

Mechanisation and Productivity in the Linen Industry

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Mr. President and Gentlemen,

In considering what I have to say to-night, I would like it to be clearly appreciated from the outset that the business of growing and processing flax—its conversion into yarns—their later weaving into linen fabrics—and the final cloth-bleaching, dyeing, and finishing processes constitutes a *craft* trade of a very high order. It is essential to keep this fact prominently in mind, for it severely limits the extent to which productivity in the industry can be increased by a process of mechanisation similar to that which has taken place in the manufacture of rayon or cotton. For this reason the manufacture of linen, particularly in the fine end of the trade associated with Northern Ireland, involves a much higher proportion of operatives to machinery than rules in the cotton trade of Lancashire, or in the rayon industry.

Most of you are aware of the “antiquity” of flax and linen, which hold first place in textiles in this respect. Long before Biblical times, flax was playing its part in providing man with a means of survival, apart from its use as clothing. And it is interesting to note that when those of us with several generations of experience of linen manufacturing come to compare present-day products with the carefully-guarded examples of linen found in the tombs of the early Egyptians, we are struck by the similar characteristics, in spite of crude production by hand having given way to power methods aided by a hundred years or more of considerable inventive and scientific progress.

Some say quite naturally that research and other aids to present-day industry should by now have shaped things differently, reducing our “craft” problems, improving our seed and fibre in a manner which would have made the task of linen-producers more simple and brought about substantial economies in the costs of manufacture. We linen-makers are constantly striving to achieve gains in these very important directions, but our progress is necessarily slow, except perhaps in the heavy end of the industry—for example, in Scotland where the coarser product manufactured lends itself more easily to mass-production methods of handling.

Let us consider for a moment some of the difficulties involved in the production of flax. To-day most of the flax used in the Northern Ireland linen industry comes from France and Belgium. Selection becomes more and more difficult yearly. Some say that the effect of the “*iron curtain*,” presenting as it does since 1939 barriers to exchange of seed, has considerable bearing upon crop circumstances. Others argue that the soil—in terms of humus—is not what it was

50 years ago when artificial fertilisers were largely unknown. Many contend that mechanical handling of the raw fibre which has taken the place of family labour, the changes in retting procedure (that is to say the steeping of flax in the early stages in order to separate the fibre from the straw stem) are responsible for present-day problems and shortcomings. Probably *all* the reasons I have mentioned contribute their part to our worsened raw material position. Thirty years of research, substantially contributed to by the D.S.I.R. and supported by trade subscriptions, may admittedly have helped us in many minor directions, but not in those concerning basic, large-scale economies or improvements. Suffice it to say that in spite of the combined efforts of the industry and the Northern Ireland Government, there has been a very rapid decline in the acreage of flax sown in the Province. To some extent, this is because flax is a difficult crop to grow: it requires a large amount of direct handling, and its yield is prone to fluctuate sharply. To some extent the decline is due to the high prices which the farmers have obtained for other crops in post-war years, crops which are less tedious to grow, and which require less labour. It seems unlikely that there will be any substantial increase in home flax production so long as the prices of oats, barley and other crops remain at their current levels.

I will now pass on to the important stage of spinning. Flax fibre is extremely variable in length and difficult to control in its conversion into yarns. Many costly processes and much skill is involved in yarn-production. Carefully-produced, well-handled yarn is essential to the loom.

Certain improvements in fields of mechanisation and productivity have been applied in the last decade in spinning, but only in the coarser end of the trade, and it is doubtful if the economies achieved in production have not been offset by a worsened product. Probably the most fundamental recent change in spinning techniques has been the application of ring spinning to the production of linen yarns, but it is unlikely that more than 5% of the present capacity of the spinning trade consists of ring spinning frames. The fact remains that flax, at all stages, requires coaxing and guiding in its movements over and through machinery rather than a forcing of the pace associated with the present-day aim for higher and higher productivity in other textiles. The hurrying of flax yarn-production can be dearly paid for at the later stage of weaving.

By far the most important recent advance in the weaving of textiles other than linen has been the development of the so-called automatic loom, in which the weft supply is renewed by mechanical means rather than by hand. In the cotton, wool and rayon industries these looms have led to considerable increases in efficiency, for the time lost in renewing the weft supply is significantly reduced, and perhaps more important, the number of looms which can be operated by a weaver is substantially increased. But in the weaving of *linen* cloth the advantages of the automatic loom tend to be offset by the changes in yarn preparation and other services which it necessitates. For the production of a given linen cloth on an automatic loom it is essential to use a warp yarn of much higher quality than would be necessary for the production of the same cloth on a non-automatic

loom. Again, because of its complexity, the automatic loom requires much more attention from loom tenters and fitters than the non-automatic loom. When all the costs are taken into consideration, the superficial advantages of automatic weaving become much less impressive. Where factories in Northern Ireland are using automatic looms successfully, it will be found that these looms are substantially engaged in weaving cotton or rayon fabrics.

The most successful manufacturers in our midst maintain full employment and high production more by possessing versatile machinery, and by sound planning of work in process, than by any other means. Such firms continue to weave their linens—both jacquard and plain—on non-automatic looms. It is only possible, of course, to “measure” results accurately and make comparisons properly if one possesses a system of recording such as is essential (to any organisation worthy of the name) for costing and general-information purposes. Far too many Northern Ireland linen manufacturers still employ rule-of-thumb methods in determining matters, and supposed economies are too often more than discounted by the higher overheads which pile up when the older craft methods of manufacturing give way to so-called modern ones.

In successful linen weaving, as in spinning, patience, dexterity, indeed inherited skill, can play a greater part than any thing else in making for success.

I would like to pay tribute to-night to the wonderful band of operatives which the Irish linen industry employs and enjoys, approximately 85% of which is female. Nowhere can they be equalled. If recruits are to come forward in sufficient supply, two requirements are essential :—

- (1) Proper training during the early stages of work, and
- (2) The availability of continuous employment on attractive wage-terms.

In the past there has been too much “leaving it to chance” to provide recruits who in many cases received only indifferent training, and as a result took too long in becoming proficient operatives capable of bringing home “good money” in the shape of earnings. A craft trade is necessarily a tedious one, demanding patience, but the craft must not be too laborious, nor too slow in yielding satisfactory remuneration.

Payment by the piece-rate system, with suitable additional incentive-bonus rewards in certain cases, are increasingly in evidence in our industry, and such policy cannot have too close attention.

It is necessary, I think, at this stage that I should say a word about the effect which cloth-merchandising policy can have upon productivity. In the past—I refer to the period of time which ended at the outbreak of the 1939 war—the linen industry accepted too readily the theory that business demand was bound to wane periodically, and that in times of depression unemployment relief was there for those temporarily discharged, expected to return willingly at the call of the employer perhaps several months later. This attitude of mind which, strangely enough, both employer and employee seemed to share, unquestionably retarded progress in the past. Employers, in these circumstances of fluctuating demand, being alive to the resultant upward and downward movements in

flax, were prone to recover losses by speculative transactions in raw materials, and were, I believe, often remarkably successful in doing so in both "short" and "long" operations. But of course this was only possible while workers were prepared to accept these fluctuating employment conditions. To-day, quite properly, skilled workers seek and find alternative work of one kind and another. The firm unable to offer continuous well-remunerated employment will find its labour force melting away.

There were exceptions, of course, in the Northern Ireland linen industry to this pre-war acceptance of fluctuating demand for the product. The few firms who in the past realised their responsibilities to their work-people, and who specialised in versatility, bringing-round merchandise for stock in dull times, are still in the lead in our midst, I am glad to say. But it is true nevertheless that old industries with "craft" associations and backgrounds are prone more than the younger, bolder type to accept the trade cycle as an "Act of God."

To me, one of the peculiar features of the Irish linen trade has always been its patient waiting for the customer to state his needs rather than a "commencing-upon-manufacturing" and aggressive sales policy based upon a study of the consumer markets and the catering for their potential demand in advance.

You may say that this is lack of vision, poor sales tactics, and so forth. Again the craft atmosphere has considerable bearing upon matters. It must be remembered that to mount and equip a jacquard loom costs perhaps hundreds of pounds before the weaving stage is reached. Further, customers can be exceedingly jealous people and difficult to handle. Unhappy too often is the lot of a salesman, if, for example, distinctive-type goods sold are discovered at a later stage in the windows of a nearby competitor. All this has a retarding and frustrating effect upon the manufacturer who naturally can become cautious and is inclined to wait for decisions rather than make them himself. A very wide range of merchandise is also expected by the linen distributor, this resulting too often in excessive stock-carrying and the uneconomical manufacture of goods in small quantities by the maker striving to please all parties.

I fear all this may sound more of a treatise on sound, or unsound merchanting than a paper on mechanisation and productivity, but unquestionably many of our industry's past troubles are the result of lack of courage, imagination, and enterprise.

Proper mechanisation and productivity depend upon a continuing demand for a finished product. In my view, this can only be achieved by a well-balanced vertical organisation, operated on bold lines, which will keep up the momentum of production at all costs, aided by a serious body of thrusting workers who by means of piece-rate earnings, or output bonuses of some kind, share in the resultant prosperity.

The operating of such an organisation, possessing able direction giving a lead to its work-people, can be one of the most interesting tasks imaginable. In such circumstances, even when strong competition applies from linen-producing sources abroad, obstacles can be a spur to greater and greater incentive. Grave risks may have to be taken at times. Monopoly restrictions may have to be strongly

resisted. Considerable capital, and appropriate borrowing facilities, are essential, but high output, involving much more close attention to detail in a "craft" trade than in any other, expressed in terms of reduced manufacturing cost, can go a long way to ensure steady and continuous, if not rapid, improvement in "mechanisation and productivity."

In my opinion, far too much money has been spent in recent post-war years in so-called "modern development" here in our midst, by people who have not yet mastered the fundamental principles of manufacturing and business-transacting. Government grants have been too easily obtained without exploration of the full circumstances. Re-equipment measures in the linen industry must of necessity be a closely-studied, slow policy. This view must be accepted and supported by the Trade Unions. We need not expect great achievements from expensive machinery evolved to handle man-made fibres and fabrics rather than "natural" ones. The existing machinery of the linen industry is excellent, and sufficiently versatile for our needs in linen-producing directions. What we require most is concentration upon and proper use of "know-how." Imagination, enthusiasm, and above all leadership must play their parts. The very difficulties I have described in our *craft* circumstances can be turned increasingly to our advantage if we face up to them and use them in the right way. We should be proud and thankful that we have a trade—an inheritance of skill and craft—here in our midst—something with roots and stability, when most of our textile competitors the world over, bewildered by the almost-too-rapid scientific development of this age, grope round for some "wonder fabric" which will not be out-distanced.

The linen industry can never hope to be a low-cost one, but we can surely find sufficient markets for our product—the best natural, vegetable fibre and fabric the world has ever known—provided we lay our minds to the task seriously, refusing to accept the view that scientific development in man-made directions are our enemy. These, in my view, are merely complementary activities and developments.

The textile industry of Northern Ireland had in the years 1950, 1951 and 1952—on average—a gross output of some £48,000,000, of which a substantial proportion was linen merchandise. Within the same period Northern Ireland *linen exports* alone averaged some £19,000,000. And it should never be forgotten that some 59,000 operatives of all kinds derive employment from our textile activities.