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Deirdre Hogan

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Introduction

Although it was in the countryside where the most far-reaching anarchist socialisation took place, the revolution took place in the cities and the towns too. At that time in Spain almost 2 million out of a total population of 24 million worked in industry, 70% of which was concentrated in one area - Catalonia. There, within hours of the fascist assault, workers had seized control of 3000 enterprises. This included all public transportation services, shipping, electric and power companies, gas and water works, engineering and automobile assembly plants, mines, cement works, textile mills and paper factories, electrical and chemical concerns, glass bottle factories and perfumeries, food processing plants and breweries.

It was in the industrial areas that some of the first collectivisations took place. On the eve of the military uprising a general strike was called by the CNT. However once the initial period of fighting was over it was clear that the next vital step was to ensure the continuation of production. Many of the bourgeoisie sympathetic to Franco fled after the defeat of the insurgent armed forces. The factories and workshops owned by these were immediately seized and run by the workers. Other sections of the bourgeoisie were reluctant to keep the factories going and by closing them attempted to indirectly contribute to Franco's cause. Closing factories and workshops would also lead to higher unemployment and increasing poverty, which would play into the enemy's hands. "The workers understood this instinctively, and established in almost all workshops, control committees, which had as their aim to keep a watch on the progress in production, and to keep a check on the financial position of the owner of each establishment. In numerous cases, control was quickly passed from the control committee, to the directive committee, in which the employer was drawn in with the

¹ Gaston Leval, Collectives in Spain, http://dwardmac.pitzer.edu/Anarchist_Archives/leval/collectives.html

workers and paid the same wage. A number of factories and workshops in Catalonia passed in this way into the hands of the workers who were engaged in them.”¹

Also of the utmost importance was to create, without delay, a war industry in order to supply the front and to get the transport system moving again so that the militias and supplies could be sent to the front. Thus, the first expropriations of industries and public services took place in order to insure victory over fascism, with anarchist militants taking advantage of the situation to push immediately for revolutionary goals.

The role of the CNT

The social revolution can be best understood in the context of the relatively long history in Spain of workers’ organisation and social struggle. The CNT, which was the major driving force of the collectivisations, had been in existence since 1910 and had 1.5 million members by 1936. The anarchist syndicalist movement had existed in Spain since 1870 and, from its birth to the (partial) realisation of its ultimate ideal during the social revolution, had a history of constant engagement in intense social struggle - ”Partial and general strikes, sabotage, public demonstrations, meetings, struggle against strikebreakers., imprisonment, transportation, trials, uprisings, lock-outs, some attentats”²

Anarchist ideas were widespread by 1936. The circulation of anarchist publications at that time gives us some idea of this: there were two anarchist dailies, one in Barcelona, one in Madrid, both organs of the CNT with an average circulation of between 30 and 50 thousand. There were about 10 periodicals, in addition to various anarchist reviews with circulations of up to 70,000. In all the anarchist papers, pamphlets and books, as well as in their trade

² Gaston Leval, *Collectives in the Spanish Revolution*, Freedom Press, 1975, chapter 2, pg54.

surely contributed to the final defeat of the Spanish Republic by the Francoist forces in 1939.”⁵

Conclusion

Despite the limitations of the Industrial revolution in Spain, it demonstrated clearly that the working class are perfectly capable of running factories, workshops and public services without bosses or managers dictating to them. It proved that anarchist methods of organising, with decisions made from the bottom up, can work effectively in large scale industry involving the coordination of thousands of workers across many different cities and towns. The revolution also gives us a glimpse of the creative and constructive power of ordinary people once they have some control over their lives. The Spanish working class not only kept production going throughout the war but in many cases managed to increase production. They improved working conditions and created new techniques and processes in their workplaces. They created, out of nothing, a war industry without which the war against fascism could not have been fought. The revolution also showed that without the competition bred by capitalism, industry can be run in a much more rational manner. Finally it demonstrated how the organised working class inspired by a great ideal have the power to transform society.

www.struggle.ws/spain/coll_1.html

In order to gain control over the collectives, to minimize their scope and to oppose moves made by the working class in the direction of economic unification and overall economic regulation from below, the Catalan State issued the Collectivisation Decree in October 1936. The decree which "legalised" the collectives, prevented them from freely developing into libertarian communism by obliging each workshop, and each factory to sell that which it produced, independently. The state attempted to control the collectives through the decree by creating administrative committees which were answerable to the Ministry of Economy. The decrees also allowed only factories of 100 or more workers to be collectivised.

As mentioned earlier, the C.N.T. militants fought against this system and for greater inter-workplace co-ordination. In their press and within meetings in their unions and collectives they worked at convincing their fellow workers of the dangers of partial collectivisation, of the necessity of keeping the control of production entirely in their own hands and of eliminating the workers' bureaucracy which the collectivisation decree attempted to create. They were partially successful, and the industrial collective tended towards greater socialisation. However, they suffered from the increasing difficulty of obtaining raw materials as well as from the continuing counter-revolutionary attacks. Attempts were made to sabotage the functioning of the collectives. These included deliberate disruptions of urban-rural exchanges and the systematic denial of working capital and raw materials to many collectives, even war industries, until they agreed to come under state control.

Then in May 1937, street battles broke out as government troops moved against urban collectives such as the CNT controlled telephone exchange in Barcelona. In August 1938, all war-related industries were placed under full government control.

"In all cases where the collectives were undermined, there were substantial drops in both productivity and morale: a factor which

⁵ Lucien Van Der Walt, *The Collectives in Revolutionary Spain*, <http://>

union and group meetings, the problem of the social revolution was continuously and systematically discussed. Thus, the radical nature of the Spanish working class, politicised through struggle and confrontation, as well as the influence of anarchist ideas meant that in a revolutionary situation anarchists were able to obtain mass popular support.

The CNT had a very strong democratic tradition at its core. Decisions on all local and immediate matters such as wages and conditions were in the hands of the local membership who met regularly in general assembly. Mutual aid and solidarity between workers was encouraged and posed as the central way of winning strikes. The CNT organised all workers irrespective of skill. In other words, workers were encouraged to form one general union with sections based on a particular industry rather than separate unions for each different job within an industry. Both the democratic tradition and the industrial nature of the trade union greatly influenced the structures of the revolutionary collectives, which generally, grew out of and were shaped by the industrial unions already in place.

Another important aspect of the CNT that accounted for the strength of the revolution was its use of direct action. "The CNT had always advocated 'direct action by workers themselves' as a means of solving disputes. This policy encouraged self-reliance and self-confidence within the union and membership - there was a prevailing culture of 'if we want something sorted out, we have to do it ourselves'."³ Finally the federal structure of the CNT which was based on local autonomy and which created a stable but highly decentralised form also encouraged self-reliance and initiative, indispensable qualities which greatly contributed to the success of the revolution.

Gaston Leval highlights the importance that this culture of direct democracy and self-reliance has when it comes to a revolutionary

³ Kevin Doyle, *The Revolution in Spain*, http://www.struggle.ws/talks/spain_feb99.html

situation when he compares the role of the CNT with that of the UGT in the collectivisation of the railways. Describing the highly organised, efficient and responsible manner in which the railway industry was put back into action under revolutionary control in only a few days he writes "All this had been achieved on the sole initiative of the Syndicate and militants of the CNT Those of the UGT in which the administrative personnel predominated had remained passive, used to carrying out orders coming from above, they waited. When neither orders nor counterorders came, and our comrades forged ahead, they simply followed the powerful tide which carried most of them along with it."⁴

This history of struggle and organisation and the anarcho-syndicalist nature of their union gave the CNT militants the necessary experience of self-organisation and initiative which could then be put to use naturally and effectively in the reorganisation of society along anarchist lines when the time came. "It is clear, the social revolution which took place then did not stem from a decision by the leading organisms of the CNT... It occurred spontaneously, naturally, not ...because "the people" in general had suddenly become capable of performing miracles, thanks to a revolutionary vision which suddenly inspired them, but because, and it is worth repeating, among those people there was a large minority, who were active, strong, guided by an ideal which had been continuing though the years of struggle started in Bakunin's time and that of the First International."⁵

⁴ Gaston Leval, *Collectives in the Spanish Revolution*, Freedom Press, 1975, ch 12, pg254

⁵ *ibid*, chapter 4, pg80.

sarily require a new form of political structure."² However, as long as the capitalist political structure - state power - remained, the new economic organisation could not develop and full coordination of the economy was held back.

Counter Revolution

The industrial collectives were hindered from advancing in the same manner as the agricultural collectives "as a consequence of contradictory factors and of opposition created by the coexistence of social currents emanating from different social classes."³ In the industrial town of Alcoy, for example, where the Syndicates had immediately gained control of all industries without exception, the organisation of production was excellent. However Leval points out: "the weak point was, as in other places, the organisation for distribution. Without the opposition of tradesmen and the political parties, all alarmed by the threat of complete socialisation, who combated this "too revolutionary" programme, it would have been possible to do to better... For the socialist, republican and communist politicians actively sought to prevent our success, even to restoring the old order or maintaining what was left of it."⁴ The counter-revolutionary forces were able to unite in their opposition to the revolutionary changes taking place in Spain and use the power of the state to attack the collectives. From the start the State remained in control of certain resources, such as the country's gold reserves. Through its control of the gold reserves and its monopoly of credit the Republican state was able to take aspects of the economy out of the control of the working class and thus undermine the progress of the revolution.

³ Gaston Leval, *Collectives in the Spanish Revolution*, Freedom Press, 1975, ch 11, pg227

⁴ *ibid*, ch 11, pg239.

What happened...?

The revolution, however, was unable to extend itself due mainly to the fact that while the rank and file seized control of the factories and pursued the work of socialisation, there was a failure to consolidate these gains politically. Instead of abolishing the state at the outbreak of the revolution, when it had lost all credibility and existed only in name, the state was allowed to continue to exist, with the class collaboration of the C.N.T leadership (in the name of antifascist unity) lending it legitimacy. Thus, there existed a period of dual power, where the workers had a large element of control in the factories and streets but where the state was slowly able to rebuild its power base until it could move against the revolution and take power back. The economic shortcomings of the revolution: the fact that the financial system was not socialised, that collectivisation lacked unity on a national level, that the industrial collectives did not go further than, at best, co-ordination at the level of industry, is inextricably linked to this major political mistake and betrayal of anarchist principles.

In order to achieve libertarian communism with production based on need and communal ownership of means of production as well as of what is produced it was necessary to replace the entire capitalist financial system with an alternative socialised economy based on federative unity of the entire workforce, and a means of making collective decisions for the entire economy. This required the setting up of workers congresses and a federal coordinating structure which would unify collectives all over the country and allow for effective coordination and planning for the economy as a whole. This new system of economic and political organisation must replace the government and capitalist market economy. As Kropotkin said, "a new form of economic organisation will neces-

² Kropotkin cited in the anarchist FAQ, I.8.14, <http://www.geocities.com/CapitolHill/1931/secI8.html#seci814>

Anarchist democracy in action in the collectives

The collectives were based on the workers self-management of their workplaces. Augustin Souchy writes: "The collectives organised during the Spanish Civil War were workers' economic associations without private property. The fact that collective plants were managed by those who worked in them did not mean that these establishments became their private property. The collective had no right to sell or rent all or any part of the collectivised factory or workshop, The rightful custodian was the CNT, the National Confederation of Workers Associations. But not even the CNT had the right to do as it pleased. Everything had to be decided and ratified by the workers themselves through conferences and congresses."⁶

In keeping with the democratic tradition of the CNT the industrial collectives had a bottom up delegate structure of organisation. The basic unit of decision-making was the workers' assembly, which in turn elected delegates to management committees who would oversee the day-to-day running of the factory. These elected management committees were charged with carrying out the mandate decided at these assemblies and had to report back to and were accountable to the assembly of workers. The management committees also communicated their observations to the centralised administrative committee.

Generally, each industry had a centralised administrative committee made up of a delegate from each branch of work and workers in that industry. For example, in the textile industry in Alcoy there were 5 general branches of work: weaving, thread making, knitting, hosiery and carding. The workers from each of these specialised areas elected a delegate to represent them in the industry-wide administrative committee. The role of this committee, which

⁶ Flood et al, Augustin Souchy cited in.. I.8.3, <http://www.geocities.com/CapitolHill/1931/secI8.html#seci83>

also contained some technical experts, included directing production according to the instructions received at the general assemblies of workers, compiling reports and statistics on the progress of work and dealing with issues of finances and co-ordination. In the words of Gaston Leval "The general organisation rests therefore on the one hand on the division of labour and on the other on the synthetic industrial structure."⁷

At all stages, the general assembly of Syndicate workers was the ultimate decision making body. "all important decisions [being] taken by the general assemblies of the workers, . . . [which] were widely attended and regularly held. . . if an administrator did something which the general assembly had not authorised, he was likely to be deposed at the next meeting."⁸ Reports by the various committees would be examined and discussed at the general assemblies and finally introduced if the majority thought it of use. "We are not therefore facing an administrative dictatorship, but rather a functional democracy, in which all specialised works play their roles which have been settled after general examination by the assembly."⁹

Advancing along the road of Revolution

The stage of industry-wide socialisation did not occur overnight but was a gradual and ongoing process. Nor did the industrial collectives proceed in the same manner everywhere, the degree of socialisation and the exact method of organisation varying from place to place. As mentioned in the introduction, while some work places

⁷ Gaston Leval, *Collectives in the Spanish Revolution*, Freedom Press, 1975, ch 11, pg234.

⁸ Robert Alexander cited in the Anarchist FAQ, I.8.3, <http://www.geocities.com/CapitolHill/1931/secI8.html#seci83>

⁹ Gaston Leval, *Collectives in Spain*, http://dwardmac.pitzer.edu/Anarchist_Archives/leval/collectives.html

Difficulties and Weaknesses

Limitations

The revolution in the countryside was more advanced than the collectivisations that took place in the industrial areas. Many of the agricultural collectives succeeded in reaching a stage of libertarian communism, operating on the principle "from each according to ability, to each according to need". Both consumption and production were socialised. "In them one did not come across different material standards of life or rewards, no conflicting interests of more or less separated groups."¹⁹ This was not the case with the collectivisation in the towns and cities, where aspects of the capitalist money economy still existed along with a fair proportion of the bourgeoisie, state institutions and traditional political parties. Collectivisation was limited to workers' self-management of their workplaces within the framework of capitalism, with workers running factories, selling goods and sharing the profits. This led Gaston Leval to describe the industrial collectives as a sort of "a workers' neocapitalism, a self-management straddling capitalism and socialism, which we maintain would not have occurred had the Revolution been able to extend itself fully under the direction of our Syndicates."¹

¹ *ibid*, ch 11, pg227.

were so kind and cooperative toward us, really got a kick out of that.”¹⁸

However it is not true to say that women achieved equality with men in the industrial collectives. Wage differentials between men and women continued to exist. Also, except for a few exceptional cases, women were under-represented in the factory committees and other elected positions within the collectives. The continuation of women’s traditional domestic roles was no doubt one of the factors which contributed in preventing the more active participation of women in the collectives and these issues, as well as others that affect women in particular (such as maternity leave), were not prioritised. Although large numbers of women entered the workforce during the revolution, equal participation in the paid workforce was not achieved and because the anarchosyndicalist vision of social organisation was based around the workforce, people not in the industrial collectives were effectively excluded from social and economic decision making.

were immediately seized by the workers, in others they gained control of their workplaces by first creating a control committee which was there to ensure the continuation of production. From this the next natural step was the take over the workplace entirely by the workers.

Initially, when the continuation of production was the most pressing task, there was little formal co-ordination between different workshops and factories. This lack of co-ordination caused many problems as Leval points out: ”Local industries went through stages almost universally adopted in that revolution . . . [I]n the first instance, committees nominated by the workers employed in them [were organised]. Production and sales continued in each one. But very soon it was clear that this situation gave rise to competition between the factories. . . creating rivalries which were incompatible with the socialist and libertarian outlook. So the CNT launched the watchword: ’All industries must be ramified in the Syndicates, completely socialised, and the regime of solidarity which we have always advocated be established once and for all.”¹⁰

The need to remedy this situation - where although the workers had gained control of the workplaces the different workplaces often operated independently and in competition with each other - and to complete the socialisation process and so avoid the dangers of only partial collectivisation was a task of which many workers were keenly aware. A manifesto of the Syndicate of the wood industry published in December 1936 stresses that the lack of coordination and solidarity between workers in different factories and industries would lead to a situation where workers in more favoured and successful industries would become the new privileged, leaving those without resources to their difficulties, which in turn would lead to the creation of two classes: ”the new rich and ever poor, poor.”¹¹

¹⁰ Gaston Leval quoted in the anarchist FAQ, I.8.4

¹¹ From the Manifesto of the CNT Syndicate of the wood industry, quoted in *Collectives in the Spanish Revolution*, Gaston Leval, Freedom Press, 1975, ch 11, pg231.

To this effect increasing efforts were made by the collectives not to compete with each other for profits but instead to share the surpluses across whole industries. So for example the Barcelona tramways, which was particularly successful, contributed financially to the development of the other transport systems in Barcelona and helped them out of temporary difficulties. There were many cases of solidarity across industries too. In Alcoy, for example, when the printing, paper and cardboard Syndicate was experiencing difficulties the 16 other Syndicates that made up the local Federation in Alcoy gave financial assistance that enabled the printing Syndicate to survive.

However as well as bringing an anarchist society a step closer it was also a question of efficient industrial organisation. In the manifesto published by the wood industry Syndicate it was stated "The Wood Syndicate has wanted to advance not only along the road of the Revolution, but also to orientate this Revolution in the interests of our economy, of the people's economy."¹² In December 1936 a plenum of syndicates met and made analyses on the need to completely reorganise the inefficient capitalist industrial system and press onward towards complete socialisation. The report of the plenum stated:

"The major defect of most small manufacturing shops is fragmentation and lack of technical/commercial preparation. This prevents their modernisation and consolidation into better and more efficient units of production, with better facilities and coordination. . . . For us, socialisation must correct these deficiencies and systems of organisation in every industry. . . . To socialise an industry, we must consolidate the different units of each branch of industry in accordance with a general and organic plan which will avoid competition and

¹² *ibid*, ch 11, pg230.

labour could be used on improvements such as a new barrage near Flix constructed by 700 workers which resulted in a considerable increase in the available electricity.

Participation of women in the collectives

One major change brought about during the revolution was the large scale incorporation of women into the workforce. The CNT began seriously to push for the unionisation of women workers. In the textile industry, piecework for women was abolished and homeworkers incorporated into the factories, which generally meant improvement of wages and hours worked. The responsibility for childcare and housework was, however, still left to women and many women found it difficult to balance their multiple roles. Sometimes childcare was provided by the collectives. For example, the wood and building trades union in Barcelona as well as building a recreational area with a swimming pool, also reconverted a church into a day-care centre and school for workers' children.

Mujeres Libres, the women's anarchist organisation, organised secciones de trabajo with responsibilities for specific trades and industries which cooperated with relevant CNT syndicates. These secciones de trabajos helped set up childcare centres in factories and workshops as well as running schools and training programs to prepare women for work in factories. These training programs helped women access work which had previously been restricted to men. For example, one of the first women licensed to drive trams in Barcelona describes her work there: "They took people on as apprentices, mechanics, and drivers, and really taught us what to do. If you could only have seen the faces of the passengers [when women began serving as drivers], I think the companeros in Transport, who

¹⁸ Pura Perez Arcos cited by Martha A. Ackelsberg, *Free Women of Spain, anarchism and the struggle for the emancipation of women*, Indiana University Press, 1991, ch 5, pg125.

was accomplished by the creative capacity of the members of the Optical Workers' Union of the CNT."¹⁶

A good example of the scale of some of the industrial collectives is the textile industry which functioned efficiently and employed "almost a quarter of a million textile workers in scores of factories scattered in numerous cities... The collectivisation of the textile industry shatters once and for all the legend that the workers are incapable of administrating a great and complex corporation."¹⁷

One of the first steps towards building an anarchist society is the equalisation of wages. This is necessary in order to finish the divisions within the working class, divisions which only serve to weaken the class as a united whole. In the industrial collectives often this did not happen immediately and there sometimes existed relatively small differences in wages between technical and less specialised workers. Wages were decided by the workers themselves at the general assemblies of the Syndicates. When wages differences, between workers with technical responsibilities and those without, were accepted by the majority of workers this was often seen as a temporary measure to avoid provoking conflicts at this stage of the revolution and to ensure at all costs the smooth continuation of production. Highly paid executive wages, however, were abolished and ex-bosses given the option of leaving or working as one of the regular workers, which they often accepted.

With private profit as the main motivating factor in the organisation of industry gone, industries could be reorganised in a more efficient and rational manner. For example, there were many electricity generation stations scattered all around Catalonia which produced small and insignificant outputs and which, although suited to private interest, were not in the public interest at all. The electricity supply system was completely reorganised, with some of the inefficient stations closed. In the end this meant that the saving in

¹⁷ Augustin Souchy, Collectivization in Catalonia, http://www.struggle.ws/spain/coll_catalonia_dolgoft.html

other difficulties impeding the good and efficient organisation of production and distribution. . ."¹³

The effort made to do away with the smaller, unhealthy and costly workshops and factories was an important characteristic of the industrial collectivisation process. As was the case with land cultivation, it was felt that with the running of workshops and factories" the dispersal of forces represented an enormous loss of energy, an irrational use of human labour, machinery and raw materials, a useless duplication of efforts."¹⁴ For example, in the town of Granollers "All kinds of initiatives tending to improve the operation and structure of the local economy could be attributed to...[the Syndicate]. Thus in a very short time, seven collectivised hairdressing salons were set up through its efforts, replacing an unknown number of shabby establishments. All the workshops and mini-factories on shoe production were replaced by one large factory in which only the best machines were used, and where necessary sanitary provisions for the health of the workers were made. Similar improvements were made in the engineering industry where numerous small, dark and stifling foundries were replaced by a few large working units in which air and sun were free to penetrate... Socialisation went hand in hand with rationalisation."¹⁵

The creative drive unleashed

The Barcelona Tramways

As was the case with the collectives in the countryside, workers self-management in the cities was associated with remarkable

¹³ Cited by Souchy, cited in the Anarchist FAQ, section I.8.3, <http://www.geocities.com/CapitolHill/1931/secI8.html#seci83>

¹⁴ Gaston Leval, *Collectives in the Spanish Revolution*, Freedom Press, 1975, ch 12, pg259

¹⁵ *Ibid*, ch 13, pg287.

improvements in working conditions, productivity and efficiency. Take for example the achievements of the Barcelona tramways. Just five days after the fighting had stopped, the tramways lines had been cleared and repaired and seven hundred tramcars, which was a hundred more than the usual six hundred, appeared on the road, all painted diagonally across the side in the red and black colours of the C.N.T. - F.A.I. The technical organisation of the tramways and the traffic operation was greatly improved, new safety and signalling systems were introduced and the tramway lines were straightened. One of the first measures of the collectivisation of the tramways had been the discharge of the excessively paid company executives and this then enabled the collective to reduce the fares for passengers. Wages approached basic equality with skilled workers earning 1 peseta more a day than labourers. Working conditions were greatly improved with better facilities supplied to the workers and a new free medical service was organised which served not only the Tramway workers but their families as well.

The Socialisation of Medicine

The socialisation of medicine was another outstanding achievement of the revolution. After July 19 the religious personnel who had been administering the sanitary services disappeared overnight from the hospitals, the dispensaries and other charitable institutions, making it necessary for new methods of organisation to be improvised immediately. To this effect the Syndicate for Sanitary Services was constituted in Barcelona in September 1936 and within a few months had 7000 skilled medical professional members, over 1000 of which were doctors with different specialities. Inspired by a great social ideal the aim of the Syndicate was to fundamentally reorganise the whole practice of medicine and of the Public Health Services. This Syndicate was part of the National Federation for Pub-

lic Health, a section of the C.N.T. which by 1937 had 40,000 members.

The region of Catalonia was divided up into 35 centres of greater or lesser importance, depending on population density, in such a way that no village or hamlet was without sanitary protection or medical care. In one year, in Barcelona alone, six new hospitals had been created, including two military hospitals for war casualties as well as nine new sanatoria established in expropriated properties located in different parts of Catalonia. Whereas before the revolution doctors were concentrated in rich areas, they were now sent where they were needed most.

Factories and workshops...

In the factories, too, great innovations were made. Many workplaces, once in control of the workers, were converted to the production of war materials for the anti-fascist troops. This was the case of the metal industry in Catalonia which was completely rebuilt. Only a few days after July 19th, for example, the Hispano-Suiza Automobile Company was converted to the manufacture of armoured cars, ambulances, weapons, and munitions for the fighting front. Another example is the optical industry which was virtually non-existent before the revolution. The small scattered workshops that had existed before were voluntarily converted into a collective which constructed a new factory. "In a short time the factory turned out opera glasses, telemeters, binoculars, surveying instruments, industrial glassware in different colours, and certain scientific instruments. It also manufactured and repaired optical equipment for the fighting fronts. . . .What private capitalists failed to do

¹⁶ The Anarchist Collectives: Workers' Self-management in the Spanish Revolution, 1936-1939, ed. Sam Dolgoff, Free Life Editions, 1974, ch 7. http://www.struggle.ws/spain/coll_innov.html