Management Accounting
Professor Anil K. Sharma
Department of Management Studies
Indian Institute of Technology, Roorkee
Lecture 40: Labour Variances - IV

Welcome students! So, we are learning about this composite case in the labour variances and in the previous class I discussed with you that since the actual production is different from the standard production by 10 units, actual output is 810 and the standard expected was 800 units. So, now we have to means rework the whole thing. We have to upscale the standards in light of the actual production and then compare with the actual production because we were expecting that if 800 units have to be produced, then how much this standard hours are required for the actual output, right?

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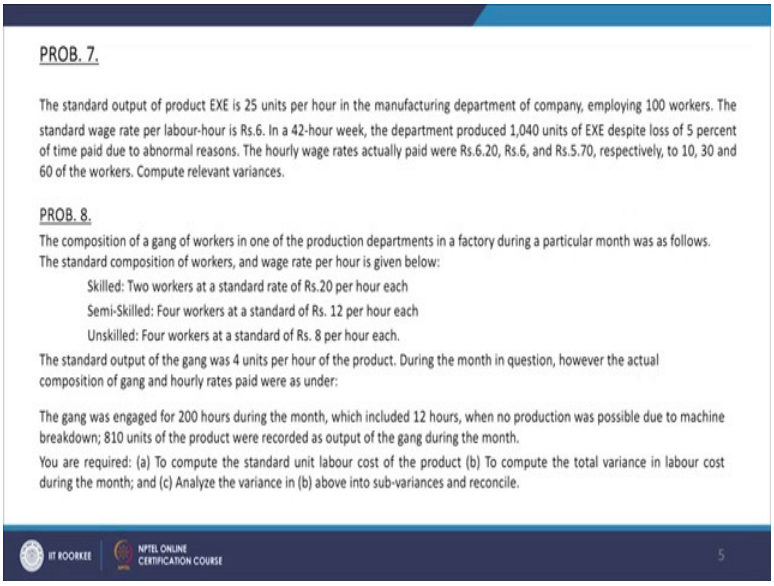

So, it means all the standard hours are required for the standard output. We have found out every worker has worked for 200 hours because it is given in the problem also. If you look at the case, it is clearly given that the gang was engaged for 200 hours in the month and if there is a 4 units during 1 hour production during 1 hour is 4 units, it means that the standard production was 800 units. So, 200 hours when we talk about it means every worker; skilled, semi-skilled and unskilled has worked for 200 hours and the output of this total team of the 10 people 10 workers is say 4 units in 1 hour.

So, it means in 200 hours there should be 800 units output but actual output is 810. So, let us upscale it that if say in 200 hours the standard output expected is 800 units then, say for producing the 810 units how many man hours are required, right? So, it means we have to upscale it and in the previous class I discussed with you that actual production is 810 so, it means if you divide by per hour production by the whole gang by the whole team so this works out as 810 divided by 4.

So, this is 202.5 hours per gang worker. This should be the output. So, now we will have to prepare a statement first to calculate the revised standard cost and then we will have to take into account the actual cost and then we will have to calculate the labour cost variance. So, let us prepare this statement here and labour cost variance. So, we are going to prepare this. We are going to find the labour cost variance. For that we are going to prepare the statement. So, statement will be something like this.

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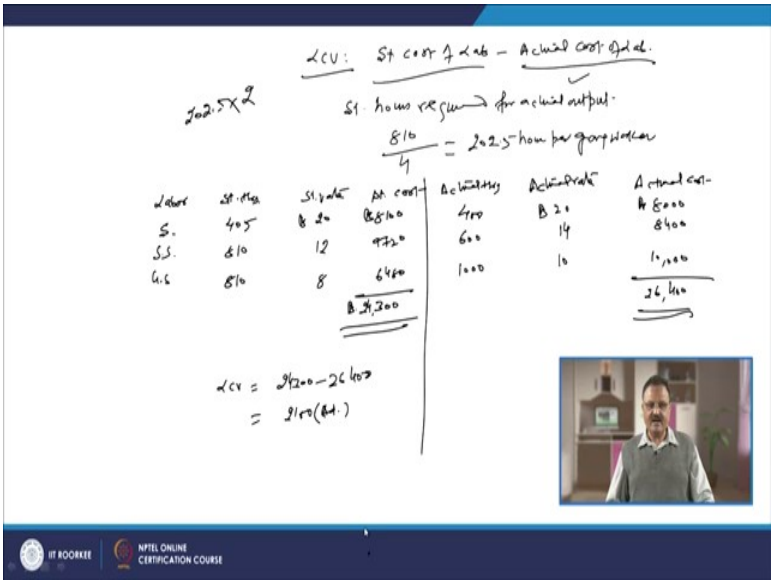

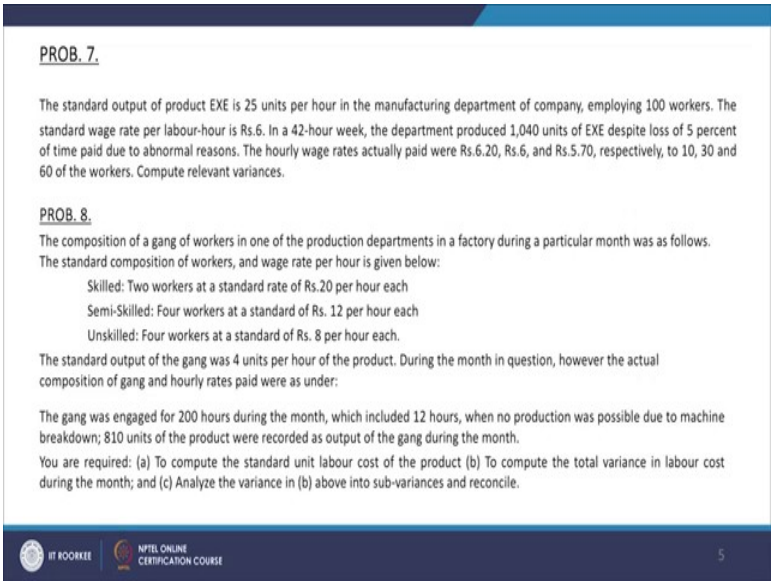

We will write here labour then is the standard hours then is the standard hours labour standard hours then is the standard rate. Then is the standard rate and then is the standard cost. Then is the standard cost. Then we have to go for the actual. Here, if you go for this you have to go for actual now and if you go for the actual it means actual hours. Then is the actual rate, actual hours, actual rate and the actual cost, actual labour cost, actual cost, right? So, this statement we have to prepare first labour is the skilled.

Skilled workers standard hours are required are how much now? We have got how many 202.5 and how many workers are there. So, these workers are how many 2, so it means this works out as 405 standard hours for the skilled labour. 405 standard hours are required and the standard rate already given is rupees 20. So, it means what is going to be the standard cost here. Standard cost is going to be 8 rupees, 8100. This is rupees 8100. Then, we have semi-skilled.

Semi-skilled are how many? If you look at semi-skilled here how many workers are there standard, 4 and if you take this if you convert this you will find out here is that semi-skilled will be how much 810 hours because they are 4. Semi-skilled workers are 4, 810 hours. And what is the standard rate? 12. So, this amount works out as how much? 9720 and then we will go for the unskilled. Unskilled labour is again how many? We go for the unskilled labour and they are 4.

So, if they are 4, so number of standard hours will be how much? Again 810 and what is the rate? Standard rate is 8. So, what will be this cost? 6480. 6480. So, you will count this. This is

the standard cost of the labour. What is the requirement here? Standard cost of labour minus actual cost of labour. So, this is the revised standard cost, if you total it up this works out as how much; rupees 24,300. This is the standard cost of the labour and in the case of actual cost we have not to do anything.

We have to only pick up the information given in this case, and this information is how many actual workers are put on the job, 2, 3 and 5. 2 skilled, 3 semiskilled and 5 is the unskilled workers are put on the job and they have worked for 200 hours. They have actually worked for the 200 hours. So, what are the actual hours here? So, it is 2, the number was 2, 3 and 5. So, this is going to be how much; 400 hours. In this case it is going to be how much? 3 means 600 hours and in this case it is going to be how much; 1000 hours. There are going to be 1000 hours.

So, what is actual rate now? Actual rate is given to us that is rupees 20, then is the rupees 14 and then it is rupees 10. So, this will be how much? Rupees 8,000, actual cost for the skilled is 8,000, for the semiskilled is 8400 and then for the unskilled is 10,000, unskilled is 10,000. So, total it up you will find out this actual cost and the actual cost is going to be how much? This is going to be 26,400. This is 800, 8000, 16400 and 26,400, right?

So, now this is the information available with us. We require the standard cost of the labour and the actual cost of the labour. So, if you look at this standard cost, this is 24,000. So, let us go for the labour cost variance. Labour cost variance is 24,300 minus actual cost is 26,400 and finally the labour cost variance is how much. This is going to be 2100 adverse, 2100, 2100 adverse. This is the variance which we have calculated here is 2,100 adverse. Now we look at, had we calculated it maybe by taking into account that in the 200 hours, the output expected was 800 units. And now actual output was 810 units.

Had we not up-scaled the standards, this variance would have been further more negative. But we up-scaled the standard and we then raised the standard up to that if for 800 units 200 hours are required per worker per say, 200 say man hours are required in every category of the workers then how much are required for 810 units production? Keeping in mind the 4 units production per hour. So, we upscale the standard and we will upscale the standard we still got that the standard cost works out as 24,300, right?

Had you not upscale the standard this cost would have been much less. We would not get 24,300 even less than that but the actual cost is very high that is 26,400 and this may be largely due to if you look at with your naked eyes without doing any kind of analysis, you can find out that we have increased the labour rate. Numbers of workers are also changed. In case of the skilled we have 2, 2 but in case of the semiskilled we were expecting 4 as a standard but actually we could get only 3. And in the case of the unskilled we were expecting to put on the job 4 workers but we got 5 or we had to arrange 5 because there was a 1 worker less available in the semi-skilled category.

But if you look at the rates; rates are same in the case of the skilled category 20 rupees per hour but in case of the semi-skilled the standard was 12 rupees actual is 14 rupees and in the case of the unskilled standard was 8 rupees and actual is 10 rupees. So, because we have changed the composition of the workers also and we have paid the higher rate actually as compared to the standard rates. It means that the labour cost variance has worked out as negative that is 2,100 as adverse, right?

Now, in the same line we will go for now the calculating the further variances, sub-variances. Next question is; first question was to calculate the standard labour cost per hour. We calculated the standard labour cost per unit. So, that was 30 rupees. Then, we had to calculate the labour cost variance. We calculated it. This worked out as 2,100 adverse. And now we will have to go for the sub variances.

Sub variances of the labour cost variances are the labour rate of par variance and the labour efficiency variance. So, we will calculate these 2 variances. We will try to find out whether the labour rate has caused this negative variance labour cause variance or labour efficiency or both, right? So, and after that we will calculate 3 more variances as the sub variances of the labour efficiency variance which is labour idle time variance, labour mixed variance and labour yield variance, right?

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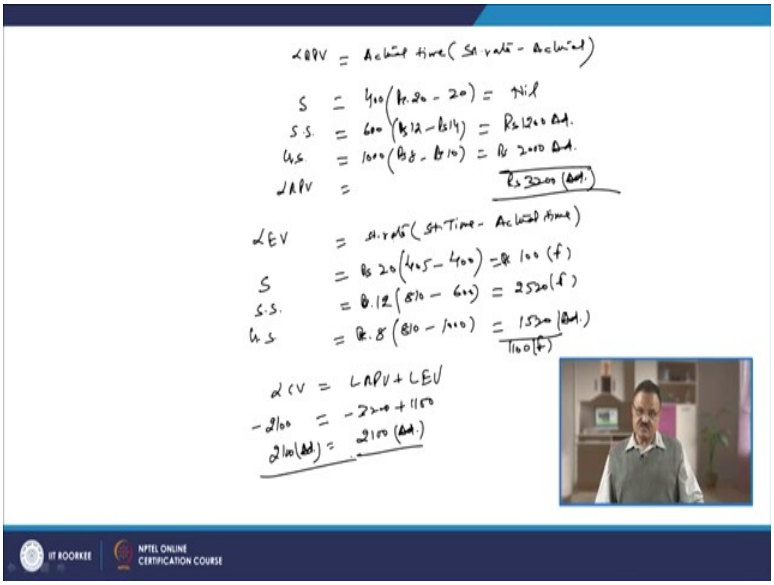

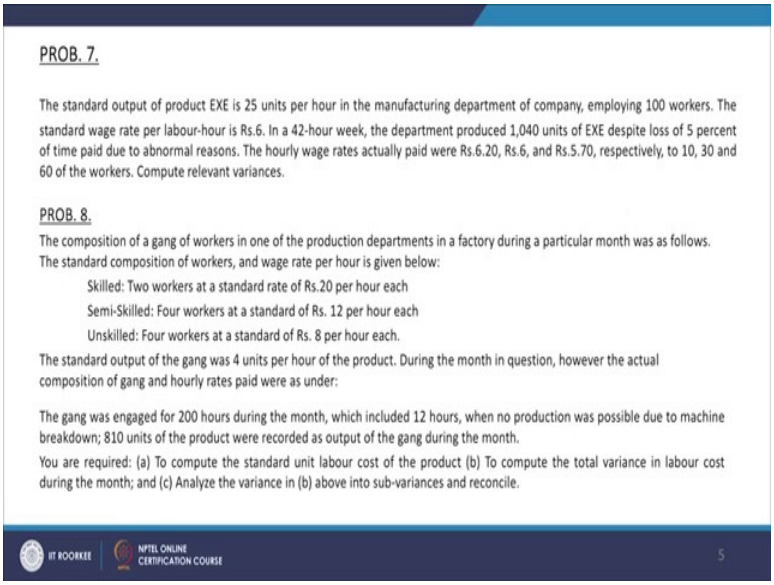

So, now let us calculate the labour rate of the pay variance LRPV. Labour rate of the pay variance if you calculate this rate this variance so, what is the formula? Actual hours paid for or actual time you can say actual time into standard rate minus actual rate standard rate minus actual rate. This is basically per hour, right? So, this is the formula. Now, actual time is how much? If you look at the actual time here, we will now have to calculate it in the 3 category of the workers separately.

And if you calculate in the 3 categories of the workers separately, first we are going to calculate in case of the skilled. In case of the skilled workers, this variance is going to be how much? This time is how much; 20 into total actual time is, we have to go for looking at the actual time. So, the actual time if you look at here that is the how many 200 hours the gang has worked. How many workers were actually?

There were 2. So, 200 into 2 is the 400. So, this is the 400 into standard rate minus actual rate. If you look at the standard rate it is same. So, it is 400 into standard rate is rupees 20 minus 20 so, it works out as basically this is the, the variance is basically nil or 0. In case of the skilled there is no variance. You have seen it that number of workers are 2 both standard and actual and the rate is also 20 rupees. So, basically there is no variance at all and labour rate of pay variance has not caused any negative deviation in case of or as far as the skilled labour is concerned.

Now, we go for the semi-skilled. For going for the semi-skilled labour now we will have to go for the actual time. Actual time is how much; 3 workers and 200 hours. So, it is 600. And what is the rate? Rate is 12 minus 14 rupees. 12 was the standard, actual paid is how much; rupees, actual rate paid is actual that is rupees 14. So, this is going to be how much? This variance is going to be 1,200 rupees 1,200 and this is adverse.

And then we go for the unskilled. This is unskilled. So, if you go for the unskilled in this case what is the number of workers 5 and number of hours again 200. So, this works out as 1,000. And now, here it is a variance. What was the standard rate; rupees 8. And what is actual rate; rupees 10. 10 or I think it is more. No, this rate is 10, fine. This is 10 so this works out as how much? This variance is 2,000 adverse rupees 2,000 adverse.

So, this total variance if you calculate this is LRVP Labour Rate of Pay Variance, if you calculate this variance this works out as how much; it is rupees 3,200 adverse. This is the variance. This is the labour rate of the pay variance. After this, we will calculate the third variance as the dissection of the labour cost variance and this variance is the LEV, labour efficiency variance. And if you calculate this labour efficiency variance here, what is the formula; formula is now we are calculating the efficiency so, what will happen?

This say time will come say this hours will come inside the brackets and standard rate will come outside. In the upper case in the labour rate of pay variance, rate went inside the bracket and that

actual time came outside the bracket. So, which you want to find out the variance which you would like to find out that those figures will be inside the bracket and multiplied by either the actual time or the standard rate.

So, we multiplied by the actual time and difference was between the standard rate and the actual rate. In case of the labour variance efficiency now, we will have to apply the formula. So, what is the formula? Standard rate into standard time or standard hours you can say standard time minus actual time standard time minus actual time. So, if you now calculate it you have to again calculate it for all the 3 categories. So, first is the skilled category of the workers. If it is skilled then in this case what is the standard rate?

Standard rate was I think rupees 20. Rupees 20 multiply, standard time was how much; standard time was say we were given the standard time, if you look at this standard time given to us that was in this statement we will have to find out. Standard time we have calculated here. This is our standard time, standard hours are given to us here. So, if you look at this standard time, this is we have calculated and this is 405 is the standard time because we have upscale the standards. So, it is 405 minus actual time is how much; 200 into 2 workers, it is 400.

So, this variance works out as how much; this variance works out as 100 but favorable. Variance is there but it is favorable variance. Now, we go for the semi-skilled. In case of the semiskilled now, what is the standard rate; rupees 12 and now, standard time is how much; 810 and minus what is the actual it is 600. So, this variance is 210, 810 minus 600 is 210 and this is 2520, that is 2520 and this variance works out as it is favorable again. This is in terms of the rupees. Labour efficiency variance is in terms of the rupees.

And now, we will go for the unskilled and if you go for the unskilled here, in case of the unskilled what is the rate; it is rupees 8 into the time is again 810 standard time and actual time is how much; 1,000 actual time spent on the unskilled is 1,000 hours. So, it means standard time is in hours. So, it is 810 minus 1,000 and this works out as how much; this will be somewhere 15 this 1,810. So, this difference into 8, so this works out as how much; 1520, 1520 and this 1520 is adverse.

This is 1520. So, we have got 100 favorable, in case of the skilled workers, in case of the semi-skilled 2520 favorable and in case of the unskilled this variance is 1520. So, if you take this into

account finally it would be how much; you take it as 2620 minus 1520. So, this will work out as 1100 and it is favorable because the favorable variances are more than the adverse variance. If you subtract the unfavorable from the favorable so, favorable is 2620 and minus 1520. So, this is 1100 adverse and this labour efficiency variance is now with us.

So, now you first apply the check before proceeding further; you apply the check here. If you apply the check here so, what is the LCV is equal to LRPV plus LEV. So, if you look at this LRPV was how much; labour cost variance is 2,100 minus and this is going to be how much; minus 3200 plus this is going to be 1100 favorable. So, finally it is going to be 2100 adverse is equal to 2100 adverse and these 2 variances are with us. So, it means till now what we have done but variances we have calculated.

These 3 variances, labour cost variance, then the labour rate of pay variance and labour efficiency variance so, you can say that the net result is means tally with each other that is 2,100 2,100 adverse. So, if you look at this analysis up to this point, we are able to find out that though the labour was efficient if you look at the overall variance in case of the skilled workers and semi-skilled workers we have got the favorable variances.

Their standard time was more actual time taken was less total means if we talk about the man hours and the variances in case of the skilled and semi-skilled are positive favorable variances. We have saved the time, we have increased the efficiency of the labour. Labour has been more productive as against the standards but in case of the unskilled workers this has become negative at the efficiency of the unskilled workers is at question and they have not contributed as standardized as was anticipated.

So, it means in the case of the unskilled labour the variance has come up as negative but the net variance if you look at skilled, semi-skilled and unskilled we have found out that net labour efficiency variance is 1,100 it is favorable, right? But the real culprit here for increasing the cost variance labour cost variance is the labour price. And in both the categories that is semiskilled and unskilled we have paid the higher price as against the standard price. Standard price was 12 in case of semiskilled we have paid 14, 2 rupees extra per hour, right.

And then, unskilled was 8 we have paid 10 and here also we have paid 2 rupees extra. So, it means this all has caused the total labour cost variance to be negative though the efficiency has

compensated to some extent but since the price paid was very high or there was a difference in the price paid actual price as against the standard and number of man hours are also very high 200. So, the net result of the labour rate of pay variance has been that is 3,200 adverse. So, to some extent increased efficiency of the skilled and semiskilled workers, this variance has come down but unskilled workers again have proved to be the spoil sport. And the total labour cost variance has become negative that is by 2,100.

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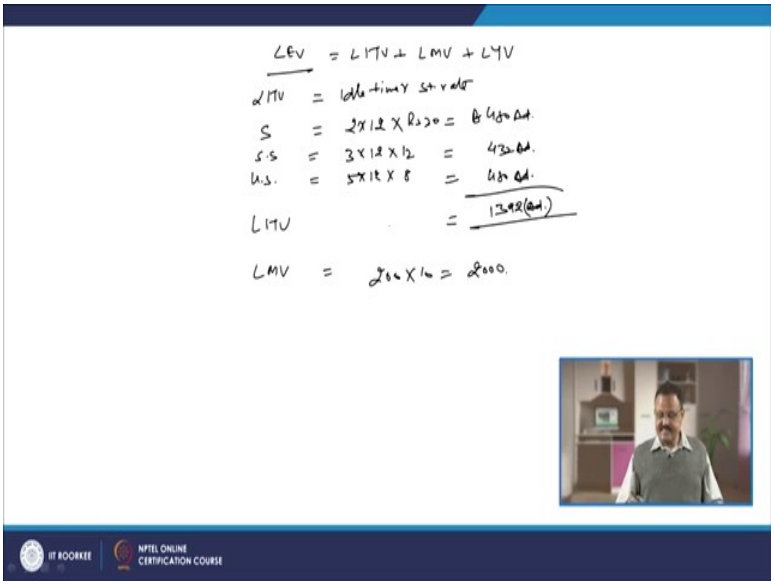

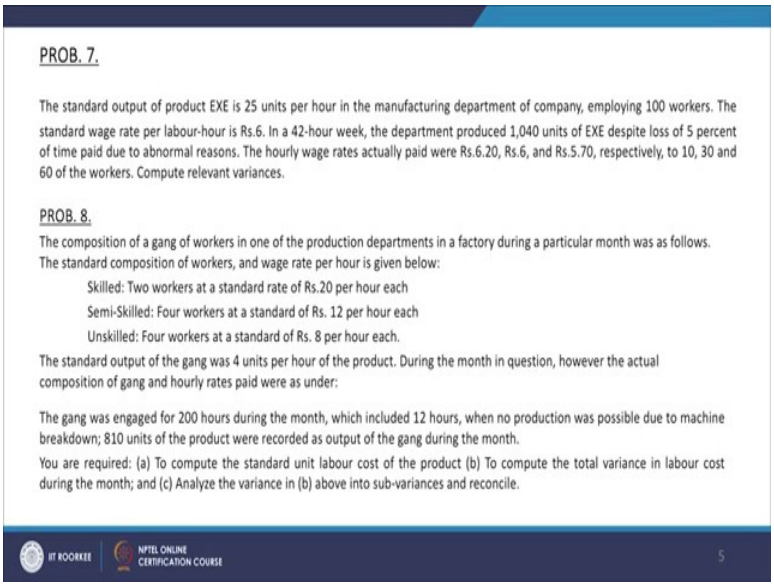

Now, we go for the further dissection of labour efficiency variance. So, it is the LITV plus labour mixed variance plus labour yield variance. Labour idle time variance, labour mixed variance and labour yield variance. So, now we will have to find out that labour efficiency variance which was 1,100 favorable has been means because of which factor. Mixed has contributed, yield has contributed or idle time which we have means separately we are going to calculate.

What is the rule of the idle time; because it is recognized that there was some idle time because of the some reason given here. What was that reason for the idle time? There was a machine break down. So, because of the machine break down so we had some idle time. So, we have to recognize that part also. So, now we will go for calculating the labour idle time variance that is the LITV and in case of this what is the formula here; idle time into standard rate.

Idle time into standard rate, so, idle time in the case of skilled category is how much; idle time in skilled category is rather total number of hours for which the labour could not work, 12 hours. In case of the skilled how many workers 2, how many hours 12 and what is the standard rate; standard rate is 20 rupees 20. So, what is this variance? This variance is going to be rupees 480. And this variance has always to be known as negative variance or adverse variance.

Similarly, we talk about the semi-skilled. In case of the semi-skilled, how many semi-skilled workers are there. In case of this we put 3 workers on the job. What was the number of hours 12 and this is what is now the standard rate was rupees. What was the standard rate was in that case standard rate given to us was 12 rupees. So, this 12 rupees if you take, so this will work out as 3 into 12, this will work out as 432 and again adverse.

432 again is adverse and now the third category is the unscaled and this unscaled is how much; this is again going to be 5 workers. Number of hours is 12 and then 12 hours 5 into 12. 5 workers were there put up on the job. If you take this labour idle time variance so this 5 workers 12 hours and the rate was rupees 8 standard rate was 8. Actual rate paid was more. That actual rate paid was rupees 10 because of that the labour rate of pay variance has become negative. So this is the total works out as 480 adverse.

So, what is the total LITV? If you calculate the LITV as a sum total of these 3 categories this works out as how much; 1392 but adverse. This variance will always be known as treated as or will be recognized as adverse variance, negative variance because when there is wastage of time

idle time labour could not work labour could not produce. So, it means we will have to go for say recognizing this and this is always recognized as a negative variance or the adverse variance.

This is the 1 variance as the dissection of LEV the 1 the first variance was labour idle time variance and then we will calculate the other 2 variances that is LMV and then the labour yield variance. So, in this case next variance is the LMV, labour mixed variance. So, if you calculate the labour mixed variance again we will have to calculate it in the light of say 3 categories of the workers skilled, semi-skilled and unskilled.

But here now, we have to again find out that as I told you that in the case of labour mixed variances in case of the labour mixed variances we have 4 different formulas. And those formulas depend upon that if there is no difference between the actual time and the standard time, total actual time and standard time then we have 1 formula. If because of any reason the standard has to be revised then the second formula.

Third formula is when there is a difference in the actual time total actual time and standard time then the third formula and fourth formula is when the standard is revised because of any reason and still there is a difference between the actual time and the standard time then the fourth formula. So, now in this case we will have to first of all work out the standard you can call it as the standard time total standard time and total standard time if you look at we will have to rework.

We will have to revise the standard then we will have to see what was the total time used for say manufacturing this number 810 units by 3 set of workers and then we will have to find out that whether the total time and standard time is same even after revision or there is a difference. If there is a difference then we will use the fourth formula. But if the total time is same summing up skilled, semiskilled an unskilled workers time then we will be going to use the in case of the labour mixed variance or the gang composition variance the formula number 2.

So, it means now we will have to calculate this variance labour mix variance for the 3 set of the workers again the skilled, semi-skilled and unskilled, right. So, what is the standard proposition of these workers? The standard proposition of these workers is 244 that is case of the skilled, semiskilled and unskilled. So, total workers are how much; 10 workers, right. And for, how many hours they have worked together, for how many hours they have worked together?

If you talk about that they have worked together, for example, 200 hours and 10 workers means they are actually have worked for the 2000 hours or they should have worked for the 2000 hours. So, it means the standard time was, that is pre-revised standard time 2000 hours. But out of this now we are segregating the idle time variance so what was the idle time in this case? If you talk about the idle time this was 120 hours which has been wasted. So, you have to subtract it.

We subtract it. So, this works out as how much, 1880 hours. This is the standard total standard time means once we know it that the labour worked for 2000 hours and 12 hours work was, 120 hours total work hours 120 hours there was no say production or machines could not work or labours could not work. For that we have already calculated the labour idle time variance so, it means now we have to find out that, what actually is the standard time? That is, 1880 for which actually the labour has worked.

And we have to compare that with actual time and then we have to see whether it is same or any kind of the difference prevails in that. If there is any kind of the difference then we will have to apply the formula number 4. So, let us now calculate this standard time, compare it with actual time in all the 3 categories of the workers and then we see total time standard time which is 1880 is equal to the total time 180 or not. If it is same then we will apply the formula number 2 and calculate the labour mix variance.

So, in this case for calculating the labour mixed variance under the 3 different categories of the workers and then summing it up and calculating the composite gang composition variance. I will discuss with you in the next class. Thank you very much!