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HOUSE COMMITTEE ON ECONOMIC REVITALIZATION, BUSINESS &  
MILITARY AFFAIRS  
TESTIMONY REGARDING SB 1299 SD 2  
RELATING TO GENERAL EXCISE TAX

TESTIFIER: KURT KAWAFUCHI, DIRECTOR OF TAXATION (OR DESIGNEE)  
DATE: MARCH 17, 2009  
TIME: 7:30AM  
ROOM: 312

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This bill proposes to amend section 209E-2, HRS, to modify Hawaii Enterprise Zone law by expanding the definition of "qualified business" to include businesses engaged in advanced flight simulator training for pilots, dispatchers, mechanics, or air traffic controllers.

The Department of Taxation ("Department") **opposes the unbudgeted revenue loss contained in this measure.**

**UNSURE OF ANY FLIGHT SIMULATION FOR MECHANICS**—The Department points out that it is unsure what types of advanced flight simulation would be available for mechanics and questions this term's inclusion in the bill.

**OPPOSED DUE TO BUDGET IMPACT**— The Department must be cognizant of the biennium budget and financial plan. This measure has not been factored into either. Given the forecasted decrease in revenue collections, this measure would add to the budget shortfall.

**REVENUE LOSS**—This bill will result in a revenue loss of approximately \$400,000 for fiscal year 2010, \$1.2 million for fiscal year 2011, \$400,000 for fiscal year 2012 and \$275,000 per year thereafter.

**From:** Jim Crisafulli [JCrifafu@dbedt.hawaii.gov]  
**Sent:** Monday, March 16, 2009 6:11 PM  
**To:** EBMtestimony  
**Subject:** Analysis of projected Impacts of an Advanced Flight Simulator Training Center in relation to SB1299 (Hearing on Tuesday, March 17, at 7:30 a.m. in Room 312)  
**Attachments:** Flight Simulator Impact Analysis.pdf  
**Importance:** High

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# Impacts of an Advanced Flight Simulator Training Center

## (Pursuant to SB749 and SB1299)

### Summary

DBEDT has been asked to estimate the economic gains associated with an advanced flight simulator training center, which would be incentivized through SB 749 and SB 1299. This analysis focuses on the primary mission of the center to train new commercial pilots for certification, which is estimated at about 75 trainees per year on average. However, there are other sources of revenue to the training center that cannot as yet be estimated with confidence. One of these is recurrent training of pilots by airlines, particularly Hawaiian airlines. Depending on airline participation this could include around 200 pilots per year utilizing the center's simulator. Another source of revenue is the use of the simulator to train Hawaiian Airline pilots on the newer Airbus aircraft the airline is expected to purchase. That training would likely be incorporated into the purchase of the equipment, but the number of aircraft and their introduction into the Hawaiian fleet is not year clear.

Based on assumptions and methods discussed in this report, our estimates of the total impacts generated by the training of new pilots by the center are summarized in the table below.

**Summary Table, Total Economic Impacts**

	Units	First-Year	Second-Year/Annual
<b>Output impacts</b>			
Direct (excluding imported)	\$M/Year	5.0	5.5
Direct & Indirect	\$M/Year	7.1	8.0
Direct & Indirect & Induced	\$M/Year	9.9	11.7
<b>Total job impacts</b>			
Direct	Jobs/Year	30	37
Direct & Indirect	Jobs/Year	44	57
Direct & Indirect & Induced	Jobs/Year	66	75

Source: DBEDT

As the table shows, there are significant impacts in the first year and these will increase in the second and subsequent years as the center moves into operational mode. First year impacts represent the construction phase. It is assumed that all construction funds are supplied from the private sector outside Hawaii. The construction of the center is estimated to directly generate \$5 million in economic output (a concept that roughly corresponds with sales revenues). About 30 jobs will be generated directly in the

construction phase. However, secondary impacts from first-year construction (called indirect and induced impacts) will occur as the spending flows through the economy. This will likely generate an additional \$4.9 million in output in the first year (for a total of \$9.9 million) and 33 more jobs (for a total of 66). In total, nearly \$10 million in additional output and 66 new jobs can be expected from first-year construction activity.

In the second and each subsequent year, operational expenditures of the center are estimated to directly generate \$5.5 million in additional output per year and 37 jobs. Again, as expenditures circulate in the economy, indirect and induced impacts will increase total output to nearly \$12 million per year and support a total of 75 jobs.

### **Basic Information and Assumptions**

This report is based on the following assumptions and information found in the report attached to SB1299 (SB 1299, SD 1, SSCR 212), other information provided to the Senate Committee on Economic Development and Technology, as well as technical assumptions related to the methodology. The parameters of an aviation flight training center are complex and DBEDT has interpreted the information provided the best it can within the short period provided to develop these estimates of economic impact.

1. The program will generate \$5 million additional construction expenditures from new private external sources, outside of Hawaii. The project will utilize Hawaii construction firms and labor, and will be completed within one year (corresponding to year one in the data tables).
2. The program will be fully operational in the second year and beyond (second year/annual in the data tables) with 75 students per year. It is assumed that 75 percent of the students will be from overseas and 25 percent Hawaii residents. The program training center will employ a staff of 37 (representing direct jobs created).
3. Average revenue per student will be \$60,000 per year. This is the estimated yearly revenue for a 16 month training period costing a total of \$85,000 for a complete certification package.
4. Other expenditures (including rent for housing) are assumed to be \$20,000/year per non-Hawaii student and \$8,000 per year for Hawaii students (which excludes rent)
5. The full cost of students' training is covered and there are no in-state subsidies.
6. Aircraft, parts, and devices are imported from outside Hawaii, therefore investment in those inputs have a negligible economic impact on Hawaii.

The assumptions are summarized in Table 1.

**Table 1. Assumptions**

	Units	First-Year	Second-Year/Annual
New Construction	\$M	5.0	
# of Student	Students/Year		75
Revenue/Student	\$/Year		60,000
Total Student Revenues	\$M/Year		4.5
GET Rate	%		4.0
Total Annual GET on Revenue	\$		180,000
Other expenses/non-HI student	\$/Year		20,000
Other expenses/HI student	\$/Year		8,000
Share of HI students	%		25%
Total Other PCE of Students	\$M/Year		1.3

M=millions

## Methodology and Estimated Impacts

The total output gains (which roughly correspond with sales revenues in the economy) and impacts on total jobs can be estimated based on the assumptions above and the 2005 State Input-Output Model.

The overall economic impacts of the ongoing, new pilot training by the center stem from three sources of expenditures:

- (1) One-time impacts of the \$5.0 million construction expenditure,
- (2) Impacts of the \$4.5 million annual student revenue, and
- (3) Impacts of the annual \$1.3 million personal consumption expenditures (PCE) from both Hawaii and non-Hawaii students.

For gains in both output and total jobs, three types of impacts are estimated;

- 1) *Direct impacts* are the initial expenditure on the industry providing the good or service (in this case construction for the first year and educational services thereafter).
- 2) *Direct and indirect impacts* include the direct impact plus the upstream impact on industries that supply goods and services to the directly-impacted industry. These are estimated based on the *Type I Multipliers* from the 2005 State I-O Model.
- 3) *Direct, indirect and induced* impacts include the impacts above, plus the impacts of personal consumption expenditures made by employees of those direct and indirect industries. This spending helps create additional output and employment in a range of other industries and is labeled as a Type II impact. These expenditures are captured by combining the Type I multiplier results with the Type II Multiplier results from the 2005 State I-O Model.

The following sections estimate the value of output and jobs generated by the three sources of expenditures, in terms of the three types of impacts.

## 1. Impacts of the \$5 Million Construction Expenditures

The estimated, one-time impacts of the \$5.0 million additional construction expenditure are provided in Table 2. Assuming all construction work is conducted by local firms and labor, the \$5 million in additional construction expenditures will increase the total output (revenues) of Hawaii's construction industry by \$5 million (the direct impact). Based on the Type I and Type II Multipliers, the direct & indirect and the direct, indirect & induced impacts on total output are \$7.1 million and \$9.9 million, respectively.

Based on the 2005 State I-O Model, the direct, direct & indirect, and direct, indirect & induced impacts of the one-time construction expenditures on total jobs are 30, 44, and 66 jobs, respectively.

**Table 2. The Economic Impacts Construction Expenditures**

	Units	First-Year
Output impacts (revenue gain)		
Direct	\$M	5.0
Direct & Indirect	\$M	7.1
Direct & Indirect & Induced	\$M	9.9
Total job impacts		
Direct	Total Jobs	30
Direct & Indirect	Total Jobs	44
Direct & Indirect & Induced	Total Jobs	66
Construction Output Multipliers		
Type I	\$/ \$	1.43
Type II	\$/ \$	1.98
Job Multipliers		
Job/output ratio	Jobs/\$M	6.09
Type I	Jobs/\$M	8.76
Type II	Jobs/\$M	13.11

## 2. Annual Impacts of Student Revenues

The estimated impacts of the \$4.5 million annual student revenue are provided in Table 3. The direct impact on output is the \$6.4 million additional revenue within Hawaii's educational service industry. Based on the Type I and Type II Multipliers, the direct & indirect and the direct, indirect & induced impacts on total output are \$6.6 million and \$9.9 million, respectively. These impacts will continue annually as long as the program is in operation at the same level of service.

Based on the 2005 State I-O Model, the direct, direct & indirect, and direct, indirect & induced annual impacts of the \$4.5 million additional student revenue per year on total jobs are 37, 46, and 60 jobs, respectively.

**Table 3. The Annual Impacts of Increased Student Revenue**

	Units	Second-Year/Annual
<b>Output impacts</b>		
Direct	\$M/Year	4.5
Direct & Indirect	\$M/Year	6.6
Direct & Indirect & Induced	\$M/Year	9.9
<b>Total job impacts</b>		
Direct	Jobs/Year	37
Direct & Indirect	Jobs/Year	46
Direct & Indirect & Induced	Jobs/Year	60
<b>Output Multipliers</b>		
Type I	\$/ \$	1.47
Type II	\$/ \$	2.19
<b>Job Multipliers</b>		
Job/output ratio	Jobs/\$M	8.22
Type I	Jobs/\$M	10.14
Type II	Jobs/\$M	13.34

If the student revenues are not subject to GET, the state will forgo the receipt of about \$180,000 GET revenues per year.

### 3. Annual Impacts of Additional Student Consumption Expenditures

The estimated annual impacts of the \$1.3 million additional student personal consumption expenditures (PCE, e.g. expenditures on housing, food, etc.) are provided in Table 4. At an estimated \$1.0 million, the direct impact on Hawaii produced goods and services is smaller than the total estimated personal consumption expenditures because about 21 percent of PCE in Hawaii is imported (Based on the 2005 I-O Model). Based on the Type I and Type II Multipliers, the direct & indirect, and the direct, indirect & induced impacts on total output are \$1.4 million and \$1.9 million, respectively.

Based on the 2005 State I-O Model, the indirect, and indirect & induced annual impacts of the \$1.3 million additional PCE per year on total jobs are 11 and 15 jobs, respectively.

**Table 4. The Annual Impacts of Increased Student Other Expenditures (PCE)**

	Units	Second-Year/Annual
Output impacts		
Direct (excluding imported)	\$M/Year	1.0
Direct & Indirect	\$M/Year	1.4
Direct & Indirect & Induced	\$M/Year	1.9
Total job impacts		
Direct & Indirect	Jobs/Year	11
Direct & Indirect & Induced	Jobs/Year	15
PCE Output Multipliers		
% of Imported PCE		0.21
Type I	\$/ \$	1.11
Type II	\$/ \$	1.47
Job Multipliers		
Type I	Jobs/\$M	8.93
Type II	Jobs/\$M	11.84

#### 4. Total Impacts

The estimated total economic impacts are summarized in Table 5. The total direct annual impact on output is \$5.5 million. The annual total direct & indirect, and the direct, indirect & induced impacts on output are \$8.0 million and \$11.7 million, respectively.

The direct, direct & indirect, and direct, indirect & induced annual impacts on total jobs are 37, 57, and 75 jobs, respectively.

**Table 5. Total Economic Impacts**

	Units	First-Year	Second-Year/Annual
Output impacts			
Direct (excluding imported)	\$M/Year	5.0	5.5
Direct & Indirect	\$M/Year	7.1	8.0
Direct & Indirect & Induced	\$M/Year	9.9	11.7
Total job impacts			
Direct	Jobs/Year	30	37
Direct & Indirect	Jobs/Year	44	57
Direct & Indirect & Induced	Jobs/Year	66	75