in the order of £100,000.

In addition there is growing concern as to the availability of helium in the future. The present rate of consumption of the resources of crude helium can only be expected to last for a few more decades. In these circumstances a system such as 'Air-float' is highly desirable. However to allow for fine control over its load/unload position, complex vertical and horizontal vectoring power units will be required.

It is suggested that Lucas could make a major contribution in this. It is proposed that direct contact should be made with Dr Edwin Mowforth of the University of Surrey in order that Lucas' contribution to this development could be explored in detail.

The Combine has already been in contact with Dr Mowforth on this issue.

### Railway Systems

The structure of railway coaches is based on a design philosophy which is about 100 years out of date. Strength and weight of railway coach structures depends essentially on the characteristics of rigid wheel on the track and its power transmissions through that. R. Fletcher of the North East London Polytechnic pointed out for a number of years that these problems could be overcome if pneumatic wheels were used. The entire suspension system of the vehicle could then be much lighter as could the overall payload bearing structure. This work is currently supported by a Science Research Council grant. If Lucas were to accept the proposal for braking systems made elsewhere in this Corporate Plan they could extend that idea by providing a complete wheel and axle unit which would embody a pneumatic wheel, a retarder and disc brake. Aerospace would provide the automatic braking system and the micro-processors to operate the unit.

With the overcrowding on roads such a light weight train could be used to great advantage on suburban lines and might even be used on some of the lines now closed by the Beeching Plan. It is therefore proposed that contact should be made with R. Fletcher to establish in which way the braking systems could be incorporated into an overall design philosophy for these lightweight railway vehicles.

Approximately 10 years ago Lucas Aerospace spent vast sums of money on developing a railway actuator. Basically the idea was that a vehicle could be taken directly from a railway and run on wheels suitable for conventional road surfaces. These wheels to be actuated into position by a system provided by the then Rotax Division. It is suggested that the system should now be re-examined in light of current transport requirements. It should be particularly re-examined in light of the proposals above for a light weight vehicle.

The (Scottish) Highland and Islands Development Board has already shown considerable interest in such a hybrid road/rail system. A section of track has been located where the tests can be carried out. The hybrid prime mover proposed above and the 'Braking System' should be incorporated into the final design.



## Summary of Proposals

This is a summary of proposals made specifically in sections of the Corporate Plan or those arising from a review of alternatives.

### 1. *Components for low energy housing*

- a. Solar heating, in particular switching circuits and pumping components. The provision of materials and prototype components for research and development in the Essex County Council experimental house. The appointment or seconding of a research fellow to the Group working on this research project at North East London Polytechnic for the Sussex County Council.
- b. An examination of the feasibility of the Luton site producing solar heating panels for such housing.
- c. An investigation of the feasibility of applying advanced aerospace technology to wind power sources in particular 'windmills', with special emphasis upon rotor speed regulation systems.
- d. The building of a prototype and the testing of it at the test house at Sibton Green, Sussex.

### 2. *Fuel Cells Technology*

A research and development programme to keep Lucas abreast of the technology in this field. Specifically, consideration to be given to the feasibility of building a prototype 30kW fuel cell power plant, using gaseous hydrogen and oxygen.

### 3. *Braking Systems*

Set up analysis and development team to adapt eddycurrent dynamometer technology to the requirements of retarders for coaches.

Analyse markets for such retarders and investigate patent complications in connection with the 'Telma' retarder. Establish relationship with British Leyland and with Girlings to produce an overall system for Leyland buses and coaches.

Initial staff required 2 R&D personnel, 1 prototype fitter over a 3-month period expand the team to cater for the following work:

- a. The design of a 600 brake horse power unit weighing approximately 200 kgs.
- b. An integrated braking system incorporating both mechanical disc brakes and dynamometers.
- c. Anti-skid systems.
- d. Automatic braking systems incorporating station keeping capabilities.
- e. Complete braking systems for railways.

### 4. *Transport Systems*

- a. The design and development of a prototype hybrid power package incorporating internal combustion engine, generator, batteries electric motor.
- b. Airship vectoring systems.  
Arrange meetings with Dr Edward Mowforth of the University of Surrey.

- c. Combined road/rail vehicle. Establish transport systems design and development team.

Establish working relationship with R. Fletcher of the North East London Polytechnic whose work in this area is supported by the Science Research Council.

Examine feasibility of providing integrated braking system for this vehicle together with micro-processors, suspension systems using Girling know-how and the hybrid power package outlined above. Contact Scottish Development Board, and Derbyshire County Council through R. Fletcher with a view to establishing a test section of existing track.

Re-examine the Rotax railway van actuator in light of current requirements.

### 5. *Oceanics*

Establish working relationship with Vickers Oceanics.

Consider feasibility of providing complete systems for submersibles.

Examine the feasibility of designing, developing and manufacturing, either independently or with Vickers, telecheiric devices for metal bearing nodule collection and marine agriculture.

### 6. *Micro-processors*

Marston Green Electronic Group to consider the provision of micro-processors for the systems outlined above.

Particular attention to be paid to the development at Plesseys.

### 7. *Medical*

Establish a medical division at G&E Bradleys, initially increasing the production of kidney machines thereby approximately 40%.

In conjunction with Ministry of Health build up a 'design for the disabled' unit.

Investigate the feasibility of applying aerospace technology to provide 'sight' to the blind.

### 8. *Power Units*

Examine the requirements of the computer industry for standby power units using automatic sensing and starting systems, to be developed by Marston Green.

Carry out market survey of requirements of Middle East Oil producing countries and newly emergent nations for power packs built on a module basis to meet alternatively the requirement for pumping facilities, hydraulic power pack facilities, electricity generation and compressed air.

### 9. *Industrial Ball Screws*

Analyse the application of ballscrews to valve control systems, machine tool control systems, telecheiric machines and submersible vehicles.

### 10. *Telecheiric Machines*

Augment existing systems and actuator know-how with



specialists in remote control field.

Examine application for fire fighting telechearic devices, mining machines and underwater devices.

#### 11. Employee Development Programme

Arrange Union/Management negotiations on employee re-training.

In the event of immediate redundancies negotiate full time education as a form of work sharing backed by government grants.

Unions to have discussions with the Department of Employment and Manpower Services commission.

#### 12. Integrated Product Teams

Union/Management negotiations on the establishment of

integrated product teams incorporating design, development production engineering and manufacturing in one group. Negotiations on the redesign of jobs. Union to meet Dr Gilbert Jessop of the Work Research Unit of the Department of Employment to discuss job satisfaction schemes.

#### 13. Other Products Under Consideration for Enlarged Corporate Plan

- a. Linear motors operating pumps and compressors.
- b. Range of applications for the '60 and 90 Gas Turbine'
- c. Robot helicopter using Lucas gas turbine for crop spraying.
- d. High speed motors.

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*Continued from page 6*

wish to avoid the "leakage" of the potential employment effect of reduced hours into higher levels of overtime because these would be more cost inflationary than employment of additional workers. It would make sense, therefore, for the state to *reduce* the cost of reduced hours to employers, *and* to increase the net employment resulting, by some type of subsidy to additional employment — financed from the improved fiscal balance resulting from that employment. This could help to steer the employer away from increased reliance on overtime working towards additional recruitment.

- xi. Most productive industries are currently operating with a great deal of surplus capacity. (In its last survey the Confederation of British Industries found two thirds of firms working below normal capacity.) Consequently, on previous trade cycle experiences, if there is renewed and sustained growth of industrial production in

1978-79 high rates of improvement in both capital and labour productivity should be forthcoming in production industries. This should mean both that the reduction in normal hours need not prevent the attainment of high rates of economic growth (if other aspects of national economic management make that possible), and that there is still more reason to believe that rising productivity would substantially offset increases in unit costs that might have been associated with the reduction in normal hours.

- i. It would be important for the TUC to ask other trade union centres to achieve a broadly similar advance to the 35 hour week. This could act on a world scale to tackle the mass unemployment that has emerged. It would also mean that the transition to the 35 hour week would not be delayed by employer and government resistance based on fears of adverse effects on the competitive, comparative cost, position of any one country.

## 4. Assessing The Potential Employment Effect in Britain

In the preface some indication was given as to the potential scale of the employment that might be created as a result of a programme for reducing the length of the normal working week. Necessarily, any such projections must be somewhat arbitrary at this stage, until much closer empirical investigation of particular sectors and methods of reducing hours has been conducted. But it is useful to explain the kind of reasoning behind the estimates put forward here.

A balance of factors is involved.

Firstly, it is assumed that there would be a considerable offset to the cost of moving to reduced normal hours as a result of enhanced efficiency. People may work more efficiently within the reduced working week, companies may be stimulated to improve methods of work organisation and to re-tool. Firms may be able to take up elements of current slack or under-employment. These productivity gains would reduce the costs involved in the hours reduction but also the additional employment required.

Secondly, some part of the change to shorter working hours may simply mean a loss of production (this might be true in certain services). It might be argued that some slight loss of production could be involved if there were an adverse effect on competitiveness.

Thirdly, there might in the short run be some tendency for overtime working to increase. Some of the proposals made in the previous section were concerned to minimise this overtime "leakage". We have seen that the problem is mainly one concerning manual men rather than the other categories in the labour force.

As a first approximation it is suggested that 60 per cent of the employment effect that would result if *nothing* changed except normal (and with them, actual) hours could be absorbed from some combination of higher productivity, reduced output, and increased overtime. It is not necessary to identify the exact contribution to this offset to the employment effect caused by each of the three factors (e.g. it could be 40 per cent, 10 per cent, 10 per cent, respectively; or 35 per cent, 10 per cent and 15 per cent).

The employment estimates are based on a further simplifying assumption. This is that all normal weeks longer than a given number of hours are reduced to the stated number.

In practice the industrial world may not be so tidy, and the process may be incomplete. But, on the other side, some groups may succeed in reducing their normal hours even below the "target" figure postulated.

On this basis employment effects in terms of "full time equivalents" can be estimated for the British economy. In practice the total employment effects would be expected to be larger than the figures to be given below because many of the additional jobs created would be part-time (e.g. in the distributive and other service trades).

*Phase 1.* Coming down to a 37 hour basic week for all workers whose basic week is at present longer than that would increase employment by some 360,000. Over 60 per cent of the extra jobs created (about 220,000) would be for manual men. Registered unemployment might be expected to fall by over 250,000.

(Rather depending on the balance of the three offsetting factors mentioned above, the "cost" of phase 1 might be something like 3 to 4 per cent increase in labour costs. But this is assuming no reduction in pay for the basic week, and no reduction in general pressures to raise bargained pay for the basic week. The former is realistic, the latter is probably exaggerating the total cost push of trade unions under conditions of a general bargaining of reduced normal hours.)

*Phase 1 and 2.* The normal working hours are brought down to 35 for all workers with longer hours of work. This would create about 750,000 additional jobs; nearly 400,000 for manual men. Registered unemployment would be expected to fall by half a million. The scale and occupational balance of these figures suggests the relevance of the 35 hour week goal as a way of reducing the massive unemployment that disfigures the economy. (The increase in labour costs associated with a general reduction to the 35 hour normal week might be 7 per cent. It has already been noted that this is on fairly harsh assumptions about the complete maintenance of trade union pushfulness on the basic weekly wage. This paper earlier assumed that this effect would be spread across some two to three years.

It is time to turn the 35 hour week from a slogan into a practical strategy. This paper is a contribution to the debate that is needed.

### FOOTNOTES

1. "Normal" and "basic" are used inter-changeably in this article.
2. On the last count, for January 1977, over 20% of the registered unemployed in Britain had been unemployed for over twelve months. The comparable figure for the Federal Republic of Germany (for September 1976) was over 18%, nearly double the

proportion that had been unemployed for over a year some twelve months earlier.

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# C. A. PARSONS UNIONS EXPLAIN

Most people are aware that the Power Plant Industry is facing serious problems and these have been the subject of discussions with Government Ministers and other appropriate bodies over the last two years. The industry comprises two boiler manufacturers, Babcocks and Clarke-Chapmans, and two turbine-generator manufacturers, GEC and C.A. Parsons.

The world wide fall-off in the use of electricity, the campaign to economise with the use of energy generally, the fierce international competition and the spasmodic ordering pattern by the CEGB are all factors contributing to the problem.

Some eighteen months ago, the firms in the Industry discussed at length with the Department of Industry, prospects for Planning Agreements. Following this, in May 1976 the Central Planning Review Staff ('Think Tank') was instructed *as a matter of urgency* to review the prospects for this industry and to make *recommendations on any of these matters covering both short-term measures to deal with imminent problems and longer-term issues such as the structure of the plant industry and future power station ordering policies.*

The final Report in December 1976 listed the following possible measures for action:

#### *Shorter term aims*

1. bring forward one power station order (e.g. DRAX, Stage II)
2. provide additional assistance to exports.

#### *Measures with longer term aims*

3. make a Government commitment to a firm and steady ordering programme starting as soon as possible for the home market;
4. place an order for a prototype 1300 megawatt high speed turbine-generator
5. encourage the rationalisation of the industry (i.e. mergers)
  - other measures of help being made conditional on acceptance by both management and labour of at least the heads of agreement on mergers and to the speedy implementation of the rationalisation programme.

There are two important points to make in connection with these proposals. The bringing forward of the DRAX order was specifically designed to alleviate the situation at Babcocks and Parsons where redundancy was imminent. Babcocks had manufactured the boilers for the existing

DRAX machines and Parsons the turbine-generators. Because it was a repeat order work could be put onto the shop floor quickly after the placing of the order.

The second and more serious point is that in making agreement on mergers a condition for the other measures of help, the Report produced an impossible political situation and played right into the hands of Arnold Weinstock who is anxious to establish a monopoly of the Power Plant Industry and reduce it to about half its existing size.

GEC has a much more favourable work situation having had most of the recent CEGB orders and on this basis has secured additional export orders. GEC has therefore no real interest in the DRAX order other than in respect as to how it fits into its strategy to obtain monopoly control of the industry. Weinstock had only to insist on obtaining a majority shareholding in the merged Company to prevent the DRAX order being placed at Parsons. The longer the delay by the Government the greater the difficulties are at Parsons. It is now almost impossible for Parsons to obtain export orders because of the uncertainty about the Company's future, created by the CPRS Report and the subsequent speculation about a GEC take-over.

The workers at Parsons are very clear in their objectives. Primarily we are opposed to redundancies and the contraction of the industry. On this basis we are totally opposed to either of the private companies having control of a merged company. We are also opposed to the view that the industry must be skimmed down by 40 to 50 per cent. In our view the industry is ripe for nationalisation as it requires continuous Governmental assistance and supporting policies by the CEGB. Short of nationalisation there should be major shareholding by the NEB to prevent either of the private manufacturers being in a controlling position.

The Government has been attempting in recent weeks to browbeat the Parsons Management and Parsons workforce into accepting GEC take-over. The Management are prepared to accept defeat on this issue, but the workers will not, and have demonstrated the strength of their opposition. Eric Varley has used Lord Ryder in a brutal attempt to convince the National Executive Committee of the Confederation of Shipbuilding and Engineering Unions to accept a Weinstock controlled industry. This did not succeed and CSEU has repudiated this position.

Parsons' Corporate Union Committee believes that regardless of the placing of the DRAX order the workers in the industry will be faced with demands for large scale redundancy and that we should be united in our opposition



to this. This view is shared by the trade union representatives from Babcocks and Clarke-Chapmans.

Unfortunately, Weinstock has persuaded the GEC Combined Committee (with some exceptions) that the problem is one of redundancies at Parsons or redundancies at GEC. They are therefore demanding that the DRAX order go to open tender despite the fact that originally they declared that this order was not required and also that they, and everyone else, know that GEC have enough cash resources to "quote below the odds" in order to prevent Parsons getting the order. They are demanding a GEC control of the industry, repudiating nationalisation and even NEB majority involvement.

In putting forward these policies they are stating that this is the best way of securing maximum employment in the industry. This seems incredible in view of Weinstock's known record on brutal redundancies, his attitude towards reducing the workforce to maximise profit, and his open statement on television that 6,000 of the 16,000 workforce in the Power Plant Industry would have to go and more than one factory closed.

A group of socialist economists in co-operation with the TASS-AUEW organisation at GEC Trafford Park have produced a Report on the Industry which calls for the nationalisation of the industry and the need for unity across the industry to fight against redundancies, pointing out that Weinstock has been successful in sacking thousands of workers because there has been no united opposition to his plans.

The pamphlet advocates the need for diversification of the energy industry under national ownership, an integrated energy policy and the development of alternative sources of energy, solar, wind, tide etc. It maintains that only on

the basis of a united fight behind such a programme can the workers in the industry prevent large-scale sackings.

Clearly in the Power Plant Industry we have a situation which is of great concern to all those in the Labour Movement who are opposed to unemployment and who support the social ownership of production and the significant involvement of the National Enterprise Board in situations where Government assistance is required. It must also be of interest and concern to those who are opposed to Weinstock, or any other multinational Company, getting monopoly control over a very important industry.

The Corporate Union Committee at C.A. Parsons calls on all those attending the Seminar on Full Employment to assist our campaign to maintain the Power Plant Industry and prevent the Weinstock take-over of the turbine-generator industry. We say:

1. No to a Weinstock take-over of the turbine-generator industry.
2. The immediate placing of the DRAX order with Parsons and Babcocks to prevent imminent redundancies.
3. Longer term assistance with exports, steady home ordering programme, prototype work, to be the subject of positive discussions.
4. No mergers which produce redundancies or a private monopoly of the industry.

For further information or details of your activity on this issue please contact:

H. Blair,  
Secretary,  
Corporate Union Committee.

## THE SHOP STEWARD'S GUIDE TO THE BULLOCK REPORT

KEN COATES-TONY TOPHAM



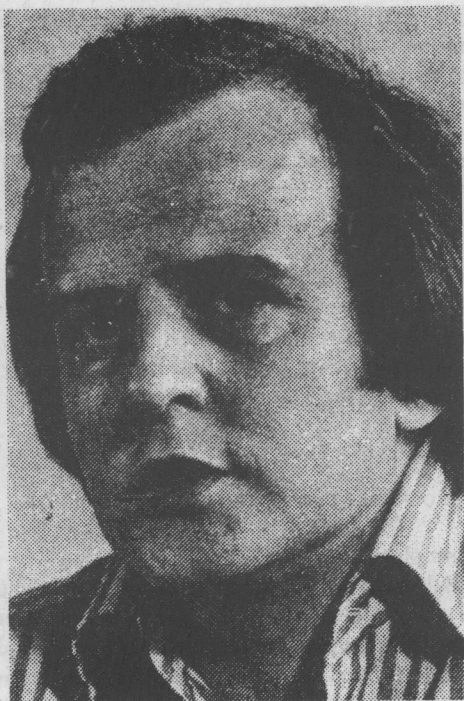
## THE SHOP STEWARD'S GUIDE TO THE BULLOCK REPORT

by Ken Coates and Tony Topham

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**Stuart Holland:**

# There is an Alternative to Cuts

The IMF loan, for which so much was 'sold' was less than the total handout through tax relief on stock appreciation — i.e. a new Labour measure — which has amounted already to £3.8 billions.

The case against the public expenditure cuts should be related to the changed structure of big business since the war: i.e. that 100 companies command some half of manufacturing output and employment, and more than half our export trade, against only some fifth to a quarter of output and employment thirty years ago.

This new monopolistic structure has meant that they now can pass on either cost increases (commodities, oil) from abroad, or pass on the higher unit costs of under-utilised plant, fixed interest borrowing via banks and bonds (rather than variable cost borrowing via the stock market) etc. Big business is now in a position to raise prices to compensate for lost sales, and tends to do with an ineffectual prices policy administered by a government which has no real information on the costs and profit structure of firms. In short, the greater the deflation (through public expenditure cuts) the greater the inflationary pricing by the big business commanding half our activity (to compensate for lost cash flow from sales).

Thus, firms could bring down their unit costs (i.e. production costs per unit of output) if there were more output: i.e. by reflation. Therefore, the key short to medium term policy should be a restoration of the projected reduction of public expenditure (i.e. 'reverse the cuts') plus price controls. Firms who are 'pinched' or squeezed initially will be squeezed less the greater the recovery of demand and output. Those big firms facing bankruptcy or closures if they cannot raise prices by more than an established norm should be able to come and 'reveal' their cash needs to the government via Planning Agreements in which the books concerned are also opened to the unions. Smaller firms (less than £50 millions turnover a year) could be given higher price norms for an initial period (i.e. 18 months).

This would give a rationale for two specific demands:

1. Reverse the cuts in public expenditure.
2. Enforce progressive price controls.

It clearly could be related to a further demand

3. No further redundancies for the coming 18 months (i.e. for the period in which restoration of demand via public expenditure, and recovery of higher viability through easier covering of fixed costs by business). The rationale here has been admitted by the Temporary Employment Subsidy, which could be allowed to all non-Category 1 firms, with the others going through tri-partite Planning Agreements.

Otherwise one could also argue that the case in both Labour's Programme 1976 and the TUC Economic Review for £1 billion a year expenditure — rather than funds in the kitty which are not used — by the NEB, i.e.

4. £1 billion a year expenditure by the NEB (average year to year) to 1980.

The NEB remit could be linked to taking over those firms which are clearly in difficulties and need diversification and modernisation. Plus a further demand (again in Labour's Programme and the TUC Economic Review 1977), i.e.

5. Planning Agreements negotiation to be started from now, with both an opening of the books to unions and a Social Audit published on the top 100 companies (as promised in Labour's Programme 1973). Plus
6. Establishment of a National Planning Commission and a Cabinet Committee for Economic Planning — which it would serve — as in Labour's Programme 1976.
7. Co-ordination of the Planning Agreements information and projected expenditure by the top 100 plus companies in the Planning Agreements system by the National Planning Commission, using existing potential sanctions such as the Price Code (tightened where necessary below the allowed national norm for recalcitrants), and the discretionary powers allowed to the Secretary of State for Industry under both the 1972 and the 1975 Industry Acts.
8. A publication of the sectoral and regional distribution of both public expenditure and big league private company expenditure as a term of reference for new debate and claims on resources by both unions and local authorities.
9. Labour Party NEC sponsorship of a national debate on the distribution of employment, between firms and industries, and between regions, i.e. national debate on



the case for a 35 hour week, related to the new national planning objectives and institutions.

10. The re-introduction of effective taxation on the big league corporate sector, which, through tax relief on stock appreciation, depreciation allowances, etc., is at present not paying effective tax (i.e. nominal tax is rebated via tax relief).

Such effective taxation will become more feasible with the reflation of public expenditure and demand, covered by the improvement of the trade balance via oil.

We might add the principle of no public money rebated to the private sector from the initial negotiation of Planning Agreements, unless need is revealed via Planning Agreements, as specified as Party policy in Labour's Programme 1973.

The principle might be jargonised as 'no tax relief without representation', i.e. representation of revealed need.

The 35 hour week could, and should, be stressed to relate to the trend to technological unemployment, rather than a cutting of work and pay. This, of course, depends on reflation rather than deflation.

In addition we could propose a variant on generalised import controls, i.e.

11. The planning of trade via Planning Agreements with the top 100 companies which account for more than half our export trade, plus temporary and selective import controls in some sectors of the economy, with the selectivity focused against classic dumpers or major net export countries, such as Japan. Plus
12. The call on EEC member states to reverse their present

'beggar my neighbour' policies of self-cancelling export surpluses, with a claim that the Federal Republic of Germany in particular should reflate.

In sum:

1. Reverse the public expenditure cuts both to reflate demand and defend the welfare state;
2. Enforce progressive price controls;
3. No further big business redundancies for 18 months, with NEB intervention where necessary;
4. £1 billion a year NEB spending to 1980;
5. Obligatory Planning Agreements negotiation between company unions and government with top 100 firms;
6. Establish a National Planning Commission, linked to Cabinet, NEDCs, etc., as Planning Agreement co-ordinator;
7. Publish national planning targets, negotiated by unions;
8. Negotiated industry and regional targets with company unions and local authorities;
9. Promote national debate on 35 hour week, related to the 'right to work' and the 'right to income'.
10. No big business tax relief without Planning Agreements negotiation;
11. Plan foreign trade via Planning Agreements with big business and selective, temporary imports controls versus developed country imports;\*
12. Call on joint reflation via restoration of public expenditure from the EEC Nine.

\*I am not wholly persuaded about the import controls case, which is always isolated by the press, but it may be necessary.

## Letter to the Editor

### VOICE OF THE UNIONS

Readers may have been confused by a statement printed in your issue number 35 saying that VOICE OF THE UNIONS had ceased publication.

This is not correct. VOICE OF THE UNIONS is printed monthly and is available from 38 Corbyn Street, London N4. (10p per copy or £1.85 annual subscription).

Early last year some members of the editorial board felt that the time had come for the paper to cease publication. However, the majority of active members on the editorial collective — that is, those who had been responsible for bringing the paper out each month over the previous two or three years — decided to accept the responsibility of keeping the paper going. They did this mainly in response to the requests received from shop stewards and other supporters of the paper from all over the country, and from many of the original sponsors of the paper — including Ernie Roberts who was its principal founder.

The paper has been re-designed, up-dated, and we hope, greatly improved — now being printed by offset litho.

There is still a debt outstanding to the original printers, Ripley Printers, and we are pleased to cooperate with the editorial board of the previous series in any way that will help to pay of our debt.

The VOICE remains an independent, non-sectarian, libertarian left socialist paper. Its columns are open to all shades of opinion within the labour movement. Sample copies are obtainable from the above address.

RICHARD FLETCHER

pp VOICE OF THE UNIONS Editorial Collective

## New from Spokesman

### THE HOW AND WHY OF SOCIALISM

by Brian Sedgemore MP

In this important book Brian Sedgemore argues that the international monetary system and the rules for world trade which are governed by the IMF, GATT and the EEC have broken down. They can no longer provide for full employment or sustained growth for the Western World. This breakdown is accelerating deep-seated industrial decline in Britain.

"We shall only emerge from the slump of the seventies through planning and protection in the 1980s. Our task is to see that planning is carried out in a democratic fashion through both political and industrial institutions", he says.

The book concludes with Sedgemore's brilliant essay on the ethics of socialism, recently delivered as a Fabian lecture and already the topic of widespread discussion.

Paper £0.95

Available from Bertrand Russell House, Gamble Street Nottingham (add 15% for post, etc.)

# Under Review

## Industrial Democracy: The European Experience

The Bullock committee commissioned two analyses of the European experience of industrial democracy by E. Batstone and P.L. Davies. Their papers were published by HMSO in 1976 (*Industrial Democracy – European Experience*). Although this work influenced the committee's conclusions, particularly concerning the role of trades union organisation in the structure of worker representation on company boards, it supplies a perspective which is absent from the Bullock Report itself. Batstone's brief remarks comparing worker-director schemes with collective bargaining are worth noting.

Consideration of European worker-director schemes led Batstone to conclude that

"... first, worker-directors have generally had little or no effect on anything, and, second and consequently, they have certainly had no catastrophic effect on anything or anybody."

This is because worker-directors have no organic connection with the people they are supposed to represent. They became ideologically and operationally subordinated to management even with parity representation as in the German co-determination industries. And frequently the important company decisions are taken, not by the boards on which workers are represented, but by committees on which workers have no voice. Therefore, argued Batstone, in order that a worker-director scheme be effective, the worker representatives should (i) be represented on a body with ultimate formal authority in the company, (ii) have parity of representation, (iii) be backed by union resources to help in the analysis of information for the development of policy alternatives, and (iv) be firmly based on the shop-steward organisations.

"For these alone provide a representative body which is relatively independent of management, permits the recognition of a conflict of interests, and provides a base for worker directors within a more thorough-going system of representation."

The above ideas are discussed fully in the Bullock report itself and critically examined in *The Shop Steward's Guide to the Bullock Report* (K. Coates, T. Topham, Spokesman Books). Batstone, however, raises the question of whether worker-directors are desirable in any form. Two factors must

be considered – the influence of the economic system as a whole on worker-director schemes, and their connection with collective bargaining.

Firstly, conventional business interests will not be endangered, even by a worker-director scheme satisfying the above conditions. Our economic system, based upon private property and the market system, will largely govern company policy however it is run –

"... even parity representation is unlikely to lead to a major change in the underlying assumptions of company activity."

Because of the limitations imposed by the economic system

"... it is unwise to see worker-directors as anything more than a marginal contribution to industrial democracy and industrial relations."

Secondly, there is a significant European trend towards increasing the number of levels and scope of collective bargaining. If board representation and collective bargaining could be considered separately, the latter, supported by a vast increase in the amount of information supplied by companies to unions, use of alternative data sources, and power to inspect the company books, could be a more effective means of exerting worker influence. However, considered together, worker-directors might be a useful adjunct to collective bargaining.

Finally, comparing the two forms of worker pressure, Batstone says

"Even though negotiations may seriously affect the scope of managerial action, the very process of bargaining recognises and legitimates the authority of management, while at the same time making the union partially dependent upon management and integrated with it... In contrast, although a worker-director scheme extends the integration of the workers, it at least begins to change the formal authority structure within the enterprise. Such changes, except possibly in symbolic terms, will be marginal in the short term. And it is difficult to assess how significant they will be in the long term. For the future depends both on the underlying trends in the structure of society and the actions of the state, employers, workers, and their unions."

John P. Cleave

## A Letter: Democracy in the Post Office

Why do you say the Post Office plans 'are considerably weaker than Bullock's own compromise proposals'? That they are different is true, because they were worked out by a process of negotiation in the Post Office, to suit our particular circumstances, and were completed in outline before Bullock was published.

The unions and the Post Office enter this experiment without commitment; many trade unionists, however, see the agreement as a significant advance. It introduces trade union influence into the decision making process and secures access to management information. Appointment to the Board will be by the unions and their representatives will report back to their unions. They will retain union office. The collective bargaining machinery remains intact; indeed we intend to strengthen it, for instance by pressing for a much firmer status quo clause and by seeking formal joint determination over a wide range of issues.

Meanwhile discussions about management units at local and regional level are well advanced.

The significant elements in our agreement are:-

- access to information and to decision making in a unified Board;
- appointment by the unions in accordance with their own democratic machinery;
- complete accountability (including right to recall) of trade union representatives, who will not give up union office, but will not be involved in direct negotiations;
- no interference with the collective bargaining framework;
- extension of similar arrangements to all management units.

This amounts to the most advanced experiment in industrial democracy so far devised. It's not a pattern for everyone and it's capable of a lot of improvement but it deserves serious study.

Antony Carter  
Council of Post Office Unions  
8.6.1977