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Nueva Montana, Spain- Rod Mill

Ernest Unknown

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NUEVA MONTANA, SPAIN - ROD MILL

Two strand rolling of 8 MM is proceeding successfully and has created an excellent initial impression. Before proceeding further I thank Bill for his letter of 31 October and Eric for his letter of 31 October. Dealing with Bill's letter first I would comment as follows:

REFERENCE (3):

The "Electroflow" man is still on site but is unable to finalize his furnace adjustments because of fluctuating gas supplies. The gas piped from the older part of the plant is liable to be reduced in quantity and mixture without notice. This is frustrating and after a gas supply reduction we have to wait for the billets to heat up again and are then not sure that they are fully soaked.

After these repeated reheatings the scale position, although considerably improved, since the initial rollings, is not ideal. The furnace men at present are not as skilled as normally expected and if we get a rolling stoppage due to any cause they seem afraid of getting the billets stuck together and reduce the gas supply.

Am now informed that stable supplies of gases are doubtful until the gas holder (erection started a few weeks ago) is completed. This will, I am told, take about 12 months. These people do not seem to start anything until it is actually needed - forward planning seems unknown, perhaps they are short of finance. Now that we are getting some reasonable runs on two strands the scaling position is considerably improved and the failure of bite at No. 1 stand has almost disappeared. I hesitate to apply an extra water hose on the ingoing billets because the water position at the moment is touchy.

REFERENCE (5):

We have "dog kennels" over the pushout desk, the motors for the skids, billet conveyor, ram charger, coil conveyor motor and limit switch for ram charger etc. We are gradually looking like a stray dogs home!!

cont'd
Nueva Montana Report:

REFERENCE (7):

Number one crop and cobble shear is working excellently at the moment but No. 2 shear still needs some electrical adjustments and has given us trouble.

REFERENCE (8 & 9):

As you point out Bill, tail end coiling will improve when we get up to top rolling speeds, but at the moment we have not had any pinch roll troubles used on one reel at the maximum distance only from the finishing stand No. 15. Some time ago I had rods made for 8, 9, 9.5, 10, 11 & 12 MM diam for the accurate setting of the pinch rolls.

REFERENCE (11):

We have to watch the twist plugs at the first repeater only. Billet temperatures and slightly varying spreads seem to be affecting us here at the moment. We do not get the slightest trouble with the twist plugs into the last repeater, but the section here is a very small oval with correspondingly smaller spread due to heat. If I remember correctly Templebro rod mill mounted a housing containing two very easily handled adjusted twist plugs at the ingoing mouth of their first repeater. This was air cooled and worked very successfully. Adjustment of our last twist plug, particularly when very hot, is not too efficient. Perhaps Sadler would let us have particulars for our future consideration, we could then perhaps do something similar in our twist troughs. I put this point forward as a more efficient method of adjustment - I think our present set up is a bit crude.

REFERENCE (14):

Nueva Montana's jobbing foundry must be poor judging from the guide castings we are getting. Every care is taken with castings for their resale air compressors etc but castings for internal consumption are, to be vulgar, lousy! !
GENERAL:

(1) Up to the present time we have had three (no warning) power cut offs. On the last occasion with the mill full of steel, but fortunately single strand only.

(2) Have referred in a previous report on the unsatisfactory sheared ends of the billets. On October 31 we had a three man delegation from the billet suppliers (Aviles) and they have promised to investigate the trouble. As pointed out previously the sheared ends are bent in opposite directions thus:

At the moment we are working one shift 6 a.m. to 2 p.m. and as the skids and billet conveyor are in the open with no lighting, when dark, if the billets are not fed into the furnace with the bent ends in the lateral plane, we get trouble on the conveyor and at the furnace skids. During the visit of the Aviles people Jim Chesney was also here and the Aviles people immediately said "Senor Chesney sold us this Davy billet shear!!" Some of the billet ends are bent more than others and these give us a little trouble when pushing out.

(3) The mill operators as a whole appear to be the cheapest obtainable so the enthusiasms and initiatives are rather low grades.

(4) The hook carrier is now in operation. Several months ago I drew up a manning list (which was agreed on) with these people and particularly stressed that a boy was necessary for tucking in loose ends of coils before the coils reached the hook carrier, star wheel. No boy was provided and a loose end was jammed in the star wheel and as the electric stop button was not completed at the head of the coil conveyor the jamming bent the shaft of the star wheel. The not too satisfactory straightening of the star wheel shaft has taken four days of maintenance work. A man has now been ordered to tuck in all loose ends on the conveyor. Again they do nothing until it is essential.

(5) Will you please consider removing the limit switch attached to the trip bar for the cobble bundler. On all the cobble bundlers with which I have been connected the limit switch has been removed as it has proved more of a nuisance than a help.

(6) Our delivery twist plugs at the housings need more consideration - the ovals are not so bad as the squares, The squares are cut out in a very short time and this makes cont'd
Nueva Montana Report:

it difficult here because of my continual fight with these people to obtain the minimum necessary spare guide equipment. In spite of all my efforts they are not moving at all quickly to supply sufficient spare guides.

(7) In future will you please include in the "bible" in addition to the height and width of squares, the size of the square sides.

(8) Some considerable time ago I pointed out that our screw down dials were graduated in decimals of inch sizes and as all our rolling sizes are in metric sizes it would have been better to have had metric graduations on the dials. It was agreed that I would persuade these people to remove and reverse the dials and mark with metric markings. This they promised to do but to the moment no change has been made. Will you please consider metric markings on dials for countries in Europe other than England in the future.

(9) Will now give some thought and time to the possible calculations of effective roll diameters as requested by Eric. In the meantime along with Mike Shore I think we can get a very close solution by practical means. By fitting a known diameter disc (steel knurled) on to a tachometer we can obtain the following equations:

\[ \text{ROLL EFF. DIA} \times \pi \times \text{ROLL RPM} = \text{DIA TACH. R. DISC} \times \pi \times \text{SPEED OF STICK IN RPM ON TACHOMETER} \]

from this equation you will readily see that \( \text{ROLL EFF. DIA} = \text{DIA TACHO DISC} \times \text{SPEED OF STOCK IN RPM ON TACHO.} \)

ROLL RPM

When areas of stock are calculated from the hickey we can then also find out whether pull between stands is taking place and also obtain a rolling constant.

(10) Am frequently watching the temperatures of the high speed pinion bearings in gear boxes and independent drive shaft bearings. Up to now these have been very cool bearing in mind we are running at approx. 80% full speed.

We have a few oil leaks at Morgoil bearings - not serious - I believe when the internal parts were cleaned in the Morgoil shop the oil seals were cleaned with a fluid unsuitable for the composition of the seals material. Hope to solve this snag before leaving here.
ROLLING NEWS:

Two strand rolling is being insisted on. We are still rolling good 8 MM rods with scaled billets. Rolling, along with the mechanical equipment, has not given any difficulties worth mentioning. Rolling time since we started has been limited due to services outside our control such as gas supply, electrics, water, bent billet difficulties and man handling of coils from the coil conveyor. I can now say that the mill from a rolling angle has settled down very well - possibly we got away too easily and the Spaniards may be thinking there's nothing to bother about!! It is certainly an effort to make the mill crew parade continuously and examine all parts of the mill when it is rolling.

It may be a bit early to say, but I think at the moment we shall not have pass shapes or roll diameters difficulties here. When we are sure we are rolling 60 MM billets it may be different. At the moment cannot answer for the finishing cage as we are finishing the rods now being rolled at Stand No. 15. There may be a change this week-end to 7 MM rods and this means three stands in the finishing cage. We have changed passes once at Stand No. 15 and the finisher has been shown how and when to stone finishing passes. It has been very carefully explained and put into writing officially to them the reason and frequency of stoning holes. We cannot obtain here suitable chalk for marking the tops of the rods and stoning one roll only for this purpose is not practicable for the first 2.1/2 - 3 hours of rolling in a new hole. Shutting the water off the top roll does not produce satisfactory results either. Shall appreciate hearing about any other efficient method.

Regarding Eric's letter to Mike Shore dated 31 October, my copy was overlooked but I borrowed and copied Mike's original letter and would comment as follows :-

Initially, after satisfying myself on the single strand rolling with badly scaled billets in the pass nearest the work side and with billets gradually decreasing in scale and with possibly little spring due to the proximity of the pass to the work side roll housing I switched to the second strand. After a short period of second strand rolling with decreasing scale and possibly more spring than was experienced in the first pass I started to squeeze up a little at a time starting from No. 1 Stand exactly as suggested by Eric. After a short period on this second strand I started to double strand the mill and squeezed up a little more starting from No. 1 Stand.
A good square at No. 9 "bible" size is being achieved and we can possibly reduce this further if necessary, even when the billets are still slightly scaled - the following are the provisional partings now in the mill but we shall take leads as soon as possible with stock in and stock out when we are sure we are rolling 60 MM billets.

To-day, along with Mike Shore, have taken from Stands No. 1 to No. 9 provisional roll speeds, temperatures into No. 1 Stand and temperatures of stock after each stand up to No. 9, shapes with the burning hickey and tachometer readings of stock speeds for deliveries after each stand from No. 1 to No. 9 inclusive. Areas and rolling constant and tabulations of other essentials will be sent you as quickly as possible. Am really pleased with results up to now because it appears (may be wrong here) that we have extra squeeze up our sleeves if necessary.

**PARTINGS. DOUBLE STRAND. 8 MM RODS. 9 NOVEMBER 62**

<table>
<thead>
<tr>
<th>&quot;BIBLE&quot; PARTINGS</th>
<th>PRESENT PARTINGS</th>
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</thead>
<tbody>
<tr>
<td>No. 1 - 8 MM</td>
<td>Bible parting minus 0.100&quot; inches on dial</td>
</tr>
<tr>
<td>No. 2 - 8 MM</td>
<td>&quot; &quot; &quot; 0.050&quot; &quot; &quot; &quot;</td>
</tr>
<tr>
<td>No. 3 - 6 MM</td>
<td>&quot; &quot; &quot; 0.100&quot; &quot; &quot; &quot;</td>
</tr>
<tr>
<td>No. 4 - 4.5 MM</td>
<td>&quot; &quot; &quot; 0.070&quot; &quot; &quot; &quot;</td>
</tr>
<tr>
<td>No. 5 - 3.52 MM</td>
<td>&quot; &quot; &quot; 0.060&quot; &quot; &quot; &quot;</td>
</tr>
<tr>
<td>No. 6 - 3.6 MM</td>
<td>&quot; &quot; &quot; 0.060&quot; &quot; &quot; &quot;</td>
</tr>
<tr>
<td>No. 7 - 3.02 MM</td>
<td>&quot; &quot; &quot; 0.060&quot; &quot; &quot; &quot;</td>
</tr>
<tr>
<td>No. 8 - 2.5 MM</td>
<td>&quot; &quot; &quot; 0.033&quot; &quot; &quot; &quot;</td>
</tr>
<tr>
<td>No. 9 - 2.49 MM</td>
<td>&quot; &quot; &quot; 0.040&quot; &quot; &quot; &quot;</td>
</tr>
</tbody>
</table>

If I had not set up the mill originally to the "bible" partings I would have set partings allowing for the following springs.

| Stands 1 to 4 | 3/32"  .094 |
| " 5 to 7   | 1/16" .0625 |
| " 8 & 9 | 1/32" .031 |

We are not too far adrift again with scaled billets. The following are the provisional stock sizes carefully measured to-day from the shapes taken by means of the hickey:

| No. 1 - , Bible Shape | 65 x 40 | Hickey Shape | 71 x 39.4 |
| No. 2 - " " | 78.5 x 27 | " " | 81 x 28 |
| No. 3 - " " | 32 x 48 | " " | 33.4 x 47.2 |
| No. 4 - " " | 53.5 x 20.5 | " " | 54.7 x 20.25 |
| No. 5 - " " | 30.84 x 30.84 | " " | 30.25 x 30-25.5 square |
| No. 6 - " " | 34.5 x 15.8 | " " | 33 x 15.7 |
| No. 7 - " " | 22.53 x 22.53 | " " | 21.4 x 21.9 - 19 " |
| No. 8 - " " | 26.5 x 11.5 | " " | 23.3 x 12.3 |
| No. 9 - " " | 17.09 x 17.09 | " " | 17 x 17 - 14 square |

cont'd
The present hickey shapes may have to be adjusted slightly after examination of tabulated results from particulars taken to-day. We may have slight pull in the above stands at the moment - will finalize results as quickly as possible and proceed similarly from Stand No. 10 onwards, again when we are sure of rolling 60 MM billets. We have an intelligent mill pulpit operator and it was pleasing to-day to see him sitting down in the pulpit for quite long periods without touching the speed controls.

The oval receiving guides at stand No. 13 are a bit touchy at the moment and I think it would pay us in future to machine the very small plug guides in the trumpets into Stand No. 15. I am now making a better job of these small plug guides - machinists' labour is very cheap here. Maybe when the Stands 10 to 12 are finally adjusted the touchiness in receiving guides at No. 13 will disappear. I was a bit uneasy when I found that we had no more pull up space in the repeaters than was originally allowed at Dorman Long's, but up to now this has not been any serious problem - this comment may be a bit premature but I hope not. Up to now we have not had one cobble due to setting-up or actual rolling maladjustment. May have to alter our drawing size holes for twist plugs to the repeaters, particularly those into the first repeater. I will send you as soon as possible details of the oil calibrations for gearboxes and Mergoils etc.

I think this mill will be an excellent testing ground for obtaining honest to goodness information, but don't think these people will be very receptive to trying new experiments. Coils are whipped off immediately they leave the hook carrier.

There is so much I would like to do for these people and hope I have the time to do it.

PERSONAL:

The local Works Director is camping in the mill and is actually on the floor at 6 a.m. He has approached Mike and suggested he stays here for a mentioned period of two years - he has not said a work to me about this - believe Mike has already informed you.

CONCLUSION:

Am working under difficult conditions with these people not too interested in taking much responsibility - must gradually make them shoulder their responsibilities.

Sincerely,

Ernest.

EWM/swf
cc E.H.Fors, W. Murray
Ed. Murrah