

Industrial Common Ownership Movement



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I.C.O.M. Pamphlet No. 1

Shop Floor Democracy in Action

A personal account of the Coventry
gang system

Dwight Rayton

Biographical Note

Dwight Rayton is the pen name of a Coventry engineering worker. Born in 1900, he was apprenticed to a pharmacist on leaving school. His father died in 1916, and he had to give up his apprenticeship and take a job in an engineering firm. After the war, his experiences of the slump and the employers' lock-out in Coventry led him to take an active part in the local labour movement. Following a period as a fitter and machinist in the fast-developing car industry, he moved to Leicester where he became a knitting machine expert. In this work he was responsible for numerous technical innovations and had the opportunity to travel widely in Europe and North America teaching workers how to handle the machines. In 1936 he returned to Coventry, where he became an aircraft fitter. After the Second World War he worked for himself for a while, making special machine tools and other goods in his own workshop, and producing most of the food his family needed in his large garden. Later he went back to industry as an 'ideas man', first in the motor industry research association, then in building, and finally with his old aircraft firm. During this time he created new technical processes and patented several of his inventions.

Today he lives in retirement in a house once belonging to a Coventry master watchmaker. He reads, 'talks to himself on paper' and indulges his love of music. He has recently written a short play, The Gaffer, describing a Coventry strike, and is currently writing his autobiography. He has three children and six grandchildren.

As in all pamphlets published in this series, the views expressed are those of the author and do not represent the collective view of the Industrial Common Ownership Movement. Published August 1972.

Foreword

In the continuing debate on industrial democracy two of the **major** criticisms levelled at its feasibility focus on the alleged apathy of workers and on their lack of managerial **capacities**. Critics have drawn a view of the contemporary worker as dominantly instrumental in his orientation to his job, concerned principally with its material **rewards**, and having little or no interest in the problems of management. They have also emphasised the complex nature of modern industrial organisation and have suggested that, even amongst the minority of workers who may be interested in controlling their workplace, few have either the ability or training to take an effective part in management.

Exponents of industrial democracy deny the validity of both these criticisms. Firstly, they claim that all men have a natural interest in the decisions affecting their lives, whether in work or outside it, and most want to share in them when they are given a meaningful opportunity to do so. If they do not always show interest in decision-making it is because the present system gives them little occasion to control the process. Secondly, they argue that most people have far greater capacities to play an effective part in management than the present inadequate systems of education and training make apparent. Given the proper preparation workers could assume many of the **so-called 'managerial'** functions without difficulty.

These diametrically opposed assumptions about the nature of contemporary man and his capacity to manage his own life at work could only be tested conclusively by setting up major experiments in large sectors of industry. It is to be hoped that it will not be too long before we have a government with the will and courage to launch such a venture. But in the meantime it has been suggested that there is already **substantial** evidence of workers' potential to share in the control of their work lives to be found within traditionally owned and controlled **enterprises**. In many fields of activity from mining and building to engineering and the service industries, small teams of workers run much of their day-to-day work with little or no interference from management. These arrangements are so much taken for granted that they have been little studied and written about, and yet they represent an important fund of experience for all those concerned with the development of industrial democracy and provide impressive evidence of the capacity of the worker to take a responsible and effective part in management.

This pamphlet describes one of the most elaborate and long established examples of workers' self-management within capitalist industry, the Coventry gang system. Although the system has been an important feature of industrial organisation in Coventry for many years, little has been published about it apart from Melman's valuable **study** of the management of the Standard Motor **Company**.*

The present account looks at the genesis and organisation of the system through the eyes of a skilled craftsman who spent much of his life working

* Seymour Melman *Decision Making and Productivity*, Blackwell 1958.

with the gangs. It does not furnish a model for workers' self-management in an ideal society but gives an account of what can be achieved even in the context of capitalist ownership and alienating mass production technologies, when workers obtain a measure of control over the managerial system. It is offered as evidence of workers' potential and **perhaps** a foretaste (but no more than that) of what life could be like on the shop floor if industry as a whole **was** run on a democratic basis.

Roger Hadley

The Growth of the Gang System

During the First World War, I was in charge of some women and girls at the Daimler Works, Coventry, and we were on permanent **night-shift**. I was **17**. We were machining aero engine parts; and each girl was on individual piecework which led to greed, jealousy and quarrels. A new girl, a Belgian refugee, refused to accept that it was possible to measure work to a hundredth of a millimetre. She sat **down**, and was told by the foreman, "No work, no pay". The next night she cried, thinking of all the money she hadn't earned. The girls had a meeting and asked me if I could "arrange" to take a small amount off each of them and book it to the Belgian girl. I did, and after that they rallied round full of help for anyone in trouble. As trouble was practically permanent I decided to treat them as a team, sharing the work and the money equally between them. At once all animosities disappeared. They could now afford to help one another since gains and losses balanced out. This was strictly against the firm's rules. I discovered a little later that skilled craftsmen in the shop were doing the same — surreptitiously. The war ended, the girls went and the men returned from the war to individual piecework — which was rigidly enforced. Individual greed, "I'm alright **Jack!**" began to assert itself; **some** men fought and scrambled for a larger share of work and the management refused to do anything about it. We, the bulk of us, led a campaign to "civilise piecework", and in **1919** the entire workforce refused to operate the piecework system. For three months, six thousand men did as little work as possible and the management came to terms — but threatened us with "consequences".

The "consequences" were the great slump of 1920 to 1922 when millions were unemployed. Then, just as we were drifting back to work there **was** a strike of moulders in foundries and this led to a lock-out of all engineers. Most of us were by then in dire poverty and we had to return to work on the employers' terms, which were as bad as they could make them. From that defeat stems most of the bitterness and strife which still dogs engineering. The conditions enforced then still apply. For years after 1923 engineering and mining were subject to endless brawls — winning arguments and enforcing senseless competition seemed more important than earning a decent living. None of the ideologies then current were relevant. We were groping for something sensible and immediately practical.

Gang Work in Aircraft Building

In the late nineteen-twenties, eight boy-fitters in a Coventry aeroplane factory, Armstrong Whitworth, disgusted with individual piecework, suggested that they all be allowed to operate as a gang, sharing the work out in their own way and sharing earnings equally. The firm's officials agreed, reluctantly, and decided to "see how it worked out." The boys almost immediately became "specialists". One cut the strips of metal to the lengths necessary, another shaped the ends, holes were drilled by another boy, and the rest of the gang bent and formed the strips into clips to be used to hold cables and pipes on to aeroplanes. The gang spokesman was elected "ganger" and he saw to it that blueprints, tools

and metal were always ready, and, as each batch of clips was finished saw them through inspection and made out the dockets ready for payment. Foremen, **rate-fixers** and wages office took a fatherly view of all this, and both management and men were interested. The boys' production-line was a great success, especially so since they had arranged it themselves. It was soon found that the boys were "earning too much money". All this was really pretty obvious - it had been done before, tentatively, but had never been encouraged. In fact, most employers frowned on such things believing that "competition was the only way". And there were rules to be enforced. The **1922** rules - the rules of defeat.

The skilled craftsmen in that workshop made approaches to the management with a view to extending gangwork to wherever it might be suitable, but management felt it might create a dangerous precedent. The idea **was** in the air for a year or so, but was finally forgotten in the great slump of **1930-1931**.

In **1936** I took a job with that firm and became an aircraft fitter. The all-metal aircraft of today were then just emerging and entirely new techniques were evolving, almost every job being "a problem". Men working on day work (fixed wage) had to be driven by foremen who were, like **ourselves**, "finding their way" - and men struggling with problematic new work hated being watched and chivvied. And nearly all daywork shops tended to be "stagnant", lacking in incentive, so most jobs were put on piecework. *Individual* piecework. The result was **thousands** of jobs being timed or estimated, and therefore thousands of arguments between men and rate-fixers (who were in short supply) and there was more argument than working. The idea of gangwork was again in the air. Coventry craftsmen had an instinct for group work. The Superintendent (a giant of a man, six foot four and a half and only recently promoted) was beside **himself** with anxiety, sometimes with fury, and was torn between being an autocrat and being "one of us". He tried out one of his furies on me (I was six foot two and didn't give a damn for **him!**), and we had a blazing row. I enjoyed **it!** I let him have all the home truths I could think of and wound up with, "Why not put the whole shop on gangwork? Let them run the job in their own way, then you can get on with your office work". He told me he wasn't a free agent, he would have to convince the managers. I told him, "Well go on - convince **'em**". And he did.

We started gangs up the next week — I was on "Gang No. 3".

The Gang System Starts

We worked out between us how many men we would want and the boss agreed. We elected a ganger, and a deputy ganger to take charge on night shift. We sorted out men, openly, to do the work they were best fitted for. We made mistakes, but they were immediately corrected. We reckoned up the various prices of jobs and proved theoretically, that we could increase our earnings. We had all the benches and other contraptions moved to suit our way of working. Some of the firm's officials objected that we were "infringing their rights" and the management **proper insisted that they would appoint the** ganger. **We said "No** He would then be a boss and we are not having a boss. He is *our* man responsible to us, and we, individually and collectively will be responsible for all the work done by the **gang!**" It wasn't put quite so explicitly as I have just written, but that was what was meant, and the **managers** being good chaps (we knew them

personally) accepted it. This, insisting on ourselves appointing the ganger, turned out to be the key to success. The "contract" (unwritten, as is the Common Law kind of contract) was not between the firm and the ganger, but between the firm and the gang as an entity. In our case "Gang No. 3". Gangers could come and go, but Gang 3 went on. We knew of course that in a serious situation the management could abolish Gang 3 - but why should they? They wanted us. Wanted the work. We had endless discussions the first few weeks. We kept watch on the ganger to see that "our money" was being properly "banked" with the wages office. The ganger kept watch on us to see that each of us was earning his keep and a bit over. We watched each other. And then, eventually, finding that everything was working out well we gave up worrying and concentrated on work.

The position was that the ganger kept track of work and money and left discipline and other details to us. He was just one member of a democratic team. He saw to it that the gang was supplied with tools, materials, and information derived from design office **memos** and blueprints. Clever men helped others decipher difficult drawings, not so clever men were content to do the drudge work. *No* distinction was made on degrees of skill - that was a waste of time. Divisive. All this was tacitly understood. Management also tacitly understood, and no written rules were made. Consequently there were no "orthodoxies", everything being left as fluid as possible. In this way all kinds of initiatives came from the shop floor, and these, added to brilliant design, planning and organisation pushed the firm into the lead in aircraft production. Every week men joined us and were accepted at once as equals. Only the ganger and his deputy worried - about money; the rest were free to concentrate on their work which was a great relief to men previously tormented by individual piecework. But it still was piecework, still gave men the urge to earn more, and earn it by brains and skill rather than by being driven. Decisions were made at gang meetings (in meal breaks) and the ganger was obliged, as in Parliament, to answer questions. He could also, in return, publicly castigate men who were at fault. Naturally he was the best man on the gang for all this, which was why the men picked him. Men working together almost always "sense" the man they want as leader. And they could also sack him, at a gang meeting.

The management could also sack a man from the position of ganger, but only by arrangement with the gang. In such an instance shop stewards would conduct the case, as a guarantee that the man was treated fairly by both sides.

Foremen never interfered in the domestic matters of a gang - all they were concerned with was supplying knowledge, dealing with hold-ups in supplies and the ordinary disciplines of life. They had lost the power to sack men and had become "a service" to production."

Likewise the Wages Office. Their work was simplified; they could deal with a gang of thirty men as though it were one man. Every week they issued to each **gang** a statement of earnings (a gang sheet) combined with a list of the men sharing those earnings, at so much per hour, according to the hours he worked. Thus the wages office was also a service to production. The weekly gang statement of earnings was the property of the gang, and every man had access to it. Every man saw instantly how he stood, and was satisfied. (Usually!) [See Appendix A for an example of a gang sheet]

When it came to bargaining with a ratefixer over the price of a new job the individual man could receive moral support from his ganger, and anyone else who was felt to have had experience of the **work**, including a shop steward if necessary. He was in this way likely to get a fair price without fear of being overwhelmed by an over-zealous expert. The ratefixer was thus obliged to be fair, to the man, and to the gang — and, in the long run to the firm and **himself**, because he could now be trusted to give a fair deal. A service to production.

Most men were satisfied with gang work. It gave them opportunities previously denied them and in many cases a man became a better individualist inside a gang than outside. But a few highly individualistic men did come to reject gangwork and were found work in other shops on ordinary piecework.

Gangwork became the norm in that shop and production and earnings steadily rose. But still the firm wanted more, and overtime was asked for — more and more overtime. More men, more **nightwork**. At first the men were full of enthusiasm: they had new work full of interest, a new system to be sorted out and made to function, and three incentives: money, improvement of conditions of work, and, in the long run, reduction of working hours by the elimination of overtime and then, possibly, a shorter working week. We had all these in mind and felt that it was "up to us". But enthusiasm dies down and it **was** then that a few gangers and their deputies started to become secretive, to withhold information from their gangs. Some of us became suspicious and felt that these gangers were on the way to becoming "Gaffers' Men", that is, favouring management rather than the gang, so a "gang steward" was elected. Usually he was a very strong trade union man, one who was always probing. He was, in effect, like the Opposition in Parliament, and similarly had the right to demand answers from the ganger. He was "The Voice, the Conscience of the gang". The ganger's booking of money was regularly scrutinised and when necessary his organising ability was questioned. At times he was prodded into action, was told what inarticulate men on the gang thought, and was given the opportunity to explain; or maybe to put any blame elsewhere. If the ganger left, or was removed from the gang, the deputy would usually take his place for he already knew and practised most of the routines. The gang steward would then become deputy, unless of course he preferred to remain in permanent opposition. Thus we had three men who were trained leaders. Had trained themselves. And there was nearly always a man available and capable. This was amongst a labour elite, craftsmen.

GENESIS OF THE GANG SYSTEM

All this happened naturally and easily. It was in the direct line of Coventry's old craft tradition, which had been inherited from the Craft Guilds, from the time when the fine churches were built. For centuries Coventry had had small communities of craftsmen, either self-employed along with their families and friends, or groups of like-minded craftsmen who "ganged up" to do special work; like the Masons who built the churches. Coventry had preserved this craft tradition and had never been overwhelmed by the sordid degradation of the early factory **system**.* Coventry workers fought fiercely against the factory **system** and although they finally had to adopt it they always sought to run it their own way —

*See Appendix 'B'.

a group way. Well over two hundred years ago Coventry watchmakers and silk ribbon **weavers** had organised themselves into working groups. Thousands of Top-Shops' over the houses contained the ribbon looms, mostly owned by the weavers themselves. (Some of these houses still survive). Watchmaker top-shops were usually at the back of the house, over the out-buildings. A high degree of specialisation was developed, each house producing perfect watch parts. The woman helped the watchmakers, especially in polishing; every tooth of every wheel being finished like jewellery. Everything in both trades was on a friendly family and neighbouring basis — the children went into the workshop and learned by "helping" (kids love it, even today) and asking questions.

The Birth of the Bicycle

After a century of almost continuous prosperity ribbon weaving was ruined by full free trade, which removed protective duties, and cheap ribbons from the Continent flooded this country. Thousands of Coventry weavers emigrated (especially to America) burning their looms. Watchmakers managed to survive in face of cheap watch imports from U.S.A. and Switzerland, but they were in a dying trade. It finally died out during the 1914-18 war. During the slump of silk weaving 100 years ago Starley bought a sewing machine to Coventry to get it manufactured. Any sewing machine was then a technological breakthrough. Craftsmen in a factory made it — successfully. They also made some wooden bicycles, "**Velocepedes**", for Paris; but these could not be delivered because Paris was besieged by the German Army. The sight of those useless wooden bicycles set the craftsmen's minds working with the idea of all metal bicycles, and thus a new industry was born. Hundreds of little factories were started in which groups of men specialised (as had the watchmakers) in making the component parts. Complete bicycles were assembled by "The Manufacturers", but the real work was mostly done by small groups on a "friendly" basis.

Thousands of inventions were made, in the bicycles themselves and in the methods of production. New tools were needed as the standardisation of parts became essential to mass production. Special machine-tools were demanded and created, and men learned from each other. And they made money. A lot of money. Those first years of the cycle boom were, in a sense, **pre-capitalistic** on a small craftsman basis. There were a few large factories where men learned the trade only to break away to self-employment, or semi-self-employment. Always the creative urge came forth best in the **groups**, whether self-employed or in a factory group.

Cycles to Aircraft

And then capitalists came in and floated companies; and speculators and financial adventurers got away with fortunes. But the craftsmen went on; recovered the sanity of creative work and applied their skills to motor cycles, cars, and later, aeroplanes and engines for them. Around these, a large machine-tool trade grew, always from small groups of craftsmen. Electricity, wireless and electronics followed, almost always pioneered by "the small man". The big companies and combines got into it later by pushing the pioneers out; a process now nearly completed. So, for a hundred years Coventry had thrown up new industry after new industry. Bicycle manufacture left the town because there was no money in it. It was a "cheap job" and Coventry men refused to be cheap. The watchmakers had refused. It is the same today. In Coventry, "know how" is only

partly technical. Men in tens of thousands come here with their skill and brains and Coventry gives them their chance; a chance to make a decent living under conditions as good as can be under the existing system of society. Everyone has contributed in some way — but the diversity of men and women was channelled towards success by the integrity of craft tradition. By an attitude of mind. Over 100 years ago when the first steam-driven weaving mill was started in Coventry, men hated it — hated the very idea of being driven slaves at low pay. There was a riot, the factory was set on fire and the owner nearly killed. Some of the weavers were sentenced to death for this. (The Belgrade "Theatre-in-Education Group" has reconstructed this in a play which they give to the schools). From that time to now there has been a continuous fight to civilise factory life, to maintain something of the old craft tradition.

From the Old World to the New

This is not nostalgia — *not* outdated, as many modern organisation-men keep saying. It is a fact that men working together and making some of their own decisions at work *can* get better results. And it pays, if properly done. It pays the men, and the employer, and can give the customer a better article. If 5,000 men, in say a large car plant, produce 5,000 ideas, however small or trivial, if those ideas are added to the advanced technology of today then that firm will thrive, and the men, by the very fact of being participants, will be better men. Many quite ordinary men can and do train themselves into becoming experts, and the modern gang system allows and encourages this. The ownership of the firm does not always matter. What does matter is how the men work together and how successful they are in resisting autocratic managers and technical systems-men. These latter are apt to think "they know it all". They don't, and cannot. And automation will never be universal, it costs too much. In **power** stations and continuous process chemical plants where engineering has been finalised, automation is appropriate. But in the main body of work, especially engineering, finality is never reached. There is always change, and change means adaptability, and that means men. Coventry has worked and lived and pioneered in adaptability for over a century, and that, again, is due to men. Groups of men creating industries, out of ideas.

THE GANG SYSTEM IN THE AIRCRAFT AND MOTOR INDUSTRIES

And now back to Armstrong **Whitworth**, the aircraft factory where I was in 1936, over three years before the Hitler war. By the end of that year the gang system had proved itself. The part of the factory where it was in full operation was forging ahead of the rest of the works. It was a "happier shop". Men were doing more and better work, earning more money and were reducing overtime. Production jobs and experimental jobs were going on together (every aeroplane teems with modification and new ideas) and the managers realised that we had hit upon a good system. But my six foot four chief had been asking for excessive overtime and demanded that I work on a Sunday morning. I refused. We had an unholy row! I put it to him, "I like my Sunday morning in bed with my wife, some men won't miss their football on Saturday afternoon, some old men won't have overtime at **all**, some young men want all the money they can get to pay for a home of their own, or some other ambition. Now all this has nothing to do with *you*" He exploded! I went on, "You tell the gang *what* you want, and *when* you want it, and we will give it to you". We did. Regularly. **Over-**

time arrangements were openly arrived at at a gang meeting. Men with special skills who worked excessive overtime for a period arranged to have time off later on to suit themselves. In this way, greed was controlled. No-one dictated, we all knew, arranged, and tolerated. We were working until ten o'clock one night on a rush job and the Works' Manager, who lived on the aerodrome, was surprised to see us there so late. He appreciated what we were doing by fetching us beer and sandwiches and drove men to the railway station himself. All **diffi-**culties were settled in similar manner. In effect, we ran the shop ourselves and "the gaffer" stayed in the office. We knew all about "class war" and shareholder profits and the stupidities of the capitalist system, and the possibility of war. We discussed it endlessly as we worked, and we had the measure of Hitlerism and of appeasement. We knew. We didn't want war, but the war came.

Coventry at War

We had moved into a new giant factory, a mile or so further out of Coventry and were on full production of a night bomber, with a day and a night shift. The gang system in that factory was now almost universal. Car factories stopped producing and hundreds of men came to help us build planes, every week. The gangs absorbed them easily, every new man being treated as our equal, right from the start. Thus, their minds were at rest over money and status and they were free to concentrate on their new job; and we helped them with tools and ideas.

And then France collapsed and we went on twenty-four hours a day, seven days a week. The freedom and flexibility of gang work enabled men to bring forth every conceivable device to help production without being asked or told. Every bomber would be needed to bomb a possible invasion off; and they were built. And then came the nightly German air-raids on **Coventry**, **fifty** seven altogether. We were obliged to abandon night work and telescoped the two shifts into mornings and afternoons, overlapping in the middle. We still maintained production. Gang work proved itself again and again.

Germany turned against Russia and we were left alone. Now women came in to work with us on production. For every man who went into the forces or to another factory, we had two women. They also went onto gangs and fitted in without worry or trouble.

During the changeover from the **Whitley** to the Lancaster bomber, a thousand or so men went away from Coventry to other aircraft works and were appalled by the chaotic "systems" of working there. They tried repeatedly to teach the Coventry Gang System, but failed. They told me that there was practically no tradition or working together and try as they might they could not teach "the locals" quickly enough to be worthwhile. They nearly all came back. My own experience was similar. I was making bits of experimental **apparatus** for radar scientists and the firm I was with seemed to spend more effort in keeping men in subjection to an outmoded system of working than to getting the war over. I got back to my aircraft firm as soon as I decently could. These experiences taught us the superiority of gang-work and I realised that it had some social significance, something akin to gang-work was being improvised on the initiative of the shop floor workers.

At Standard Motors

Standard Motors needed experienced aircraft fitters when they changed over a

part of their works to aircraft production. Armstrong **Whitworth**, being well **advanced**, was able to send them nearly a hundred men who had worked for years on the gang-system, and being experienced aircraft fitters they demonstrated gangwork in practice and proved it by production and earnings. In a very **short** time the Standard people spread these chaps out into nuclei of two or three men and gangs gathered round them. Men took to it at once, sorting themselves out again and again until they found "their proper job". The country desperately needed those planes and production-minded men in Coventry made them in greater numbers than anywhere else. The measure of aircraft production could be put in terms of money earned. Four plants were producing one kind of **aero**-plane — at Coventry, Birmingham, Derby and Manchester. Coventry men on gang work earned 7/9d an hour, Birmingham **5/9d**, Derby 3/9d, Manchester 2/9d. Drawings, jigs and tools, piecework prices were identical. Government officials sent shop stewards to the three firms to teach the Coventry gang system. They failed. "It would take too long." I was told.

Standard Motors, Coventry, were tremendously impressed by the great success of their gang-piecework on aircraft. Production had exceeded all hopes so they studied the gang system with a view to using it after the war, on car production.

Post-War Gangwork at Standards

Before the war attempts at gang work had been made, but failed to develop into a permanent system. The idea had always been there in the minds of Coventry craftsmen and at favourable times even the idea alone helped things along. What was needed was a demonstration of success, and success came only when men were relatively free. Most of the successful Coventry firms had, in the past, been relatively free, but not free enough. **Now**, after the war, there was a pent-up demand for cars and the gang idea seemed to be just the way to get things going to get everyone **helping**. Helping the firm, and helping themselves, and the country. The firm started off by agreeing with the shop stewards and union officials on a datum line for wages below which no-one should go. This was the amount of money a typical youngish married man with two children would need to just pay his way. All above that would depend on output, and if the gang system worked successfully, everybody would eventually be well off. So gangs were formed of 50 to 500 people. It worked.

Supervision became negligible - the men "ran their own show", put all kinds of ideas up for consideration, and vigorously resisted hostile people in middle management. Shop stewards and union officials came to an agreement with management on all this, which was signed and sealed and made public. Car production at Standard Motors soared.

Ferguson Tractors

The Company's aero-engine factory was, at the same time, converted to production of the Ferguson Tractor. Standard made it, Ferguson's sold it. Gang piecework made a half a million tractors in the first ten years, almost entirely without supervision as ordinarily understood. Captain Black (**later** Sir John Black) saw to it that every intelligent suggestion was at once put into practice. The result of all this was the highest earned wages in the industry, the best conditions of work, the finest welfare and sports services, job satisfaction as far as is possible in mass production, and a product that compared with every other for price and quality. The shareholders also seemed satisfied. Some I knew, an

Old English **Colonel**, a **Doctor**, and a relative of mine said that they were "proud to belong". And workers were pestering their trade unions to get a job there.

GANG IDEAS SPREAD

Men who left aircraft production, as I did, took their gang ideas along to their new jobs and before long were giving gangwork a "try-out". This happened in motor body works, engine and gear box manufacture, motor buses, machine tools, and civil engineering and building.

Gang Work in Building

One firm which was building 1000 houses asked me to investigate trouble over gangwork on this contract. I did. I had a six week battle against dishonesty and sharp practice in the site office, an autocratic "Agent" (the site boss), and general distrust and suspicion amongst the men. The whole 400 were on gang piecework, almost identical with the aircraft gangwork. I discovered that they had, "no confidence in the office", and said, "We are being robbed." They were. There was collusion between certain office people and men outside which resulted in a considerable number of men being paid very much more than their proper share of gang earnings. The remainder of the gang were, of course, being underpaid. In the blazing row that followed I exposed certain people in the office and cleaned up the office routine to make such practices impossible. It was also "arranged", in a civilised manner, that "the guilty men" in the office were got rid of. Nothing was said, but I convinced the men that, "Every man will get every penny he has earned" — and to prove it I showed some of them, in the office, exactly how the earnings were calculated, and, most important, how each man got his proper share. Confidence was restored, earnings increased week by week, and all were happy. (Had it been possible for each gang to have had a gang sheet showing each week the total gang earnings, and the share-out figures, dishonesty and consequent distrust would not have been possible). In addition, I had all the gangers and leading hands in the office every morning to vet their work sheets, and in the process we drank two-gallon teapots of tea between us (on the **firm!**). That tea, and absolute honesty in the office performed miracles, and so did the men. And as their earnings went up and up they saw to it that I never paid for beer or **fags** !

How the Gang System Operates

Coventry's post-war housing problem was acute and in the twenty years following the war, the equivalent of four new towns have been built, complete, with amenities. And the bulk of this was done on gangwork. I saw much of it. The craftsmen, bricklayers, carpenters, plasterers, etc., were the most active trade unionists and gangers were usually picked from them. Some gangs were run by a trusted foreman, trusted by the men. He was responsible to the firm for the work done and, as a foreman, was paid by the firm. But the men were **'his'** men. They stuck to him, and he to them, wherever they went. At the same time the gang was democratic in a face to face sense. Nothing was done secretly, especially where money and earnings were concerned. In engineering, however, the ganger and foreman were always separate. The firm paid the foreman, but the gang paid the ganger out of its earnings. He was *their man*. On a large gang the ganger would not actually work. His time would be fully occupied in **'chasing'** materials and equipment, surveying and recording work done, receiving from the foremen technical and other information and clarifying the same, and of course running the gang as a paying business. Should he fail in the latter he would be called to account by the gang - and by the management. In a temporary difficulty (especially over money) he might receive special payments through the ratefixer. Or, if the job proved to be more difficult than anticipated, the ratefixer might review the prices of all the work. It may be that some of the men were not adequate or were even lazy. In that case he would tell the men concerned, publicly at a gang meeting, what he thought - and they would tell him! Once men knew the facts and thought about them while they worked they usually had a clear idea for the appropriate remedy to be clinched at the next gang meeting. Gang meetings were called by the gang steward. He was the official trade union man. Gang stewards and shop stewards were chosen by vote.

The Size of the Gang

The **size** of the gang, would, usually, be determined by the nature of the work. It might be as low as 3 or 4 men, and there have been gangs of a **1000** or more. But the "best", humanly speaking, seems to be from 20 to 60. These can know each other. A very large gang gets impersonal. The technical nature of the work is however the most useful determinant. There is, in all industries, an optimum size of factory, an efficient economic unit. It is the same (or should be) in size of workshop, and the size of the gang. There may be too many or too few men, but experience soon determines the optimum.

Correctives derived from Gang Operations

The men being in a sense in business for themselves, act as a practical corrective to errors from above. Out of this attitude arose a permanent shop floor corrective to design and drawing office errors and commissions. In building aircraft, detail-design and drawing may have to be dispersed over many separate drawing offices and discrepancies are bound to arise. When the first parts of a new aircraft arrive on the shop floor the men discover their faults. In a gang shop such men are

accustomed to exercise initiative. Being "in business for themselves" they have the sense of responsibility that goes with it. Their money is at stake! So, a man finding a discrepancy in parts fitting together stops work and fetches his ganger. The job itself pinpoints the error. The foreman fetches the planner (who **'lives'** on the job) and they confer, describe the error in every detail, and, between them work out a detailed suggestion for a corrective. This is written, and drawn, on a semi-transparent form that can be duplicated. A copy goes at once to the appropriate planner at headquarters and also to the design office man concerned. As soon as they approve the suggested alteration the job is put in hand by the gang concerned — the same day in the urgency of a new aircraft being in hand. At once the "shop copy" is stuck onto the blueprint of the job and this supplants the faulty part of the drawing. In this way the shop helps design to "finalise". Gang work makes this effective by releasing the worker on the shop floor from anxieties over money. His money is being earned, for the time **being**, by the rest of the gang and he is free to use his powers to the general advantage. He thus enhances his skill and satisfaction by participation in complex processes instead of being rebuffed as in an authoritarian set up. Designers and planners similarly benefit. This sort of thing became widespread in my aircraft factory, almost everyone getting involved in some sort of decision making. The experts at the top were not frustrated by a rigid-minded workforce. The workers enjoyed working together; and management was relieved of enormous masses of trivia. Knowledge instead of being hoarded (**'like the Crown Jewels'**) was spread right through the factory, available to all who were inclined to make use of it. And thousands did — and became better men.

On "my" building contract something similar evolved. Once the men were able to trust the office and their minds were at rest they worked with a will. They were working for themselves — working easier by finding easy ways — doing a better job, building houses for people; building them quicker.

Gang Work on Bus Building

A man in a pub described to me how gang work had been started on building buses. He was an electrician installing cables and fittings and had been continuously frustrated by individual piecework which confined him to working and thinking of one week only. He was the key man and his frustration frustrated everyone else in sequence. Gang work was introduced, and, finding himself free to make decisions he aimed at long-term organisation of his job, eventually reaching a **stage** where he had a month's supply of cables, ready for installation, in hand. His was the key operation, and his "surplus" enabled other men on the gang to work similarly, with long-term foresight and economy of effort. The result was more money, shorter hours, a better job and, I suggested, "No worry over money". He enthusiastically agreed. Asked "Who introduced the gang system?" He told me it was the foreman and the shop steward, both ex-aircraft men from my old firm. It was thus that men themselves carried the idea from factory to factory, and, on their own initiative put it into operation. Of course such organisation can be, and is, sometimes imposed from above by "the experts" (who often imagine that they are unique!) but the men are also experts (in their lesser way) and if left alone can produce remarkable results. Naturally other men seek to copy their methods and it is thus that a "gang shop" can eventually become the norm. But "the experts" still tend to dislike it as being "untidy", or "lending itself to abuse", — by which they mean a gang hoarding some money,

"at the back of the book" for a rainy day. On the other hand when a gang shop has run successfully for a period the experts and the managers quietly take credit for it, as though it was their creation.

Although gang piecework has spread through Coventry and beyond, it is not talked about — it is "allowed" — or "introduced as a convenience". It has of course been abused (I will deal with that later), and has, and is, condemned by those who cannot, or will not, "see".

A Craftsman and the Experts

One of our efficiency experts told me of an outstanding example of shop-floor expertise. An old Coventry engineer-machinist had a regular job making a key part of production. He kept the shop fully supplied, and a bit over, and was thus able to help out with emergency jobs when necessary. Every so often, he had a day off to go horseracing. His machine was a bit old but in perfect working order, having been "nursed" by the man himself and by a good machine-tool maintenance man. The old boy fell ill for a few **weeks** and his place was taken by another crack machinist who was only able to achieve four a day of the essential component. The efficiency expert tried to help but they were only able to produce five a day, and the production line was soon waiting. Just as desperation point was imminent the old boy returned and the efficiency man told me, "It was fantastic! The old man made the machine sit up and beg. He changed cutters like lightning and 'weaved' the job around the cutting head as though it were alive. It took him a day to get into the rhythm he wanted, and for the next day or so he was turning out **fouran hour!** And he was 73. Of course he couldn't keep that pace up — but he did it long enough."

We discussed the future of that job. When the old man retired the firm intended to put tape controlled machines in, which would cost up to £50,000. I visualised the prospect under a gang system instead. The old man would "choose" someone to take his place. He would teach the fellow all he could and would gradually ease himself out as he felt best. His retirement would not be sudden or hurtful. It would be "graceful" — and economic. The firm "did not see how such a thing could be done, so the old man's expertise, the accumulated skill of a lifetime, would not be transmitted. Rules! The reader may ask what this has to do with gang work? Well, the same basic economics apply: men at high wages may be cheaper than expensive new machines. But, some managers are obsessed with the idea that machines are more important than men. And worse, they seem to resent being dependent on men, especially groups or gangs of men, who appear to them to be challenging management power and authority. In fact, such challenges from a gang never happen. All that the men want is to run their own gang in their own way, as far as is possible. They take it for granted that other gangs will be doing the same, including the "Management Gang".

Decision Making — And Money

I know a gang of just over twenty men, all machinists, who have ganged-up to produce car parts. They are all young and have enormous zest in working and flog their machines to the limit. The firm allows them to earn well above the average because it pays. Some have had experience of "Measured **daywork**" in another factory, and all condemn it as, "interfering with the way we work;

treating us as kids in a kindergarten, and at the same time demanding more and more from us. We hated being '**bullied along**' and watched, and therefore had no interest in the job. Here, on *this* job, we are our own bosses — we decide. We work fast because we like it. Time flies. We earn the money and we don't need supervision; we know what we have to do." I asked, "Can you trust your ganger?" Does he book your money in alright?" The answer was, "Yes, of course. He's one of us. We can have a look at the figures if we like, but there is no need to. We *know* he's alright." I put it that, "It's partly a question of personal freedom at work then?" I was told, "What we do here is our business — What we do with our money is our business. We can do as business men do - either pay it out as "dividends", wages, or keep a bit in hand as '**reserves**'.^{***} Asked whether they used their brains more, even on repetition work, they answered, "Of **course!** That's the idea of gang work, it's *still* piecework — something to strive for. Day-work, fixed wage systems are no good to anyone on this kind of work; you then have to have gaffers, and we don't like 'em. The proper place for gaffers is in the office, not on the job. And we don't need a lot of inspectors either. We know when a job is right, better than any inspector. Every man is responsible for his own work — responsible to the firm, and to the gang." Asked to compare this with "measured daywork" systems one man told me "Such '**Americanised**' systems take your individual freedom from you. They take any form of gang system from you, and then, as a result they take your conscience from you. And they have to pay about 400 foremen about £50 a week each for it." I put it, "All they have really done then is to move your conscience to the foremen and paid for it." He agreed. Asked why men put up with it he said, "They want the money — and some men haven't got a conscience. It would be a good idea if all the men who lack a conscience were all in one heap in such places. Then all decent chaps would know where to keep away from."

Conscience and Quality

Another instance of "conscience" struck me when conducting a woman economist round one of our machine shops. Rows of machines were feeding components to an assembler. He quickly placed each part on a shaft and, I noticed, was carefully "feeling the fit" of each one. He finally locked a gear in position and placed the shaft in between centres of an old lathe. He slowly rotated the entire shaft assembly and read **off on** an engineer's clock gauge any deviation from true. He told me he was allowed two thousandths of an inch from perfection. If the shaft was "out of true" he would apply pressure from a bar for correction (He did this quicker than I wrote the sentence). He was therefore inspecting each component as he fitted it. He could feel any slight deviation and notify the machinist at once. He then inspected the complete assembly and rectified it as necessary. He told me "I personally guarantee

* "Reserves" means, as in domestic **economy**, "Keeping a bit in hand for a **rainy** day." and is considered to be a **laudable** object. But when pieceworkers accumulate it is condemned as "robbery", and some **works** accountants and their underlings go into frenzies of condemnation. Pieceworkers do, on occasion, find themselves in a position to oversave senselessly and the reaction from some managements becomes equally senseless. An understanding management however will "come to an arrangement" carried out, in my experience, with the sort of humour one uses with naughty kids! But if the gang is allowed freedom to run their own show moneywise as well as workwise they can use their skills to the general good. Their minds are free to concentrate on creative production, the money conning "automatically" as it were.

every one." Being on a gang **every machinist**, every machine-setter, and he himself had a common interest and therefore supervision and official inspection were not necessary. There was a patrol inspector on the job but it was only rarely that he was needed. All over that works similar arrangements were in operation. The factory practically ran itself. The man I have just described told me that men swapped jobs from time to time, partly to eliminate boredom, and partly so that in the event of there being a man absent someone else would be able to do his job with equal conscience and efficiency.

It was the same in aircraft production. In most aircraft factories it is the rule that every job has to be inspected continuously in every minute detail, and much production time is wasted, waiting for inspection. Not so in Coventry. Each man, taking full responsibility, will endeavour to complete his job before inspection. He will, however, gain the inspector's confidence by showing the work, and his working, at convenience to both. In this way the conscience of both is satisfied. The man's contribution to gang money is assured, and the firm and the customer are getting the aircraft without delay. And cheaper.

Self-Service

Multiply these instances by many thousands, all over Coventry, and one sees how simple, how obvious and how effective gang piecework is. I put it that it combines enlightened self-interest with the collectivism that people "feel for", but rarely achieve. The best of both worlds as it were. And out of it comes the practical sense, derived from the experience of doing things of your own volition which can be applied to other activities.

Transport for instance. Some years ago my old aircraft firm took over an aerodrome 14 miles away from Coventry for assembling and **flight-testing** aircraft. Large **numbers** of men travelled from Coventry in buses, daily. They wasted much time travelling by bus from their home to the Central Bus Station. They then boarded the firm's hired buses, and at night returned the same way. The men persuaded the management to spread the buses all around the city, away from the congested centre, so that men could be picked up almost from their doors. A bus-steward was chosen and it was he who accounted for "his" passengers and "kept them in order", as they laughingly put it. By demand of the men the service was free of charge. The firm benefited at once, as absenteeism became negligible. Several men from smaller towns ran a paid hire service and eventually owned a small fleet of buses. Some drivers worked at the aerodrome, and low paid outside drivers were "thanked" through a weekly collection, "for their good service". And it was, in consequence, good.

During summer months each gang arranged staggered holidays to suit individual men. Early in the year a choice was made and then re-arrangements made as necessary. Later on men arranged between themselves to take over each others jobs so as to maintain continuous production. This entailed the lending of the necessary tools and equipment and also supplying the knowledge of the way to do the job. The flexibility and confidence engendered by gangwork made this easily **possible**.

Apprentices

In the same aircraft firm the apprentices, about 300 in all formed their own separate but parallel organisations and ran each section on the same democratic

lines. These organisations dealt with their technical education through the firm and at colleges, their social and sports activities, and workshop meetings to air grievances, etc. At the same time they were members of gangs, contributing work and sharing money at the rate of pay appropriate to their age. They could at times participate in gang meetings, but without votes. Such partial participation was looked upon, by the men, as a major part of apprentice education. Gang work also gave a man time to explain difficult jobs and complex aircraft systems in operation to "his" apprentice — and most apprentices showed their appreciation by working hard to make up time thus lost. There was almost always tremendous zest in working and much humour of the workshop variety. When lads had completed an understanding of the building and functioning of a complete aeroplane they would then go to the Flight Shed to help prepare aircraft for flight testing, and would, in most cases, enjoy a flight as a crew member. This, the high spot of the apprenticeship, would lead to a fully paid job on the shop floor or in the planning or drawing office, or, for the exceptionally clever chap, to full-time college studies for a degree. All, without question, would have participated in the democratic procedures built up in that firm. And one could include student-apprentices from all parts of the country who would have a few months away from college to participate in like manner; and, like normal apprentices, would be paid gang-piecework earnings at the rate of pay appropriate to their age. They learned to work, as well as to think.

Practical Community Sense

Good causes were subscribed to on a works, local and national scale, and there was no expense account, all work being voluntary, and office work provided by the firm. In addition each gang (or several gangs) would regularly help a gang member through a long illness, and the longer the illness and the greater his need the more he would receive. This in contrast to official systems in which monetary aid gets progressively less. At Christmas thousands of **employees' children** were taken to the local theatre for a preview of the Pantomime Show, and were given presents etc. There was never any shortage of helpers for this or for any other cause. Some of the toughest men revelled in it — as they did in sport. There was and is, loyalty to the gang, and to the trade union. This, without any question of compulsion. To be hostile or blatantly indifferent "is not done". Men who make trade unionism their hobby are "naturals" as **shop** stewards, gang stewards, or branch officials. Other men feed them with information, and there is of course, "feed-back". All this is normal, simple and obvious — as "obvious" as other everyday human relationships. But it works and is still part of Coventry's craft tradition of "togetherness".

Controversy Over the Gang System

Argument at Standards

The **Standard** Motor Company at Coventry **started**, after the war, production of cars and tractors on the gang **system** and almost at once became the subject of **ideological** controversy — right versus left — Conservative versus Labour; and "Labour" in the minds of hostile critics came to include Communists, Anarchists, Syndicalists and agitators galore! Captain Black, the Standard chief, was described as, "A traitor to his **class!**" - "He is not *red* - but he *is pink!*" This abuse crept into the press which, more subtly, created the impression that there was serious trouble at Standard Motors and that disaster was imminent. High earnings were, "holding the firm, and the country, to ransom." Left wing shop stewards were the "villains" responsible, and the workers were "greedy and selfish and setting a bad example to the rest of the country." All this in spite of continuous progress.

Inside the factory left wing Labour men were aiming at nationalisation, **commu-**nists were trying to lead the workers to the communist paradise, and the natural rebel (who is always there) kicked up a fuss whenever he saw some trivial fault. Some idiotic strikes were called and the consequent disruption of production infuriated some of the management staff. But the gang system, the creative aspect of work, still went on from success to success in spite of the half hidden conflict of attitudes. Occasionally, these fantasies of the extreme Right and Left erupted into a large-scale strike and the press swarmed around apparently expecting that riots and police and soldiers would make front page news! Actually, nothing happened. The ordinary sensible average worker knew that "The Standard" was a good firm, and that the gang system got results. He knew that he himself had a say in the ordering of his work, and that although his loyalties were towards his union, and to his stewards, and, vaguely, to the Labour Party, he was, as a realist, more concerned with continuity of employment than with wrecking things. So, the ordinary man, the member of a gang, did, finally, have the last word, and strikes were soon settled. Captain Black may have been, disappointed that gangwork and factory conditions as good as they could be made, had failed to give complete industrial peace. But the firm had made tremendous progress and had set new standards, which other firms were obliged to copy — as far as they were able.

And then Captain Black had a serious accident and handed over the lead to **Alick** Dick, who "asserted the authority of management" to the joy of the right wing press and the prophets of doom. Under his rule, two massive strikes took place — but the gang system carried on — still getting results. Finally, the tractor factory was sold to Massey Ferguson for about **£15** million, some millions were paid out to shareholders and the balance was used to launch a new car using vast production facilities. But, after a year, due to a really heavy credit squeeze, the firm ran out of money, and was taken over by Leyland. The Leyland chiefs sacked Mick Dick and 300 of his management team and put their cards on the table to the shop stewards. They asked for stability for a period long enough to get the

firm on its feet again. This was given to them through the stewards and the gang system.

The troubled history of gangwork at Standard Motors convinced me (and others) that if you bring in new systems involving a lot of people it is best not to advertise the fact. Publicity invites controversy. It is best to do good by stealth.

Captain Black and the unions had attempted to build a new kind of relationship based, whether they knew it or not, on an old Coventry tradition, that seemed at the time to point forward to the better world we all wanted after the war. On the whole it was successful and would have been more so if only "politics" had been kept out.

Contrasting Firms

As I have said Standards got the democratic gang idea from Sir W. G. Armstrong **Whitworth** Aircraft Co., (a purely Coventry firm) where gangwork on a *properly* organised basis was first worked out. They let it develop of its own accord; with no rules. Further, they did nothing to advertise the system and consequently there was little or no argument about it outside the firm. But, there was plenty of argument inside the works, almost always constructive. Management and men met face to face, knew each other as men, and respected each other. Standards however, became the cockpit of the politico-ideological dilemma soon after they broke away from the Engineering Employers' Association. They wanted to be free to make terms with their workers and to prove that gangwork paid — paid socially as well as economically. Other employers were hostile. Some Labour people also condemned **gang-piecework** as "organised greed — a form of working class capitalism". Communists said the same — but thought of Russia. And there was of course, always the "individualist".

FROM THEN TILL NOW - SOME OBSERVATIONS

In spite of the turmoil of ideas, in which people often said one thing and did the opposite, the gang system went on and on and Standard Motors became Standard Triumph, and finally part of British Leyland. When Leyland took Standard over "everybody" (that is, the thinkers!) said that Leylands would wipe out the gang system. They didn't — and haven't. What they are now (**1972**) hoping for is some sort of measured **daywork** at a high rate of pay. But the workers are not interested in selling their freedom, in being permanently trapped in technological slavery to a "know it all management". However clever the managers and their experts may be they still depend upon the shop floor, and when things go wrong, as they do, they depend even more. The shop floor can make or marr any factory, especially those as complex as making cars or aircraft or machinery. I am told by the experts that, "gangwork is untidy, irrelevant, obsolete." The same could be said about political democracy, or the democracy of the shareholders who own a company, or the democracy of the learned and professional societies (who dispute endlessly, at times.) I put it: "You can't *have* democracy without rows. That is its whole point." Gangwork is a limited form of shop floor democracy, a face to face democracy, a practical method of getting people involved, of their own volition, in the work process. It has been a natural evolution from the craft skills out of which modern industry was created. Still *is* created. Industry means continuous creation, new ideas,

new tools, new machines, new methods, and, most important, a new kind of man who is **really** the old craftsman in a new setting. "The craftsman can make anything," it is said. He is now busy, with his friend the scientist, making automation. But for the present it is mass production in its ordinary sense that we live by. Continuous production — some automatic, some semi-automatic — and the rest handwork.

Mass Production

It is supposed that mass production is eliminating skill, yet we find in our modern factories quite ordinary men in control of highly **sophisticated** machinery and apparatus. All this has to be used systematically, regularly and with some understanding. The understanding grows out of the daily contacts - from the tools, from the systems, from the arguments. Some men take years to learn and therefore find themselves stuck on plodding, dull repetitive jobs. (These are usually the "**moaners**".) Other men are quick to learn and adapt and they move around as much as possible, acquiring new skills and understanding as they go. Some men, like the old boy mentioned above, became supreme experts in their own specialist field. They can afford to be individualists. But most men find more freedom, more opportunity (and more money!) by teamwork — and as far as I know gang piecework has provided the opportunities best of all.

The Good Ganger

But regular work for about 48 weeks a year can be an awful bore to some **men**, especially those with active minds. It is usually from those that gangers and shop stewards come. They are thrown up automatically as it were and their energies used up in the service of the group — and the rest of the **group**, or gang, are only too pleased to let them do it. But, where democratic gangwork is in operation the gang can, and does, sack them if necessary — a gang meeting at a meal break can do it. A good ganger however, keeps his position. As an illustration I could quote one I know who has been a ganger almost continuously for over 40 years; and he was one of the original boy fitters who helped to form the aircraft clip-making gang described earlier in this account. Sometimes the wrong ganger or shop steward gets control — the "wordy wind-bag" or "the twister", or the man who is "too decent" and who **allows** himself (and therefore his gang) to be taken advantage of by the firms' clever experts. Sooner or later the gang has to remove them. But democracy takes time, and the firm's production experts then get frustrated and furious; they can't wait for democracy. That seems to be the position today when ideas of automation are in the air, and when experts tell us, "the brains are now built into the machine." So they are, in some machines. But complete automation can never be universal — it costs too much and takes too long. In the meantime, I suggest that gang piecework, a proved success in Coventry, can help everyone in industry - if only they will let it. Arguments about ownership of industry are often irrelevant. Worse, they postpone something new.

Profits, Greeds, and Fears

When I am asked about profit-sharing in Coventry industries, I point out that profit-sharing is, in a sense, in operation. People share every week in high wages, and they share according to the work done each week. The advantage

of gang piecework is that "the week" can be extended to cover the mechanics of the job in hand — that is, a longer view than the one week can be taken. The pay may be received weekly, but the actual earning may be spread over a period.

Workers' Greed — and Fears

An objection to gangwork is that it breeds greed. I have seen it — collective greed. A whole gang forces a job along just to get more money than others — even at the expense of others. And by shoddy work. But retribution comes, either from management or from other workers; or quite probably from both. Such greed can be due to a newly-formed gang becoming aware of an unaccustomed freedom to "help themselves". They do — in the wrong sense. **Eventually**, however, they learn self-discipline. They become "marked men". But it takes time. The very idea of democracy took a long time.

Another cause of greed has been fear and uncertainty — the fear of the **sack**, of redundancy due to technical change. This is now being advertised by all the communications media to an extent that it becomes a threat. "Machines instead of men". And when credit squeeze becomes an almost permanent government policy which throws hundreds of thousands out of work then those still at work are in the mood to grab all they can before it's too late, before their turn comes. And some men have ambitions to have a business of their own, to which end they work overtime and flog machines (and themselves) to save some capital. But fear does not subdue men these days, it makes them more determined. If strikes are made illegal men will use other, more subtle methods, and the basic conflict of attitudes and tension is still there, underneath, just waiting. That is why strikes explode so unexpectedly. Workers *can* be beaten, but only for a while. All this inhibits the success of democratic gangwork or any decent system.

Conditions for Success

Gangwork has succeeded best where employment has been reasonably secure and men can then take long views. Aircraft building programmes have, in the past, been long-term. Car factories today are planned and manned to get as near to 48 weeks work a year as possible. This has to be, on account of the vast capital employed. Where working conditions and labour relations are good, as they are in most Coventry firms, the turnover of labour is negligible. Men stay put and are in a permanent job, regardless of the unemployed outside.

The proof of this lies in the fact that every production plant has to have the exactly right number of machines, along with the exactly right number of people to operate them. This applies to coal mines, car factories, chemical plants, power stations and the like. **Drastic** changes such as automation mostly take place at long intervals and at considerable cost. And even then the end result often means more, not fewer production workers. Events in Coventry and USA confirm this. Skilled production workers are not lightly discarded — they are assets. Today's redundancies however are very largely amongst design draughtsmen, technicians, machine-tool makers and general engineers, the key men behind the whole apparatus of production. From them comes everything, even the tools of the farmer and the surgeon. The boss himself, the executive, is not safe; and knowing it he covers himself by some form of "insurance".

The mass production gangworker feels the same uncertainty and covers himself

by maximum possible **earnings**, by keeping his wife at work (where he can!) and working up a "side line" if possible. His great hope is to win the pools and get *out!* He knows his life at work is uncivilised, and dare not think about it. Gang cohesion and comradeship at work make it **just** tolerable. Substitute the American system of a foreman to every 25 men and thus take **his** conscience from him and you are turning him into a "thing". That is what Coventry men are fighting against — *now*.

Welfare as an Industrial Overhead Cost

Increased productivity means fewer workers doing more work while others who could and would work are shut out of the creative process. The more that people are shut out or work at useless, parasitic jobs the more efficiency is demanded from industry. Taxation, welfare state costs and the private welfare of firms are becoming an ever-increasing overhead cost of industry. From a quarter to a third of **men's** pay goes in stoppages. The total of all this could be called "the overhead cost per man". Politicians and "experts" make increasing demands for money on the assumption that industry with automation, will always meet these demands. All this, added to the high cost of money capital is becoming an intolerable burden to those conscientious men on both sides, who are the driving force in industry. Many of them here and in the USA are questioning the entire set-up. The drive for efficiency has already gone too far, they think, and its consequences are all around us in social and psychological tensions which are becoming increasingly explosive. The basic problem here is, I think, to get more people at work for their own satisfaction, but for a shorter working week. But how?

There are many thousands of aircraft builders unemployed in the USA, most of them experts, at all levels. It has been suggested that they should be employed again for about 24 hours a week; this on the assumption that those still at work would also work 24 hours a week. A vast assumption! But, doubling the number of men employed doubles "the overhead cost per man" — makes the idea impossible. Our British trade unions advocate **work-sharing** without saying just how the overhead cost per man can be met. But suppose some clever fellow worked out the answer and was smart enough to get the government to adopt it. And suppose **also** that increased automation really does displace vast numbers of people. What then? Commonsense would then say that work should be shared out amongst as many people as possible. Continuous working of production plants by means of short shifts is already in operation in some places, and is bound to spread. Gangwork with its flexibility and self-sufficient simplicity seems to me to be appropriate to such a condition. The enthusiasts for work would be the permanent nucleus of the gang and others would **gang-up** around them as and when needed. A large complex and expensive plant could thus be manned to capacity, as are power stations at present. Small enterprises could arrange this easily, as some already do.

Shorter Hours of Work

The idea of everyone working a fixed long week is really a hangover from the **pre-**machine age. We are now slaves to an outmoded idea called "economics". We could, easily, be free to work 20 hours a week or less if we simplified our procedures, by-passed bureaucracy; rediscovered that "trusting people pays". Work need not be a misery and a disgrace — on the contrary it *is* interesting. People

like making things — many even like performing simple repetitive **operations**, *provided* it is in the company of like-minded people. And complex jobs like aircraft building so fascinate people that they visit our factories in thousands on "open day". Men who have had miserable lives at work have told me that when they joined us on gangwork building aeroplanes it was "like winning the pools". Helping to build cars could be interesting and exciting to car enthusiasts if they could join us in the free and simple way student apprentices gang-up with us. These are not dreams — they are facts — already existing. In 1919 I heard a world-famous pioneer of mass production describe his life's work making his product cheap and **available** to everyone. He went on: "You men in Coventry will eventually make your motor cars in the same modern way. You will only need to work 3 hours a day, or the equivalent". At that time our production engineers were visualising, "the automatic factory of the future".

As Socialists, of a sort, we young chaps had the same vision. And now, two major slumps and another major war later we are still confronted with a lunatic money system that is enslaving us, forcing industry to fit its antique and dangerous assumptions, trying to make our country richer by making **us** poorer. And this, after Keynes! Bernard Shaw said, "The poor are a disgrace, and should be abolished!" Compared with the complexities of engineering it should be **easy** to do just that. Inside a modern factory we have order. Must have. Outside we have a madhouse for some, a miserable and dangerous madhouse for **others**. Some factories still keep order by autocratic management **techniques**. Others, **as** in Coventry, are becoming democratic. All are, of necessity, becoming civilised.

The modern world of work in Coventry was, in its origins, the creation of craftsmen working at home in their own way and **being**, as far as was possible, their own boss. They evolved basic ideas and methods. The **sub-division** of labour, specialisation through repetition work, was perfected by them, in principle, in a civilised way. Lesser people **took** the idea and debased it into industrial slavery; which the craftsman detested, and still detests.

Coventry made the jump from the craftsman's world to the world of modern industry in one leap, a hundred **years** ago, and in doing so retained the idea of being civilised at work. It is that that has made Coventry successful. Civilised work paid. Many times have our men been misled and sidetracked. They have had their ideas diluted by lesser men and have been ridiculed as obsolete. But their idea still persists: they want people at work to be civilised. Their great task now is to compel mass production to be civilised.

Appendix A

An example of a gang sheet from the early 1960s

GANG NUMBER - 47

JOB NUMBERS

5708	Agreed price for jobs
5890	completed £203.13.1
5921	£260. 0.0
	£128. 0.0
<hr/>	
Gang Earnings - Total	£591.13.1

Men's Check Numbers	Hours Worked	Basic Pay	Piecework Earnings per man (Share of total gang earnings)
3621	41.75	£3. 3.8	£19. 9.11
3542	24.25	£1.16.5	11. 6. 7
3219	52.25	£3.18.5	24. 7.11
3230	36.75	£2.15.2	17. 3. 3
3232	32.75	£2. 9.2	15. 5.11
3242*	32.75	£1. 2.1	6.17. 5
3244*	32.75	£1. 2.1	6.17. 5
3224	16.50	£1. 4.9	7.14. 0
3231	52.50	£3.18.9	24.10. 0
3222	45.00	£3. 7.6	21. 0. 0
3201	45.00	£3. 7.6	21. 0. 0
3204	41.00	£3. 1.6	19. 2. 8
3206	45.00	£3. 7.6	21. 0. 0
3214	45.00	£3. 7.6	21. 0. 0
3217	41.00	£3. 1.6	19. 2. 8
3220	41.00	£3. 1.6	19. 2. 8
3221	52.50 deputy ganger	£3. 18.9	24.16. 0
3226	41.00	£3. 1.6	19. 2. 8
3225	48.50	£3.12.9	22.12. 8
3228	42.00	£3. 3.0	19.12. 0
3253	41.00	£3. 1.6	19. 2. 8
3233	45.00	£3. 7.6	21. 0. 0
3234	41.00	£3. 1.6	19. 2. 8
3236	41.00	£3. 1.6	19. 2. 8
3239	41.00	£3. 1.6	19. 2. 8
3241	45.00	£3. 7.6	21. 0. 0
3246	48.50	£3.12.9	22.12. 8
3247	49.00	£3.13.6	22.17. 4
3249	49.00	£3.13.6	22.17. 4
3250	49.00	£3.13.6	22.17. 4
3252	45.00	£3. 7.6	21. 0. 0

TOTAL £591.13.1

* Apprentices, work four days a week for the gang and on the fifth day go to technical college, being paid on that day by the firm.

Gang Sheet: explanatory notes

The normal working week was 41 hours at this time. Basic pay was 1/6d. per hour, except for apprentices who were paid about 8d per hour. The price for a job was agreed for the gang as a whole. Weekly earnings for each man were determined by multiplying his basic earnings by a factor based on the total piecework earnings of the gang for that week. The resulting figures are shown in the extreme right-hand column on the gang sheet.

In addition to piecework earnings a cost of living bonus of £5 for a week of 41 hours was paid to each man.

The ganger and deputy ganger received an extra payment from the firm of 6d., and 3d. per hour, respectively.

There was also a 'Shop Steward's Fund' run by the gang, made up by collections from all its members. This was used to compensate gang stewards and shop stewards for any time lost in work on behalf of the gang or the trade union. If the fund accumulated a surplus the stewards could allocate sums to good causes.

The gang sheet was the property of the gang. It was displayed on the ganger's table where men could check their hours and earnings for the previous week whenever they wanted.

Appendix B

THE CRAFT TRADITION IN COVENTRY

Over 200 years ago, in Coventry, men began to turn the exacting **craft** of watchmaking into an industry. Men learned from a master watchmaker how to become expert in just a part of the watch, and then broke **away** to establish their own workshop, taking with them the best men. Hundreds did **this** and built a mile of houses with Top Shops at the back where each "master man" was the natural leader of a group of like-minded men. He was not considered to be a capitalist, but as he had the major responsibility, he took the larger share of earnings. In the daily practice of the craft he was at one with the man in a face to face democracy as it were. Mondays were usually devoted to "Saint Monday" — in **pubs!** The master with the men. They invented and perfected their own tools, machines and methods, and shared ideas and knowledge between themselves. Each **house** and top shop specialised in some aspect of the watch and the watch finisher completed the job. (My father and grandfather were finishers, and the house I live in **was** a master man's house, with a top shop at the back large enough to house **15** to 20 men at **work**). Thus, specialised production, the precursor of mass production, **was** in full operation **well** over **150** years ago. Neighbourliness was the norm — a welfare state was not needed. Most of the work was piecework; some individual, and some by group where it was necessary to pass the parts from man to man, as in a production line today. Such men were the aristocrats of labour in their time, and even in my young days they were still natural gentlemen. There was no idealisation about all this, it was **just** the normal and natural way of life in a stable but very adaptable craft society. Some of the leading men were expert mathematicians and geometers and learning was always face to face, within **the** group. The women of the household helped in ancillary operations; especially polishing. It was thus that many years of prosperity were enjoyed by several thousand people — apart from an occasional slump affecting the whole country. At a late stage a few large factories employed rows of women in continuous production lines, on handwork and machine work, and this was over 100 years ago, before Henry **Ford!**

Over the same period, 200 years, there was a large Silk Ribbon weaving trade carried on in a thousand or so top shops right over the tops of the houses. Badges and ornaments of every kind were also made in **silk**, and around 1800 the Jacquard loom enabled silk picture patterns to be woven. Complete pictures followed at a later date. Whole families and **neighbours** and friends were involved in the production process. Children learned by "helping". Young men apprentices saved money to buy their own looms. Everyone learned from everyone else, *direct*, and good times and bad times being the common lot everyone had fellow feeling. Piecework was normal, the "piece" being a standard length of ribbon. There **was** also a standard price paid for the piece of ribbon etc., which was rigidly adhered to. This prevented cut-throat competition.

It will be seen that in their heyday both watchmaking and ribbon weaving were more than just a cottage craft. They were an industry dispersed in the way people wanted it, *not* as some owner of capital or managing **official** would have it. This, of course, didn't last. Full free trade, just over 100 years ago, wrecked the ribbon weaving and **battles** between workers and capitalists started. The first factories were detested, in name, idea and practice.

Watchmakers, proud of their skill, also eventually had to contend with **cheap** watches from Switzerland and U.S.A., mostly "made of tin". (In my schooldays one could buy an "American" watch for half a crown). New industries were desperately needed.

Just before 1870, during the poverty period of the **weavers**, Starley brought a sewing machine to Coventry to get it manufactured. The mechanical skills needed were available — in the watchmakers. And almost the whole working population of Coventry was, by custom, predisposed to working together in civilised self-organising groups. Starley's sewing machine was **made**, and so was he. A greater success was the bicycle. Starley made it, but before long his best mechanics left him and started on their own account and covered Coventry with cycle factories. The **sub-contracting** methods of the watchmakers were put into full **swing** and groups of craftsmen **component-makers** supplied "the manufacturers", who were largely just **assemblers**. Special **tools** and machine-tools had to be invented and made and the entire town teemed with men grouping and regrouping to meet the demand. It was thus that self-organising groups repeated the watchmakers methods of **100** years before creating an industry out of craftsmen's ideas. The demand for cycles, and tyres, was so great that skilled mechanics poured into **Coventry**. They were accepted on condition that **they** became

"one of **us**". Most of them did; and found that it paid. Piecework paid — and also gave a man a certain amount of control over his working. Social integration at work paid, and giving a new craftsman immediate **status** paid. Success paid so much that Coventry became famous for its **method**: piecework plus social integration at work.

It was thus the obvious place to make the first cars — and then motor bikes and even more advanced machines and tools. Craft-made cars became production jobs based on piecework (repetition work) and factory work became the norm. But even then the men stuck together at work, tried to group together as had been the custom. At **first** this was not so much trade unionism as the natural cohesion of craftsmen. As the car and ancillary industries grew and thousands of new men came to Coventry the firms became even larger and capitalistic; and some of them autocratic in managing. The workers, in opposition, combined in tightly organised trade unions, at first only skilled men, but later including the lesser skilled.

During the First World War, Coventry became a leading production centre for munitions of war, and men swarmed in, 50,000 or more being in lodgings. Repetition work now became "production engineering" and we were in the world of mass production. It was thus inevitable that mass production of cars etc. would be the aim after the war. There was a two-year post-war boom, and almost everyone was at work. But inflation followed by drastic financial measures produced massive unemployment over the following two years (1920-1922). The workers resisted the wage-cuts which resulted but were eventually driven back to work in disarray. Beaten.

As a result the shop steward movement was slowly built up and continuous guerrilla warfare against managements was the order of the day. Some enlightened managements did, **however**, gain workers respect and creative social cohesion at work began again. And then, just as we were feeling our way towards a better world, there came the slump of 1930-31. No work, no place for **cohesion**, no sense in **the** world it seemed.

Coventry, due to the adaptability of its people, did however recover more quickly than most places and began to grope towards civilised ways of working. **Gang** systems were tried out. Trade Unions and their shop stewards had an increasing **say**. Firms amalgamated into larger production units and were getting ready for the mass market of the future. What **was** needed was money, mass money for the people - Keynesian economics, "the economics of plenty." Either that, or, as some said, Socialism - *real* Socialism - or Communism. Instead we had war - the inevitable result of frustrated nations falling for the idiocies of the dictators. In such a world it seemed that the sanity of creative work **through** craftsmen's integrity was impossible. But the craftsman, along with his mate the semi-skilled worker, still retained his integrity, even though he was making weapons for destruction.

As I have indicated in this account, some of us were able to build up a form of democratic gangwork, which was a proved success. Others were not so **successful**. They didn't really believe in it. Some, including trade union leaders, still do not believe. And many employers, who now think they have almost absolute power in management, also do not believe in it. Don't *want* to believe in it. They **fight it!** That is where we are now - in 1972.

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