

NEWALL

GROUP

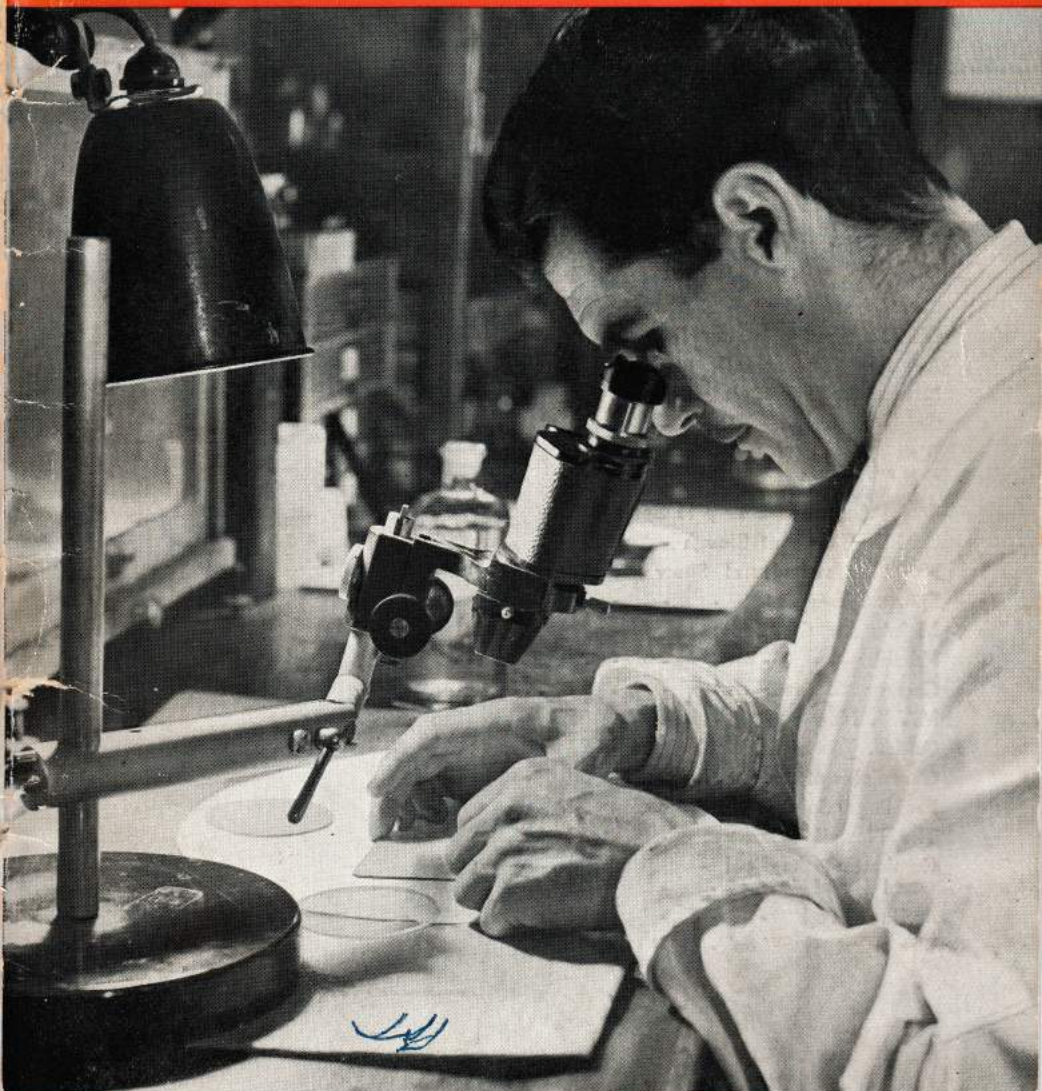
PRECISION

No. 2

Vol. 1

November, 1947

PRICE 6d.



A QUARTERLY MAGAZINE DEVOTED TO THE ACTIVITIES OF THE NEWALL GROUP OF COMPANIES

This magazine is mainly concerned with the activities and interests of the Newall Group of Companies.

*The Newall Engineering Co. Ltd.,
Peterborough.*

*Optical Measuring Tools Ltd.,
Slough.*

*Keighley Grinders (Machine Tools)
Ltd., Keighley.*

*James C. Kay & Co. Ltd.,
Bury*

*Machine Tool Electrics Ltd.,
Leigh-on-Sea.*

Machine Tools and Gauges.

*Optical and Scientific Measuring
Instruments and Optics.
Grinding Machines.*

Ironfounders.

*Electrical Switch and Control Gear,
and Electronic Equipment.*

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Cover Design

A graticule being examined with a 70 times magnification. It is essential that lines are uniform, unbroken and are of prescribed thickness, as well as being to the required form and profile.

Precision

MAGAZINE OF THE NEWALL ENGINEERING GROUP



November 1947

No. TWO

Vol. ONE

EDITOR : J. PEERS

Editorial

THE resumption of the publication of "Newall PRECISION" after so long an interval will be welcomed, we are sure, by all Newall Group personnel.

Our first number was received with unqualified praise, and in every way we were encouraged to plan for bigger and better issues. Mr. Shinwell's fuel crises arrested our plans, and temporarily checked the original intention to issue the magazine at quarterly intervals. This is still our ambition, and every effort will be made to produce an issue for February 1948.

Many articles in this issue have been contributed by members of the staff of Optical Measuring Tools Ltd., so that this becomes virtually an O.M.T. number.

In the next issue we plan to feature the activities and interests of Keighley Grinders, and cordially invite contributions from our Yorkshire colleagues.

We extend our apologies to certain contributors whose articles have had to be withheld from this issue, due to lack of space.

Everyone will be pleased to know that Mr. Denis Player is again in action. He is feeling much better, and wishes to convey his thanks to everyone for the good wishes and kindness shown during his absence. We understand Mr. Player shortly intends to tour the Newall Group.

PROJECTION LIMITATIONS



MUCH has been both written and said for and against the inspection of parts by the projection method, and it is with great trepidation that the writer endeavours to outline certain points that may sometimes be overlooked and which yet have an important bearing on the accuracy of work which may be checked by projection.

The simplest form of projection is that in which a light beam is directed past the object, and the shadow of that object is transposed on to a suitable medium, such as a white screen (commonly known as a "shadowgraph" and which normally requires a darkened room for its application), and which has no means of measurement other than by taking direct rule or scale measurements on the screen.

The conditions which may give rise to errors in the use of the above type of projector are usually confined to one or more of the following:—

- (a) The "human element."
- (b) The magnification factor.
- (c) Abberations.

The "human element" (in this case the inability of the eye to discern small deviations) must always be regarded as the controlling factor governing the accuracy of measurement on the plane of the screen; and if errors of magnification are present along with an aberration of the projected image, then the degree of accuracy is seriously impaired.

Most of the projection systems in use today are reasonably free of distortions, so that if it were possible to eliminate the imperfections of the human element, we could expect near perfect results from shadowgraph checking.

Even with the above restrictions it would still be possible to perform inspection of parts with a fairly high degree of accuracy on such an instrument, provided a sufficiently high power of magnification could be employed; but it is in this respect that difficulties normally become prevalent.

With a simple shadowgraph it is desirable to project a part in its entirety, so that it may be compared with a standard scale outline or measured in the plane of the screen; which obviously restricts the magnification factor as otherwise it would necessitate an instrument being made which would be so large as to be unwieldy and impracticable to employ.

This restriction allied with the limitations of the human eye can and does give rise to error.

The reader will readily appreciate that the normal degree of accuracy to which a rule may be read is in the region of .010" and therefore to check work to the order of tolerance of .0001" which in these days is not unusual, would demand a magnification of 100X at least.

I leave it to the readers' imagination to visualize the difficulties and inconveniences that would arise to check a part of say 2" x 1" in its entirety with a magnification of the order referred to above, and which would entail using a screen of approximately 17 feet x 8 feet to give the necessary accommodation.

All problems, however, are worthy of solution and at Slough works instruments have been developed which enable a wide variety of work to be checked to the order of .0001" using projection as a means to an end but employing only relatively small screens; and having provision to eliminate as far as is possible any doubtful human element; further details of which will doubtless follow in a later issue of this journal.

"NABOB."

BONUS SYSTEMS

by the Shop Committee.

BONUS systems of various kinds have become such a recognised system in industry that the tendency is to overlook the purpose for which they were first developed. Managements, when they think of the subject at all, seem to think they are just giving money away, or have become victims of a new three-card trick worked on a mass scale. Workers for their part consider the whole idea with more than a hint of suspicion, suspecting the use of stop watches and motion-study (a development which takes into account a worker's most intimate motions) by those unfortunate individuals ratefixers.

It would appear therefore that this subject of bonus varies according to your point of view. Of one thing we can be sure. It is not a "new-fangled idea" as some people think. In various forms it has been part and parcel of human relationships since someone first did a service for someone else and got paid a bit extra over the agreed amount.

As can be seen, this bonus business is highly controversial, and worthy of a little detailed study. First of all, what is bonus? For our purpose it can be defined as payment additional to wages for extra effort given to work done, or as the cynical define it, "the carrot before the donkey". But its real purpose in industry is to provide incentive to workers to work harder, an implication which the conscientious worker finds a shade unpalatable. The application of a bonus system to a Works can, if it is applied in a reasonable scheme, be to the mutual advantage of management and workers, each getting a return from it. Usually it is applied on a "time-saved" basis, which should work on the following lines.

Suppose a firm has designed a new grinding machine, and handed the component drawings to ratefixers, who decide times allowed for all the various

machining and fitting operations to build the complete machine. All these times added together give the data necessary to decide, along with material costs, etc., the actual cost of building the machine and its subsequent selling price. The price, then, has been fixed by the ratefixers at, say, 2,000 productive hours. If the times allowed have been fairly laid out the firm will be satisfied if the machine takes the 2,000 hrs. to build, because their price has been fixed on this figure. But this is where the bonus system plays its part. When the machinist or fitter receives his part of the job and sees the time allowed, (they usually faint or call weakly for a shop steward), he sets out to do the job in a shorter time. For example, if the time allowed is 6 hours, he will try to do it in four, thereby saving 2 hours, for which he will be paid at his bonus rate of, say, 1/6d. an hour, earning for himself 3/- bonus from the job. This, of course, is in addition to his continuous hourly rate of, say, 2/-. Study of the foregoing example will show that two things are happening as a result of the incentive properties of bonus. Firstly, if all the machinists and fitters are doing their jobs in a shorter time they too are earning bonus, thereby increasing their earnings by 1/6d. for every hour saved. Secondly, as a result of this extra effort, the firm has produced the machine in the shorter time of, say, 1,500 hours as against the original laid out time of 2,000 hours. As a result the firm has produced the machine cheaper, because the price was fixed on a basis of 2,000 hours at 2/- an hour, and the incentive provided by the bonus resulted on a saving of 500 hours the firm has saved 500 times the difference between the bonus rate of 1/6d. and the continuous hourly rate of 2/-. But bad bonus schemes can have just the reverse effect for which they were introduced. Their incentive effect is nil and they simply result in the times allowed being

(Continued bottom next page)

MR. H. J. ROWE

Career

*being a quarterly feature which
reveals the achievements, the
interests, and the sports of
Newall Group personalities*



PARTICULARS OF MR. H. J. ROWE'S CAREER FROM 1914

1914—1919 Apprentice—Newall Engineering Co. Ltd.; 1919—1930 U.S.A., Gaugemaker—Taft Pierce Manufacturing Co., Toolmaker—Warren F. Fraser Co., Machine Assembly—Heald Machine Co., Treasurer & Secretary—Bethel-Player Co., Sales Engineer—Norton Co.; 1930—1933 Sales Manager—Newall Engineering Co. Ltd.; 1933—1936 Works Manager—E. Showell & Co. Ltd.; 1936—1939 Manager, Gauge Division—Newall Engineering Co. Ltd.; 1939—1943 Assistant General Manager—Newall Engineering Co. Ltd.; 1943—1945 General Manager—Newall Engineering Co. Ltd.; 1945 Managing Director—Optical Measuring Tools Ltd. Age 48; Wife and two children. Hobbies—Golf.

exceeded, which, to return to our example, means that more than the 2,000 hours allowed are taken. The extra hours are of course paid at the 2/- on hour rate. This in turn means that the machine takes longer to produce, the profit is smaller, and no one is satisfied because they are poorer. Board-rooms become agitated, supervision harassed, ratefixers hire bodyguards and shop

stewards are badgered into premature old age. This, of course, is the popular conception of bonus systems, but, given a fair scheme, with no competition from persistent overtime as a rival source of income, the results that can accrue would be very revealing as regards production to both management and worker.

THE SHOP COMMITTEE.

THE MANUFACTURE OF OPTICAL PARTS AND APPLICATIONS

by J. A. Haley,

OPTICAL MANAGER, O.M.T., Ltd.

MY intention is to insert a series of articles quarterly, dealing with general optics and functions.

Almost everybody at some time or other has seen or handled an optical instrument containing optical components, but few people perhaps realise the amount of work and fine craftsmanship which is necessary for the making of these optical parts.

The optical systems are designed by the lens design department for a specific purpose, then split up into various components much the same as the details of a machine tool. Lenses, Prisms, Mirrors, etc., including mounts for lenses, are made in their respective departments.

This and subsequent articles is to describe methods employed in manufacture, also the co-relation of items into the final optical system. The writer proposes to deal with the making of a lens in this article.

The main feature of a lens is its spherical curve, and to enable this curve to be ground and polished it is necessary to use two sets of tools, one for Grinding and one for polishing, both approximate to the curve required on the lens. To check these curves a pair of brass templets are required, concave and convex, of a good mating fit, about .002 is usual. The spherical tools are usually of cast iron or brass, and radii generated on a lathe with the usual radius attach-

ment, the tools one Cave and one Vex, are lapped together with coarse abrasive until good fit is obtained.

Further tests are then made for the depth of the curve, by a spherometer, which consists of a micrometer spindle actuating in a metal dome of a known diameter. By this means, curves can be measured to .0001. In almost all cases, greater accuracies are required, so in addition to templets and spherometers, proof spheres are made of glass in accordance with the finished lens for radii and diameter. To measure these proof spheres, a travelling microscope is used, thus obtaining an accuracy of sphere in the order of .00001, a very good fit revealing Newton ring system when placed together, therefore, enabling lenses to be checked in the course of manufacture.

The actual lens to be made is either glass cut from rough blocks, or moulds approximately to the finished lens. This mould is roughed in the tool using coarse emery powder, then smoothed with finer emery until ready for polishing.

The polishing process is done with pitch correctly formed on concave or convex tool, using rouge as polishing medium. When a high polish is obtained, care must be taken to ensure it is free from scratches or marks because these defects would affect the working efficiency of the lens.

An Innocent Abroad.

THIS is the story of how I went
Touring on the Continent.
I dreamed of Paris in the Spring,
My pals all said, "You lucky thing,"
But when the date arranged draws near
They've cut the juice, but have no fear
You'll go there at an early date,
And this machine you'll demonstrate.
So with my phrase book in my hand
I enter France, the promised land.
I try my best to "Parlez vous,
N'est pas, bonne and veuillez vous,"
But when I go to my hotel,
The waiters all speak English well.
I start to demonstrate the job,
Surrounded by a seething mob
Of fellows, speaking only French,
So I make sketches on the bench.
And though my sketches are not good,
I make my meaning understood,
And in the evening when I'm free,
The sights of Paris I would see.
I stroll along the boulevard,
But I must always be on guard,
Because the French girls, when at play
Will steal a man's good name away.
So on I go to see the sights,
The Champs Elysees bathed in lights.
The Sacré Coeur, The Madelaine,
Then back to my hotel again.
On Sunday I can spend an hour
To clamber up the Eiffel Tower,
And when my work is finished here
I travel home across the mere.
Next I learn with much delight,

"Your boat for Denmark leaves tonight."
So I embark upon the ship,
And to the restaurant I trip.
I watch the stewards as they serve
Twenty varieties of Hors D'oeuvre.
Upon my plate they lay it thick,
I go below, and then . . . I'm sick.
What a night, and what a day,
Leaning o'er the sink this way,
And when at last I reach the land,
I go with passport in my hand,
And when at last I disembark,
I sigh and say: "So here's Denmark."
Now after this I am in clover,
I am so pleased that I've come over.
The food is good and my heart sings,
I view the monuments and things.
Also, of course, I do some work;
This, you know, I must not shirk.
The man I teach on this machine,
Speaks quite good English in between.
The people here are very good,
And give me lots of pre-war food,
That we in England cannot find.
It's all for export; do you mind?
Too soon my work is finished here,
I've tried their bacon, eggs, and beer.
So now the North Sea I must cross,
But to the sea gulls a dead loss,
Because the sea is calm and still,
So I can eat and drink at will.
Thirty-six hours upon the foam,
Back to England, wife and home.

AMBROSE HARKER

(Keighley Grinders (Machine Tools) Ltd)

APPRENTICESHIP SCHEME at O.M.T.

A new Apprenticeship Scheme has been put into force at both the Slough and Maidenhead Works. The Scheme and the Certificate given has been based on a scheme drawn up by the Gauge and Toolmakers' Association. After serving a period of time in the works the Apprentice has the opportunity of taking a certificate for craftsmanship at the City of London Guilds College. Several boys at both Slough and Maidenhead are now coming into this bonafide apprenticeship scheme.

J. HANN,

General Manager.

ACCIDENT PREVENTION

by Nicholas R. Canadine (Labour & Welfare Manager)

ONE of the most important parts of Welfare Management is the recording and analysis of accidents in order to reduce the seriousness of their effect.

Given reasonable respect, modern engineering is SAFE. We have consistently encouraged all employees to use the Ambulance Room for any injury, no matter how trivial it may seem. Sepsis arising from treated injuries in six months was nil. There were 10 cases of sepsis arising from neglected

injuries, mainly caused at home. And sepsis is NOT funny.

The average number of accidents to all employees was slightly over one per person every two months. Most of these were tiny cuts of no importance when treated, but which would have been dangerous if neglected. Although figures can be made to prove anything, it does seem from the above that there are worse places to be than Newall Works. Here is the list:

Injury.	Women.	Boys.	Men.	Total.
Cut Hands & Arms.	25	67	640	732
Eye Injuries.	6	14	226	246
Splinters.	4	5	75	84
Knocks, Grazes and Dropped Objects.	10	20	186	216
Trapped Hands.	3	8	48	59
Strains & Sprains	1	2	11	14
Burns.	—	1	7	8
TOTAL.	49	117	1193	1359

These treatments were spread over all productive occupations in proportion to the number of persons engaged in them. Accident-proneness does exist, and it can be cured. It cannot, however, be cured by the Welfare Manager. The cure lies in the commonsense of the man who takes it around with him. It is easy to pick up a piece of swarf from a rotating bore when the tool is in position. We use a mile or two of bandage every year on people who do that.

These figures can alter in two ways. Their number can increase—meaning the

number of injuries receiving attention—and the importance of the injuries; and the harm done by them will decrease in proportion.

There were 246 treatments for the removal of foreign bodies from eyes, and all were successful. What happens when fellow-workers attempt to remove a piece of grit we would hate to guess. Eye-treatment is a highly skilled operation. The fact that treatment at the machine or bench does not always show ill effects at once means nothing. There is only one place for grit removal, and that is, the Ambulance Room.

(continued overleaf)

One of the most important of the above is the injuries received from "knocks, grazes, and dropped objects". 216 treatments. If all the dropped objects had registered direct hits this figure would have been the highest, we feel, of all. And why drop objects? "Accident-proneness" is a present day high-falutin phrase. And it does seem in this instance that it is also a euphemism for carelessness. Or is that too old-fashioned a word?

Accident proneness and accident prevention are something more than tongue-twisters. The way to prevent accidents is to stop having them. It is often as simple as that. The management and maintenance staff are constant in their endeavours to remove accident-hazards, which also forms a substantial part of the work of the shop committee. But at least half of the cuts to hands and arms, for instance, were avoidable so far as the human element was concerned. Some of them were due to unavoidable contributory factors. But many of them were not.

This, then, is a little of the story of the work of accident prevention undertaken here, and if it sounds a trifle blunt, it is so because no-one here wants to see one avoidable accident.



"Look Joe—no hands!"

Acknowledgements to "The Toolmaker"

A Letter from Brenda

MR. Lewin, who joined O.M.T., on 29th October, 1942, Optical Department-Maintenance Section, found this letter from his daughter Brenda on his pillow one night, at the time when Electricity Power Cuts first came into effect. Unfortunately Brenda's hopes were not fully realised, although at Slough, we were more fortunate than many.

Brenda Lewin. Age 10. Keen on all sports and music. Plays piano and does ballet and tap-dancing.

Although Brenda's letter is now out of date, we print it because it surely ranks as one of the world's loveliest letters. We wish it would happen to us.

"Dear Daddy,

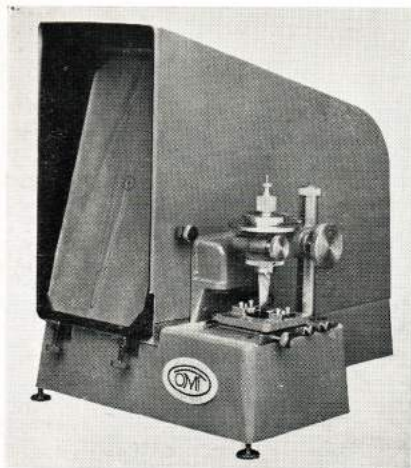
you are the Sweetest daddy In the world. I appreciate all the thing that you do for me

I hope your firms Electricity will never be cut

Your faithfull true and loving daughter,

BRENDA"

NEW O.M.T. PROJECTORS *by H. J. Rowe*



View showing Side view of the Profile Projector.

The above instrument is a simple type Projector which we have recently developed at Slough for the inspection of profiles and dimensions, which are difficult and sometimes impracticable to inspect by normal projection methods.

One of these instruments has recently been supplied to Messrs. Napier and Sons for the inspection of the section thickness and truth of the compressor blade used in jet propulsion aircraft engines, and the illustration across shows this part under inspection.

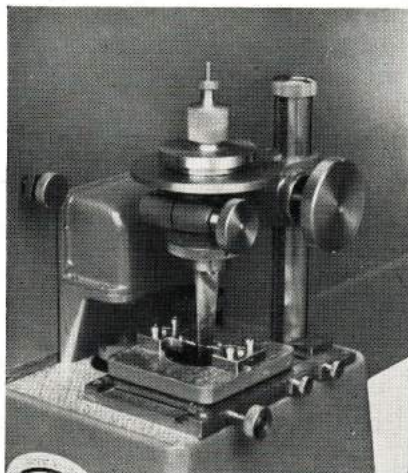
The instrument consists of an aluminium base supporting a carriage which is free to move in two directions. Attached to the carriage are two Stylus with ball points, one for each side of the blade, and set a predetermined distance apart. Acting in conjunction with the carriage and following its movement is a graticule with two small circles having a white centre and a black rim, corresponding to the tolerance which is allowed on the section thickness of the blade.

By means of a Projector Optical system, the image of these circles of the graticule are thrown on to the screen, and follows around the drawn magnified profile of the

blade. Any error in the blade in respect of thickness or thinness is readily indicated by the circle completely leaving the profile line.

The blade is supported by a holding fixture in a bracket on a column which can be inspected, and it can also be turned angularly to take care of the helix angle of the blade, and always present the sides at right angles to the Stylus points. The magnification is 20x and as well as a check for the section thickness, the instrument also provides a check for the truth of the blade portion with its base and its general alignment. The time taken to inspect four points on the blade is 1 minute, which compares very favourably with 20 minutes or more taken by other methods, and enables 100% inspection to be carried out, as there are 2,000 blades per engine.

Further orders are anticipated from the Napier Co., who have given us very considerable assistance in respect to the building of this instrument, and a larger size will be made for them. We also anticipate orders from other Companies engaged in the manufacture of these blades, also it should find a market for



View showing Table and Holder of Profile Projector with Compressor Blade in position.

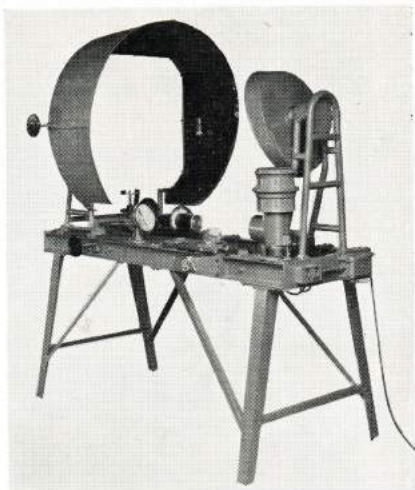
a variety of other work of this type, including 3 dimensional cams.

SPECIAL WORKS PROJECTOR

This is another special projector produced at Slough and supplied to the Bristol Aeroplane Co. The instrument in the main is similar to a standard projector except that it has a fairly large field of view, of $1\frac{1}{2}''$ at 20x magnification and $2.8''$ at 10x magnification, and yet takes up comparatively little floor space.

This is accomplished by double reflection and by the employment of two swivelling accurate flat mirrors, one of which is $18''$ dia.

Another feature is that the instrument is very rigid, and is equipped with a work vice or holder so that templet gauges and the like can be filed and finished direct on the instrument and comparisons immediately made with master drawings on the large screen.



Crisis or Crash ?

SHALL we crash—or shall we survive?

This crisis will not be solved, this crash will not be averted, by unknown persons in far away towns.

It will be solved by me, and my neighbour. By you, and your friend.

It started because we—you, and I, were so very tired, so relaxed after war, so sick of the sight and the sound of a queue.

We shall end it. You, and I, who know each other, together will end it. No-one else will end it for you, and me.

We shall build a memorial together for those of us who were lost in the war. We—you, and I, will take the place of those who have gone. We shall do the work that they would have done. You, and I, working in harmony together, will build their memorial with our hands and our brains. No-one else can do this for us. For no-one knows, and we, you and I, we do not talk of this; and so they cannot know.

For our friends who were killed we shall build good things. These extra things that we build will be their memorial. They will not bear their names. But we—you, and I, will know.

These extra things that we build will bring back to our Island that which she loves. They will bring laughter, and comfort again, and plenty for all. Even this may happen. Our work may bring laughter, and comfort to those friends of ours who worked with us, whose work we, you and I together, are going to do—whose names, in our English way, we never mention, and whose lives we shall never forget.

N.R.C.

FINE LINES

by John Wilson (Graticule Dept.)

TO the uninitiated a graticule is often a thing of wonder. They look at a small slip of glass, and with an effort, distinguish a series of black markings on it. Someone obligingly arranges it under a microscope, and lo and behold, those same indistinct black markings resolve themselves into fine lines and figures. "Remarkable," they say; and when a voice nonchalantly adds: "Those lines are one ten-thousandth of an inch thick," their astonishment is complete.

Like a precision instrument maker, a graticule maker is accustomed to thinking in ten-thousandths, for his scales, angles and templates have become essential where high-class instrument manufacture is concerned.

Graticule making is largely precision photography. An enlarged and accurate drawing is made and photographed down in stages to the required dimensions, thus producing the master negative from which the final scale is printed. The photographic plates used are capable of recording lines as fine as one fifty-thousandth of an inch in thickness, but the optical and mechanical means employed form a separate subject, and may be dealt with in a later article.

Perhaps the most amazing thing to the layman is the fact that the final scale is only dyed seccotine. Added to an ordinary glue, very similar to seccotine, is a light sensitive chemical; when the glue is dry, strong light renders it insoluble in water. Plain glass blanks are coated with a thin film of the prepared glue and exposed, in contact with a negative, to a powerful electric carbon arc. The unexposed glue washes off, leaving a perfect image on the glass. This image is then dyed black (or any prescribed colour), and there is a graticule. Cement a coverplate on top for protection, and the job is complete.

An older method of producing fine lines is to use an automatic diamond engraving machine, filling the cuts with a black pigment. This method can only be used in the manufacture of graticules bearing graduated scales. What is more, the numerals on such scales have to be

applied by a separate and laborious hand operation. This means, that in practice, the engraving of a degree circle takes four times longer than the printing and protecting of a similar glue copy. In addition the method of engraving allows of individual errors, but from a photographic master negative, many identical copies may be printed.

It will be readily appreciated that the work of making fine lines is exacting. There are, however, moments of humour. We have a certain clock in use for timing accurate exposures. Our Managing Director was explaining the clock to a visitor and said, "This pendulum mechanism is accurate to a three-thousandth part of a second." Said the visitor, looking at his watch, "But the clock is twenty minutes slow."

JOHN WILSON,
Graticule Dept.

N.B.—With respect to the last paragraph, I may say that this is quite true, and that this accurate synchronome clock which we employ, was definitely twenty minutes slow, so I had to explain to the visitor that it was its seconds accuracy which we utilised without any reference to it as a time-piece. Needless to say, we see now to its being correct.

H. J. ROWE.

AT WORK OR PLAY

Never
Experiment
With
Allowances
Limits
Loads or
Speeds

IF IN DOUBT, ASK !



MAKING PICTURES

Here the Newell Camera is seen in production at Islington Studios where "Miranda," the film about a mermaid, is being made. Stars in the picture are Google Withers, Griffiths Jones, and (below camera) Glynis Johns. Camera Operator, Dudley Lovell (nearest camera). Follow Focus, Manny Tospa.

THE photograph shows the Newell Camera in action in the production of the full length feature film "Miranda." This picture is a light comedy and all who go to see it will get 90 minutes of enjoyment. To tell the story now would be to spoil your future entertainment, but one might briefly say that the picture is about a mermaid who "goes to town" in all senses of the expression. So much for the introduction.

The business of making pictures is at first very strange to people who work in offices and factories in-as-much as when one goes to a studio there appears to be hundreds of people wandering aimlessly about whose sole purpose in life is doing nothing. This of course is not the case, and when one gets used to the trend of the film making it can be quite readily seen that each of these hundreds of people have a certain job to do and unless that particular job is done correctly at the right time, heavy losses in production and money can quite easily result.

A picture first starts with the decision as to the story. This is taken from a book or play and adapted for the film by the script writers. From this script the Art-director produces the scenes required, and drawings are made of all the sets. From these drawings the carpenters, plasterers and decorators proceed to build up the sets. So much for the main construction, but inside all this the chairs, rugs, pictures, carpets, lights, in fact all the small things that go to make a room look homely have to be acquired by the Property Department, known generally as "Props." A general list of things is prepared by the Art-director and passed on to "Props." Now no-one cares where these things come from provided that they are in the studio on the set at the right time. That is the "Props" baby, and he has to hold it. For instance, in "Miranda" for the underwater scenes, pebbles, canal seaweed and live fish had to be procured. The worst of these things happened to be the fish—not the procuring of them, but the keeping of them during the shooting of the underwater scenes. The water

in a specially built tank had to be at a higher temperature than that the fish were accustomed to, so that in between scenes "props" had to go round with his fishing net and catch them all to keep them in a bath at the side of the set. This sounds very simple and entertaining, but when there are 140 fish in a tank 60ft. x 20ft. x 6ft. deep and they have to be caught two or three times a day, it gets a little tiresome. The same sort of thing happened with a bowl of goldfish in the flat scene. "Props" had to change the water daily, feed the little dears and be generally responsible for their good health. Flowers, foliage, cocktails, cigarettes, matches, newspapers, magazines, all fall to the lot of this happy man. If the foliage fades in a woodland scene, then "Props" has to send his "stooges" out for a couple of trees to make good the damage.

We assume that now we have got as far as the sets and all properties. The next thing is the fixing up of the lights, known commonly as the "Arcs," "Cans," "Pups" and "Inkies," etc. All these, of course, can be fitted with means of diffusion, known as "wires," "half-wires," "silks" and "barn-doors"—incidentally, the "barn-doors" can be arranged on the lamps either "English" or "Chinese" fashion, according to the desires of the camera-men. These lights are mounted on rigging above the set and different rigging is needed for each different set. The riggers, being the men responsible for this part of the business, gather around them lots of steel tubes, angle brackets and a number of ratchet spanners and proceed to build platforms to carry the lighting equipment (arc-lamps) and themselves, attach the whole construction to a couple of cranes and hoist themselves above the set until it looks somewhat like a shipyard. Having done this, the riggers await instructions from the camera-men as to where and how he would like them to put the lights.

While all this has been going on the producer, together with the director, assistant director and camera-man, have been breaking up the script into the shots that will be taken to produce the required finished picture. These are all broken down and listed. Complete lists are sent

to the directors, camera-man and sound camera-man, together with the dates on which each shot will be taken. From this break-down the daily call sheets are issued to everyone on the production, giving the artists names, the shots for the day, time of arrival at studio, time at make-up, hairdressing, and time on the set.

At the same time, the wardrobe, make-up and hairdressing departments have been busy on the dresses, hair styles, to suit the requirements of the producer. From here all the film stars have to try on all the dresses and wear the different hair styles for a film test. About a hundred feet of film is shot for each of these tests, processed and projected back on the screen, and any modifications made accordingly.

Although we are now more or less ready to commence production, it seems that something should be said about the electricians, the camera-crew and the sound department.

The electricians are responsible for the upkeep of all lighting, wiring and supply of electricity, and operate under the camera-man positioning and diffusing lights to suit this person and this person only.

Next the camera-crew, the most important section where we are concerned. This consists of the camera-man, camera-operator, follow focus man, "Grips" and the "clapper-boy."

The camera-man is responsible for the complete lighting of a set, and dependent upon this lighting is the good or bad result that is seen on the screen. His lighting must give the correct highlights and shadow, soft lighting of the artistes and the expression on the set to suit the theme of the picture. This, as can quite easily be realised, is a very responsible position. Next comes the camera-operator, who must work in close co-operation with the camera-man. He composes the picture of each particular shot and follows the artiste during the shot wherever the artist may move. In composing his picture it is quite a common occurrence to hear him shout out, "Chippie, move the lock in that door 1in. higher," or "Electric, lower that lamp 6ins.," or "Props move that

table 2ins. left," and although this seems rather fantastic to the layman, it can make considerable difference to the finished result.

The follow-focus man has a double job to do. Firstly, he, as his name implies, keeps the lens in focus on the subject, and this entails quite a lot of tape measure work from the camera to the artist in the different positions that the artist may move during a shot. He also loads the camera, changes the lenses and generally maintains the camera during a production.

Next on the list is the "Grips," who manhandles the velocitator about during a tracking shot or track and pan shot. During a tracking shot he may have to move to two or three positions on the track and these movements must be timed exactly. He is also responsible for the maintenance of the velocitator and tracks during productions.

Lastly is the "Clapper-boy." He is responsible for the synchronisation of sound and film. His clapper board carries the name of the picture, the number of the shot, number of take, type of shot, Director's name and Camera-man's name. At the top of the board is a hinged flap painted black and white, which is clapped together when sound and picture cameras are both running. This results in an identification as follows: the clap is registered on the sound film at the same time as the clapper hits the board, so that when the picture is made these two marks are put together and sound and picture are in synchronisation.

Lastly we have the Sound-crew, consisting of the sound engineer with his mixing box, his assistant, sound camera-man and boom operator. The sound engineer and the boom operator wear earphones, and during a take can hear exactly how the resultant sound strip will sound in the picture. Volume control is operated by the sound engineer in his mixing box.

The following is a brief description of one take in a picture. The set is complete with all its properties and the artistes are ready. The camera-man then proceeds to light the set according to the

shot. For this purpose stand-ins are used instead of the artists. Having done this, the boom operator brings his boom into position with microphone fixed. Lighting is checked for "mike" shadows. The stand-ins are then replaced by the artists and rehearsals of the shot taken. When the director, camera-operator and sound-engineer are each satisfied with the result the shot is taken. The procedure is as follows:—

Floor-director: Ready camera.

Camera-operator: Ready.

Floor-director: Ready sound.

Sound-engineer: Ready.

Floor-director: Quiet, everywhere, we are shooting this time—Red light!

(Here the red light is put on outside the studio, and no entry is allowed whilst it is on).

Turn them over. Sound.

Here sound presses a warning button on the mixing box and receives back a double-buzz denoting that the sound camera is running. When this sound is heard the camera electrician switches on camera, and when it is up to speed shouts: "Running." The "Clapper-boy" then stands with his board in front of the camera and announces the Scene Number and Take Number and shuts his clapper. The Director then gives "Action," and after the take "Cut." The Director then enquires of the camera-man, camera-operator and sound-engineer whether their side of the take is alright. If it is, the take is printed, if not, it is re-taken until everyone is satisfied with the result. Each shot may be taken from different angles and the most appropriate one for the theme selected.

This take is then sent to the laboratories, processed and printed during the night, and returned to the studio for projection the next day. The producer, director, camera-crew and sound-crew see these rushes, and from them it is decided which will be used in the picture. The Editor makes notes of all the likes and dislikes, and these are taken into consideration when the film is edited before publication.

At each take the stills department takes two or three shots and these are processed and sent through to the Publicity Department who make use of them accordingly.

Last, but not least, come the continuity girls, who record all the events of the day. These include time taken in lighting, scene changing, make-up on set, camera breakdown, time in shooting and all delays. A report covering all these is sent through daily, and if for instance the camera breaks down, the time is noted and somebody gets it in the neck. It must be realised here that if for instance the camera breaks down for two hours it will probably cost the production £2,000.

I should like to mention here that the Newall Camera used in the production of "Miranda" has not caused any loss of time in production at all, and has been well received by the camera-crew at Gainsborough, Islington.

W. GORDON MASON, M.I.E.D.

O. M. T.

APPOINTMENTS

MR. JACK HANN—Mechanical Works Manager at Slough, was appointed General Manager on 1st June, 1947.

MR. F. J. STALLARD—Machine Shop Foreman, was appointed Mechanical Works Superintendent (Slough) on 1st June, 1947.

MR. J. HOBBS—Chief Inspector, was appointed Technical Sales Representative on 1st April, 1947. MR. B. WHITEHEAD succeeds him as Chief Inspector.

We wish these colleagues every success in their new jobs.

BIRTHS

MR. GORDON HINES (Electrical Department) became a proud father for the first time when his wife, Mary Vaux, presented him with a son—Richard—on September 12th, 1947.



ERNIE NEWALL

NEWALL, Ernie—9 years' service at Newalls—Labourer.

Served first World War; Service Medal, Overseas Medal; wounded in France; 14 weeks in hospital; discharged in Tipperary.

Hobbies: Gardening; Motoring in 1936 Austin 7.

Favourite Film Star: None; likes them all.

Very fond of music—particularly organ.

Friend of all, enemy of none; willing to do any service for anyone.

Hopes to win Newall Horticultural Cup this year.

Tea wagon comes into the picture because Ernie acts as maitre d'hotel on Sundays. Serves tea with an air.

MARRIAGES

MR. HENRY ROCKWELL and MISS ALICE GRUNOVA, both members of the Production Office Staff, were married on the 4th June, 1947.

MR. K. BURRIDGE (Toolroom) to Miss Irene Letitia Wade, at Windsor, on the 12th July, 1947.

MR. A. SAWKINS (Foreman Tilting Table Section) to Miss Gladys Blackwell, at Romsey Abbey, on the 21st June, 1947.

MISS MARY HENSON (General Office) to Mr. Patrick Scullion, at Slough, on the 26th July, 1947.

We take this opportunity to repeat our good wishes for the future happiness of these colleagues.

SOCIAL ASPECT OF TRIP TO SPAIN *by S. W. Hoare.*

HAVING been asked to write a few words concerning the social aspect of my visit to Spain recently, I find it rather difficult where to start; perhaps it would be better to begin with our entry into the country, as this was rather notable.

This consisted, in view of frontiers between France and Spain being closed, of a taxi-ride over a mountain, with a lovely view from the top, of a pretty bay each side with a deep blue coloured sea, quietly lapping on the shores, and the sun shining brilliantly. This gave us our first view of what proved to be a very colourful country.

After a very hot and tiring journey, we finally had our first meal in the hotel where we had residence. Imagine our delight at finding on the menu everything you could more or less wish for to eat, and drink, and no restrictions as to how many courses, or how many repetitions one asked for. I am afraid as a result, we all felt ill effects later, through having too much. Needless to say this did not deter us from sampling all we could.

An amusing incident occurred on our first day, as we sat in a public square. A shoe-shine boy came up to us (thinking to himself no doubt, as we learnt later to our misfortune: "Ah! English, some easy money here"), and as we all had very dusty shoes, we hired him to clean them. He apparently decided to share his good fortune, and in a flash so to speak we had a valet each. These three very industriously polished our shoes, but also before we realised what was happening, they were pulling off our soles and heels which were in quite good condition, and were replacing them with what proved to be very inferior rubber, and for which they charged us very exorbitant prices. We endeavoured to argue with them, but to no avail—we definitely were had. This certainly made us wary for the rest of our stay.

Another occasion of interest occurred when we had lunch with the contractor who built our stand at the exhibition. He and his wife very kindly invited us to his home for this meal, after which we attended a bull fight. This meal, I think I can safely say, was the largest any of us

from England had ever experienced. It consisted of practically everything imaginable to eat, and an almost endless procession of courses, with varied wines to suit each food.

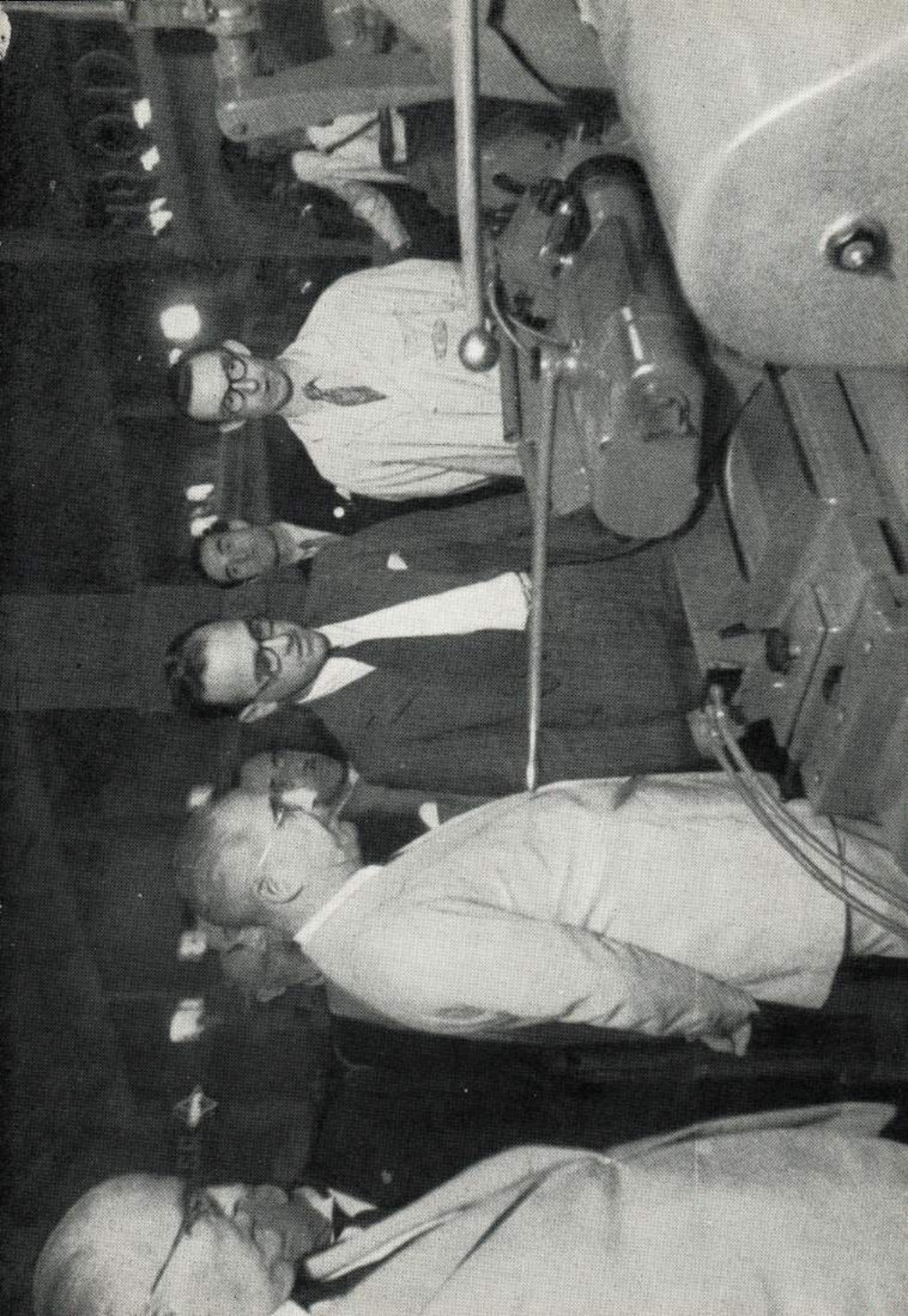
From this we proceeded to the bull fight. Unfortunately we arrived a little late, and so missed what to us would probably have been the best part, that is, the pageantry which foregoes the fighting. As it was, we reached our seats just before one of the bulls was killed, and the sight following on top of our late feast was not too good. Men, women and children of all ages, attend these functions, and apparently thoroughly enjoy themselves, but I am afraid it did not suit us particularly, nor any of the other Englishmen we met in Spain. One was enough for us all. This particular performance consisted of six bulls being killed, and lasted about two hours.

Shop window gazing was a more or less continuous pleasure in our leisure hours also. They were absolutely full of everything, and no coupons required. They also seemed to stay open all night, especially the pastry and confectionery shops. The clothing shops, too, were full, but although there were plenty of pure silk stockings, they do not seem to have any Nylons.

One thing I have often wished for since my return, especially during our recent summer weather, is a drink they call *Horchata de Chufa*. It is made from the juice of crushed tiger nuts, or almonds, and water, and is a most refreshing liquid, which looks like milk. Incidentally, we were repeatedly asked if we were mixing *Horchata* on our machines, when we had the suds running. In our endeavours to keep cool, we drank gallons of *Horchata* during our stay and also lots of ice cream, which was concocted in dozens of different flavours and styles.

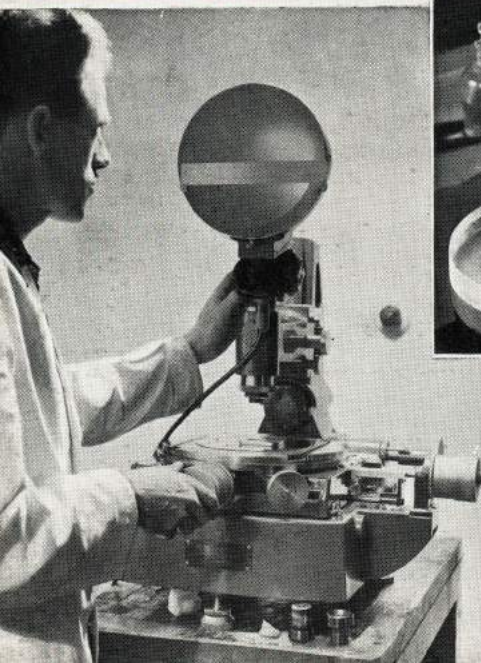
PHOTOGRAPH OPPOSITE →

Spanish Minister of Industry and Commerce keenly interested in the Newall 'LA' Grinding Machine, on show at the Barcelona Fair, June 1947. In the Spanish press report, in which the photograph appeared, it was stated that the quality and performance of the machines had created a lively interest among Spanish industrialists.





(Above) View of optical machines with dust-proof covering, showing prisms in course of examination and polishing.
(Below) Toolmakers' microscope being assembled and inspected.

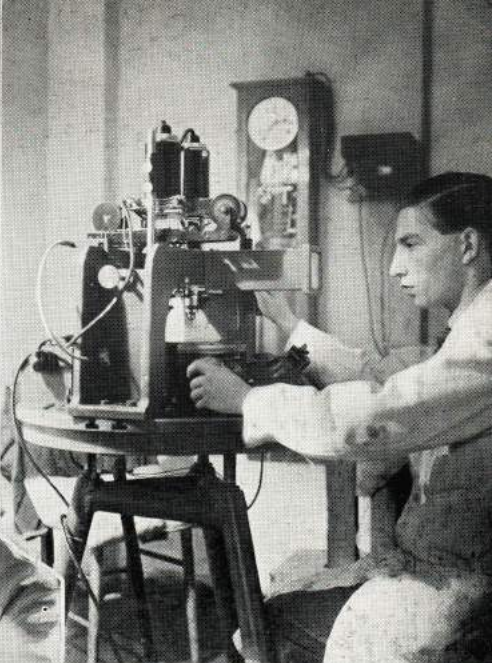


(Right) Machine polishing of lenses. Note the various sizes being manufactured at the same time.

OMT are engaged in the production of a wide variety of Optical parts. The illustrations on this page show optical parts in process of manufacture at OMT works in Slough.

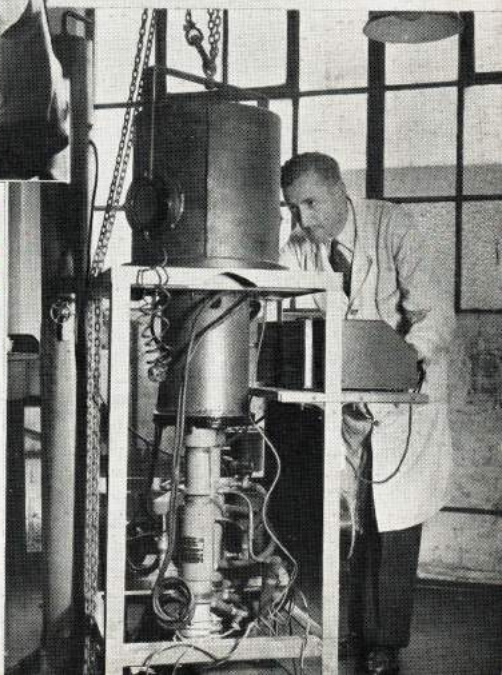
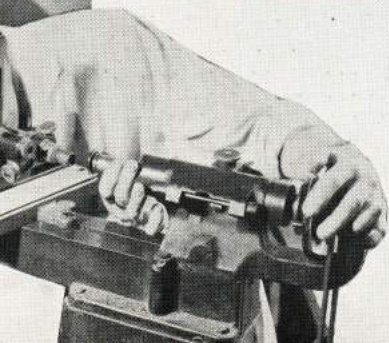
(Above) Shows optical flat in silica being examined against a silica master of 12" diameter. The master is of an accuracy over the whole area in the order of .000002". These flats are examined in a temperature controlled room when the final examination takes place. The picture shows a method by use of Newton rings.

(Right) Accurate centring of lens employing high power microscope, as in this case the optical axis is very important—in the order of .00004" when the edging is completed.



The illustration (above) shows the apparatus for photographing the negative which is employed for making glass circles.

(Above) A lense being checked for definition and perfect sphericity.
(Right) A view showing a vacuum pump and chamber used for the "blooming" of lenses, also for the illuminising of mirrors.



The NEWALL HORTICULTURAL SHOW

THE Third Annual Show held on August 16th, 1947, again proved to be an outstanding success. The first show held in August 1945, 311 exhibits were entered, and August 1946, 400 (excluding photographic) beat that figure, but 1947 was the record when with fewer exhibitors over 410 exhibits were staged. The exhibits were of a very high standard, considering the difficulties under which the gardener had to labour. Special congratulations must be given to Miss E. Rigby (Canteen Staff) on her first attempt at showing, the Flower Class, in which she swept the deck, with 24 points. From all accounts I hear, there will be tremendous fight in this Class next year. Well, all the best to the winner. This is the spirit which makes successful shows.

The Show was opened by Mr. L. B. Oldfield, supported by Mr. K. Temple, with a fine attendance.

Light refreshments and drinks were in the able hands of Mesdames F. Easey and A. M. Lewis, and their helpers. All these good folks deserve very high praise. The sum of £13 from the refreshments and sale of exhibits was sent to the Peterborough Memorial Hospital. On behalf of the Committee I would like to thank everyone who helped to make the show a great success.

The statement of accounts shows a balance of £6.

One other word—we are hoping again to run our monthly Whist Drives, but this will only be possible if the fuel position permits.

FREDERICK S. EMERY.

FISHING

Congratulations go to A. Walker for bringing off the "Double," winning both "Members'" and "Open" Cups, and hoping he will be in the winning team for the "Departmental" Cup. I

must here thank J. Brandham, A. Walker and J. Keeley for their work put in on the Island to make fishing possible.

The "Departmental" Cup was fished on August 31st. The winners were Camera Department, results being as follows:

Camera Dept:

L. Brown, J. Cross, R. Wright
3 lb. 7 oz. 12 drms.

Inspection:

T. Thomas, J. Tee, T. Bailey
2 lb. 6 oz. 12 drms.

Fitters:

H. Hobbs, T. Wright, T. Smith
2 lb. 5 oz. 0 drms.

Inspection:

V. Emery, S. Bays, T. Smith
2 lb. 2 oz. 9 drms.

Machine Shop 2:

T. Burton, L. Gorham, H. Wilson
2 lb. 0 oz. 4 drms.

Machine Shop 1:

J. Keeley, J. Brandham, A. Walker
1 lb. 15 oz. 12 drms.

Apprentices:

P. Hill, R. Abbott, G. Thornburn
1 lb. 6 oz. 8 drms.

Staff:

A. Holroyd)	3 lb. 5 oz. 4 drms.
)	
D. Carswell)	3 lb. 0 oz. 0 drms.
)	
J. Piggott)	0 lb. 5 oz. 4 drms.
)	

As will be seen, the Staff had reduction of 3 lb. When weighing-in, I asked a competitor: "Is this a Rudd or Roach?" He replied, "That's no Rudd or Roach, but a - - - - Herring." We do, however, thank them for their sportsmanship, being non-fishermen. The Committee also thank all competitors for making this match a success.

Newalls entertained the B.T.H. on September 14th, with 10 per side, Newall wining 9 lb. 11½ oz. to the B.T.H. 4 lb. 10½ oz. The winners were:

1st	P. Cross	2 lb. 2 oz.
2nd	R. Wright	1 lb. 9 oz.
3rd	J. Brandham	1 lb. 4 oz.

ANGLING NEWS

by Roland Wright.

MEMBERS of the Sports Club please note that for those members interested in fishing, the Eastwoods Knothole is hired for this purpose, also non-employees 5/-. Old Age Pensioners 2/6, Children 1/- per season. Prizes for the heaviest fish are given at the end of the Season for the following: Tench, Roach, Rudd, Perch, Pike. Fish are weighed in at 124 Palmerston Road, or any tickets from Angling Clubs.

The first match was held on July 20th, open to all members, and 22 rods were out. The winners were:

1st J. Bowen	2 lb. 13 oz.
2nd L. East	2 lb. 1 oz.
3rd V. Emery)
4th C. Cope	1 lb. 15 oz.

Congratulations go to J. Bowen, who, only 16 years old, landed a tench 2lb. 5 oz.; also the angler who had to do a quick retreat when a swan swimming about 30 yards away rose from the water and came flying straight at him. I may say the swan also did a quick retreat.

The match on August 10th was for "The Newall Sports Club Members' Cup," which was presented by the Chairman of the Sports Club, N. R. Canadine, Esq. The Committee wish to thank Mr. Canadine for his interest in the Sports Club, and for making this visit to the knothole, and as one man said: "I think they go fishing because they have no Sunday dinner." I do sincerely hope Mr. Canadine got his. Winners of this match were:

1st A. Walker	15½ oz.
2nd T. Wright	11½ oz.
3rd T. Burton	11 oz.
4th —, Burton	10 oz.
5th S. Bays	7 oz.

As members can see by the weights, sport was very poor and one member did want to win so he weighed in a fish which had been dead about a month, but the smell gave him away. The most



surprised man was the winner to think that he had won the Cup with 15½ oz.

The "Open Cup" was fished on the Island, sports being good and 36 rods competing. Winners were:

1st A. Walker	2 lb. 10½ oz.
2nd L. East	2 lb. 10 oz.
3rd J. Brandham	1 lb. 14 oz.
4th W. Regan	1 lb. 13 oz.
5th F. Simpkins)

O.M.T.

CRICKET

The O.M.T. team, captained by Mr. S. R. Avis (Machine Shop), had a very enjoyable season in the course of which they played 14 Sunday matches against local teams. The final results were 8 won, 4 lost and 2 drawn. Some very good scores were recorded by Messrs. Avis, Eeles and Jackson, and the best bowling performances were by Messrs. Eeles, Shepherd and Jackson.

OUTINGS

During the past nine months several charabanc outings were arranged to Speedway and Ice Hockey matches, and we understand that the enthusiasts had some very enjoyable times. It is hoped to arrange further outings during the winter, which will include charabanc trips to some of the popular theatre shows now running in London.



mainly for the ladies

MILK

IN these days of milk rationing it can be very nearly disastrous to burn the milk. This can happen to even the most careful housewife, and the following is my way to take the burn out of milk, so that it is palatable and fit to be used and free from the smell that goes with burning.

Take one slice of lemon, and one clean saucepan, which should be warmed with hot water and then dried. Pour the burned milk into the clean warm saucepan and bring slowly to the boil. As soon as the skin begins to form place the slice of lemon on top. The skin

will then thicken rather more than usual. Remove skin and lemon and the taste and smell will have left the milk, which can be used then for all purposes.

SAVE YOUR COUPONS

Flour bags are the almost perfect answer to the tea towel problem, and no coupons required!

Incidentally, it is much easier to sew flour bags before washing them. The slight stiffness given by the dressing is the reason.

KEEP IT DARK

That little pulled thread in your stocking. You know it will go into a ladder if it isn't stopped at once.

Keep a needle threaded with your own hair in the back of your needle case. It won't take two minutes to catch the pulled stocking thread in a neat little darn—the repair will be practically invisible—and will stand untold visits to the wash-tub.

HAPPY IRONING

Electric irons are apt to tarnish and drag after ironing damp garments, or pressing over a damp cloth. Cigarette ash on a damp duster will bring back your iron's smooth surface. Rub the chromium gently until the tarnish has gone, and be sure to have the iron quite free of ash before using it.

AT Newall we wanted lodgings for our new Worker. Amongst others we received the following letter.

July 10th, 1947.

Dear Sir

I am sorry, but I have got a young man in my Bedroom, so I can't take any one else at the moment.

Mrs. _____

WE RATHER CARE FOR THIS.

* * *

WEDDING BELLS

SINCE the last issue of *Precision*, Cupid has been very busy among the employees at these works. Some of them are still with us, others have left us. Whatever reason was responsible, the following list shows that it was successful in bringing about wedding bells for our fellow worker. Joan Berrisford, of the Gauge Shop, was married at Easter to the son of one of our former workers, Mrs. Nell Crowson. Since the holidays Joan has left us. She was with the firm nearly six years. Then Betty Wyatt from the Insp. Dept. was recently married to one of our Inspectors, Mr. J. Reynolds. Before he came to work for the firm he was a "regular" in the Royal Air Force. He has now left us and joined up again.

All we can say is "good luck" to them both. Now for Machine Shop news: Betty Spriggs from the Gear Shapers heard wedding bells recently. She was married during the holiday week and is still with us. Mr. Barks, of the G.S., was also joined in matrimony. He has been a grinder with us for a good many years. We hope all of them are still with us when we issue the next magazine.

As for me, I am expecting my husband home from India between now and October, and I hope to be with the firm as long as I can. We have had many a happy hour here; we have all seen lots of people come and go, and in the seven years I have worked here I have had some really happy times. Let's all hope they continue.

MRS. RUTH WOODS (G.S.)

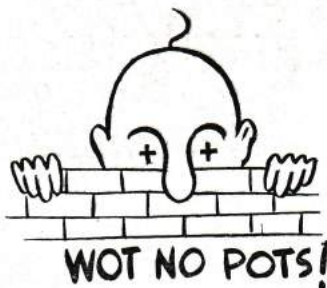
"*Precision*" can't keep pace with Cupid.—EDITOR.

HUMOUR

By-Products of the
Newall Group

A would-be Turner obtained a job in a large engineering works. When asked by the foreman what class of work he was used to he said he preferred large machines so was put on the large shaft lathe. This foreman was in the habit of saying to his old hands when he required a thou or two taken off a shaft, "Just take a 'thought' off it Bill", and the old hands knew what he meant. The new hand started and after about an hour when the cutter had travelled some 3 ft. along the shaft the foreman dashed up and stopped the machine with the remark, "I thought I told you to take a 'thought' off this" when the newcomer turned round and said, "I thought a quarter of a ruddy inch. How much do you think!"

G.G.S.



DIRECT QUOTE EX LETTER
RECEIVED 10-1-47.

'Unfortunately we are out of stock of most types of Pots, but in view of the urgency of the matter will arrange to let you have some from our next allocation...'

PRODUCTION MUST GO ON.



The Editor
'Precision'
Newalls Engineering
Works

CORRESPONDENCE

To The Editor of 'Precision'.

3rd February, 1947.

Dear Sir,

Thank you for the copy of the first edition of 'Precision'. I take this opportunity of congratulating everyone concerned in this very fine effort.

To me it was a vivid reminder of many happy days spent at Newalls. Bro. Groome's article also reminded me of some of the more hectic episodes such as the vital discussions on whether we should go to air raid shelters or keep on working; whether the Tea Wagon should stop in No. 1 Bay or No. 2 Bay; why Bill Smith got cheese rolls and Jack Jones couldn't have any; and, the most vital question of all, why couldn't we all have bread and dripping.

I myself living so near to the Works only used the shelters on one occasion, and on that occasion had an argument with a casting on the way to the shelters, cutting open my eye. Hence, from that date onwards the saying in the Works 'Eye-Eye'.

The Pen Portrait of the Office Staff was very good and I feel sure that if you continue along the lines indicated in your first issue and the workers are assured of the co-operation of the Management, there is no reason why Newalls should not become one of the leading Machine and Instrument Makers in the country. I am sure you have as good a class of tradesmen at the old firm as could be found anywhere. This, coupled with a good Trade Union backing, is sure to bring results and, providing Mr. S. Player and the Board of Directors carry on with the idea of open discussions and not holding their difficulties from the employees, success is bound to follow.

To 'Precision' I say good luck. To my fellow Trade Unionists, use your Shop Stewards for all your grievances. Not only use them, but above all put your confidence in them and remember

even you can sometimes be wrong, it is not always the other fellow.

Best wishes,

Yours faithfully,

G. E. SCOTTING.



HARRY RICHARDSON

RICHARDSON, Harry — Werrington — 38 — Electrician.

Favourite Film Star: Charles Laughton.

Hobbies: Horse-riding; reading. Favourite Authors—Shakespeare, Kipling. Rugger and Hockey, Army. Has jumped at Olympia, London, 1938, representing Royal Horse Artillery in inter-unit competitions. Biggest thrill—falling off a horse.

Married—twin daughters aged 4; Christine Ann (the dark one), Valerie Jean (the fair one).

Likes plenty of work: late twice only in 5 years, both through bike breakages.

Thinks Newalls give ex-Servicemen good opportunity if they like to take it; left Army totally unskilled to come to Newalls as electrician 1941.

Grumbles: No house.

Praise: Works' Canteen.

M.T.E. NEWS

IN June plans were put in hand for a Work's Outing. By popular vote Felixstowe was chosen as "the place to go", and a weekly payment scheme started whereby all members would pay for the cost in advance. In addition to this, the management kindly assisted by paying out a Bonus, which had accrued over three months, on the Friday before the Outing.

We arrived in Felixstowe at 11.30, having stopped at Colchester on the way for tea—it being too early for any other beverage. The party promptly dispersed or should I say disappeared, into the nearest Hostelry and imbibed many Beers, Gin and Limes and sundry other kinds of refreshment, to reappear again at 12.30, to enjoy an excellent lunch at the Victoria Cafe.

After lunch the party made their way shorewards, the majority steering for Butlin's Pleasure Park. There many members forcibly placed the writer in the Dive Bomber in an endeavour to stir up his lunch and liquid refreshment in a quicker manner than nature intended, but he survived and we started looking for further excitement in the Crooked House, Big Wheel, Bumper Cars, Darts, Rifle Shooting, etc.

After tea and a final look at the sea, all the members rejoined the Coaches. We stopped at a country Inn called "The Gun", where we spent an hour or so dancing and drinking, then into the coaches feeling extremely happy and jolly. I think the drivers must have thought they had changed their sedate passengers of the morning for candidates for Runwell. After many other stops to allow the members to view the countryside by moonlight, we all arrived back at the works at 11.30 p.m.

The result of this outing was the formation of the M.T.E. Social Club. The management kindly granted the use of the Canteen, and our first Social and Dance was held on Wednesday, the 17th September. The thanks of the M.T.E.

Staff go out to P. Saltom, G. Marsden, J. Quelch and Mrs. Butcher and her assistants, all of whom helped to make the evening a very enjoyable and successful one. We were all pleased to greet the Club's President, Mr. Browne and his wife, and our Vice President, Mr. Wilkinson.

It is hoped to hold a Social once every week, together with Theatre Outings, throughout the Winter months, and the Club extends a hearty welcome to any member of the Newall Group who happens to be in the district, at any time.

A. W. GOODFELLOW, M/C. SHOP.

DOUBTFUL DEFINITIONS !

A monkey wrench is what happens when Papa Monkey gets his calling-up papers.

* * *

Two Point Steady is another name for a brassiere.

* * *

A Night Shift is what mother puts on to go to bed in.

* * *

A Day Shift is the same thing, only father puts it on to go to work.

* * *

A Rest Room is a place from which one gets kicked.

* * *

A Foreman is a man who gets a higher wage in order to allow him to put more on the football pools.

* * *

A Lead Hammer is used when you don't want to waken up your mate.

* * *

A Screwdriver is the owner of a horse and cab.

* * *

A Typist is a girl who hides one half of her body behind a typewriter and shows the other half under the table.

* * *

Calf love may be found by watching most men's eyes.

* * *

A Tracer is an obliging girl who perpetuates a draughtsman's mistakes by printing them in ink.

S. MIDGLEY

MR. DENNIS PLAYER

MR. Denis S. Player, who for the past 25 years has suffered some handicap both in his social and business life through a badly shortened leg caused by TB as a child, has recently undergone an operation which we believe will be greatly beneficial.

The decision taken at the time was a serious one, and it is only in recent years that an operation of this calibre has been made possible.

Service with a Smile

IF you one day would care to stray
Into the Works, there tucked away
You'll find a small green door with lock
Which seems to say—"You're welcome
—knock."

*It's open now and you will find
Someone to greet you—very kind.
"Now what for you today?" she'll say
In her accustomed happy way.
A Boiler Suit, or may be Coat,
She needs to have no record note
In spite of numerous cabinets
Right quick you'll get your Workman's
sets.*

*Discard your Jacket—that is right!
Your overalls now won't fit so tight.
Your are thinking—what a treasure
Alas!—12 coupons made to measure.*

*When every week the van man brings
The load of newly-laundered things,
It's then we get that kindly touch
Which means to us so very much.*

*She'll air your coat to keep you fit,
Help you change the buttons on it;
There's been at times an awkward tear
And she has even made repair.*

*Still carrying on this heavy work
Behind those doors where few folks lurk,
I think it's time for us to file
Our thanks for SERVICE WITH*

*A SMILE
BY AN ONLOOKER*



THERE is something more in a craft than doing a job and getting paid for it. A true craftsman, properly apprenticed, falls into a tradition that goes back, far beyond the traditions of the Public Schools, far beyond the traditions of noble families, back 2,000 years and more to the day when the first man worked the first primitive wood-working lathe.

Each generation that grew added something to the craft, to the present day, with its measurement by light and by sound wave, so that an apprentice today has access to an array of knowledge, and has skill that would amaze—that would, indeed, dismay, his forefathers.

At Newall we know these things; we share this pride as a part of our private lives and as a part of our work; and in our Certificate of Apprenticeship they are symbolised.

This Certificate of Apprenticeship can be framed with pride; and throughout the world it is accepted, and it means: here is an Engineer; here is a man who has worked for six long years to learn all that Newall, with their precision, their standing in the trade, can teach.

In any part of the world this Certificate of Apprenticeship is valid as an entry to the best of jobs in the best of trades.

N.R.C.

O.M.T. WORKS AT MAIDENHEAD

OUTSIDE of a number of people who have actually been to Slough to see us, it is not generally realised that in addition to our works at Slough we have a works at Maidenhead, about three miles away. These works are on a site about 2½ acres in area and while at the moment they occupy a relatively small part of this, as time goes along and building restrictions disappear, they will be increased.

These works have a frontage on the London to Bath Road where there are office premises and also a showroom for optical instruments. At these works are made all the camera units which we supply to Peterborough for the Newall Camera, Precision Boring Heads and the assembly of the Inclinable Tables.

The new works, which was first opened last January, had, to say the least of it, a very difficult start. Barely was the first equipment in than along came the fuel cuts, and these were before the crisis cuts which came later. After the fuel cuts came the floods and 18 in. of water came and stayed with us for two weeks. One can well imagine the depressing sight of seeing jib boring machines and other equipment surrounded by this amount of water. I would like here to pay a tribute to the men at these works under Mr. Hann's and Mr. Lacey's guidance, who did what they could to lessen the after effects of

the water. I can well remember the sight of them paddling along Maidenhead High Street in R.A.F. rescue craft with a half-ton Inclinable Table aboard, and Camera parts. We never realised there were so many potential sailors among them.

These works fully got going in April and are now equipped and staffed. Two new works are approaching completion where further Camera work will be undertaken in conjunction with Peterborough.

It is not generally known that Mr. Lacey, who is in charge of these works, was around 1930 very well known as a racing motor cyclist. He was development Engineer for J. A. Prestwick and during that time covered 103 miles in an hour and so gained the Motor Cycle Trophy which was offered to the first man who achieved this feat in Great Britain. Afterwards Mr. Lacey was attached to the racing department of Norton Motors and during this period he broke the World's 3 hour record, covering 306 miles, including two stops for fuel, at Montlehery in France. In 1931 he held the World's 1 hour record at an average speed of 110.8 miles and which was not broken for 5 years. He held the world's 1 hour record four times and at one time had 40 World's records to his credit.

H. J. ROWE,
Managing Director.

We have recently received a number of letters from Nigeria of which the following is a sample. We thought readers of "Precision" might be interested in the quaint wording—*Amen.* (EDITOR).

From S. A. Ayoade,
St. James's School,
Ogunpa,
P.O. Box 343,
Ibaden.
24 Ags., 1947.

Dear Sir,

I have the honour most humbly and respectfully to submit this letter for your kind consideration.

I want us to be friends so that we may be in unity. If you want something in our country write to me in time so that I may find the things quickly in order to send them to you in time.

Please I want you to reply in time so that I may know whether you have received this letter or not.

Please kindly send me important things, any other necessary things catalogues and particular things. God will help you Amen.

Awaiting for your favourable reply, God will be with you Amen,

I remain,

Yours for ever,
S. A. AYOADE.

O.M.T. APPOINTMENTS

MR. J. H. BARNETT—Machine Shop
Foreman—Camera Works, Maidenhead.

MR. L. J. BUTT—Fitting Shop Foreman—
Camera Works, Maidenhead.

MR. L. H. BAREHAM—Charge Hand—
Machine Shop, Slough.

MR. F. KEELEY—Service Engineer.

APPRENTICE EDUCATION PRIZES

EACH Year prizes are awarded to the Newall Apprentice with the best Scholastic record. These are cash prizes of £10-10-0, £6-6-0, and £3-3-0 respectively.

1st G. R. THORNBURN.

2nd A. D. BROTHERS.

3rd J. A. CROWSON.

POETIC INVITATION

HERE'S *Precision Magazine*,
It's the queerest ever seen,
But after all, its read by funny blokes.
It's amazing when they show it,
For you'd really never know it;
How machinists and inspectors and some
fitters tell their jokes.

There are articles on work
(Wish they'd tell us how to shirk!)
And others that are there to make you
smile.

And to tell you if your mates
Have been busy making dates.
Yes, we've done our best to make it
worth your while.

Though this may not have made sense,
It has helped us to commence,
And we hope your magazine you will
enjoy.

And when the next one's due
Can we have a line from you?
For 'Precision' needs you, every man
and boy!

MRS. PAT EVANS,
OPTICAL INSTRUMENT ASSEMBLY,
O.M.T. LTD.



SUSAN WALKER

LAST month, (October), saw the Social Section commencing a series of dances, etc., for the entertainment of members of the Sports Club and their friends.

Last season, as you no doubt remember, we had many snags to contend with, No. 1 being the weather. No matter when we arranged a dance, the weather played havoc with us. We had cloud bursts, a snow storm, and even a heat wave in May. I still wonder who used the most energy on that May evening, the dancers or the band. Strangely enough there were very few grumbles at the time from either.

The fuel crisis caused the second hitch. A programme of local dances had been arranged, but had to be cancelled because at the time 'The Old Firm' was almost deserted—ghost machines and a handful of workers shivering in their shoes—dances were completely out of the question.

I would like to thank all the people who came along to our functions no matter what happened and I hope that this season will show even better support from the members of the Sports and Social Club.

SUSAN WALKER
(SECRETARY SOCIAL SECTION)



JACOBUS enjoys "PRECISION"

The Chronicles of Jacobus the Scribe

Furthermore, there was also among the elders of Omtopia, one D. Zeiner, who was a follower of the teachings of V. Clidde, and he called together his satellites, to wit, Jock, Chas. and Pete, (these were they who dealt in improper fractions).

And D. Zeiner with his satellites did burn much oil and sweated mightily to prepare plans, which were afterward considered by the Pharaoh who was exceedingly satisfied.

And after they had carved the stones according to the hieroglyphics of Know-all, these stones were delivered unto the grey friar of Vectis—even St. Allard. He, having received the stones immediately went into conference with the chief of his slaves—even Johnny, and they agreed between themselves what form these pieces should take.

And they laboured mightily for many suns and prepared the pieces and joined

them together according to the wishes of D. Zeiner.

And then it came to pass,

And failed !!!

And they were sore stricken and did murmur between themselves saying, 'Yea! And what is a tenth?'

There were also certain of the citizens of Omtopia whose task it was to put together the results of the labours of the cutters and scratchers.

The chief of these, even Fred De Keillie, owed allegiance not to the Pharaoh, but to Izaak Walton, yea, he was a complete wangler; De Keillie had his taskmasters R. Furre and R. Onnie, who was also a good man.

And these two did cause much misery to the youths of Omtopia even S. Pudde and Tubbeigh. Yea, their legs were pulled mercilessly by the taskmasters and their underlings.

And it came to pass during the reign of Power Cutts, that Pudde and Tubbeigh endeavoured to continue their tasks.

And they became Velocipedean Writers, seeking to imprint in precious metals under the eagle eye of R. Furre. And lo! It was not so good!

And there was also a Mayor of Omtopia—even the Alder-man—who had done all in his past. He it was who had sole charge of all material in the colony, likewise, all the stones, the products of the brains of D. Zeiner were in his care. And so it was, that wheresoever the citizens went to his emporium seeking stones, that he excused himself by always quoting a magic formula. Yea! We have not got it; try the Rejection Apartment. And it was not so good!!!!

A problem solved by projection

by "Nabob"

WITH the advent of the jet propulsion engine, many new problems developed to give industry much food for thought; and not by any means the least of these problems was to find an accurate yet quick method of inspecting the profiles of compressor blades, etc.

These relatively small yet vital parts of the turbine engine were of major importance to the performance of the engine as a whole, and without substantial knowledge of the same, progress may have been seriously retarded.

In consequence to requests received from a well known firm of engine manufacturers, and with the full co-operation of certain individual members of their technical staff, we at O.M.T. decided (to use a hackneyed phrase) to "have-a-go" to see just what could be accomplished in the way of an instrument that would fulfil the functions required, to enable these blades to be inspected with accuracy and speed.

Bearing in mind the fundamental requirements of all inspection apparatus, viz :—

- (1) Ease of operation
- (2) Accuracy of the gauging element
- (3) Maximum inspection rate without loss of accuracy
- (4) Elimination of doubt due to personal interpretation

instructions to do the best possible with the problem in hand were issued.

(Followed weeks, nay months, of feverish activity on the part of design, physics and optical departments, with much head wagging and "doodling" on sundry pieces of paper, etc., but eventually out of this seeming chaos emerged a general arrangement and various detail drawings, which in general caused even more head wagging than before, especially among the ironmongery side of O.M.T.)

In due course, however, the "O.M.T. Horizontal Profile Projector" came into being; and to the surprise and possibly consternation of those among us whose ideas of checking contours conformed to

more orthodox methods, proved itself from the very commencement to have all those essentials so necessary to the problem in hand.

The methods previously employed to determine the accuracy of the blade contours were in most instances confined to the use of form or template gauges (which in themselves had of necessity to be allowed a reasonable tolerance for manufacture, were extremely costly and had the disadvantage of being subject to considerable wear in use) or pantograph tracings of the blade contour onto smoked glass, which in turn had to be projected before errors became apparent.

The Horizontal Profile Projector had none of these disadvantages; and the reception it has been afforded is full recompense to all concerned for the many worries with which its development was associated.

Although space does not permit of a full description of this instrument (and the writer was warned not to develop this short article into one of technicalities), it may be fitting to briefly describe its characteristics.

The instrument consists of a blade holder which is adjustable for both height and helix of the blade, and which is mounted vertically above a compound carriage.

The carriage has mounted upon it a pair of stylii, so arranged that the distance between points corresponds to the distance between two circular graticule centres which are contained in a bracket affixed to the side of the carriage. This same carriage is pre-loaded to maintain either of the stylos in contact with the blade as the carriage is progressively traversed around the blade, and obviously under these conditions both the carriage proper and the graticule follows the actual contour of the blade under inspection.

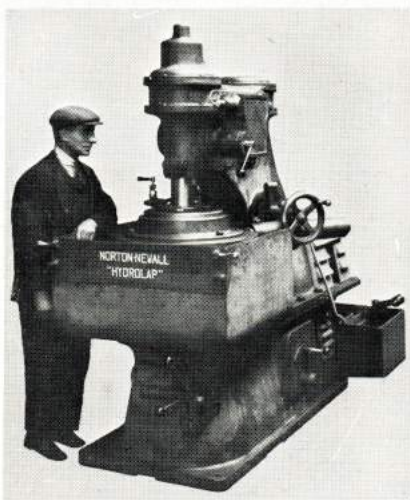
By means of a suitable optical system the image of the graticule is projected onto a ground glass screen, which contains the true profile of the blade at the correct magnification ratio, and irregularities or discrepancies in the actual blade are readily discerned, by comparison of the path taken by the graticule as it moves around the blade

and the master profile on the screen. For production checking provision of "tolerance zone" area is incorporated in the graticules.

A very outstanding feature of the instrument has been the enormous saving of time in the inspection of a blade, having reduced what was previously approximately a thirty minutes operation into something which now takes under one minute; and also the fact that an unskilled operator can inspect a blade with a greater degree of accuracy than was hitherto possible even by a first-class inspector.

Although the instrument briefly described above has without doubt proved a real boon, rumour has it that developments are already afoot which will employ almost revolutionary ideas; to improve still further the versatility of the O.M.T. Horizontal Profile Projector, and I have little doubt that by the time the next issue of this publication is on sale, there will be much to impart that should prove interesting.

"NABOB"



HISTORY.—A photograph of the first Hydro-lap machine ever produced by Newall. Made at Ponders End about 1929. See Harry Gough on the left.

TROT OUT Your funny stories

ANYONE who has worked for any length of time in an Engineering Shop must have come across some funny stories of humorous situations which would make interesting light reading. We should like very much to print some of these as a smile or two is always worth while these rather dreary days. As an encouragement to readers to submit suitable items, the Editor will be pleased to award a prize of five shillings—not a very high figure, but at least it will buy 30 fags and it is tax free—to what, in his opinion, is the best story submitted. What is wanted are items or incidents—true or imaginary—of factory life. So please do not submit the story that Bill told you and which you repeat at the Club where the wife can't hear you. No prize will be awarded if less than three items in all are received.

As a start the writer submits the following, which has the merit of being true.

A Works' Manager of one of the large Engineering Companies very close to our Works when we were in Walthamstow, had the rather objectionable habit of trying to score off apprentices. The fact that he had a 'cleft palate' which caused him to speak in a rather high squeaky voice, something which the apprentices were quick to notice and imitate, may have had something to do with this habit of his. Going the rounds of the shop one morning he came across an apprentice fitter filing away fit to beat the band. Going over to the lad he told him that he would never make a fitter if he held the file in the way he was doing. The lad replied that he always held the file in this way, that it was a very good way to hold a file and that he could file anything with it if he held it in that fashion. "So you think you can file anything do you," retorted the Works' Manager—"Ever tried filing air?" "No" replied the lad, in a suspiciously squeaky kind of voice, "But I soon will if you will shove it in the vice for me!"

E. A. VALDES.



THE NEWALL MICROMETER

DID you know that NEWALL at one time made a standard one inch Micrometer? As a matter of fact the Newall Company was the first to commence the manufacture of one inch Micrometers in this Country on anything like a quantity basis. The illustration shows a Newall one inch Micrometer, complete with ratchet stop and locknut, which sold in 1929 at the very modest figure of £1 12s. 3d., to the user. And a very good tool it was too. One of these micrometers, supplied in 1930, was recently returned to us for adjustment, and, when received, a check-over proved that it was still capable of measuring accurately to with .0001". Probably the fact that it had been in the possession of a Government Research Station might suggest that it had not been overworked, although a more likely reason is that it had been used by a mechanic who took a pride in his tools.

The claims of machine tool manufacture more or less compelled us to give up the micrometer, but some of us still feel a sense of pride that the Newall Company could, even in those far off days, turn out a tool that compared very favourably with the best that the Americans could offer.

E. A. VALDES



Cath. Vincent

Her many friends will be glad to see this photograph of Cath Vincent, who has now altered her name to Mrs. C. Jennings, with her husband at the Church door.

Cath came to us as a turner in the high days of war, was transferred to office work, and subsequently promoted to Mr. Burfoot's department. Her many friends will wish Cath the best of luck in her new life.

Cath has earmarked the subscription, to which we all so gladly subscribed, for a bedroom chair and linen basket. Good luck, Cath.

Combating the Fuel and Flood Crises

ELSEWHERE in this issue Mr Rowe has paid tribute to all concerned in combatting the fuel crisis and the floods.

At Maidenhead, the fuel cuts were sudden and complete and little could be done except to supply the Fitters with hand drills. On the Trading Estate, however, which has its own generating plant, we continued for two days before orders came through from a higher authority that we were to close down. Those two days gave us a chance to get alternative plant going. We took a leaf from Heath Robinson's book and got cracking.

An Enfield motor cycle with a belt round the back wheel was soon driving one centre lathe which fortunately had a flat pulley. A trailer fire engine was available, and we removed the impellor and put a pulley on the main shaft to drive a counter shaft rigged in the roof between our two largest lathes. The counter shaft had flat pulleys and the lathes had Vee ropes and as we did not feel disposed to turn up new pulleys, we filled the Vees with Plaster of Paris, domed it nicely, and switched on, or rather started up. It worked, and worked well, except that we had to have one man constantly on the throttle to vary it according to the load.

It went so well that a lawn mower was soon brought along and using the same technique of packing the Vee rope pulleys with Plaster of Paris to revert them to flat pulleys, we drove a radial drill.

Finally the ever faithful push-bike drove the engraving machine. Every man who was not thus employed was given a brush and the place was whitewashed and painted throughout. The Fitters kept going with components which we had in stock, and the shortages were made up on the machines we had running. The power was not actually switched off from the mains and we made so much noise with the exhausts that no one

could tell how many machines were actually running! Mercifully the Trading Estate were allowed to switch on again after a week and a half and not one man was stood off. The morale was as high as the sky and everyone worked like mad; they must have done, for we maintained our monthly output, but we hope that we will never have to go through it again.

We had barely recovered from the effects of the fuel cuts when along came the floods, and the sight was unforgettable. The river broke its banks about 2 o'clock in the morning and by the afternoon the water was in the Factory. The current down Oldfield Road was travelling at about 7 knots and the local boatmen flatly refused to take their punts anywhere near the main stream. We contacted one of the "locals" and he finally agreed to lend a hand with an old rough craft. With four men wading in the water, one at each corner of the punt, we took a short cut over, not through, various private gardens and reached the Factory. We took the nose of the punt right through the Inclinable Table Assembly Shop and loaded aboard enough component parts to keep the Fitters occupied at Slough, where they were temporarily housed. Eventually we removed a finished Inclinable Table to safety. Mr. Lacey "borrowed" a pneumatic dinghy from the Army, who had been called in, and several hectic trips were made down the main stream to reach the Factory yard. Where it was impossible to shift large machines, the electric motors were removed and taken to a place of safety.

The floods stayed with us for two weeks and then came the cleaning up. The filth left behind was indescribable, but it was finally cleared and the smell of disinfectant remained for weeks to remind us of it.

J. HANN,
General Manager O.M.T.

A Day's Toil

by D. Sneesby.

MOST of the chaps in the works have the idea that our job is easy, clean and "cushy", so I am going to try and show you all how a day's work goes with us in the sparks department.

To start the day well, you usually hit the clock at three minutes past eight. Then you start to get your overalls on, when some angry machinist crashes in on your bliss and bawls: "Hey! My machine won't work. Come and do something, will you?" Giving him a gentle smile you murmur, "O.K. chum, lead the way". Grabbing your tool kit, (consisting mainly of pliers, screwdriver and hammer) you follow him through the shop.

Upon arrival at the sick machine, you begin by shovelling away all the grease, steel shavings and old lunch papers that accumulate round the switch-box. But before you can touch the switch the operator yells "Look, this is all I did!", and promptly kicks the switch on. There is a blue flash, a loud bang and a cloud of smoke. From all around come cat-calls, sarcastic remarks relating to the electrician's ability, and loud bangs caused by the slapping of files on tool-boxes. The cause of all this commotion stands back with a sadistic grin all over his face. You don't say a thing, because you'd hate to upset him. You just carry on as if nothing had happened.

After a while you ease up from your uncomfortable position and announce that the machine is all right. The machinist doubtfully presses the "start" button. If the machine works his surprise is so great that you fear he is going to say "thank you" or something. You walk back to the Department slightly annoyed at the lack of gratitude. Before you get to the door a voice yells across the shop, "What about my light?". You pretend not to hear, but it's no good, a hand grabs your shoulder and you know that you've got to do the job or get broken up into little pieces.

Fixing a light on a machine is no joke, as the operator obstinately refuses to stop his job because he's on bonus. Not knowing what bonus actually is, we don't argue.

Just as you've finished the light, a chap comes and tells you the crane has ceased to function. At the same time the tea-boy comes to report the arrival of tea and rolls. Knowing that you're going to have cold tea, you are not in such a sweet mood as usual as you get a ladder and head for the crane.

Interruptions are fast and furious on this job because every one in the shop is waiting to use the crane. "How much longer will you be", "Why don't you fetch an electrician", "Come on chum, I'm on bonus and I can't hang about like this", "I could do the job in half the time", and various other attempts to annoy.

Despite all this, you get the crane in working order again, feeling pretty good about it because you now see that the shop can't do without our gang. But just as you pick up your tools and start to move off, one of the chaps will cheer you up a little by saying, "I suppose it will crack up again in a day or two. It always does when you fix it." Beating off temptation, you put your hammer back in your pocket.

Getting back into the department without being spotted is an art not to be spurned, but it can be done successfully—when you know how.

Once safely inside you get busy on your tea and rolls, taking an earful of "Music while you work". But even that is taken from you, as the camera blokes want to listen to all the mysterious noises inside a motor which they have on our bench, so they have to switch our loud speaker off.

(Continued on next page)

A Day's Toil

(Continued from page 34)

Your tea is cold, no music, nerves highly strung, temper very short, but anyway, the cheese roll is good, until a voice grates in your ear, making you swallow hard and almost choke to death. "When are you chaps going to wire up my two machines? I asked about them three days ago. Now come on laddie, it's production we want".

You don't have to look round. There's no mistaking that voice. It's utterly unparalleled. It's no longer just a voice at Newall's, it's a legend.

Your own voice has got down to a mere whisper by now, so you don't bother to answer, just pick up your tools and crawl out to the gauge shop determined to make this job last until twelve thirty.

Scrambling underneath dirty machines is no fun, believe me, and coupled with climbing all over the roof to get a connection is even less fun. The distribution board is a mass of curled wires, and finding three spare fuses beats the lot. You are now so fed up that you shove your hand on the live side. This, of course, helps to wake you a little. Then, wonder of all miracles, the buzzer! Grabbing your kit, you make a mad dive back to the electrical dept. A whole hour with no grousing machinists on your tail. It's wonderful!!

But it all begins again after dinner. "Where's my light?" "Fix my drill, mate." "I dropped some steel shavings in my switch and it won't work now, wonder what's up!" "My motor is smoking, come and do something." "My water pump has stopped, see what you can do, I'm on bonus."

Your head is reeling, you feel dizzy, your face is black with grease and anger. You decide you want a short rest, so you go and see the shop convenor. "It's nothing important you have to complain about, only something about bonus, but he's such a helpful chap, and so soothing to talk to. Also it's amazing the way he can actually pull the wool over your eyes in any subject you approach.

The afternoon drags by on leaden wings, but you cope, you have to, it's your living. By five forty-five you don't want anything more than a wash, a meal and a bed.

There's only one man in our gang that goes around unperturbed all day, our chief maintenance engineer, the man with the pipe and cap, our mascot, who can always spit in a disinterested fashion and say "It's all right now!"

The doctor has a little black bag, but we have a little tin box. Not the same job, quite, but the same equipment, no doubt.

They call us blokes "non productive," but remember, "we also serve who always get here late!"

BIOGRAPHICAL NOTE

DEREK SNEESBY—Electrician's Apprentice—19 years old. Came to Newalls straight from school; is attending night school with a view to taking National Certificate, but was put back by serious accident some three years ago. Hobby: Girl friends; no steady yet but living in high hope. Motor-bike fan. Takes life the hard way. Film student: Thinks British films more original than American. Dislikes excessive montage.

NEWS from M.T.E.

SINCE the last issue of "Precision", considerable strides have been made by M.T.E. in the production field, and this in more senses than one! We've been producing a lot more electrical switchgear and some other things besides. But first things first—and now about the business side of our production.

We're pleased to say that a number of our formidable obstacles such as lack of raw materials and inability to buy plant, etc., have been surmounted, but there are many more ahead. However, we're doing our best to overcome these and to develop and produce the necessary components which are essential to enable us to cover a comprehensive range of switchgear. Up to the moment our range of components comprises of 2, 3 and 4 pole A.C. 20 amp contactors, the triple pole magnetic overcurrent relay and the push-button unit. In the very near future we hope to be manufacturing our own timer and to extend our contactors to cover the larger sizes and the D.C. field. These are now past the prototype stage and should be available for fitting very shortly.

Our technical staff have been more than busy in further developing our Electronic Equipment, and we're glad to say that the outside enquiries received to date have been more than encouraging. There is very definitely a big field open to Electronics in its varying branches, but as usual "Rome wasn't built in a day," and we must progress step by step. The chief trouble here lies in the difficulty of obtaining more technical electronic brains. Up to the moment the entire research work has had to be done by Mr. Wilkinson and Mr. Consterdine, but

before we can branch on into other aspects of Electronics we must have more people capable of carrying out the detailed research work. Our talent scouts are on the look out, so here's looking to success.

The other side of our production is more domestic. For instance, it is now known that one of our Directors (at least) is collecting His Majesty's five shillings regularly every week. This proves quite sufficient for "Beer money," providing the said gentleman doesn't, in the course of his duties, have to visit the Peterborough area . . . when it becomes a mere pittance. Harry Swiney, from the Machine Shop, has increased his income in a similar way, while Jim Allwinkle is rumoured to be making great strides. To this latter gentleman's wife we send every good wish for the "Big Event," scheduled for December. There may be others, but how's the writer to know.

Of marriages we can back two—one past and one to be. Our Doris changed her surname to Rayment during the Summer, but what a wedding present she received from the Labour Government. Poor Mr. Rayment received his calling up papers on the first day of the honeymoon—since then several people have been heard whistling that lonely melody "One Night of Love." Ken Sonster, who usually tests panels, has decided to test marriage and we wish him all luck as he walks that measured mile some time this month.

Well, that's all the gossip, so until the next issue here's wishing you all the best of luck. One final question to M.T.E. personnel—how did many succeed when all others failed—she found a flat.



THE FIRST OERLIKON

The photograph was taken in Peterborough on the 27th July, 1947, and shows the Oerlikon Radial Boring Machine being unloaded.



Winifred Creasey

On September 27th wedding bells rang for Winifred Creasey's marriage at St. Margaret's Church to Staff-Sergeant Leslie Cave of the Norfolk Regiment.

Winifred came to Newall from the A.T.S. in 1946 with a Loyal Service Badge and a determination to get on. Winifred spent a long part of her Military Service in hospital and everyone admires the way in which she is conquering a bad service injury.

She is continuing her work for Mr. Scott, our Chief Service Engineer, and looking forward to the day when hubby is demobbed.

THE



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