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DELTA AIR LINES, INC.

URL Location:

http://www.delta.com/about_delta/investor_relations/annual_report_proxy_statement/

Currency: Million**Company Overview**

Delta Air Lines Inc. is one of the largest airline companies around the world. They provide transportation for passengers and cargo in the United States and around the world. In 2008, Delta Air Lines acquired Northwest Airlines Inc. in order to gain the economics of scale. Delta Air Lines, Inc. financial ratio in 2009:

	ROA	ROE	D/E	Net income	Operating income
original	0.045%	-221.09%	176.71	(1,237.00)	(324.00)

$$\text{ROA} = \text{OIBI,AT} / \text{Average Asset} = (-324 + 344) / ((43,539 + 45,084) / 2) = 0.0045\%$$

$$\text{ROE} = \text{Net Income} / \text{Average Common Shareholder's Equity} \\ = -1,237 / ((245 + 874) / 2) = -221.09\%$$

$$\text{D/E ratio} = 43,294 / 245 = 176.71$$

GAAP limitation

After reading Delta Air Lines' 2009 annual reports, I can see that the amounts of property and equipment and goodwill represents 47% and 22.48% of Delta's total asset. Of the total liabilities, long-term debt and capital leases and pension represent 47% and 35% respectively. Their debt to Equity ratio is really high, about 176.7%. Besides, due to their industry characteristics, Delta Air Lines also had a lot of operating lease which have to be reclassified as capital lease. For the pension plan, as can be seen from the pension plan footnote, Delta has adjusted the difference between benefit obligation and fair value of plan assets to liabilities and comprehensive income. Thus, I believe that operating lease and property and equipment are the most important issues of the GAAP limitation.

Adjustment to Operating Lease

Delta by its nature has a lot of lease, such as aircraft, airport terminals and maintenance facilities, ticket offices and other property and equipment from third parties. As I can see from their footnote, capital lease is around 445 million and operating lease expense is around 1.3 billion in 2009. Operating lease is a good way for off-balance financing. Through operating lease, lessees can gain the right of using the property without recording the asset and liabilities on their balance sheet. Operating lease will cause the liabilities and assets to be undervalued and ROA and ROE to be overvalued. Thus, I adjust all operating lease to capital lease in order to be fair disclosure. I used the information from footnotes 7 lease obligation shown as below:

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The following tables summarize, as of December 31, 2009, our minimum rental commitments under capital leases and noncancelable operating leases (including certain aircraft under Contract Carrier agreements) with initial or remaining terms in excess of one year:

Capital Leases

Years Ending December 31,
(in millions)

2010	\$148
2011	146
2012	119
2013	87
2014	67
Thereafter	337
Total minimum lease payments	904
Less: amount of lease payments representing interest	(396)
Present value of future minimum capital lease payments	508
Plus: unamortized premium, net	25
Less: current obligations under capital leases	(88)
Long-term capital lease obligations	\$445

Operating Leases

Years Ending December 31, (in millions)	Delta Lease Payments	Contract Carrier Aircraft Lease Payments ⁽¹⁾	Total
2010	\$1,082	\$ 507	\$ 1,589
2011	910	497	1,407
2012	806	490	1,296
2013	711	460	1,171
2014	634	451	1,085
Thereafter	3,700	1,542	5,242
Total minimum lease payments	\$7,843	\$3,947	\$11,790

⁽¹⁾ These amounts represent the minimum lease obligations under our Contract Carrier agreements with Atlantic Southeast Airlines, Inc. ("ASA"), Chautauqua Airlines, Inc. ("Chautauqua"), Freedom Airlines, Inc. ("Freedom"), Pinnacle Airlines, Inc. ("Pinnacle"), Shuttle America Corporation ("Shuttle America") and SkyWest Airlines, Inc. ("SkyWest Airlines").

At December 31, 2009, we operated 213 aircraft under operating leases and 93 aircraft under capital leases. Our Contract Carriers under capacity purchase agreements operated 450 aircraft under operating leases. Leases for aircraft operated by us and our Contract Carriers have expiration dates ranging from 2010 to 2025. During the four months ended April 30, 2007, we recorded estimated claims relating to the restructuring of the financing arrangements for many of our aircraft and the rejection of certain of our leases in connection with our bankruptcy proceedings.

Adjustment from operating lease to capital lease (2009)				Adjustment from operating lease to capital lease (2008)			
	cash flow	11.8%pv factor	PVOL		cash flow	8.6%pv factor	PVOL
2010	1,589.00	0.8945	1,421.29	2009	1,646.00	0.9208	1,515.65
2011	1,407.00	0.8000	1,125.67	2010	1,559.00	0.8479	1,321.86
2012	1,296.00	0.7156	927.43	2011	1,326.00	0.7807	1,035.27
2013	1,171.00	0.6401	749.53	2012	1,204.00	0.7189	865.58
2014	1,085.00	0.5725	621.18	2013	1,059.00	0.6620	701.05
thereafter	5,242.00	0.5121	1,944.95	thereafter	5,664.00	0.5613	2,082.55
total	11,790.00	total PVOL=	6,790.05	total	12,458.00	total PVOL=	7,521.96
duration=	5,242/1,085=	4.8313	=5years	duration=	5,664/1,059=	5.3484	=6years

I used the information from footnote 7 to do the adjustment. I used 11.8% $((\$148 - \$88) / \$508 = 11.8\%)$ as the PV factor calculated by capital lease. \$148 is the payment in 2010. \$88 is the current obligations under capital lease. \$508 is the present value of future minimum capital lease payments. Thus, the implied interest rate is 11.8%. I used the total cash flow from 2010-2014 and thereafter to calculate the PVOL. I used the payment of thereafter divided by the payment of 2014 to calculate the duration of "thereafter" which is 5 years. As shown in the next table, the total PVOL is \$6,790. As mentioned in the textbook, the ratio of UA/UL is suggested to be 75%. Thus, the total assets will increase by \$5,092.54; the total liabilities will increase \$6,195.92, including \$6,790.05 PVOL and -\$594.13 tax shield. The tax shield is calculated as $-(1 - 75\%(UA/UL)) * 35\%(\text{Delta's tax rate}) = 8.75\%$; $8.75\% * 6,790.05(\text{PVOL}) = -\594.13 . The impact on expense, which also affects

shareholder's equity, is $(1-75\%(UA/UL))*(1-35\%(\text{Delta's tax rate}))*6,790.05$ (PVOL) = \$1,103.38.

As a result, total asset and liability increase, net income and equity decrease. Thus, ROA will decrease, D/E ratio will increase and net income will decrease. The detailed calculation is as below. This adjustment will affect stewardship decision. First, since the asset increase such a large number and net income decreases, the ROA will decrease in a large amount. Most of the management compensation is based on ROA and pre-tax operating income, so it will affect the stewardship decision. Second, liabilities increase a lot as well, so it will affect the debt to equity ratio. If D/E ratio exceeds certain number, the lender will ask for immediate repayment.

(All pretax dollars in millions)	<u>Capital Lease View</u>	<u>Operating Lease View</u>
Rent Expense		\$1,646
Depreciation Expense	\$100.6	
Interest Expense	\$844.4	
Pretax difference in income		\$-701(548.9/(1-21.7%))
Totals	\$945	\$945

Rent expense= as reported in the 2008 annual report of Delta under the lease obligation footnote for scheduled lease pmt.

21.7% is the effective tax rate in annual report

Interest Expense= $(6,790.05+7,521.96)/2 * 11.8\% = 844.4086$

Impact on balance sheet					
year	2009	2008		2009	2008
Assets	5092.5405	5641.4731	Liabilities	6790.0539	7521.9641
			tax shield	-594.1297	-658.1719
Assets	5092.5405	5641.4731	Liabilities	6195.9242	6863.7923
			Equity	-1103.3838	-1222.3192
total	5092.5405	5641.4731		5092.5405	5641.4731
			Change in Retained Earnings =		548.93264

change in financial ratio					
	ROA	ROE	D/E	Net income	Operating income
original	0.045%	(2.21)	176.71	(1,237.00)	(324.00)
after adjusted	-0.160%	3.88	(57.65)	(2,340.38)	(424.60)

Calculation of the adjusted ratio:

-ROA=OIBI,AT/Average Asset

$=(-324+344-100.6)/((43,539+5,641.47+45,084+5,092.54)/2) = -0.16\%$

-ROE=Net Income/ Average Common Shareholder's Equity

$=(-1,237-1,103.38)/((245-1,222.32+874-1,103.38)/2) = 3.8783$ (ROE become positive because both net income and equity are negative.)

$$-D/E \text{ ratio} = (43,294 + 6,195.92) / (245 - 1,103.38) = -57.65$$

$$-\text{Net income} = -1,237 - 1,103.38 = -2,340.38$$

$$-\text{Operating Income} = -324 - 100.6 = -424.6$$

Adjustment to Property and Equipment

GAAP's limitation for PP&E is that GAAP uses historical cost for PP&E. This rule makes the assets of companies with lots of old assets relatively smaller. This approach will undervalue the assets and increase the ROA ratio. Thus, replacement cost adjusted to PP&E is important. Delta's fixed assets represent 47% of their total assets. Most of the fixed assets are flight equipment and ground property and equipment. As can be seen from the long-lived assets, most of Delta's fixed assets are relatively young. The accumulated depreciation does not exceed 50%. However, due to the large amount of the PP&E on the balance sheet and the important of replacement cost, I still do some adjustment to it. Below is the long-lived asset from the footnote:

Long-Lived Assets

The following table shows our property and equipment at December 31, 2009 and 2008:

(in millions)	December 31,	
	2009	2008
Flight equipment	\$ 19,513	\$ 18,237
Accumulated depreciation	(1,731)	(828)
Flight equipment, net	17,782	17,409
Ground property and equipment	2,936	2,715
Accumulated depreciation	(949)	(578)
Ground property and equipment, net	1,987	2,137
Flight and ground equipment under capital leases	717	708
Accumulated amortization	(244)	(152)
Flight and ground equipment under capital leases, net	473	556
Advance payments for equipment	191	525
Total property and equipment, net	\$ 20,433	\$ 20,627

Below is the adjustment I made for PP&E:

adjustment to long-lived asset					
2009	average asset age	As reported	Price change	Current Cost	Change
Depreciation Expense	1.9*	1,536.00	1.057	1,623.55	87.55
Net book Value	1.90	20,433.00	1.057	21,597.68	1,164.68
2008					
Depreciation Expense	1.47	1,062.00	1.057	1,122.53	60.53
Net book Value	1.47	20,627.00	1.057	21,802.74	1,175.74
average CPI for aircraft from 2005-2009	2.8%**				

*Average asset age = Accumulated depreciation / depreciation expense in 2009 = $(1,731 + 949 + 244) / 1,536 = 1.9$

**Average CPI for aircraft from 2005 to 2009 came from the website of the Bureau of Labor Statistics.

-As reported amount is from balance sheet of Delta.

-Price change = $(1 + \text{CPI})^{\text{Average asset age}} = 1.028^2 = 1.057$

-Current cost= reported amount* Price change

-Change= Current cost- reported amount

According to the previous table, the replacement cost will be \$1,164.68. The long-lived asset will increase \$1,164.68. The depreciation expense will also increase \$87.55. After the adjustment, the ROA and ROE will decrease, the D/E ratio will decrease and the net income will also decrease. This adjustment will affect stewardship decision and valuation decision. For stewardship decision, the increasing asset will cause the ROA decreasing, so it will affect management compensation. For valuation decision, the increasing replacement cost will decrease net income. Replacement cost will strongly affect future earnings, so it will affect valuation decision as well.

Impact on balance sheet					
	2009	2008		2009	2008
Assets	1,164.68	1,175.74	Liabilities	-	-
					-
Assets	1,164.68	1,175.74	Liabilities	-	-
			Equity	1,164.68	1,175.74
total	1,164.68	1,175.74		1,164.68	1,175.74

change in financial ratio					
	ROA	ROE	D/E	Net income	Operating income
original	0.05%	-221.09%	176.7102	(1,237)	(324)
after adjusted	2.60%	-4.18%	30.7119	(72.3190)	1,467.8169

Calculation of the adjusted ratio:

ROA=OIBI,AT/Average

Asset= $(-324+344+1,164.68)/((43,539+45,084+1,164.68+1,175.74)/2)=2.60\%$

ROE=Net Income/ Average Common Shareholder's Equity

= $(-1,237+1,164.68)/((245+874+1,164.68+1,175.74)/2)=-4.18\%$

D/E ratio= $43,294/(245+1,164.68)=30.7119$

Net income= $-1,237+1,164.48=-72.52$

Operating Income= $-324+(1,164.48/0.65)=1,467.82$

Comprehensive Analysis

After the adjustment, the ROA increases by 3%. The ROE increase by 14%. The D/E ratio decreases by 15. The net income increase \$61.3 and the operating income increase \$1,691. Operating income and ROA increase after adjustment because adjusting operating lease to capital lease will increase more interest expense, which doesn't take into account in operating income and ROA, than depreciation expense. Aside from previous reason, ROA increases also because the adjustment to PP&E not

only increases assets but also increases net income. And the reported OBIT,AT is so small that when the net income and asset increase at the same amount, the ROA will increase. Below is a summary of the adjustment of operating lease and PP&E:

summary of the adjustment					
	Total Assets	Total Liabilities	Total Shareholder's Equity	Operating Income	Net Income
As Reported (2009)	43,539.00	43,294.00	245.00	(324.00)	(1,237.00)
adjustment to operating lease	5,092.54	6,195.92	(1,103.38)	(100.60)	(1,103.38)
adjustment to Fixed Asset	1,164.68		1,164.68	1,792.00	1,164.68
total	49,796.22	49,489.92	306.30	1,367.40	(1,175.70)
As Reported (2008)	45,084.00	44,210.00	874.00	(8,314.00)	(8,922.00)
adjustment to operating lease	5,641.47	6,863.79	(1,222.32)		
adjustment to Fixed Asset	1,175.74		1,175.74		
total	51,901.21	51,073.79	827.42		

change in financial ratio					
	ROA	ROE	D/E	Net income	Operating income
original	0.045%	-221.090%	176.7102	(1,237)	(324)
after adjusted	3.360%	-207.410%	161.5748	(1,175.7028)	1,367.4000

Calculation of the adjusted ratio:

$$\text{ROA} = \text{OIBI,AT} / \text{Average Asset} = (1.367 + 344) / ((51,901.21 + 49,796.22) / 2) = 3.36\%$$

$$\text{ROE} = \text{Net Income} / \text{Average Common Shareholder's Equity}$$

$$= (-1,175.7) / ((827.4 + 306.3) / 2) = -207.41\%$$

$$\text{D/E ratio} = 49,489.92 / 306.3 = 161.5748$$

It is worth mentioned that Delta acquired Northwest Airlines in 2008. In the footnote, it shows that Delta acquired Southwest Airlines for \$3,353. Among \$3,353, \$7,333 (\$4,632+\$2,701) is intangible assets and goodwill. Delta paid Southwest Airlines a lot on its goodwill and intangible assets. Thus, it is important for Delta to do the impairment test on goodwill and intangible assets every year based on the market share and employee turnover after the acquisition.

In conclusion, Delta has negative income and a really high D/E ratio. They also have really low ROA and negative ROE. After the adjustment, ROA, ROE and D/E increase a little but their net income is still negative. Delta still has to work on increasing return for their shareholders. They should also work hard on increasing revenue and decrease expense. Compared to 2008, Delta's net income has increased. Through the acquisition, we expect that Delta will gain the economics of scale and increase their market share.

Be sure to include the following statement as a separate final page of your exam **and sign it.**

By signing this exam below in English, I am able to honestly say that I have not given or received any assistance on this exam before or after it is turned in, and that I have abided by the University of Illinois honor code in every respect. I realize that if I am found to be guilty of violating the exam policies or the honor code I may be dismissed from the program without graduating.

Print your name here, last name first _____

Record a legible signature of your full name here, if appropriate.

Good luck with all your future endeavors!
Gene Imhoff