Financial Accounting
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Lecture – 12
Depreciation 2

Namaste. If you remember in the last session, we had started our discussion on the concept of conservatism. Can somebody tell what is conservatism very briefly? By conservatism what we mean is, any possible loss we need to provide for; possible I am saying not certain even if there is a chance of a loss, we should provide. But if there is a possible game, but it is not certain then we will not account for it. So, accountants follow a very prudent path or a conservative path and normally assign a lower value when two values are available. We had seen two examples of this.

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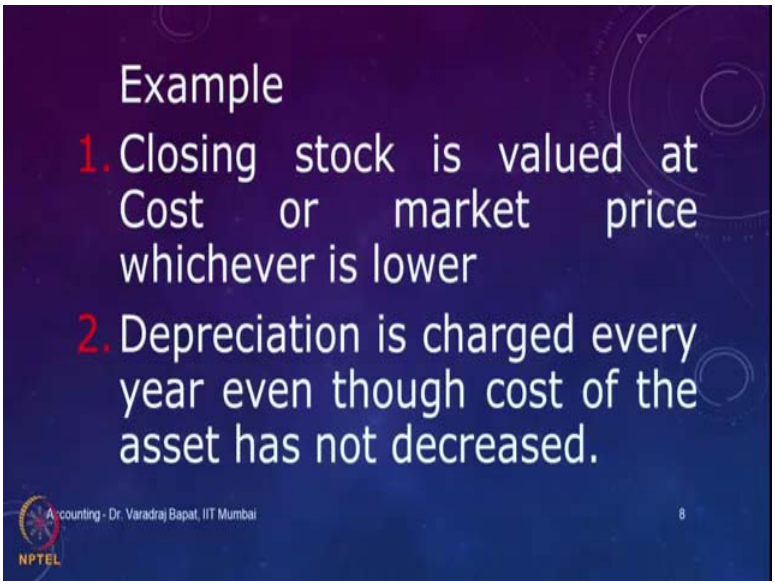

One is because of the application of the concept of conservatism; the closing stock is to be valued at cost or market value whichever is lower. The second one was depreciation is required to be provided every year.

Now, most of you would have read your annual report. Just look at the financial statements. After the financial statement, in the note number 1 company would have given important accounting policies. Please go through those accounting policies. Several of those accounting policies are based on the concept of conservatism. Please try

to identify them. We have just given two examples of valuation of stock and depreciation, but some more examples you can find if you read carefully ok.

So, let us go ahead with today's session. Then in the last session, we had started discussion on depreciation. First of all how do you define depreciation?

See depreciation is a loss in value as the name suggest, but it is a continuous and gradual loss in value of fixed assets. In case of other assets like inventory or like investment, values can go up and down. But for fixed asset from the date of purchase, till the date it is scrapped out the value of asset continuously falls and that fall is what is known as depreciation. So, it is a gradual and continuous fall in the value of asset mainly because of four reasons. Do you remember those four reasons? I think most of you are remembering.

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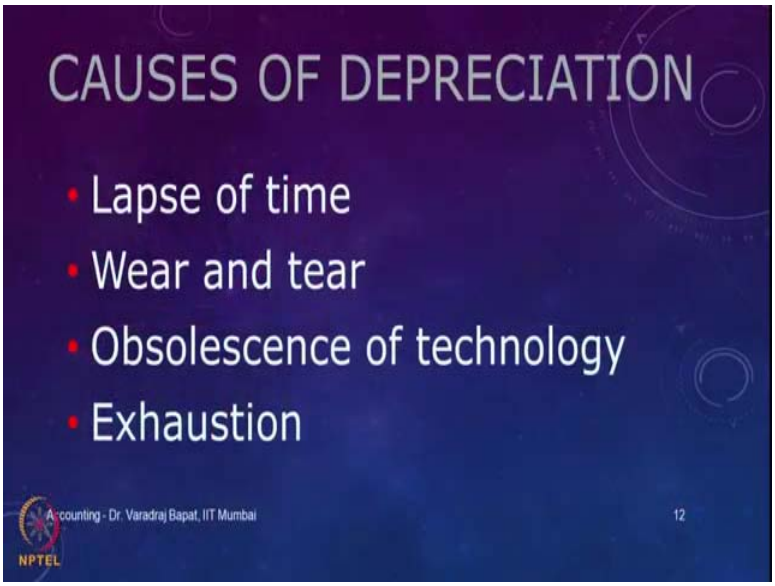

So, lapse of time, wear and tear, obsolescence and exhaustion. Particularly the first three are important for most of the assets and exhaustion; the fourth one is for which asset? It is only for assets like a mine ok. Now, we went into the discussion on the methods of depreciation. Now to calculate any depreciation, we need three important estimates. First one is mostly actual that is a cost of asset, then estimate of the useful life and the estimate of the scrap value.

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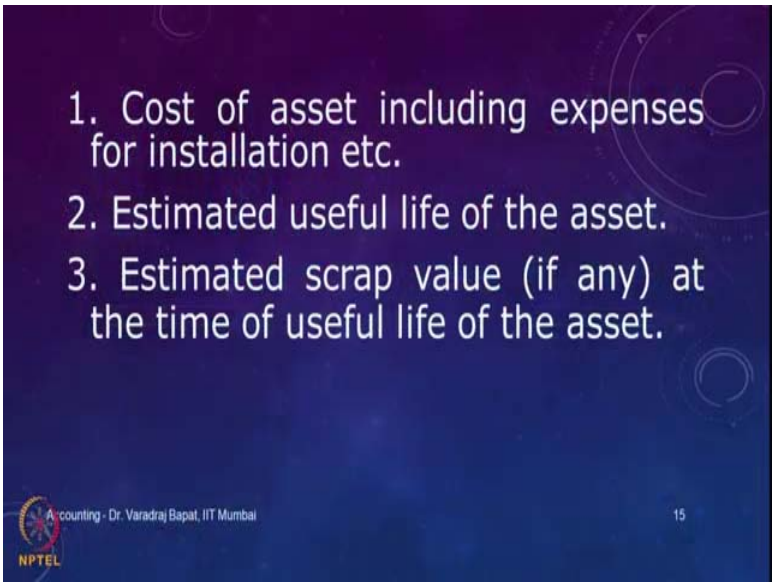

Based on these three we try to calculate annual depreciation for each and every tangible and intangible asset. Now, to calculate them, there are four methods there are several methods, but four methods we are going to discuss in these this.

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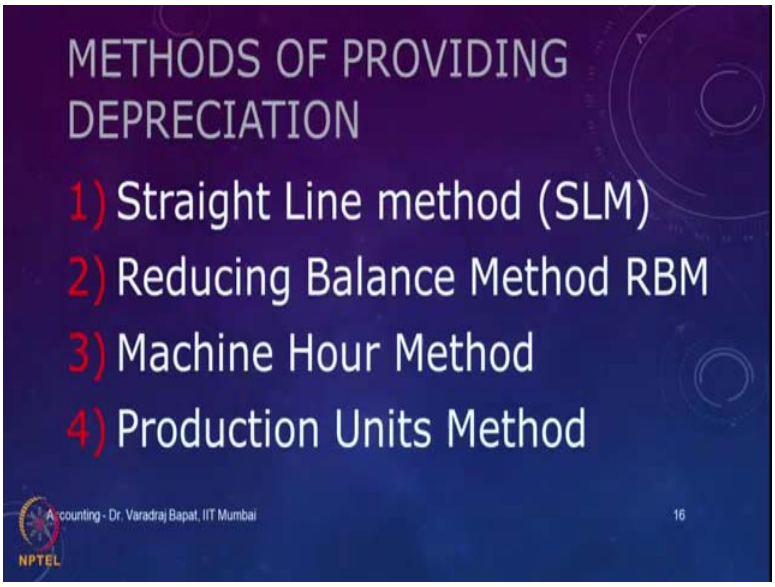

The first two are very important; the straight line and reducing balance. Last time we had discussed straight line. Do you remember what is straight line method?.

I will just give you a very simple example. Suppose we have purchased one asset say, machinery for 1 lakh. It is useful life is 4 years, scrap value is let us say 10000. What

will be the depreciation every year? 1 lakh minus 10000; that means, 90000 is to be distributed over a period of 4 years. So, we will simply divide 90 by 4. So, 90000 upon 4 is a depreciation per annum. Getting it? So, it will be 22500 and this is known as straight line method. You can see the formula ok; cost of asset minus scrap value upon useful life.

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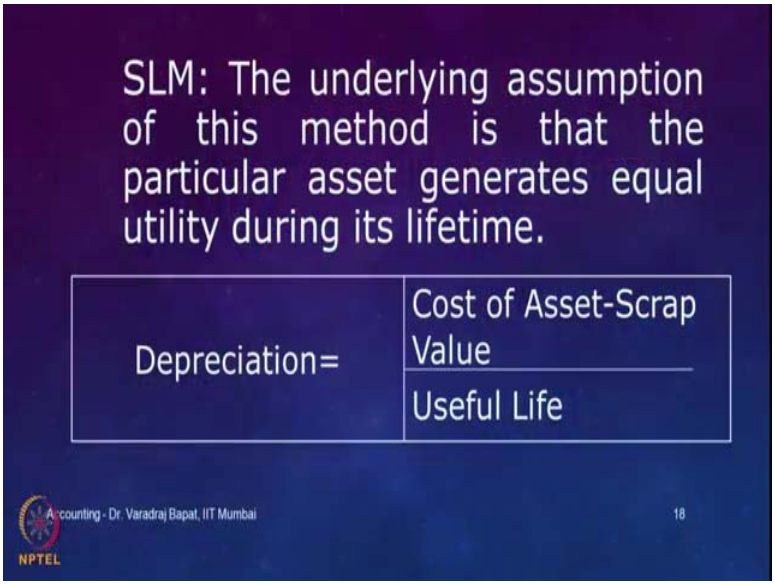

Now, what will happens due to this is the depreciation remains constant throughout the useful life. The second method is known as reducing balance method. Now in reducing balance method what happens is instead of annual depreciation which is fixed, we calculate a we arrived at a depreciation rate. So, suppose the same machine; let us say is having a value of 1 lakh in the beginning. And, suppose the rate of depreciation is taken as 25 percent, then in year 1; it will be 1 lakh into 25percent that is 25000. In year 2, we will not apply 25000 on 1 lakh. We will take 1 lakh minus the first year's depreciation that is 25000. So, 75000; the 75000 is known as written down value.

See acquisition cost minus depreciation. Now on 75000, 75000 into 25 percent is a second years depreciation; in third year it is 75 minus the second years depreciation that is 22500 and so, we will get a further reduced value, on that we will charge the same rate that is 25 percent. So, effectively the amount of depreciation will go on reducing every year that is why it is known as reducing balance method.

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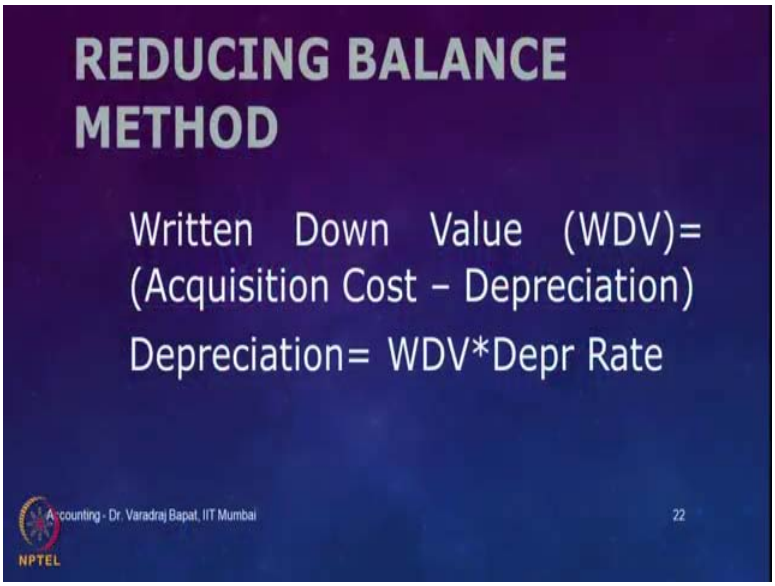

Last time we had stopped our discussion with the comparison of the two methods; straight line and reducing. Now, between the two methods, which method is better in your opinion? I think those who like simplicity, we will say that straight line is simple. So, it is good. There are some advantages of straight line, but there are a lot of advantages with reducing balance Now in reducing balance, what happens is the value of depreciation falls over a period of its useful life. In the earlier year, the depreciation is higher; in the later year, the depreciation is lesser.

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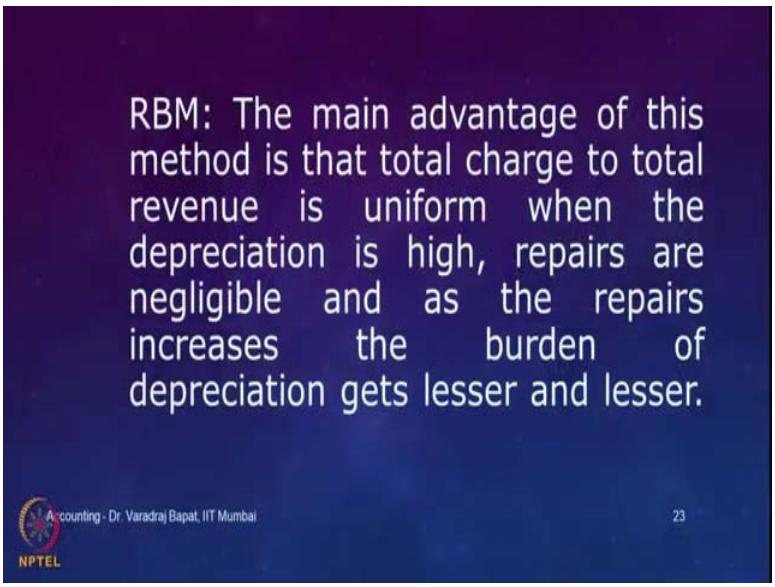

Now, this is a very good thing because every year the cost of repair is likely to increase because the machine is becoming older. So, it is good to charge more depreciation in the initial years and lesser depreciation in the later years. Because initial years repair will be less, but depreciation is high; later year let us skip depreciation less. So, that repair more of repair can be born that is one approach, that is also another advantage is reducing balance. Because in the initial year there is significant loss in the value that gets better reflected in the balance sheet; if we charge more depreciation in the earlier years which happens in reducing balance.

That is why income tax act allows only one method that is reducing balance method in companies act both the methods are allowed; straight line as well as reducing balance.

If you are reading the balance sheet of your company which you have chosen, please read their depreciation schedule. In the depreciation schedule, then we have mention the method as well as the rate at which they are charging depreciation. I hope you getting it. Now let us go.

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So, this is a formula once again you can have a look at it. Last time we had done these calculations.

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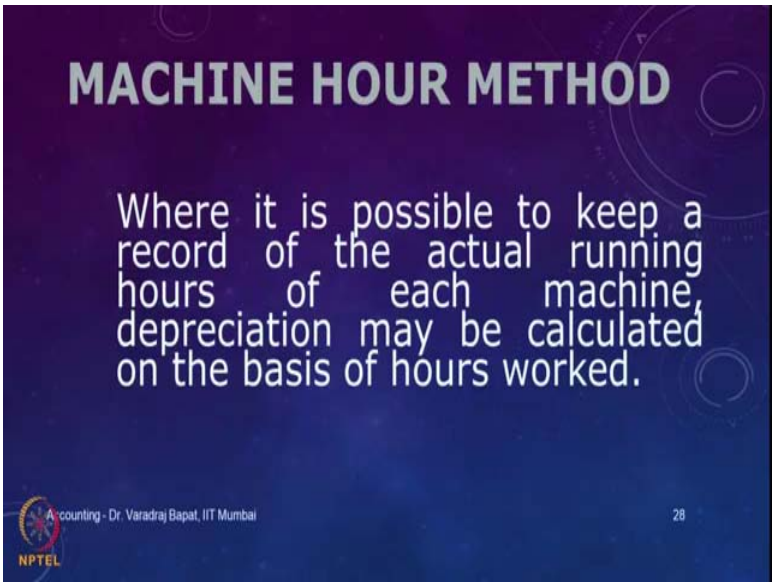

Now, let us go to the third method that is known as machine hour method. Now what happens is in case of certain machines, the life depends on how many hours you use the machine.

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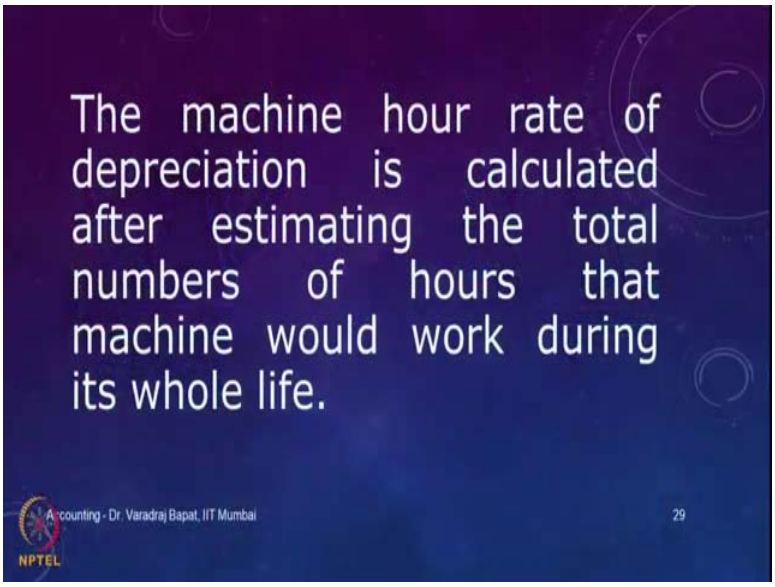

So, the depreciation is also calculated as per the likely life which is calculated in terms of its working hours.

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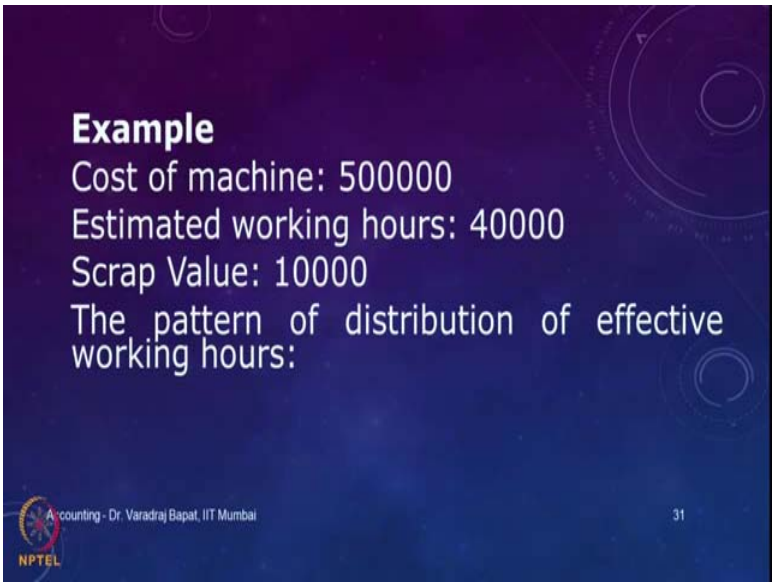

So, this is an example. If the cost of machine is 5 lakhs and estimated working hours are 40000 scrap value is 10000.

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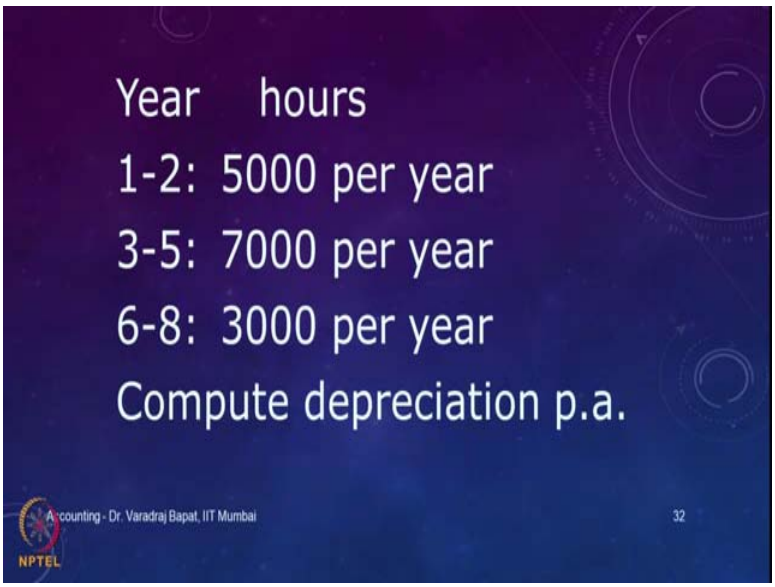

Now, there given the pattern of effective working hours. Let us say in year 1-2, it is 5000; 3-5 it 7000 and 6-7, it is 3000. Now how do you compute depreciation? Now, what we will do is we know the cost and we also know that the estimated working hours are 40000; scrap value is 10000; so, instead of charging straight line depreciation which will be uniform or instead of charging depreciation at a certain rate. We will calculate it on

per hour basis and then based on the hours in that particular year, we will compute the depreciation.

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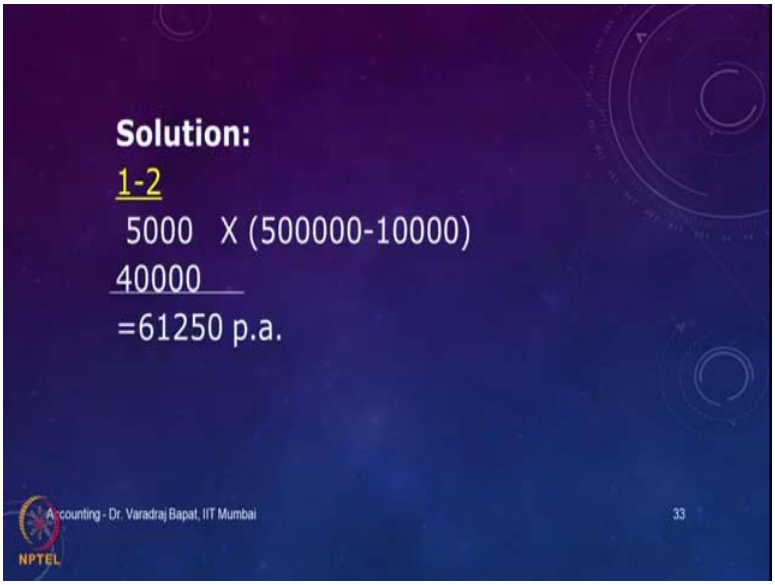

For example, firstly, we will we know that the total depreciation total number of working hours are 40000. Now the cost of machine is 5 lakhs minus 10000; that means, basically we have to depreciate 490000 over its useful life. In year 1 and 2, it is a new machine yet to settle. So, useful hours or useful hours are only 5000; so, 5000 upon 40000 into 490000. So, the cost is the depreciation is 61250 in year 1 and 2. Are you getting?

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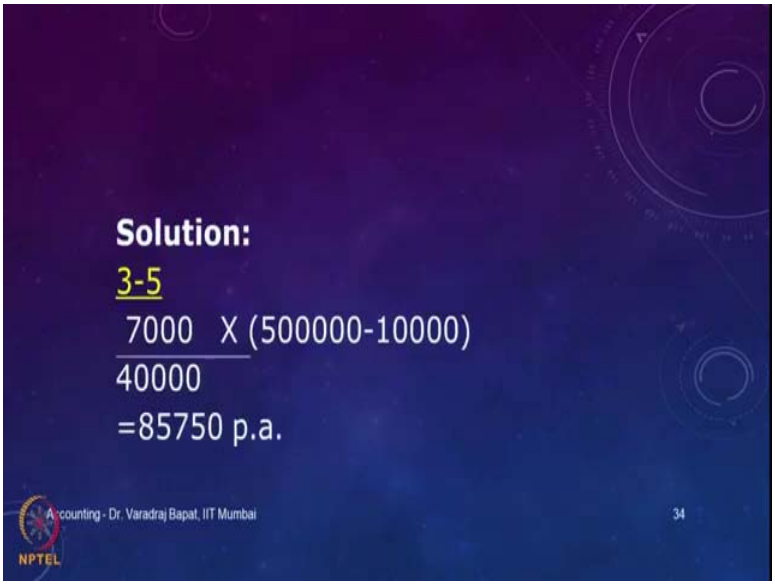

Now, in year 3, 3 to 5; now the amount to be depreciated is same 5 lakh minus 10000 that is 490000. In year 3 to 5, the estimated number of hours are 7000. So, 7000 divided by the total hour that is 40000. So, each year we are getting 85750 as depreciation from year 3 to 5, fine.

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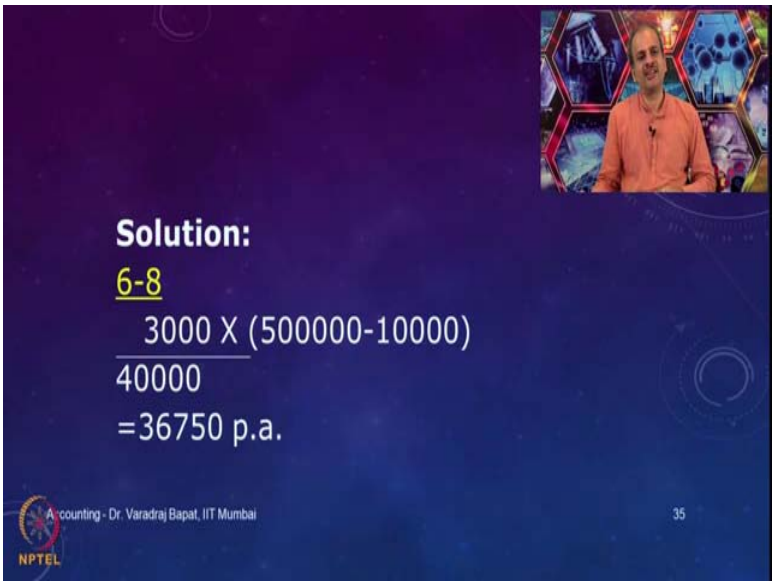

And for year 6 to 8, now the machine as rather become older. So, the useful hours per year are only 3000; so, 3000 upon 40000 in to 5 lakh minus 10000 which is constant. So, in year 6 to 8, the annual depreciation is only 36750. Are you getting?

So, here instead of reducing it over a period, we are going by its utilization. So, in a year how many hours you use, accordingly the depreciation is charged. Are you getting? This is known as machine hour method and fourth one which we are going to discuss is production unit method.

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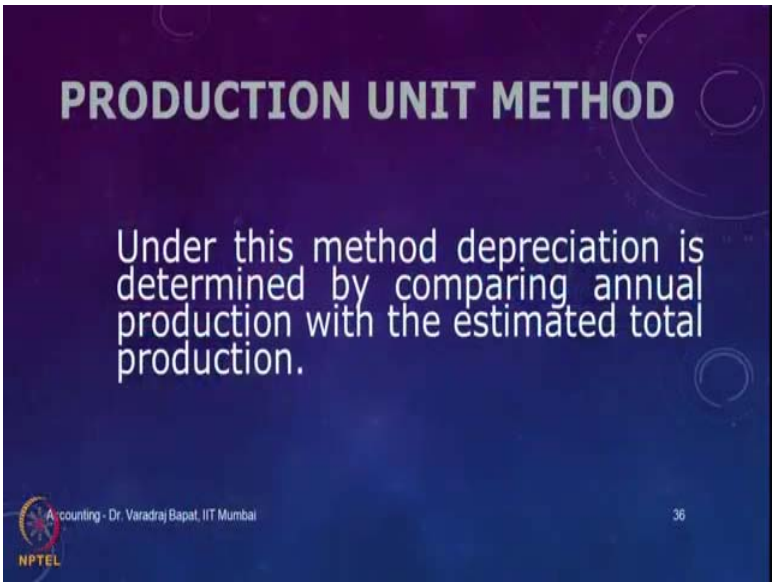

Now, in production unit method, what we are doing is we are looking at the annual production and the depreciation will be charged based on the production in that year.

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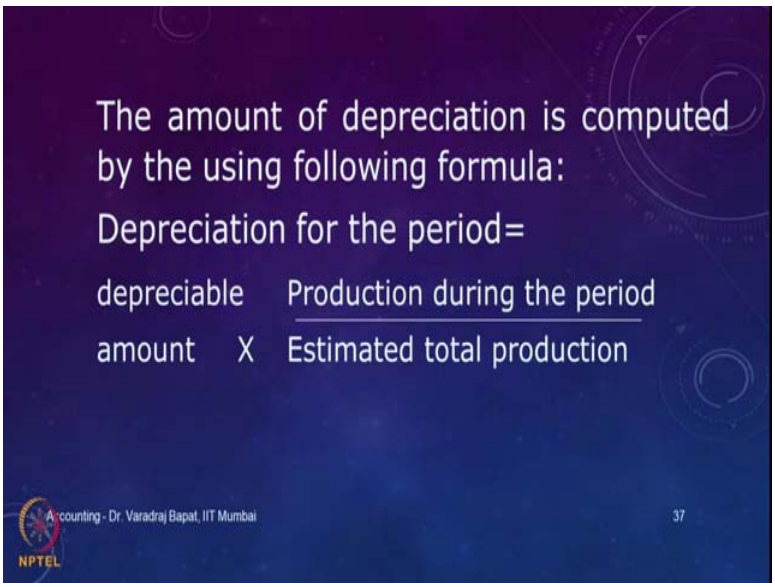

Now, this is the formula we use. So, what we do is, total depreciable amount will be divided by the estimated total production. Out of the total production whatever is a production units for that particular period that much portion will be depreciated in that period.

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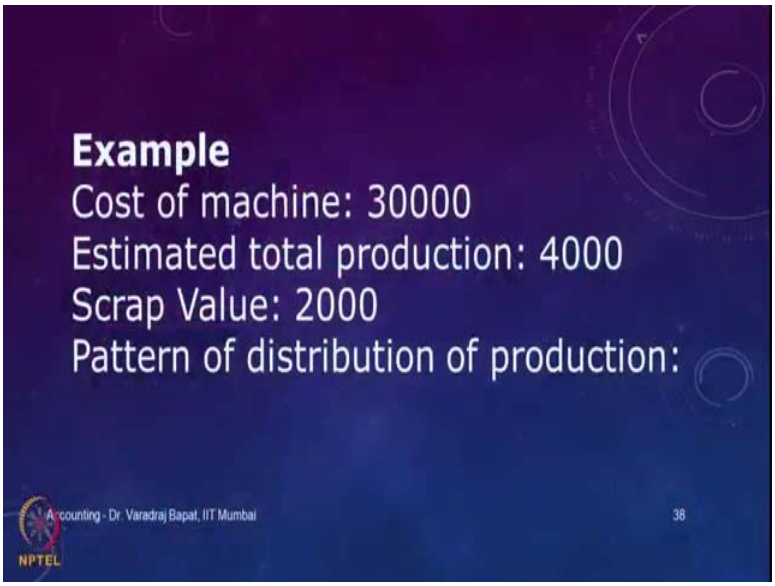

Let us check this example. So, cost is 30000, estimated total production is 4000; it is in terms of unit, the scrap value is 2000. So, basically you will see that 30 minus 2; that means, 28000 is a depreciable amount which is mainly for the production of 4000.

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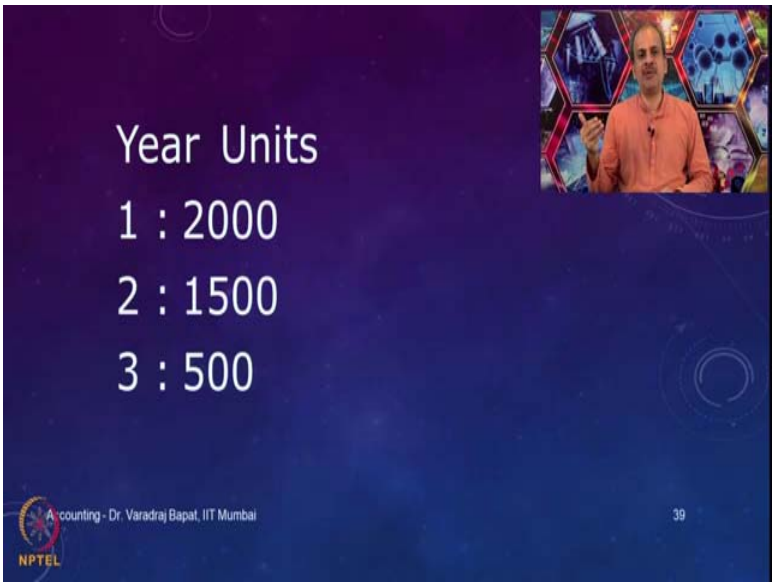

Now, this 4000 is spread over three years in this manner. In year 1, estimated is 2000, year 2, 1500 and year 3, 500. So, what we will do is the depreciation is for 4000 units, we will spread it over as per the estimates of units.

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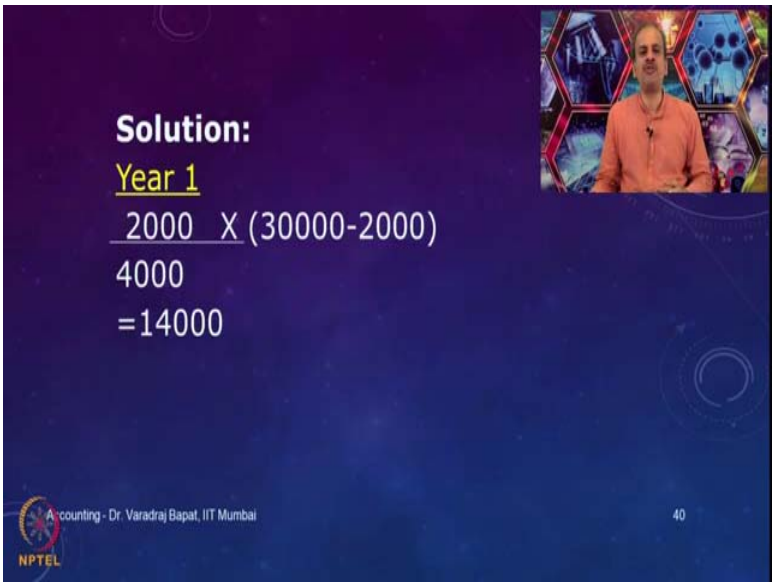

So, in year 1, 30 minus 2 that is 28000 is to be basically depreciated and here we take 2000 divided by 4000; that means, for year 1, the depreciation is estimated to be 14000.

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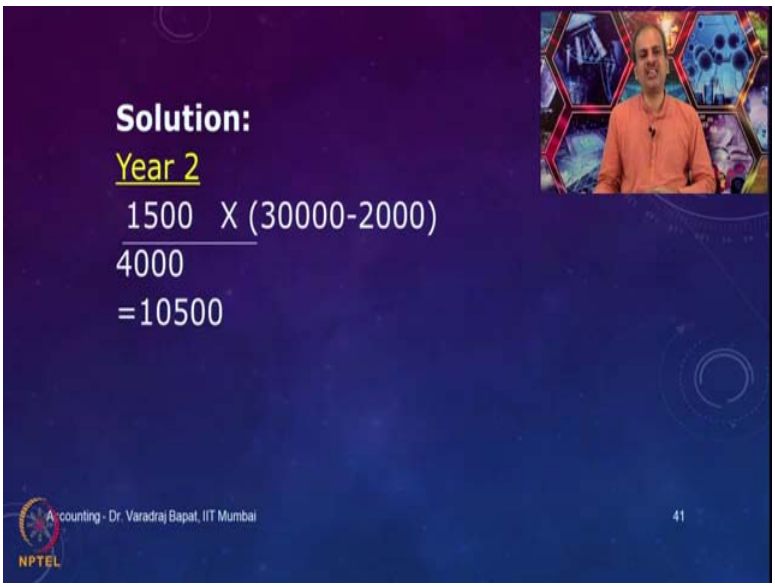

In year 2, the formula is same it is 1500 upon 4000; that means, we are calculating it based on 10000; we are calculating it to be 10500. Now can you do it year 3? Just have a look once again.

So, 30 minus 2; that means, basically 28000 upon 4000 and in year 3, the estimated units are just 500. So, you can do it orally also; 500 into 28000 divided by 4000.

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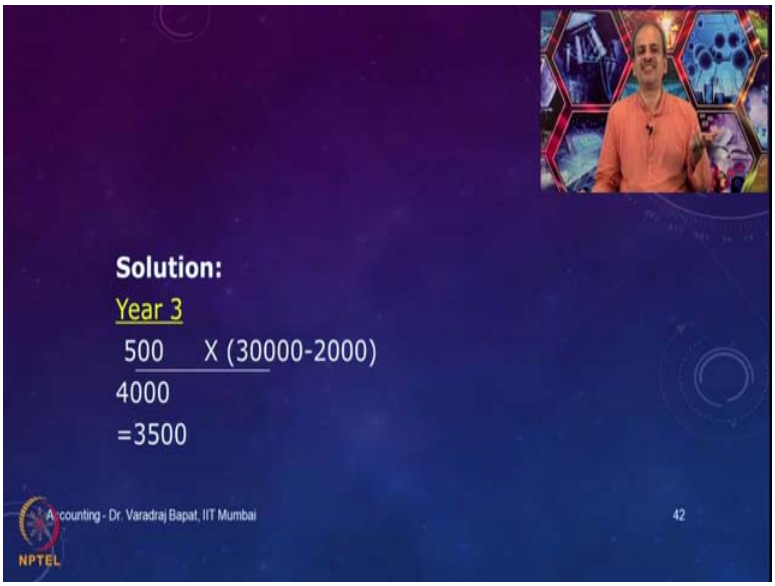

Are you getting it? This is the calculation. So, you are getting 3500 per year. Are you getting? There are some more methods, but they do not have much of practical utility. The first two methods that is straight line and reducing balance are the most important methods and almost all companies use any one of the two, particularly the second method that is reducing balance is most important. Most of the companies using and as per income tax act, it is mandatory to use reducing balance method.

The third and fourth method are not use normal in financial accounting, but they will be useful for managerial or for cost accounting. That is why, I have covered it in this particular session ok. So, with this our discussion on depreciation is over. I will once again remind you to look at the depreciation schedule as per your own company and that will give you some more inputs. So, with this now having discussed about depreciation, let us have a look at how it appears in the annual report. I have been telling you in every session that you decide a company, go to the annual report of that company and as we discuss have a look at the statements which are as published by a particular company.

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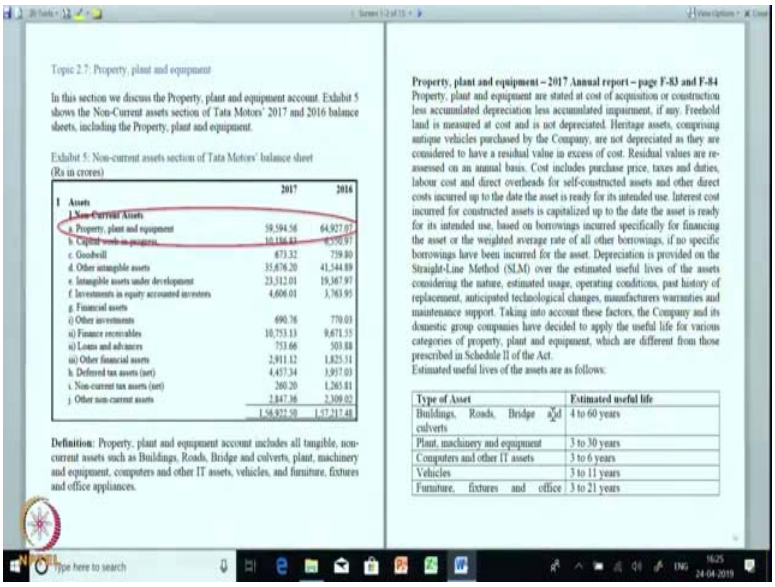

Topic 2.7: Property, plant and equipment

In this section we discuss the Property, plant and equipment account. Exhibit 5 shows the Non-Current assets section of Tata Motors' 2017 and 2016 balance sheets, including the Property, plant and equipment.

Exhibit 5: Non-current assets section of Tata Motors' balance sheet
(Rs in crores)

	2017	2016
I Assets		
1 Non-Current Assets		
a. Property, plant and equipment	59,594.56	64,927.07
b. Capital work-in-progress	10,156.83	9,750.97
c. Goodwill	673.32	759.80
d. Other intangible assets	35,676.20	41,544.89
e. Intangible assets under development	23,512.01	19,367.97
f. Investments in equity accounted investees	4,606.01	3,763.95
g. Financial assets		
i) Other investments	690.76	770.03
ii) Finance receivables	10,753.13	9,671.55
iii) Loans and advances	753.66	503.88
iii) Other financial assets	2,911.12	1,825.11
h. Deferred tax assets (net)	4,457.34	3,917.03
i. Non-current tax assets (net)	260.20	1,265.81
j. Other non-current assets	2,847.36	2,309.05
	1,56,922.50	1,57,217.48

Definition: Property, plant and equipment account includes all tangible, non-current assets such as Buildings, Roads, Bridge and culverts, plant, machinery and equipment, computers and other IT assets, vehicles, and furniture, fixtures and office appliances.

Property, plant and equipment – 2017 Annual report – page F-83 and F-84
Property, plant and equipment are stated at cost of acquisition or construction less accumulated depreciation less accumulated impairment, if any. Freehold land is measured at cost and is not depreciated. Heritage assets, comprising antique vehicles purchased by the Company, are not depreciated as they are considered to have a residual value in excess of cost. Residual values are re-assessed on an annual basis. Cost includes purchase price, taxes and duties, labour cost and direct overheads for self-constructed assets and other direct costs incurred up to the date the asset is ready for its intended use. Interest cost incurred for constructed assets is capitalized up to the date the asset is ready for its intended use, based on borrowings incurred specifically for financing the asset or the weighted average rate of all other borrowings, if no specific borrowings have been incurred for the asset. Depreciation is provided on the Straight-Line Method (SLM) over the estimated useful lives of the assets considering the nature, estimated usage, operating conditions, past history of replacement, anticipated technological changes, manufacturers warranties and maintenance support. Taking into account these factors, the Company and its domestic group companies have decided to apply the useful life for various categories of property, plant and equipment, which are different from those prescribed in Schedule II of the Act.
Estimated useful lives of the assets are as follows:

Type of Asset	Estimated useful life
Buildings, Roads, Bridge and culverts	4 to 60 years
Plant, machinery and equipment	3 to 30 years
Computers and other IT assets	3 to 6 years
Vehicles	3 to 11 years
Furniture, fixtures and office	3 to 21 years

Now, here I am showing you extracts from Tata motors annual report so, that you will actually have a feel of how it looks like. So, right now, we are in the section of balance sheet; within balance sheet, you can have a look at assets. I hope it is visible; though the font is little small, but this is how actually it is in the annual report of Tata motors. So, you can see item a is property plant and equipment. This is something which we were discussing about when we were discussing depreciation. Over all within noncurrent assets, a list of asset is provided and then the description of each asset is given. So, property plant and equipment is described.

Now, in the end if you look there is a table which is showing the type of the asset and estimated useful life. I think this is very interesting because for calculation of depreciation, we have seen we want to estimate useful life of a particular asset and that will be the basis for calculation of depreciation. So, here you can see the types, building, then roads, bridges and culverts. For that the life is reasonably wrong. So, it is 4 to 6 years. Then plant machinery equipment, it is 3 to 30 years. Computers and it related assets is 3 to 6 years, vehicles 3 to 11 years, furniture fixtures 3 to 21 years.

So, reasonably long range, but for a particular class of assets, they have defined some estimated useful life Now for a particular asset within that range, they would decide the useful life.

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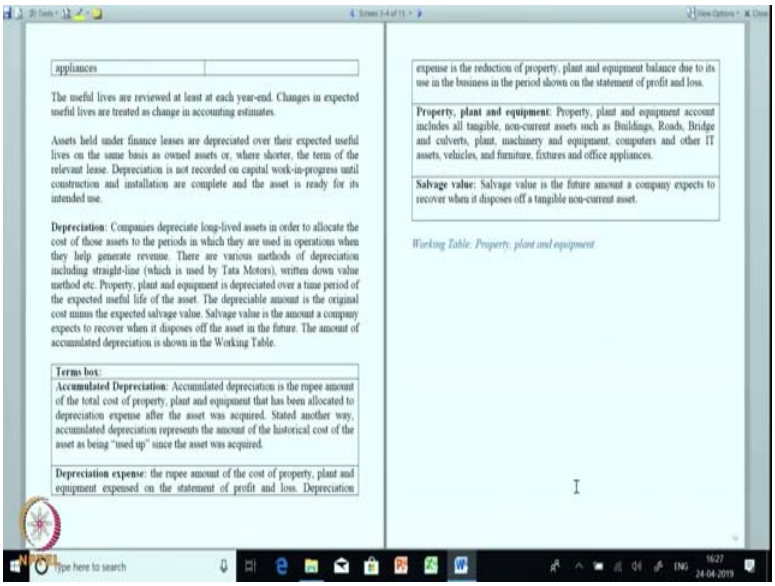

Now, next they have given definitions of some of the terms like depreciation, then the terms in the box have also been defined like accumulated depreciation. So, I hope you remember, what is depreciation. This is a loss or reduction in the value of asset in a particular year. Now for that asset, the depreciation for year 1 is say 10000; year 2, 8000; year 3, 4000; then what we do is we accumulate or collect the depreciation. So, in year 1, it will be 10, in year 2, it will be 10 plus 8, 18; in year 3, it will be ten 8 and 4, 22.

Like that the total depreciation or accumulated depreciation is calculated and it is to be disclosed in the balance sheet. After that, there is a item called as depreciation expense. Depreciation expense refers to the depreciation for that particular year and the last item given over here is salvage value; salvage value or scrap value. This is at the time of disposal, what value you have is called as a salvage value ok.

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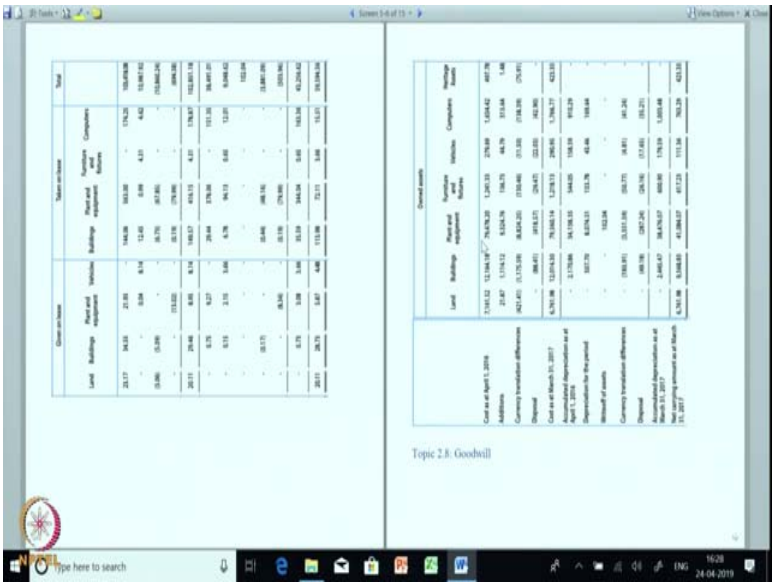

Now this is a very important. Note: I know it is little difficult to read, but I have given it here because as it is as what is in the annual report. So, it starts with the assets which are owned by the company. So, it says owned assets, then the category of assets are given starting with land, building, then plant and equipment, furniture and fixtures and so on.

Now, the cost as at April 1, 2016 that is the opening balances are given, then additions, then currency translation differences, then disposal. Now the total of all this will be the cost as on March thirty first, 2017; that is the closing cost. So, just to give the cost of the asset; the original cost, there are four items disposal will of course, be reduced, but the total will be the cost at the end. Now the next is accumulated depreciation as on April first 2016. So, at the beginning of the year, what is the depreciation than the depreciation which is added, depreciation which is written off, the depreciation on disposal. Then at the end, you are got accumulated depreciation as at the end of the year.

So, we considered all the cost, then all the accumulated depreciation cost minus accumulated depreciation is a net carrying amount. We were discussing about WDV written down value. It is same as the net carrying account amount has been discussed.

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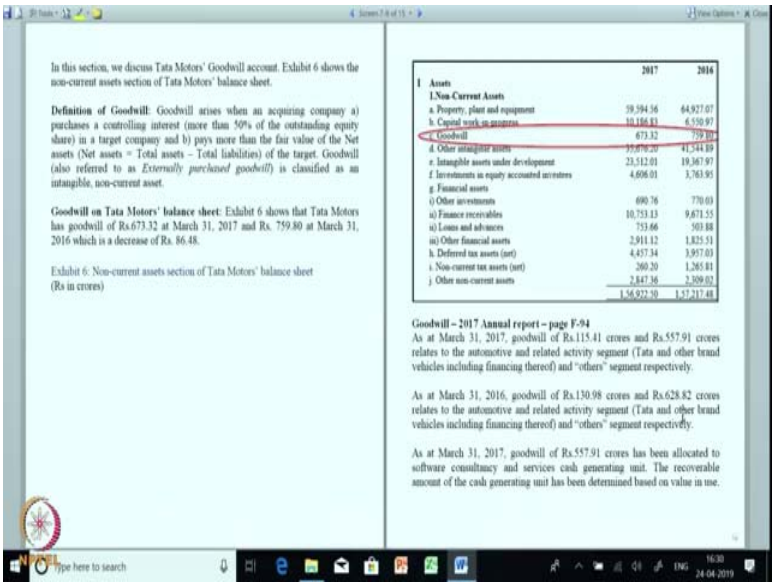

Now, a few more things; now this is related to intangible assets. Now this is about the goodwill. One of the important intangible assets is goodwill. Now, what happens is when company acquires other assets, it may pay more than what amount is a fair value of that asset. So, suppose you are acquiring assets worth 15 crore, but you are paying 18 crore let us say. So, you are paying 3 crore more 18 minus 15, 3 crore which you are paid will be considered as goodwill.

There is another category of goodwill which is known as self generated goodwill, but it is not disclosed in the balance sheet. What is disclosed in the balance sheet is called as a purchased goodwill which is classified as intangible asset in the balance sheet. So, here we are looking at a purchase goodwill. So, first the definition of goodwill is given and then the value of goodwill as is disclosed in the balance sheet, you can have a look. Under the assets non-current assets, there is items c called as goodwill ok.

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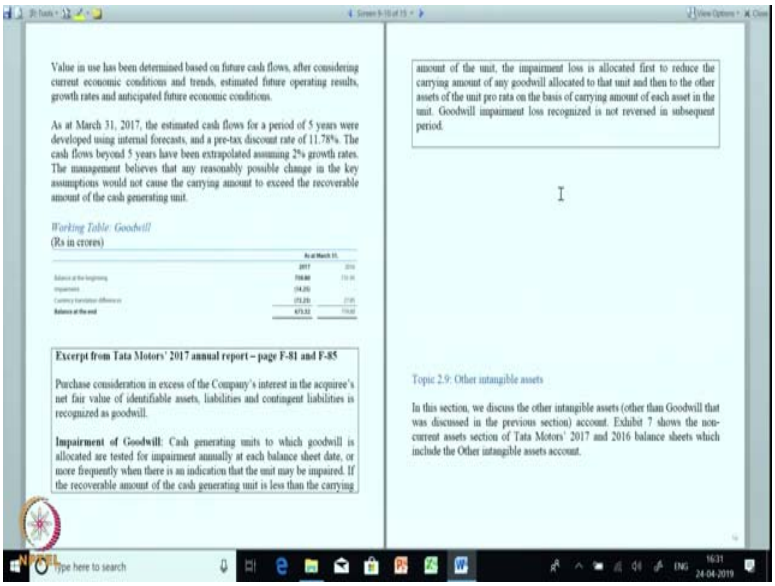

Now, if you go little ahead, there is a working table which is given in the for the goodwill. It is similar to that for a tangible asset, but slight different; first balance at the beginning, then it is called as impairment. That means if asset loses its value, it is called as impairment. So, some amount is provided as impairment. There is currency translation differences because though that goodwill is in foreign currency and the balance at the end. You can just have a look at what is impairment. Now cash generating units to which goodwill is located are tested for impairment annually.

So, what it means is, you have paid for certain amount as a goodwill assuming that that particular unit or that particular part of the business would be able to generate cash. If that business does not have that capacity any longer; that means, the depreciation is no longer applicable. In such cases, the depreciation is written off or its value is removed from the balance sheet that process is called as an impairment.

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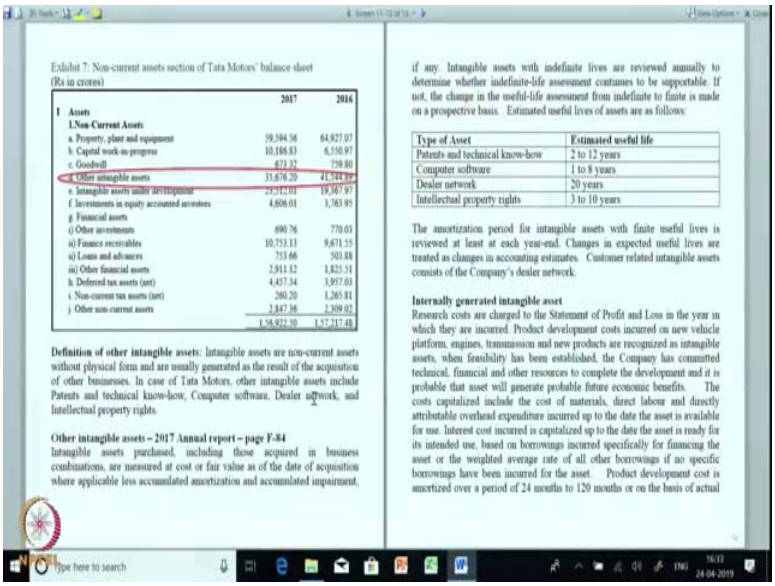

Now, further we will go to other tangible assets. So, other intangible assets I am sorry. So, here in the assets after goodwill which you see item like other intangible assets are given. I think, we are already discussed intangible asset. Intangible assets are those assets which you cannot touch or feel. Now these assets are also required to be amortized. So, they are to be depreciated, but here since they are intangible that is called as they are to be amortized. Now you can see here type of the asset and estimated useful life. So, for patents, it is 2 to 12 years; for computer software, it is 1 to 8 years, then for dealer network, it is 20 years and for intellectual property rights, it is 3 to 10 years. So, I hope you are getting the difference.

For goodwill, there is no particular estimated useful life. It can remain perpetually, only thing is you test it for impairment. If that particular business or product has lost its value, then we will write off goodwill. We will call it as an impairment, but for other intangible assets, we will charge depreciation that is known as amortization. The calculation is same like for depreciation.

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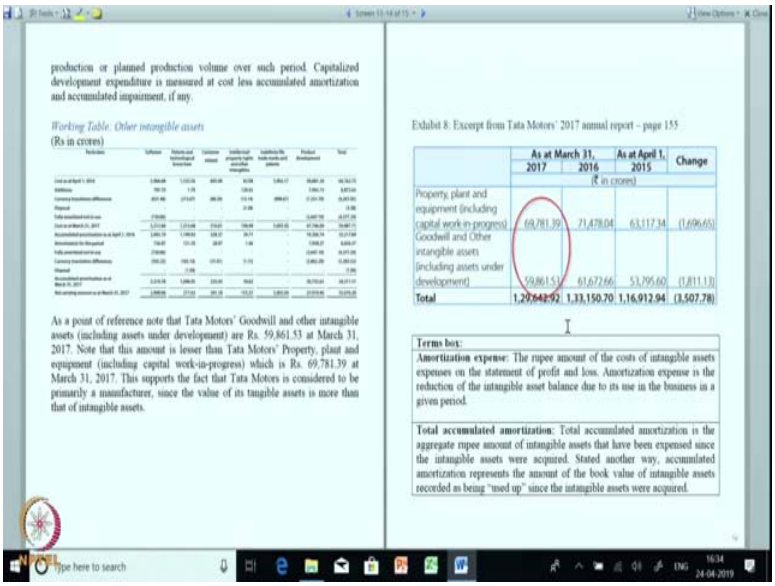

So, you will need an estimated life. So, that estimated life is given ok. Now there is one more working table again the font is small, but just you can have a look. It says working table for other intangible assets. So, just like for tangible assets, it starts with opening balances additions and so on and then accumulated depreciation is calculated and then you get the final value.

There is one more exhibit a. These are excerpt from the annual report page 155. Now here, the final disclosure is given. So, property plant and equipment that is the tangible assets total and goodwill and other intangible assets total which gives you the total of total ok. If this is not so, clearly visible I would request you to download the annual report of Tata motors and see it yourself, I am sure you are also looking at annual report of your own company.

But, I am just showing you because when actually you see it, you will have the feel of it. Then some term boxes are given like amortization, expense and total accumulated amortization. This is just like depreciation; amortization expense refers to amortization during the year and there is accumulated amortization just like accumulated depreciation. So, this was the actual extract of the annual report of Tata motors of 2016-2017 ok. Please have a look at it and I hope your, the concept of depreciation are more clear to you now. Namaste.