Report to Congress

U.S. Department
of Transportation

Economic Impact on Air Service at Airports Serving Small Air Carrier Aircraft Resulting from Certain Changes to Title 14 CFR Part 139—Certification of Airports

Federal Aviation Administration

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Report of the Secretary of Transportation
to the United States Congress
Pursuant to Section 404(c) of the
FAA Reauthorization Act of 1996

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Executive Summary

Under 14 CFR part 139, Certification of Airports, the Federal Aviation Administration (FAA) requires airports that desire to serve operations of specified air carrier aircraft to comply with certain safety requirements in order to obtain an airport certificate. The FAA is making significant changes to part 139. Of particular importance, these changes will require for the first time certain airports desiring to serve small scheduled air carrier aircraft (10 to 30 seats), designated as Class III airports in proposed part 139 revisions, to be FAA certificated. To become certificated, an airport operator would be required to develop and implement an Airport Certification Manual (ACM) specifying certain safety and operational actions, such as maintenance of runway pavement, markings and lighting; notification to air carriers of unsafe conditions; and preparedness for aircraft accidents and other emergencies.

The FAA is directed by the authorizing statute (Title 49, U.S.C. § 44706) to issue requirements for the certification and operation of airports. The statute requires the FAA to establish minimum safety standards for certificated airports that provide for the operation and maintenance of adequate safety equipment, including aircraft rescue and firefighting (ARFF) equipment. The authorizing statute also allows the FAA to exempt certain airport operators from all or some of ARFF requirements (certificated airports that have less than one-quarter of one percent of the total number of annual passenger boardings) and allows the FAA to adopt regulatory alternatives for commuter airports (Class III airports) that are "least costly, most cost-effective or the least burdensome" but provide comparable safety at all certificated airports.

This report has been prepared to satisfy a requirement that FAA submit to Congress a report on the economic impact of changes in part 139 with regard to Class III airports. Specifically, Sec. 404(c) of the FAA Reauthorization Act of 1996 provides that the regulation "...shall not take effect until such regulation, and a report on the economic impact of the regulation on air service to the airports covered by the rule, has been submitted to Congress and 120 days have elapsed following the date of such submission."

While compliance with the revised part 139 for Class III airports may be based on a lower-cost alternative method that will be determined on a case-by-case basis, the FAA estimates the cost herein based on rigorous compliance with the rule. Such rigorous compliance has the potential to impose significant costs. These costs may be divided into two components—risk reduction and accident mitigation items. Risk reduction items are associated with making an airport safer so that accidents may be avoided. Accident mitigation items, which impose the majority of costs, are incurred to mitigate accident damage once an accident has occurred. This second group consists primarily but not exclusively of ARFF costs. These costs have two parts. First is fire-fighting equipment including a fire truck. FAA estimates that typical costs would be $50,000 per airport. The second is the labor and other operating costs associated with providing ARFF services. FAA estimates that these costs would typically be $107,000 per year at airports that would meet the definition of Class III under the revised part 139. Overall, FAA

estimates the present value of the cost of the rule at all of these airports to be about $33.4 million over 10 years.

FAA estimates that the cost per passenger served will average $28 (18.2 percent of average fare paid) at airports that would meet the definition of Class III where carriers receive Essential Air Service (EAS) subsidies and $8 (4.4 percent of average fare paid) at airports that would meet the definition of Class III where EAS subsidies are not paid. On an airport-specific basis, cost per passenger served varies widely. At airports where carriers receive EAS subsidies, average cost per passenger is estimated to range from $2 (1 percent of average fare paid) to $504 (673 percent of average fare paid). At airports where EAS subsidies are not paid, average cost per passenger is estimated to range from $.31 (.21 percent of average fare paid) to more than $93 (196 percent of average fare paid). The higher costs per passenger at airports where air carriers receive EAS subsidies are the result of both higher average compliance costs and lower enplanements than at airports where EAS subsidies are not paid.

Several factors may help mitigate these costs and their subsequent effects. First, airport operators will have the option of either meeting Index A of part 139 or proposing and obtaining the Administrator's approval of an alternative plan that provides a comparable level of safety. Another is the practice of the FAA to work with an airport operator during the certification process to tailor compliance options through the ACM so as to reduce costs. Also, Airport Improvement Program (AIP) funding is available for certain capital expenditures that may be required by the rule such as fire fighting equipment, airport marking and signs, and traffic and wind direction indicators. Although legislative changes that may affect AIP funding have been proposed by Congress as of the date of this report, under FAA's current authorization Congress has specifically directed the FAA to set aside $15 million of AIP funds for the five fiscal years following the effective date of the amendments to part 139 to assist airport operators in meeting their terms (49 USC 47116(e)). Still another is the authority of the FAA Administrator to exempt an airport from some or all of the requirements of this rule. An applicant or a certificate holder may petition the Administrator under 14 CFR part 11, General Rulemaking Procedures, for an exemption from any requirement of part 139. Moreover, under 49 U.S.C. 44706(c), the Administrator may exempt an applicant or a certificate holder whose airport annually has less than one-quarter of one percent of the total number of passengers enplaned at all air carrier airports—a requirement met by all airports that would meet the definition of Class III—from all, or part, of the ARFF requirements of part 139, on the grounds that compliance with those requirements is, or would be, unreasonably costly, burdensome, or impractical.

Because most airports meeting the definition of Class III are owned by small communities, serve a limited number of passengers, and operate at a loss, it is most likely that costs not mitigated would be passed through to air carriers. At airports where carriers receive EAS subsidies—about two thirds of these airports—the Federal Government would ultimately end up supporting most if not all of the costs of the rule through increased subsidies. The air carriers' monopoly position at airports meeting the definition of Class III together with the current structure of the EAS program—which

pays carriers the shortfall of revenues below cost plus a percentage profit based on cost—would cause fares, frequency of service, and air carrier profits earned at these airports to change little if any. (Note, however, recent changes in the EAS program may possibly reduce subsidies at a limited number of airports where they are now paid. Because these changes have not yet been implemented, it is uncertain how they might affect airports that meet the definition of Class III. Should reductions occur at airports that meet the definition of Class III, frequency of service, average fares, and air carrier profits potentially could be adversely affected at these airports.)

At airports where no EAS subsidies are paid, it is most likely that passengers would share the burden of the rule with the carriers providing service. Because costs borne by carriers would increase at non-EAS subsidy airports, average fares could be expected to increase, frequency of service to decline, and profits generated by operations at these airports to decline. But the air carriers' monopoly position, plausible passenger sensitivity to fare increases, and the cost characteristics of the new rule would insure that service impacts would be relatively small at most of these airports. Estimates made in the body of the report suggest, in fact, that no one passenger would actually pay a higher fare (although some might not travel and others might need to travel at non-preferred times) and that the decline in flights at affected airports located in North America would never exceed 4 percent. However, flights at one of two airports that would meet the definition of Class III in the Pacific Territory of American Samoa could decline by two thirds and flights at the other possibly might be eliminated altogether. The adverse impact on air carrier profits earned at non-EAS subsidy airports could be as large as $513,200 annually.

On a carrier-by-carrier basis, profit impacts will vary widely. For carriers whose service to airports meeting the definition of Class III is exclusively or largely to airports where EAS subsidies are paid—Arizona Express, Big Sky Airlines, Colgan Air, Great Lakes Airlines, and Rio Grande Air—profit impacts will be small. (Should the reauthorization process limit EAS subsidies, carriers serving exclusively airports where EAS subsidies are paid might experience lower profits relative to what would occur under the program as it currently operates.) For carriers for which service to airports meeting the definition of Class III constitutes only a small portion of their business—Mesa Airlines, Midwest Airlines, and Sky West Airlines—profit impacts probably will be small relative to total profits. For Samoa Air, which operates a large portion of its flights to airports which would meet the definition of Class III and serves communities not eligible for EAS subsidies, profit impacts may be significant.

I. Introduction

Since 1970, the FAA Administrator has had the statutory authority—Title 49, United States Code (U.S.C.) § 44706, Airport operating certificates—to issue airport operating certificates to airports desiring to serve certain air carriers and to establish safety standards for the operation of those airports. The FAA uses this authority to issue requirements for the certification and operation of certain land airports—Title 14, Code of Federal Regulations part 139 (14 CFR 139), Certification and Operations: Land Airports Serving Certain Air Carriers, as amended. These requirements cover a broad range of airport operations including the maintenance of runway pavement, markings and lighting, notification to air carriers of unsafe or changed conditions, and preparedness for aircraft accidents and other emergencies.

Until 1996, this statutory authority was limited to those land airports serving passenger operations of an air carrier that are conducted with aircraft having a seating capacity of more than 30 passengers. This authority was broadened by the Federal Aviation Administration Reauthorization Act of 1996. Section 44706 was amended to allow the FAA to certificate airports, with the exception of those located in the State of Alaska, that serve any scheduled passenger operation of an air carrier operating aircraft designed for more than 9 passenger seats but 30 or fewer passenger seats (small air carrier aircraft). FAA's existing authority to certificate airports serving air carrier operations conducted in aircraft with more than 30 seats remained unchanged.

To implement its new authority regarding airport certification, FAA published a Notice of Proposed Rulemaking (NPRM) on June 21, 2000 (65 FR 38636). This NPRM proposed comprehensive amendments to the current airport certification requirements in 14 CFR part 139. Of particular importance, the amendments would, for the first time, include in the airport certification program airports desiring to serve scheduled operations flown by small air carrier aircraft, designated as Class III airports, to ensure safety in air transportation at these airports. Specifically, operators of airports that would meet the definition of Class III under the revised part 139 and desire a certificate would be required to develop and implement an Airport Certification Manual (ACM) and to comply with certain safety and operational requirements, such as maintenance of runway pavement, markings and lighting; notification to air carriers of unsafe conditions; preparedness for aircraft accidents and other emergencies; and aircraft rescue and firefighting (ARFF). While compliance with the revised rule for Class III airports may be based on a lower-cost alternative method that will be determined on a case-by-case basis, the FAA estimates the cost herein based on rigorous compliance with the rule. Such rigorous compliance has the potential to impose significant costs.

Most airports that would meet the definition of Class III are owned by small communities, serve a limited number of passengers, and operate at a loss. This makes it most likely that the costs of the rule cannot be absorbed by the airport operator but must be passed through to the air carriers whose operations trigger the requirements of the rule. This has the potential to significantly impact air service at these airports.

Paragraph (e) of amended section 44706 states that any regulation to certificate airports serving scheduled passenger operation of small air carrier aircraft shall "not take effect until such regulation, and a report on the economic impact of the regulation on air service to the airports covered by the rule, has been submitted to Congress and 120 days have elapsed following the date of such submission." As required by statute, this report—issued in conjunction with the final rule—addresses the economic impact, both in aggregate and on an airport-by-airport basis, on air service at airports desiring to serve scheduled passenger operations of small air carrier aircraft that could be newly certificated under the revised part 139. First, an overview of airports that would meet the definition of Class III under the revised part 139 is presented together with a summary of air service currently provided at these airports. Next the estimated costs of compliance with the rule are examined. This is followed by an analysis of the likely impact of the rule by airport on fares, flights operated, and the air carriers providing service. The estimates presented are intended to represent the maximum foreseeable impacts. Mitigating factors that would result in the actual impacts being less, perhaps much less than the maximum foreseeable impacts, are then explored. Finally, conclusions are presented.

II. Overview

Airports that would meet the definition of Class III and whose operators desire a certificate are new to regulation under the amendments to part 139. Airports that would meet the definition of Class III under the revised regulation are defined as airports not located in the State of Alaska that serve scheduled air carrier operations conducted in aircraft designed for 30 or fewer passenger seats but more than 9 passenger seats. These airports may also serve air carrier operations not covered by part 139 such as scheduled operations conducted in aircraft designed for 9 or fewer seats and unscheduled operations conducted in aircraft designed for 30 or fewer seats.[1] The characteristics of these airports and the air carriers which serve them are discussed below.

Class III Airport Characteristics

Airports considered to meet the definition of Class III in this report are those identified in the Regulatory Evaluation prepared in support of the rulemaking.[2] Numbering 37, their characteristics are summarized in Table 1. As indicated, they are located in 16 states and the Pacific Territory of American Samoa. Half are in four states—seven in Montana, five in New Mexico, four in Arkansas, and three in Maine. They are all owned by state or local governments. The populations of the owning entities vary widely. Three have populations ranging upwards of 100,000 but most are far smaller. Of those for which financial data are available, most operate at a loss. Given these characteristics, the ability of airports that would meet the definition of Class III to absorb the costs of the rule is, at best, limited.

Driving distances to alternative airports where passengers can obtain at least equivalent service are substantial. About one-third of airports that would meet the definition of Class III—located in Montana, New Mexico, Utah, Arkansas, Arizona, and North Dakota—are more than 100 highway miles from airports that would meet the definition of either Class I or II. And only three are within 50 miles of a Class I or II airport.

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[1] Under the proposed revisions to part 139, Class I airports are those whose service recipients include scheduled air carriers operating aircraft designed for more than 30 seats. Class II airports are those serving both scheduled air carriers flying aircraft designed for more than 9 but 30 or fewer seats and unscheduled air carriers operating aircraft designed for more than 30 seats. Class IV airports are those serving only unscheduled air carrier operations in aircraft designed for more than 30 seats. Class I airports currently hold "full" part 139 certificates while Class II and IV have "limited" certificates. Under the proposed rule, "limited" certificates would no longer exist.

[2] George A. Euring Jr., "Regulatory Evaluation, Regulatory Flexibility Determination, International Trade Impact Assessment, and Unfunded Mandates Assessment For Final Rulemaking Title 14 CFR Parts 121, 139, Certification of Airports," Federal Aviation Administration, September 2002. Note, however, the definition of Class III is based on the characteristics of air service furnished by operators to an airport. Because service characteristics can change, the specific airports meeting the definition of Class III can be expected to vary from time-to-time.

Table 1

Class III Airport Characteristics

Name		LOC/ID	Airport Ownership	Population of Entity Owning Airport - 1990 (a)	Small Entity	Operating Revenue Less Debt Service (b)	Nearest Class I or Class II Airport		
							Road Miles	LOC/ID	Class
Lake Havasu City	AZ	HII	City	24,363	Y	($78,641)	60	IGM	2
Show Low	AZ	SOW	City	5,019	Y	($136,324)	139	FLG	1
El Dorado	AR	ELD	City	23,146	Y	*	71	MLU	1
Harrison	AR	HRO	Boone County	28,297	Y	$38,347	77	FYV	1
Jonesboro	AR	JBR	City	46,535		$35,657	79	MEM	1
Mountain Home	AR	BPK/WMH	Baxter County	31,186	Y	$4,182	129	SGF	1
Imperial	CA	IPL	Imperial County	109,303		$132,593	70	YUM	1
Inyokern	CA	IYK	Indian Wells Apt. Dist.	2,647	Y	$39,800	89	BFL	1
Merrill C Meigs (c)	IL	CGX	City	2,783,726		*	10	MDW	1
Spencer	IA	SPW	City	11,066	Y	$32,187	93	FOD	1
Augusta	ME	AUG	State	1,227,928		($200,000)	58	PWM	1
Bar Harbor	ME	BHB	Hancock County	46,948	Y		54	BGR	1
Rockland	ME	RKD	Knox County	36,310	Y	($68,330)	65	BGR	1
Cumberland	MD	CBE	Potomac Highland Arpt. Auth.	23,706	Y	($301,940)	64	JST	1
Manistee	MI	MBL	City/County	27,999	Y	*	64	TVC	1
Glasgow	MT	GGW	City/Valley County	5,192	Y	($23,327)	146	ISN	2
Glendive	MT	GDV	County	9,505	Y	*	109	ISN	1
Havre	MT	HVR	City/Hill County	30,899	Y	*	120	GTF	1
Lewistown	MT	LWT	City/Fergus County	18,134	Y	*	108	GTF	1
Miles City	MT	MLS	City	8,461	Y	*	146	BIL	1
Sidney	MT	SDY	City/Richland County	17,945	Y	($1,788)	55	ISN	2
Wolf Point	MT	OLF	City/Roosevelt County	13,879	Y	*	97	ISN	2
Chadron	NE	CDR	City	9,021	Y	*	85	AIA	2
Kearney	NE	EAR	City	24,396	Y	$145,806	41	GRI	2
Alamogordo	NM	ALM	City	27,596	Y	($61,573)	88	ELP	1
Carlsbad	NM	CNM	City	31,888	Y	($106,001)	71	HOB	1
Gallup	NM	GUP	City	19,154	Y	($48,954)	122	FMN	1
Santa Fe	NM	SAF	City	55,859		($197,639)	64	ABQ	1
Silver City	NM	SVC	Grant County	27,676	Y	($4,429)	156	ELP	1
Dickinson	ND	DIK	City	19,013	Y	($125,496)	101	BIS	1
Ponca City	OK	PNC	City	30,133	Y	($31,152)	81	ICT	1
Brownwood	TX	BWD	City	24,874	Y	($182,556)	72	ABI	1
Moab	UT	CNY	Grand County	6,620	Y	$23,722	118	GJT	1
Vernal	UT	VEL	City/Uintah County	39,838	Y	($64,941)	108	RKS	1
Bluefield	WV	BLF	Mercer County	69,371		*	48	BKW	2
Fitiuta Village	PT	FAQ/TAV	American Samoa	56,911		($36,262)	71	NSTU	1
Ofu (is), Am Samoa	PT	Z08/OFU	American Samoa	56,911		($7,110)	60	NSTU	1
Number		37			29				
Total				5,031,455					

(a) U.S. Census Bureau, 1990 Census.

(b) FAA Form 5100-125. No airport specific data is available for airports not required to file Form 5100-125. This is indicated with *.

(c) Airport closed.

Air Service Characteristics at Class III Airports

Air service characteristics at airports that would meet the definition of Class III are summarized in Table 2. FAA has identified 9 different carriers, which provide scheduled service at these airports. Almost all operate aircraft with 19 seats, although some service is provided with aircraft as large as 30 seats and some service with aircraft as small as 9 seats.[3] Service averages 3 departures per day, ranging from 2 to 6 departures per day. Average enplanements per departure is about 3.1 although 5 locations enplane more than 7 passengers per departure. Overall, the annual average total number of enplaning passengers is about 3000, or about 8 per day. Fares paid by departing passengers range between $48 and $248 with an average of $163. In addition, virtually all Class III airports serve unscheduled traffic (air taxis) operated by aircraft with fewer than 31 seats.

Air carriers operating at more than two-thirds of the airports that would meet the definition of Class III (26 airports) receive Essential Air Service (EAS) subsidies. Congress established the EAS program to ensure that smaller communities would retain a link to the national air transportation system, with Federal subsidy where necessary, following deregulation of the airline industry. With some exceptions, communities generally are EAS eligible if they received scheduled air service on October 24, 1978. Under the program, which is today administered by the Department of Transportation (DOT), a minimum level of service at each eligible community is defined by specifying a hub through which the community is linked to the national network, a minimum number of round trips and available seats that must be provided to that hub, certain characteristics of the aircraft to be used, and the maximum permissible number of intermediate stops to the hub. Air carriers provide at least this minimum level of service to most communities without subsidy. Where necessary, however, DOT will enter into an agreement with a carrier to pay a subsidy to ensure that the specified level of service is provided. These agreements normally run for 2 years after which DOT will either renegotiate the agreement with the incumbent carrier or solicit proposals from interested carriers.[4]

Two airports serve communities—Imperial and Inyokern, California—that would be eligible for EAS subsidy should no carrier be willing to voluntarily continue service to that community. Three non-EAS eligible communities lost service when the carriers providing service pulled out—Mountain Home, Arkansas; Spencer, Iowa; and Cumberland, Maryland. Gallup, New Mexico lost its EAS subsidy and service when its per passenger subsidy grew to more than $200 (one of the exceptions under which otherwise eligible communities can lose subsidized service). Two airports—Show Low, Arizona and Alamogordo, New Mexico—are served with aircraft having 9 seats, less than the threshold to be considered a Class III airport. They are included because previous service providers used aircraft with 19 seats.

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[3] Although the two airports served with aircraft designed for 9 seats do not meet the definition of Class III, they are included because service has previously been provided with aircraft designed for more than 9 seats.

[4] For a summary of the EAS program and its administration, see "What is Essential Air Service?," Office of Aviation Analysis, U.S. Department of Transportation, May 1998.

Table 2

Air Service Characteristics at Class III Airports

Name		LOC/ID	Carrier(a)	Aircraft Size (Seats) (a)	Scheduled Departures per (a)		Enplane-ments per Departure	EAS Subsidy	Total Enplane-ments	Average Fare
					Yr	Day		(b)	(c)	(c)
Lake Havasu City	AZ	HII	Mesa	19	930	3	7.8	Not Eligible	7,240	$133
Show Low	AZ	SOW	Arizona Express	9	730	2	0.4	$538,432.00	288	$75
El Dorado	AR	ELD	Mesa	19	1,706	5	1.0	$898,283.00	1,790	$129
Harrison	AR	HRO	Mesa	19	936	3	2.9	$989,018.00	2,720	$116
Jonesboro	AR	JBR	Mesa	19	667	2	2.9	$898,283.00	1,920	$134
Mountain Home	AR	BPK/WMH			(d)	(d)	(d)	Not Eligible	(d)	(d)
Imperial	CA	IPL	Skywest	30	1,117	3	10.9	Eligible	12,120	$145
Inyokern	CA	IYK	Skywest	30	1,025	3	10.3	Eligible	10,600	$237
Merrill C Meigs	IL	CGX			(e)	(e)	(e)	(e)	(e)	(e)
Spencer	IA	SPW			(d)	(d)	(d)	Not Eligible	(d)	(d)
Augusta	ME	AUG	Colgan Air	19	1,302	4	3.0	$1,069,228.00	3,910	$170
Bar Harbor	ME	BHB	Colgan Air	19	1,507	4	7.9	$1,069,228.00	11,850	$179
Rockland	ME	RKD	Colgan Air	19	2,071	6	3.1	$1,069,228.00	6,470	$167
Cumberland	MD	CBE			(d)	(d)	(d)	Not Eligible	(d)	(d)
Manistee	MI	MBL	Midwest Airlines	19	594	2	1.8	$485,545.00	1,090	$133
Glasgow	MT	GGW	Big Sky Airlines	19	620	2	2.5	$816,651.00	1,560	$164
Glendive	MT	GDV	Big Sky Airlines	19	672	2	1.0	$816,651.00	670	$137
Havre	MT	HVR	Big Sky Airlines	19	993	3	0.8	$816,651.00	760	$145
Lewistown	MT	LWT	Big Sky Airlines	19	1,239	3	0.5	$816,651.00	580	$112
Miles City	MT	MLS	Big Sky Airlines	19	1,239	3	0.7	$816,651.00	840	$131
Sidney	MT	SDY	Big Sky Airlines	19	970	3	2.0	$816,651.00	1,910	$147
Wolf Point	MT	OLF	Big Sky Airlines	19	919	3	1.3	$816,651.00	1,150	$172
Chadron	NE	CDR	Great Lakes	19	952	3	1.1	$542,413.00	1,030	$248
Kearney	NE	EAR	Great Lakes	19	1,479	4	2.9	$839,487.00	4,280	$229
Alamogordo	NM	ALM	Rio Grande Air	9	1,174	3	1.0	$849,235.00	1,120	$121
Carlsbad	NM	CNM	Mesa	19	1,040	3	2.8	$560,070.00	2,960	$143
Gallup	NM	GUP		19	(d)	(d)	(d)	Not Eligible	(d)	(d)
Santa Fe	NM	SAF	Great Lakes	19	2,008	6	7.7	Not Eligible	15,400	$241
Silver City	NM	SVC	Mesa	19	937	3	2.2	$935,667.00	2,060	$108
Dickinson	ND	DIK	Great Lakes	30	1,240	3	2.1	$1,540,089.00	2,610	$207
Ponca City	OK	PNC	Mesa	19	1,169	3	2.1	$977,302.00	2,430	$118
Brownwood	TX	BWD	Mesa	19	967	3	2.0	$964,677.00	1,940	$94
Moab	UT	CNY	Great Lakes	19	976	3	1.3	$971,444.00	1,280	$223
Vernal	UT	VEL	Great Lakes	19	925	3	1.9	$1,102,967.00	1,790	$213
Bluefield	WV	BLF	Colgan Air	19	1,535	4	1.4	$1,037,631.00	2,200	$194
Fitiuta Village	PT	FAQ/TAV	Samoa Air	19	662	2	1.6	Not Eligible	1,060	$53
Ofu (is), Am Samoa	PT	Z08/OFU	Samoa Air	19	678	2	1.0	Not Eligible	650	$48
Average				19	945	3	3.1	$886,722	2,926	$163
Number(f)		37	9					26		

(a) Official Airline Guide, 2002 and 2003.

(b) U. S. Department of Transportation, EAS and Domestic Analysis Division, June 2003.

(c) U. S. Department of Transportation Origin and Destination Ten Percent Passenger Survey, Calendar Year 2002.

(d) Subsequent to their identification as Class III airports in the Regulatory Evaluation, these airports lost scheduled service.

(e) Airport closed

(f) For EAS Subsidy, number represents airports receiving subsidy.

III. Costs

The proposed amendments to part 139 may impose significant costs on airports that would meet the definition of Class III. Although the FAA Administrator may approve lower cost alternative methods of compliance on a case-by-case basis, costs presented below assume rigorous compliance with the rule. This approach is followed in order to identify the maximum expected impact of the rule.

Costs may be divided into two components—risk reduction and accident mitigation items. The first are associated with making an airport safer for air transportation so that the rate of accidents is reduced. The second, which impose the majority of the costs, are intended to mitigate accident damage if an accident occurs. This second group consists primarily but not exclusively of airport rescue and fire fighting (ARFF) items. The following sections summarize estimates of these by airport, grouped by non-ARFF (both risk reduction and accident mitigation items) and ARFF costs. A detailed discussion of these costs is presented in the Regulatory Evaluation supporting the rulemaking.[5]

Non-ARFF Costs

Table 3 reports typical non-ARFF costs estimated for airports desiring a certificate that would meet the definition of Class III broken out by the section of part 139 that would require that they be incurred. Information is presented for one-time initial costs, annually recurring costs, initial costs annualized over 10 years at 7 percent, and the sum of annualized initial costs and annually recurring costs—total annual cost. As indicated, the typical airport that would meet the definition of Class III can be expected to incur about $7400 in additional common costs to meet the non-ARFF requirements of part 139. With respect to four classes of costs, FAA anticipates that some airports will incur them while others will not. Most airports that would meet the definition of Class III are already in compliance with respect to marking, signs, and lighting, but four are expected to incur additional initial costs of $33,000 ($4,698 annualized) each and two additional costs of $83,000 ($11,817 annualized) each. Snow and ice control measures will be necessary only at 27 airports that would meet the definition of Class III in parts of the country which experience snow and ice. Additional costs for lighting traffic and wind direction indicators will be required at three airports and for wildlife hazard management at 15 airports. These costs are indicated by airport in Table 4. In addition, three airports—Show Low, Arizona, and Augusta and Bar Harbor, Maine—provided in their comments to the NPRM for this rule additional estimates of non-ARFF compliance costs for items

[5] Euring, "Regulatory Evaluation, Regulatory Flexibility Determination, International Trade Impact Assessment, and Unfunded Mandates Assessment For Final Rulemaking Title 14 CFR Parts 121, 139, Certification of Airports."

Table 3

Non-ARFF Costs Common to All Class III Airports

Part 139 at Class III Airports			Costs			
	Section	Title	Initial	Re-curring	Annual-ized Initial	Total Annual
Risk Reduction Items:						
Subpart B - Certification						
	139.103	App. For AOC	$179	$0	$25	$25
	139.113	Deviations	$0	$130	$0	$130
Subtotal - Subpart B			$179	$130	$25	$155
Subpart C - Airport Certification Manual						
	139.201	General requirements	$0	$358	$0	$358
	139.203	Content	$936	$0	$133	$133
	139.205	Amendment	$0	$717	$0	$717
Subtotal - Subpart C			$936	$1,075	$133	$1,208
Subpart D - Operations						
	139.301	Records	$14	$168	$2	$170
	139.303	Personnel	$112	$946	$16	$962
	139.311	Marking, signs and lighting	(a)	(a)	(a)	(a)
	139.313	Snow and ice control	(b)	(b)	(b)	(b)
	139.321	Handling and storing of hazardous substances and materials	$208	$104	$30	$134
	139.323	Traffic & wind direction indicators	(c)	$0	(c)	$0
	139.327	Self-inspection program	$358	$2,704	$51	$2,755
	139.329	Pedestrian/Ground Vehicles	$2,415	$450	$344	$794
	139.337	Wildlife hazard management	(d)	$538	(d)	$538
Subtotal - Subpart D			$3,107	$4,910	$442	$5,352
Total Per Airport Risk Reduction Costs			$4,222	$6,115	$601	$6,716
Non ARFF Mitigation Items:						
	139.325	A/P Emergency Plan	$896	$538	$128	$666
Total Per Airport Non ARFF Mitigation Costs			$896	$538	$128	$666
Total Per Airport Non ARFF Costs			$5,118	$6,653	$729	$7,382
Notes:						
(a) Rwy hold & ILS critical area signs are illuminated. All other signs are retroreflective. It is estimated that 4 Class III Airports would require an expenditure of $33,000 and that 2 Class III Airports would require an expenditure of $83,000 to meet these requirements. (See Table 4)						
(b) Costs apply to 27 Class III airports. (See Table 4)						
(c) Initial costs of $1,500 apply to 3 Class III airports. (See Table 4)						
(d) Initial costs apply to 15 Class III airports. (See Table 4)						

Table 4

Annual Non-ARFF Costs

Associated City		LOC/ID	Common Non-ARFF Costs	Additional Marking/ Lighting/ Signs Cost	Snow and Ice Control Costs	Traffic & Wind Direction Indicator Costs	Initial Wildlife Hazard Manage-ment Costs	Adjust-ments per Com-ments(a)	Total NON-ARFF Cost
Lake Havasu City	AZ	HII	$7,382	$0	$0	$0	$0		$7,382
Show Low	AZ	SOW	$7,382	$0	$0	$0	$49,832		$57,214
El Dorado	AR	ELD	$7,382	$0	$256	$0	$0		$7,637
Harrison	AR	HRO	$7,382	$4,698	$256	$0	$498		$12,834
Jonesboro	AR	JBR	$7,382	$4,698	$256	$0	$0		$12,336
Mountain Home	AR	BPK	$7,382	$0	$256	$214	$0		$7,851
Imperial	CA	IPL	$7,382	$0	$0	$0	$0		$7,382
Inyokern	CA	IYK	$7,382	$0	$0	$0	$0		$7,382
Merrill C Meigs (b)	IL	CGX	$7,382	$0	$256	$0	$498		$8,136
Spencer	IA	SPW	$7,382	$0	$256	$0	$498		$8,136
Augusta	ME	AUG	$7,382	$0	$256	$214	$1,139	$1,732	$10,722
Bar Harbor	ME	BHB	$7,382	$0	$256	$0	$3,559	$6,405	$17,601
Rockland	ME	RKD	$7,382	$0	$256	$0	$498		$8,136
Cumberland	MD	CBE	$7,382	$0	$256	$0	$498		$8,136
Manistee	MI	MBL	$7,382	$4,698	$256	$0	$498		$12,834
Glasgow	MT	GGW	$7,382	$0	$256	$0	$0		$7,637
Glendive	MT	GDV	$7,382	$0	$0	$0	$0		$7,382
Havre	MT	HVR	$7,382	$0	$256	$0	$0		$7,637
Lewistown	MT	LWT	$7,382	$0	$256	$0	$0		$7,637
Miles City	MT	MLS	$7,382	$0	$256	$0	$498		$8,136
Sidney	MT	SDY	$7,382	$0	$256	$0	$0		$7,637
Wolf Point	MT	OLF	$7,382	$0	$0	$0	$498		$7,880
Chadron	NE	CDR	$7,382	$0	$0	$0	$0		$7,382
Kearney	NE	EAR	$7,382	$0	$256	$0	$0		$7,637
Alamogordo	NM	ALM	$7,382	$0	$0	$0	$0		$7,382
Carlsbad	NM	CNM	$7,382	$0	$256	$0	$0		$7,637
Gallup	NM	GUP	$7,382	$11,817	$256	$0	$0		$19,455
Santa Fe	NM	SAF	$7,382	$0	$256	$0	$498		$8,136
Silver City	NM	SVC	$7,382	$0	$256	$0	$498		$8,136
Dickinson	ND	DIK	$7,382	$0	$256	$0	$498		$8,136
Ponca City	OK	PNC	$7,382	$0	$256	$0	$0		$7,637
Brownwood	TX	BWD	$7,382	$11,817	$256	$0	$0		$19,455
Moab	UT	CNY	$7,382	$0	$256	$0	$0		$7,637
Vernal	UT	VEL	$7,382	$0	$256	$0	$0		$7,637
Bluefield	WV	BLF	$7,382	$4,698	$256	$214	$498		$13,048
Fitiuta Village	PT	FAZ	$7,382	$0	$0	$0	$0		$7,382
Ofu (is), Am Samoa	PT	Z08	$7,382	$0	$0	$0	$0		$7,382
Total			$273,123	$42,429	$6,901	$641	$60,511	$8,137	$391,741

(a) Adjusts FAA Common Non-ARFF Cost estimates for airport operator provided estimates for such items as wildlife management, the Airport Emergency Plan, the Airport Certification Manual, and record keeping.

(b) Airport Closed.

such as wildlife management, airport emergency plans, airport certification manuals, and record keeping. Adjustments reflecting these comments are included in Table 4.

ARFF Costs

The additional ARFF costs that would be incurred can be expected to vary widely across airports that would meet the definition of Class III. This variation results from differences in current ARFF capabilities and air carrier schedule differences across airports. It will also vary depending on whether Class III airport operators elect to comply with the requirements of the proposed amendments to part 139 by meeting Index A of part 139 or by proposing and obtaining the Administrator's approval of an

alternate plan that provides a comparable level of safety. Because there is no way to determine which Class III airport operators will elect the alternative, this analysis is based on the costs of meeting Index A.

Table 5 reports estimated additional initial (representing mostly equipment purchases), annual personnel, and other annual costs. Annualized initial costs are also shown. Table 5 also reflects comments to the docket of five airports—Show Low, Arizona; Augusta and Bar Harbor, Maine; and Alamogordo and Silver City, New Mexico—providing estimates of ARFF costs they anticipated incurring at their respective airports.

Table 5

ARFF Costs

Associated City		LOC/ID	Additional Initial Cost	Amortized Additional Initial Costs	Additional Personnel Costs	Other Annual Operating Costs	Total Annual Operating Cost	Total Annual Costs
Lake Havasu City	AZ	HII	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Show Low (a)	AZ	SOW	$130,000	$18,509	$207,500	$7,000	$214,500	$233,009
El Dorado	AR	ELD	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Harrison	AR	HRO	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Jonesboro	AR	JBR	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Mountain Home	AR	BPK	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Imperial (b)	CA	IPL	$0	$0	$0	$0	$0	$0
Inyokern (b)	CA	IYK	$0	$0	$100,000	$7,000	$107,000	$107,000
Merrill C Meigs (b)	IL	CGX	$0	$0	$0	$0	$0	$0
Spencer	IA	SPW	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Augusta (a)	ME	AUG	$2,000	$285	$172,099	$15,650	$187,749	$188,034
Bar Harbor (a)	ME	BHB	$149,500	$21,286	$239,450	$18,000	$257,450	$278,736
Rockland	ME	RKD	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Cumberland	MD	CBE	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Manistee	MI	MBL	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Glasgow	MT	GGW	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Glendive	MT	GDV	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Havre	MT	HVR	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Lewistown	MT	LWT	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Miles City	MT	MLS	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Sidney	MT	SDY	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Wolf Point	MT	OLF	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Chadron	NE	CDR	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Kearney (b)	NE	EAR	$0	$0	$100,000	$7,000	$107,000	$107,000
Alamogordo (a)	NM	ALM	$50,000	$7,119	$250,000	$0	$250,000	$257,119
Carlsbad (b)	NM	CNM	$0	$0	$100,000	$7,000	$107,000	$107,000
Gallup	NM	GUP	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Santa Fe	NM	SAF	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Silver City (a)	NM	SVC	$50,000	$7,119	$113,400	$7,000	$120,400	$127,519
Dickinson	ND	DIK	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Ponca City (b)	OK	PNC	$0	$0	$100,000	$7,000	$107,000	$107,000
Brownwood	TX	BWD	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Moab	UT	CNY	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Vernal (b)	UT	VEL	$0	$0	$0	$0	$0	$0
Bluefield	WV	BLF	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Fitiuta Village	PT	FAZ	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Ofu (is), Am Samoa	PT	Z08	$50,000	$7,119	$100,000	$7,000	$107,000	$114,119
Total			$1,631,500	$232,290	$3,882,449	$250,650	$4,133,099	$4,365,389
Average			$44,095	$6,278	$104,931	$6,774	$111,705	$117,983

(a) Estimate incorporates comments received from airport operators.

(b) $0 estimate indicates that these airports already have ARFF capability and that there is no incremental cost imposed by the rule. Merrill C. Meigs has closed.

Total Costs

Table 6 summarizes non-ARFF and ARFF costs by airport. To support analysis of the impact of the part 139 revisions, it also segregates these costs into costs which can be expected to vary with the number of flights at an airport and costs which must be incurred under part 139 but which do not vary with flights—fixed costs. For this report, variable costs are taken to be ARFF personnel costs; all other costs are considered fixed with respect to the number of flights at an airport. As can be seen, annual costs vary significantly from airport to airport. They average $128,571 with their range running from a low of less than $10,000 to almost $300,000. Annual costs total $4.8 million with a present value over 10 years of $33.4 million for all affected airports.

Table 6

Total Annual Costs per Airport

Name		LOC/ID	Annual Non-ARFF Costs	Annual ARFF Costs	Annual ARFF Variable Costs	Annual ARFF Fixed Costs	Annual Variable Costs	Total Annual Fixed Costs	Total Annual Costs
Lake Havasu City	AZ	HII	$7,382	$114,119	$100,000	$14,119	$100,000	$21,501	$121,501
Show Low	AZ	SOW	$57,214	$233,009	$207,500	$25,509	$207,500	$82,723	$290,223
El Dorado	AR	ELD	$7,637	$114,119	$100,000	$14,119	$100,000	$21,756	$121,756
Harrison	AR	HRO	$12,834	$114,119	$100,000	$14,119	$100,000	$26,953	$126,953
Jonesboro	AR	JBR	$12,336	$114,119	$100,000	$14,119	$100,000	$26,455	$126,455
Mountain Home	AR	BPK	$7,851	$114,119	$100,000	$14,119	$100,000	$21,970	$121,970
Imperial	CA	IPL	$7,382	$0	$0	$0	$0	$7,382	$7,382
Inyokern	CA	IYK	$7,382	$107,000	$100,000	$7,000	$100,000	$14,382	$114,382
Merrill C Meigs (a)	IL	CGX	$8,136	$0	$0	$0	$0	$8,136	$8,136
Spencer	IA	SPW	$8,136	$114,119	$100,000	$14,119	$100,000	$22,255	$122,255
Augusta	ME	AUG	$10,722	$188,034	$172,099	$15,935	$172,099	$26,657	$198,756
Bar Harbor	ME	BHB	$17,601	$278,736	$239,450	$39,286	$239,450	$56,887	$296,337
Rockland	ME	RKD	$8,136	$114,119	$100,000	$14,119	$100,000	$22,255	$122,255
Cumberland	MD	CBE	$8,136	$114,119	$100,000	$14,119	$100,000	$22,255	$122,255
Manistee	MI	MBL	$12,834	$114,119	$100,000	$14,119	$100,000	$26,953	$126,953
Glasgow	MT	GGW	$7,637	$114,119	$100,000	$14,119	$100,000	$21,756	$121,756
Glendive	MT	GDV	$7,382	$114,119	$100,000	$14,119	$100,000	$21,501	$121,501
Havre	MT	HVR	$7,637	$114,119	$100,000	$14,119	$100,000	$21,756	$121,756
Lewistown	MT	LWT	$7,637	$114,119	$100,000	$14,119	$100,000	$21,756	$121,756
Miles City	MT	MLS	$8,136	$114,119	$100,000	$14,119	$100,000	$22,255	$122,255
Sidney	MT	SDY	$7,637	$114,119	$100,000	$14,119	$100,000	$21,756	$121,756
Wolf Point	MT	OLF	$7,880	$114,119	$100,000	$14,119	$100,000	$21,999	$121,999
Chadron	NE	CDR	$7,382	$114,119	$100,000	$14,119	$100,000	$21,501	$121,501
Kearney	NE	EAR	$7,637	$107,000	$100,000	$7,000	$100,000	$14,637	$114,637
Alamogordo	NM	ALM	$7,382	$257,119	$250,000	$7,119	$250,000	$14,501	$264,501
Carlsbad	NM	CNM	$7,637	$107,000	$100,000	$7,000	$100,000	$14,637	$114,637
Gallup	NM	GUP	$19,455	$114,119	$100,000	$14,119	$100,000	$33,574	$133,574
Santa Fe	NM	SAF	$8,136	$114,119	$100,000	$14,119	$100,000	$22,255	$122,255
Silver City	NM	SVC	$8,136	$127,519	$113,400	$14,119	$113,400	$22,255	$135,655
Dickinson	ND	DIK	$8,136	$114,119	$100,000	$14,119	$100,000	$22,255	$122,255
Ponca City	OK	PNC	$7,637	$107,000	$100,000	$7,000	$100,000	$14,637	$114,637
Brownwood	TX	BWD	$19,455	$114,119	$100,000	$14,119	$100,000	$33,574	$133,574
Moab	UT	CNY	$7,637	$114,119	$100,000	$14,119	$100,000	$21,756	$121,756
Vernal	UT	VEL	$7,637	$0	$0	$0	$0	$7,637	$7,637
Bluefield	WV	BLF	$13,048	$114,119	$100,000	$14,119	$100,000	$27,167	$127,167
Fitiuta Village	PT	FAZ	$7,382	$114,119	$100,000	$14,119	$100,000	$21,501	$121,501
Ofu (is), Am Samoa	PT	Z08	$7,382	$114,119	$100,000	$14,119	$100,000	$21,501	$121,501
Total		37	$391,741	$4,365,389	$3,882,449	$482,940	$3,882,449	$874,680	$4,757,129
Average			$10,588	$117,983	$104,931	$13,052	$104,931	$23,640	$128,571

(a) Airport Closed.

IV. Impact

In considering the likely economic impacts of the costs of the rule, it is first useful to examine the cost of the rule on a per passenger basis and as a percent of fares paid. Tables 7 and 8 present information on average fare, annual cost of the rule, number of passengers, cost per passenger, and cost as a percent of fare by airport for non-EAS subsidy and EAS subsidy communities, respectively. As can be seen, cost per passenger at airports serving non-EAS subsidy communities ranges from less than $1 to $93. This cost exceeds the typical $3 passenger facility charge at all but one of these airports. With the exception of airports in American Samoa, it runs from less than 1 percent to about 6.4 percent of average fare. For the two airports in American Samoa that would meet the definition of Class III, cost per passenger is 108 percent and 196 percent of fare.

Table 7

Part 139 Cost per Passenger
At Class III Airports without EAS Subsidies

Name		Average Fare	Fared Passengers (a)	Total Annual Costs	Total Costs per Passenger	Costs per Passenger as Percent of Fare
Lake Havasu City	AZ	$133	14,220	$121,501	$9	6.42%
Mountain Home (b)	AR			$121,970		
Imperial	CA	$145	23,860	$7,382	$0.31	0.21%
Inyokern	CA	$237	20,240	$114,382	$6	2.38%
Merrill C Meigs (b)	IL			$8,136		
Spencer (b)	IA			$122,255		
Cumberland (b)	MD			$122,255		
Santa Fe	NM	$241	26,020	$122,255	$5	1.95%
Fitiuta Village	PT	$53	2,120	$121,501	$57	108.14%
Ofu (is), Am Samoa	PT	$48	1,300	$121,501	$93	196.35%
Total			87,760	$983,134		
Average		$189			$8	4.40%

(a) Fared passengers are equivalent to two times the difference between total enplanements and non-revenue enplanements.

(b) Although Mountain Home AK, Spencer IA, and Cumberland MD were identified as Class III airports in the Regulatory Evaluation, they have subsequently lost scheduled service. Merrill C. Meigs has closed.

At airports where the carrier providing service receives a subsidy under the EAS program, the situation is quite different. Reflecting both lower passenger enplanements and higher average compliance costs at these airports, the cost per passenger averages $28. Ranging from $2 to $504 per passenger, it exceeds the typical $3 passenger facility charge at all but one airport. On a percentage basis, it runs from about 2 percent to over 673 percent of fare. At about four-fifths of these airports, the cost per passenger exceeds 10 percent of fare.

Table 8

Part 139 Cost per Passenger
At Class III Airports with EAS Subsidies

Name		Average Fare	Fared Passengers (a)	Total Annual Costs	Total Costs per Passenger	Costs per Passenger as Percent of Fare
Show Low	AZ	$75	576	$290,223	$504	673.31%
El Dorado	AR	$129	3,580	$121,756	$34	26.29%
Harrison	AR	$116	5,360	$126,953	$24	20.41%
Jonesboro	AR	$134	3,840	$126,455	$33	24.50%
Augusta	ME	$170	7,220	$198,756	$28	16.18%
Bar Harbor	ME	$179	22,500	$296,337	$13	7.37%
Rockland	ME	$167	12,260	$122,255	$10	5.98%
Manistee	MI	$133	2,080	$126,953	$61	46.06%
Glasgow	MT	$164	3,080	$121,756	$40	24.12%
Glendive	MT	$137	1,340	$121,501	$91	65.95%
Havre	MT	$145	1,520	$121,756	$80	55.31%
Lewistown	MT	$112	1,160	$121,756	$105	93.41%
Miles City	MT	$131	1,680	$122,255	$73	55.46%
Sidney	MT	$147	3,800	$121,756	$32	21.82%
Wolf Point	MT	$172	2,300	$121,999	$53	30.91%
Chadron	NE	$248	1,980	$121,501	$61	24.71%
Kearney	NE	$229	7,900	$114,637	$15	6.34%
Alamogordo	NM	$121	2,240	$264,501	$118	97.64%
Carlsbad	NM	$143	5,920	$114,637	$19	13.57%
Gallup (b)	NM			$133,574		
Silver City	NM	$108	4,120	$135,655	$33	30.61%
Dickinson	ND	$207	4,860	$122,255	$25	12.13%
Ponca City	OK	$118	4,860	$114,637	$24	19.98%
Brownwood	TX	$94	3,880	$133,574	$34	36.82%
Moab	UT	$223	2,360	$121,756	$52	23.12%
Vernal	UT	$213	3,520	$7,637	$2	1.02%
Bluefield	WV	$194	4,200	$127,167	$30	15.58%
Total			118,136	$3,773,995		
Average		$156			$29	18.86%

(a) Fared passengers are equivalent to two times the difference between total enplanements and non-revenue enplanements.

(b) A community is ineligible to receive subsidized essential air service if it is within 70 miles of a medium or large hub, or if its subsidy exceeds $200 per passenger (unless it is more than 210 miles from a medium or large hub). Gallup New Mexico is included here because it only recently lost eligibility when its per passenger subsidy began to exceed $200.

The costs of the rule will initially fall on airport operators. Because, as noted under Overview, above, most airports are owned by relatively small entities and have very limited financial ability to absorb such costs, most, if not all, will be forced to pass costs on to the air carriers whose activity triggers the requirements of the rule. All airports that would meet the definition of Class III are served by only one carrier. This monopoly situation may enable carriers to make certain adjustments to minimize the impact of the costs of the rule on their profits. These adjustments will consist, where possible, of changes in the number of flights provided, fares charged, and the level of EAS subsidies requested. Together with the magnitude of the costs, they will determine the impact of the rule on average fares, flights flown, EAS subsidies, and changes in air carrier profits.

In general, the impacts at an airport will differ depending on whether the air carrier providing service receives an EAS subsidy for serving the airport.

Non-EAS Subsidy Airports

At airports serving communities not eligible for EAS subsidies, carriers will attempt to minimize the impact of the costs of the rule on their profits by eliminating those marginal flights which no longer generate more revenue than they cost to produce once the additional costs are imposed. The impact of reduced service is presented in Table 9.[6]

Table 9

Change in Daily Flights at Airports without EAS Subsidies

Name		Flights Per Day	Flights Per Day After P139	Change (a)	Percent Change
Lake Havasu City	AZ	5.10	4.90	-0.20	-3.89%
Mountain Home (b)	AR				
Imperial	CA	6.12	6.12	0.00	0.00%
Inyokern	CA	5.62	5.53	-0.08	-1.49%
Merrill C Meigs (b)	IL				
Spencer (b)	IA				
Cumberland (b)	MD				
Santa Fe	NM	11.00	10.89	-0.11	-1.01%
Fitiuta Village	PT	3.63	1.21	-2.42	-66.75%
Ofu (is), Am Samoa	PT	3.72	0.00	-3.72	-100.00%
Average		5.86	4.77	-1.09	-28.86%

(a) The reduction is given for average daily flights. While a flight is either flown or not flown, the average can be changed by a fractional flight by trimming selected marginal flights on, for example, non-peak days, weekends, or the off-season.

(b) Although Mountain Home AK, Spencer IA, and Cumberland MD were identified as Class III airports in the Regulatory Evaluation, they have subsequently lost scheduled service. Merrill C. Meigs has closed.

[6] The methodology used to measure the impact of part 139 costs on air service are detailed in the Technical Appendix. Briefly, the incremental cost per flight that the amendments to part 139 impose are estimated and added to existing incremental cost per flight. When this new incremental cost per flight exceeds total revenue per flight, profit maximizing airlines are presumed to eliminate the flight.

As can be seen, average daily flights at all affected airports in North America are expected to decline by no more than one-fifth flight per day, or less than 4 percent.[7] Given the low enplanements per departure at airports that would meet the definition of Class III (See Table 2), most of the passengers who would have used these flights could most likely be accommodated on other flights. However, in American Samoa the impact is potentially large enough to adversely affect travelers. Service to Fitiuta Village is estimated to decline by two-thirds and service to Ofu (is) very likely to be eliminated.

Elimination of marginal flights may also have the impact of increasing average fares because those flights generating lower revenues which are no longer profitable under the rule will be eliminated. Given that air carriers use yield management techniques to extract the maximum fare from each passenger that the passenger is willing to pay, it is unlikely that fares now paid by passengers on flights that are not eliminated will increase. Thus, while average fares may increase because fewer lower fare paying passengers are traveling, it is unlikely that any one passenger who now travels will pay more.

Finally, the possibility exists that the total costs imposed by the part 139 amendments at any particular airport may cause an air carrier's service at that airport to become unprofitable. At the 2 airports serving EAS eligible communities with scheduled service which is not currently subsidized—Imperial and Inyokern, California—this would most likely result in the initiation of EAS subsidies. At the remaining 4 airports now having scheduled service which serve communities which are not eligible for EAS subsidies—Lake Havasu City, Arizona; Santa Fe, New Mexico; and Fitiuta Village and Ofu (is), American Samoa—it is possible that loss of service could occur.

EAS Subsidy Airports

At airports serving communities eligible for EAS subsidies where carriers are currently subsidized, no change in service or average fare is expected to occur immediately. This is because the number of flights per day is specified in the EAS agreement between DOT and the carrier providing service. These agreements typically run for 2 years at which time they are subject to re-negotiation. Carriers may also file a notice to terminate service. Under certain circumstances, this could lead to a re-negotiation of the agreement prior to its expiration. Upon re-negotiation of an agreement, it is possible that service levels might be reduced with the agreement of the DOT. This could occur should EAS funding not be sufficient to meet all needs.

In addition, recent changes in the EAS program may possibly reduce subsidies at a limited number of airports where subsidies are now paid. Briefly, these changes provide for the establishment of pilot programs to provide transportation services through alternatives to EAS and to require communities located in proximity to hub airports to assume a share of EAS costs. Because these changes have not yet been implemented, it

[7] The reduction is given for *average* daily flights. While a flight is either flown or not flown, the average can be changed by a fractional flight by trimming selected marginal flights on, for example, non-peak days, weekends, or the off-season.

is uncertain how they might affect airports that meet the definition of Class III. However, should subsidy reductions occur at airports which meet the definition of Class III, it is possible that frequency of service could decline and average fares could increase at these airports.

Air Carrier Profit Impact

Despite adjustments to service by carriers at airports where EAS subsidy is not paid in response to part 139 costs, air carrier profits generated at these airports can be expected to decline. As explained in the Technical Appendix of this report, this is because certain costs of the rule cannot be avoided and others can only be partially avoided by these adjustments. At airports where carriers are being paid EAS subsidies, profits can be expected to decline initially by the amount of the part 139 costs. This will occur because no adjustment in service is possible at EAS subsidy airports. Carriers will not be able to avoid any of the costs and consequently must bear the entire cost of the rule, under most circumstances, during the life of the current EAS agreement at these airports. When the agreement is renegotiated, the part 139 costs may be added to the subsidy provided for in the new agreement.[8] Thus, profits generated at airports where carriers receive EAS subsidies will decline by the amount of the rule's costs for up to 2 years.

The impact of the rule on an air carrier's profits will depend on the reduction in profit at each particular airport, the volume of its total business an air carrier does at airports that would meet the definition of Class III, and the overall size of the carrier. Table 10 reports the percent of total flights and miles flown to or from airports that would meet the definition of Class III for each of the 9 carriers serving these airports. Also reported is the total reduction in profit by carrier at these airports prior to the re-negotiation of EAS agreements. Profit reduction is reported in bold type where it exceeds 5 percent of the carriers operating profit or loss. As indicated, 6 carriers—Arizona Express, Big Sky Airlines, Colgan Air, Great Lakes Airlines, Rio Grande Air, and Samoa Air—fly more than 15 percent of their flights or miles to airports that would meet the definition of Class III. The part 139 amendments produce a profit reduction that exceeds 5 percent of the operating profits or operating losses for at least 3 of these carriers including Big Sky Airlines, Colgan Air, and Samoa Air. Four other carriers—Great Lakes Airlines, Mesa Airlines, Midwest Airlines, and Skywest—have a profit impact less than 5 percent. (Data limitations preclude identifying the magnitude of the impact on Arizona Express or Rio Grande Air.)

Table 10 also reports the impact on profits (losses) should additional costs imposed on carriers serving airports in communities where EAS subsidies are paid be covered by EAS subsidies when existing agreements are renegotiated. Three carriers continue to experience some reduction in profits stemming from operations at non-EAS airports that would meet the definition of Class III. One—Samoa Air, which operates in the Pacific

[8] Subsidies are typically set to equal the shortfall of revenues below costs plus allowed profit of 5 percent of costs.

Territories where no communities are eligible for EAS subsidies—would continue to have profit reductions in excess of 5 percent of operating profits (losses).

Table 10

Percent of Total Flights and Miles Flown to and from Class III Airports and Reduction in Profits before and after Renegotiated EAS Subsidies by Carrier

Carrier	Flights	Miles	Change in Annual Profits before Renegotiated EAS Subsidy(a)	Change in Annual Profits after Renegotiated EAS Subsidy(a) (b)
Arizona Express	100.00%	100.00%	-$290,223	$0
Big Sky Airlines	45.34%	28.54%	**-$852,779**	$0
Colgan Air	19.49%	12.72%	**-$744,514**	$0
Great Lakes Airlines	19.51%	21.44%	-$609,535	$0
Mesa Airlines	5.47%	2.91%	-$993,220	-$241,303
Midwest Airlines	1.12%	0.18%	-$126,953	$0
Rio Grande Air	55.01%	63.36%	-$264,501	$0
Samoa Air	28.43%	5.14%	**-$150,880**	**-$150,880**
Sky West Airlines	0.71%	0.27%	-$121,018	-$121,018
Total			-$4,153,623	-$513,201

(a) Bold type indicates change in profits in excess of 5 percent of 2001 carrier operating income or loss. (Data limitations preclude determining percentage profit impact for Arizona Express or Rio Grande Air.)

(b) Renegotiated EAS subsidy assumed to include all Part 139 costs at airports where carriers receive subsidy.

V. Mitigation

The impacts identified above represent the largest plausible effects that the imposition of the amendments to part 139 might have on airports that would meet the definition of Class III. At least five factors will mitigate these impacts. FAA believes that the combined effect of these and other factors together with the safety in air transportation provided by the rule will largely offset any adverse impacts.

Compliance Options

Variations in airport layout, operations, and air carrier service will require FAA to tailor compliance procedures for each airport through the ACM. While airport operators that choose to be certificated under part 139 will be required to document procedures for complying with part 139 and to comply with certain safety and operational requirements, the tailoring process will permit them some flexibility in complying with more burdensome requirements.

FAA recognizes that in some instances the cost to comply with certain requirements, particularly ARFF requirements, may be substantial for certain airports. Accordingly, airport operators will have the option of either meeting Index A of part 139 or proposing and obtaining the Administrator's approval of an alternative plan that provides a comparable level of safety. During the certification process, FAA will work with airport operators to determine the appropriate method of compliance. Depending on an airport's existing facilities and local community services, there may be several compliance options available that could be tailored to the airport to significantly reduce costs. For example, existing airport personnel could be crossed-trained to perform ARFF duties and Federal funds may be available to purchase ARFF equipment. In the event that additional capital improvements, equipment, and personnel are needed, FAA will assist the airport operator in applying for Federal funds for equipment and facilities and provide guidance on training events and the availability of regional resources.

EAS Funding

At airports where carriers currently receive subsidies, carriers could not discontinue service even if some or all costs of the rule were to be passed through to them. They would be required to continue service until the expiration of their EAS agreement. At this time they could renegotiate a greater subsidy to offset the additional costs of the rule that had been passed on to them. Carriers may also file a notice to terminate service. Under certain circumstances, this could lead to a re-negotiation of the agreement prior to its expiration. The total cost of the rule at airports where carriers receive EAS subsidies is estimated to be about $3.6 million annually.

In addition, the possibility exists that carriers which do not now receive an EAS subsidy for serving a particular airport might elect to discontinue service at that airport in response to passed-through cost of the rule. If the airport's community were EAS eligible—two of the six communities with scheduled service which is not currently subsidized are eligible—the carrier would be required to give notice to the DOT. DOT would then attempt to find another carrier that would serve the airport without subsidy. If none could be found, DOT would then initiate the process to ensure continuation of service through payment of subsidy to either the incumbent carrier or a replacement carrier.

AIP Funding

All airports that would meet the definition of Class III are identified in FAA's National Plan of Integrated Airport Systems (NPIAS) and are eligible to receive Federal grants under the Airport Improvement Program (AIP). AIP funds are available for capital improvements and safety equipment required by regulation. Since 1982, a total of $220,430,717 in AIP funds have been distributed to airports that would meet the definition of Class III.

Certain items required by the proposed amendments to part 139 are eligible for funding through the AIP program. These include most ARFF equipment (ground vehicles, radios, etc); marking, signs and lighting; and traffic and wind indicators. At airports that meet the definition of Class III, items required to comply with the amendments eligible for AIP funding are estimated to cost approximately $2.5 million. Congress has specifically directed the FAA to set aside a total of $15 million of AIP funds for the five fiscal years following the effective date of the amendments to part 139 to assist airport operators in meeting their terms (49 USC 47116(e)). Should all items required by the amendments at airports meeting the definition of Class III eligible for AIP funding actually be funded from AIP, costs of the amendments to these airports could be expected to fall by about 6.7 percent.[9]

Under current eligibility standards, AIP funding of parts of the cost of the rule would probably not affect the volume of service provided at airports. As noted above, EAS agreements provide for specified levels of service. At airports where carriers do not receive EAS subsidies, adverse service level impacts would only be partially offset by AIP funding. This is because AIP tends to pay for capital improvement items whose costs tend not to vary incrementally with the level of operations at an airport—fixed costs—but which are shared by a large number of operations. There are also significant costs which vary with the level of operations. Because these variable costs of providing an additional operation are not offset by AIP funding, the volume of service would not likely be impacted.

[9] From Table 6, the annualized cost of the rule is $4,757,129. This has a present value of about $33.4 million (over 10 years at a 7% discount rate). Typically, 90 percent of AIP eligible items ($2.25 million here) can be paid for by AIP. $2.25 million represents about 6.7 percent of $33.4 million.

AIP funding, to the extent that it lowers costs of the amendments passed through to air carriers, will affect the profits or losses they generate at any particular airport. At airports where EAS subsidies are not paid, these effects will flow directly to carriers. At airports where subsidies are paid, effects will initially impact carriers until EAS agreements are renegotiated. At this point, given the typical subsidy arrangement, subsidy levels would be readjusted so as to leave the carrier in the same financial position whether or not certain costs of the rule were absorbed by AIP. In other words, costs of the rule picked up by AIP would not end up being paid by EAS subsidy.

Local Support

Travelers residing in communities served by airports that would meet the definition of Class III enjoy the benefit of being able to connect to the nation's air transportation system from the local airport. They pay, at least in part, for this benefit through the fares for air transportation. Other residents also derive a benefit—the *option* of being able to access the national air transportation system, even though they do not regularly do so. As a consequence, local communities may be willing to underwrite part of the costs imposed by the rule to ensure that they continue to have the ability to travel by commercial air from the local airport. Thus, even if EAS subsidies should be limited by funding constraints, service might well be maintained through increased local support.

Exemption

An applicant or a certificate holder may petition the Administrator under 14 CFR part 11, General Rulemaking Procedures, for an exemption from any requirement of part 139. Moreover, under 49 U.S.C. 44706(c), the Administrator may exempt an applicant or a certificate holder whose airport annually has less than one-quarter of 1 percent of the total number of passengers enplaned at all air carrier airports—a requirement met by all airports that would meet the definition of Class III—from all, or part, of the ARFF requirements of part 139, on the grounds that compliance with those requirements is, or would be, unreasonably costly, burdensome, or impractical. Under this authority, the FAA plans to give careful consideration to requests for limited exemptions from ARFF requirements at all airports serving small air carrier aircraft consistent with the requirements of 49 U.S.C. 44706.

VI. Conclusion

The FAA is making significant changes to part 139. Of particular importance, these changes will require for the first time certain airports desiring to serve small scheduled air carrier aircraft (10 to 30 seats), designated as Class III airports in proposed part 139 revisions, to be FAA certificated. Overall, based on compliance with the provisions of the rule, FAA estimates the present value of certification costs for all of the airports meeting the definition of Class III to be about $33.4 million over 10 years. Despite these potentially significant costs, the impact on air service at these airports is expected to be limited. Various mitigation measures—tailoring compliance options on an airport specific basis through the ACM, AIP funding for certain required capital expenditures, increased local support for airports, an alternative compliance plan option, and FAA exemption from certain requirements where compliance with part 139 ARFF requirements would be unduly burdensome, costly, or impractical—may reduce final impacts below the impacts indicated below.

There are 37 airports that would meet the definition of Class III. Most are owned by small communities, serve a limited number of passengers, and operate at a loss. This makes it most likely that the costs of the rule cannot be absorbed by the airport operator but must be passed through to the air carriers which trigger the requirements of the part 139 amendments. Of the 37 airports, carriers serving more than two-thirds—26—receive Essential Air Service (EAS) subsidies. Carriers serving another two would be eligible for EAS subsidy should no carrier be willing to voluntarily continue service. Typically, these subsidies pay the carrier providing service the shortfall of revenues below cost plus a reasonable profit.

At airports where carriers currently receive EAS subsidies, no significant change in service or average fare is expected to occur. This is because the minimum number of flights per day is specified in the EAS subsidy agreement between DOT and the carrier providing service. Moreover, because the carrier is already extracting the maximum possible revenue from its passengers, it is unlikely that fares can be raised. Thus, the additional costs must be borne by the carrier through the agreement term (typically 2 years). At the end of this period, it is most probable that the carrier will negotiate a higher subsidy to recover any part 139 costs that are passed through to it by the airport. Carriers may also file with DOT a notice to terminate service. Under certain circumstances, this could lead to a re-negotiation of the agreement prior to its expiration. Effectively, the additional costs of the amendments at airports meeting the definition of Class III where carriers receive EAS subsidies will be shifted to the Federal Government as increased EAS subsidies. Total mitigation of these impacts would require an increase in the EAS program budget of about $3.6 million annually.

At airports where EAS subsidies are not currently paid to carriers, average daily flights are expected to decline by less than one flight per day. For the airports in North America, the decline in service never exceeds 4 percent. Given the low enplanements per departure at these airports, most of the passengers who would have used these flights

could most likely be accommodated on other flights. At the two airports in the American Samoa, the impact is a reduction of 67 percent and 100 percent, large enough to adversely affect travelers.

Elimination of marginal flights may also have the impact of increasing average fares because those flights generating lower revenues which are no longer profitable under the revisions to part 139 might be eliminated. Given that air carriers use yield management techniques to extract the maximum fare from each passenger that that passenger is willing to pay, it is unlikely that fares now paid by passengers on flights that are not eliminated will increase. Thus, while average fares may increase because fewer lower fare paying passengers are traveling, it is unlikely that any one passenger who continues to travel will pay more.

The possibility exists that the total costs imposed by the part 139 amendments at any particular airport may cause an air carrier's service at that airport to become unprofitable. At the 2 airports currently with scheduled service serving communities eligible for EAS subsidies but not currently receiving subsidies—Imperial and Inyokern, California—this would most likely result in the initiation of EAS subsidies. At the remaining 4 airports now having service located in communities which are not eligible for EAS subsidies—Lake Havasu City, Arizona; Santa Fe, New Mexico; and Fitiuta Village and Ofu (is), Pacific Territories—it is possible that loss of service could occur.

At airports where EAS subsidies are paid to the carrier providing service, no long term impact on carrier profits is likely—increases in subsidy levels as new agreements are negotiated will offset any costs of the amendments to part 139 passed on to carriers. However, before payment levels can be renegotiated—up to 2 years—carrier profits generated at these airports may fall significantly. At airports where no EAS subsidies are paid, carrier profits will be adversely affected, declining in aggregate by an estimated $513,201 annually.

On a carrier-by-carrier basis, impacts after EAS subsidies adjust will vary widely. For carriers whose service to airports meeting the definition of Class III is exclusively or largely to airports where EAS subsidies are paid—Arizona Express, Big Sky Airlines, Colgan Air, Great Lakes Airlines, and Rio Grande Air—profit impacts will be small. For carriers for which service to airports meeting the definition of Class III constitutes only a small portion of their business—Mesa Airlines, Midwest Airlines, and Sky West Airlines—profit impacts most likely will be small relative to total profits (or losses). For Samoa Air, which operates a large portion of its flights to airports which would meet the definition of Class III and serves communities not eligible for EAS subsidies, profit impacts may be significant.

Technical Appendix

The revisions to part 139 have the potential to impose significant costs on airports that would meet the definition of Class III. Although individual operators or owners of these airports may wish to absorb part or all of the costs of part 139 compliance, impacts on air service will occur in those cases where they do not. The following sections describe the methodology used to measure the impact of the costs of part 139 on air service. Where assumptions are required, they are made so as to yield the maximum plausible estimate of impacts. Impacts which can be measured are the likely increase in fares, the potential reduction in the number of flights provided, the increase in air carrier costs and ultimate reduction in air carrier profits that may occur, and the potential requirement for additional funding under the Essential Air Service (EAS) program to maintain current service levels at airports where air carriers are paid EAS subsidies.

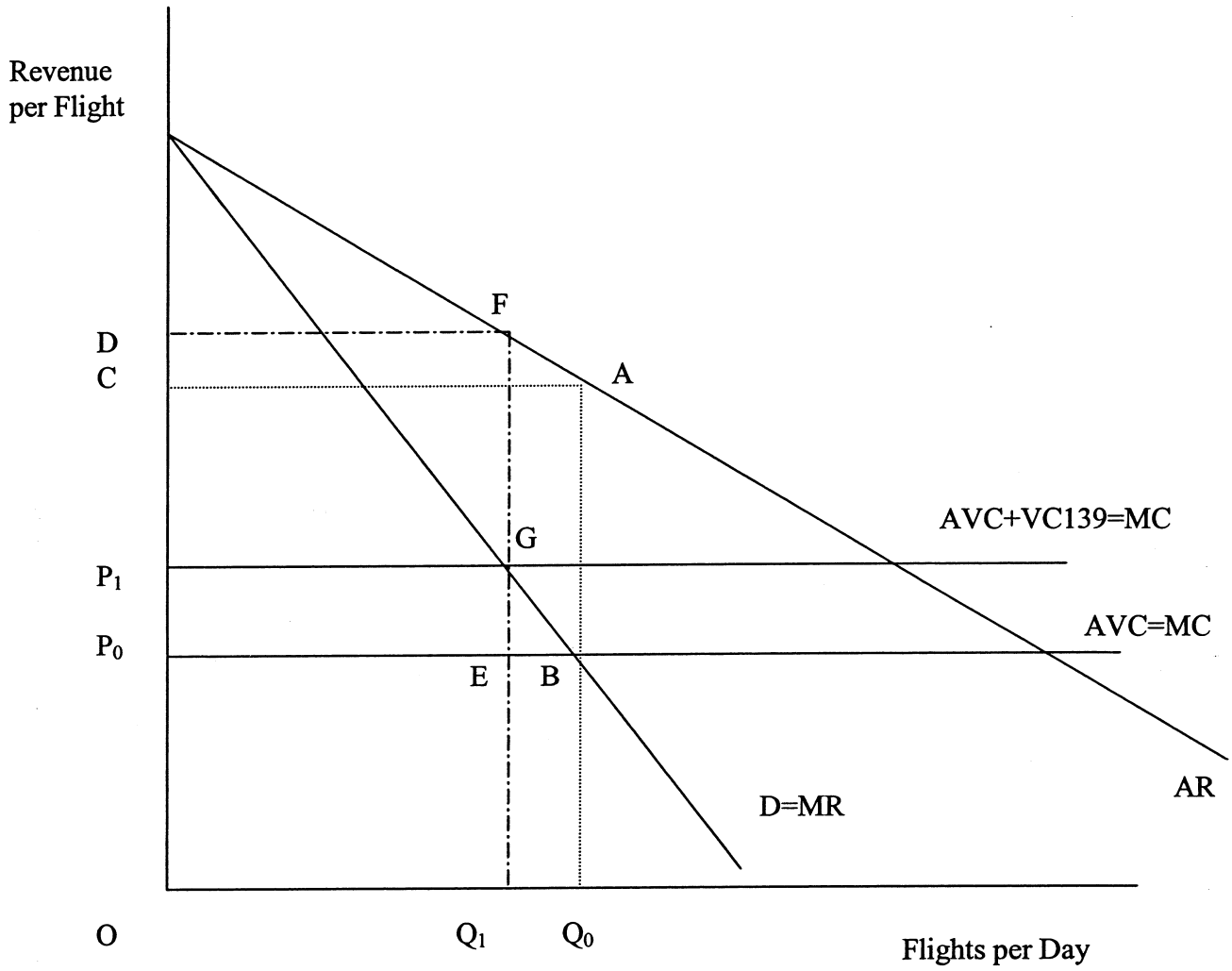
A separate approach is required for airports where carriers receive EAS subsidies and for those where they do not. Assumptions common to both situations are that service is provided by a single carrier and that this monopoly carrier using yield management techniques is able to achieve complete price discrimination—this is, charge each passenger the maximum amount they are willing to pay for air transportation to any particular destination. Both assumptions are justified because all airports meeting the definition of Class III are served by a single carrier and are significant distances from the nearest substitute airport served by a competing carrier. It is also assumed that the average variable cost of providing air service at an airport is constant and thus equal to marginal cost.

Non EAS Subsidy Airports

Air carriers will provide service to an airport provided they can cover all costs—fixed and variable—incurred in providing service at that airport. The number of flights will be increased up to the point that the additional or marginal revenue associated with the last flight equals the incremental or marginal cost of providing the flight. The case of a perfectly discriminating monopolist providing service at an airport is shown in Figure 1.

The figure presents a demand curve—D=MR—which indicates the maximum revenue that passengers are willing to pay for each successive flight on any given day. Unlike the case under ordinary monopoly where all customers are charged the same price and the demand curve represents average revenue, perfect price discrimination results in this demand curve representing the marginal revenue associated with each additional flight. An average revenue curve—AR—representing the average revenue associated with all flights conducted at the airport on any given day can be constructed for the demand curve by summing the marginal revenue associated with all flights and dividing by the number of flights.

Figure 1



The point C represents the average revenue paid per flight by all passengers utilizing the airport on any particular day prior to the new part 139 requirement. It is the product of the average fare paid by all fared passengers and the average number of enplaning or deplaning passengers per flight. The point Q_0 represents the number of flights per day at the airport. These two points taken together define point A on the average revenue curve. Assuming a value for demand elasticity it is possible to determine the slope of the average revenue curve and define the entire curve.[10] For this analysis, a value of 1.5 is selected. Based on existing empirical studies of air carrier passenger demand, this value

[10] The demand elasticity is used to determine the slope of the average revenue curve rather than the demand curve because almost all studies of air passenger demand utilize average fare data and thus estimate the elasticity of the average revenue curve rather than the demand curve.

is probably the largest (in absolute terms) that might be expected at airports that would meet the definition of Class III. Accordingly, it will yield an upper bound for plausible impacts.

Determination of the average revenue curve permits the demand/marginal revenue curve to be established. Its value at Q_0, which is B, indicates the point where marginal revenue equals marginal cost. Marginal cost, which is assumed equal to average variable cost (AVC=MC), is thus equal to BQ_0. Distance A-B represents the margin of average revenue over average variable cost for each flight at Q_0. Q_0 x (A-B) x 365 days is the excess of total revenue over total variable cost or the annual contribution margin to offset fixed costs of operating at the subject airport and other fixed costs of the carrier.

Establishment of the new part 139 requirement can be expected to shift the marginal cost curve upwards by the average variable cost per flight attributable to part 139 (VC139), distance P_1-P_0. This in turn will cause the number of flights per day to fall to Q_1 and average revenue per flight to increase to D. Moreover the contribution margin will decline to Q_1 x (F-G) x 365 days. Establishment of the new part 139 requirements will also increase the fixed cost to a carrier of serving the airport. The total impact on profitability will equal the decrease in contribution margin plus the increase in part 139 fixed costs. As long as the contribution margin continues to cover all fixed costs including this increase particular to the subject airport the carrier will continue to operate voluntarily at this airport, albeit at a reduced level of profitability.[11]

EAS Subsidy Airports

For airports with a carrier receiving EAS subsidies, the total revenue (exclusive of the EAS subsidy) that can be earned by the carrier is less than the sum of the variable and fixed costs specific to the subject airport. No carrier is willing to provide service unless it is provided with a subsidy at least equal to this shortfall. The Department of Transportation has procedures in place under the EAS program to select carriers able to provide acceptable quality service for subsidies which typically equal the shortfall of revenue below cost plus an allowed profit of five percent of cost. EAS subsidy agreements typically have a two-year term.

Any part 139 costs that are passed through to a carrier by an airport would offset this subsidy. Upon accepting a subsidy to provide service, a carrier must agree to provide at least a certain number of flights per day. Accordingly, a subsidized carrier cannot change the quantity of service provided during its contract period.[12] Moreover, because it is

[11] Should service become unprofitable, the carrier might elect to discontinue service which could result in the payment of EAS subsidies. Because profitability impacts at non-EAS airports are small, it is assumed that service will not be discontinued at airports not currently receiving EAS subsidies.

[12] It is possible that a carrier might elect to provide more that the contracted frequency of service. This might occur in those cases where the carrier was capable of earning revenues in excess of marginal costs but generating a contribution margin which was insufficient to offset the fixed costs incurred to serve the airport. If the EAS subsidy offset the fixed costs, the carrier might find it profitable to increase service until marginal revenues just equaled marginal costs. In such cases, any increase in marginal costs including

already extracting the maximum possible revenue from its passengers it is unlikely that fares can be raised. Thus the additional costs must be borne by the carrier through the contract period. At the end of the contract period, it is most probable that the carrier will negotiate a higher subsidy to cover any part 139 costs that are passed through to it by the airport. Carriers may also file a notice to terminate service. Under certain circumstances, this could lead to re-negotiation of the agreement prior to its expiration. Effectively, any additional costs will be shifted to the Federal Government as increased EAS subsidies.

Impact Estimates

Table A-1 presents estimates of impacts on air service at airports that would meet the definition of Class III resulting from the additional costs associated with the new part 139 requirements employing the methodology developed above. Average revenue per flight (column 6; C in Figure 1) is the product of average fare paid (column 2) and enplanements per departure (column 4). It represents the average amount passengers using the airport are willing to pay in fares for a single flight.

Marginal revenue (column 7) is the additional revenue passengers would be willing to pay for one more flight to the airport per day. It is calculated based on the relationship between average (AR) and marginal revenue (D=MR) curves depicted in Figure 1 and the number of flights per day at the airport prior to introducing the new part 139 requirements (Q_0). For airports for which the serving carrier is not receiving an EAS subsidy, it is equivalent to marginal cost which is taken to be equal to average variable cost (AVC=MC).

The additional average variable and fixed costs of the new part 139 requirements, as explained in the main text, are reported in columns 8 and 9, respectively. The new marginal cost after the new part 139 requirements for airports where carriers air not paid EAS subsidies is equal to marginal revenue (column 7)—equal to the previous marginal cost—plus the average variable cost of the new requirements (column 9; distance P_1-P_0 in Figure 1).

For airports where carriers are not paid EAS subsidies, the number of flights flown after part 139 costs are incurred (column 10; Q_1 in Figure 1) is found by evaluating the demand curve at the new marginal cost. For airports where carriers are paid EAS subsidies, the number of flights shown is the same as before because carriers are obligated to provide this number by the subsidy agreement. The average revenue paid by all passengers per flight at the new number of flights (column 12; D in Figure 1) is found

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the introduction of the new part 139 requirements might lead a carrier to reduce service back to the contracted for levels. While it is not unheard of for carriers to provide EAS in excess of required levels, the practice is not widespread. Accordingly, this situation is not analyzed further here.

Table A-1: Impact of New Part 139 Costs on Per Flight Revenues and Flights Per Day

AIRPORT NAME		FARED AV FARE (a)	AIRCRAFT SEATS (b)	ENP/ DEPART.	FLIGHTS/ DAY (b)	REVENUE/ FLIGHT	MARGINAL REV/ FLIGHT	PART 139 FIXED COST/FLT	PART 139 VARIABLE COST/FLT	FLIGHTS/ DAY AFTER P139	PERCENT CHANGE IN FLIGHTS	REVENUE/ FLIGHT AFTER P139	PERCENT CHANGE IN REV/FLT
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Lake Havasu City	AZ	[illegible]	19	7.76	[illegible]	[illegible]	$346.16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Show Low	AZ	$74.83	9	0.16	4.00	$12.30	$4.10	$56.66	$142.12	4.00	0.00%	$12.30	0.00%
El Dorado	AR	$129.38	19	1.05	9.35	$135.75	$45.25	$6.38	$29.31	9.35	0.00%	$135.75	0.00%
Harrison	AR	$116.04	19	2.91	5.13	$337.20	$112.40	$14.40	$53.42	5.13	0.00%	$337.20	0.00%
Jonesboro	AR	$134.41	19	2.88	3.65	$386.91	$128.97	$19.83	$74.96	3.65	0.00%	$386.91	0.00%
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	$518.20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Augusta	ME	$170.14	19	3.00	7.13	$510.94	$170.31	$10.24	$66.09	7.13	0.00%	$510.94	0.00%
Bar Harbor	ME	$178.63	19	7.86	8.26	$1,404.62	$468.21	$18.87	$79.45	8.26	0.00%	$1,404.62	0.00%
Rockland	ME	$166.78	19	3.12	11.35	$521.05	$173.68	$5.37	$24.14	11.35	0.00%	$521.05	0.00%
Cumberland (c)	MD												
Manistee	MI	$132.52	19	1.84	3.25	$243.18	$81.06	$22.69	$84.18	3.25	0.00%	$243.18	0.00%
Glasgow	MT	$163.90	19	2.52	3.40	$412.40	$137.47	$17.55	$80.65	3.40	0.00%	$412.40	0.00%
Glendive	MT	$137.48	19	1.00	3.68	$137.07	$45.69	$16.00	$74.40	3.68	0.00%	$137.07	0.00%
Havre	MT	$144.82	19	0.66	5.44	$110.84	$32.08	$10.95	$50.35	5.44	0.00%	$110.84	0.00%
Lewistown	MT	$112.36	19	0.47	6.79	$52.60	$17.53	$8.78	$40.36	6.79	0.00%	$52.60	0.00%
Miles City	MT	$131.21	19	0.68	6.79	$88.96	$29.65	$8.98	$40.36	6.79	0.00%	$88.96	0.00%
Sidney	MT	$146.84	19	1.97	5.32	$289.14	$96.38	$11.21	$51.55	5.32	0.00%	$289.14	0.00%
Wolf Point	MT	$171.63	19	1.25	5.04	$214.77	$71.59	$11.97	$54.41	5.04	0.00%	$214.77	0.00%
Chadron	NE	$248.36	19	1.08	5.22	$268.71	$89.57	$11.29	$52.52	5.22	0.00%	$268.71	0.00%
Kearney	NE	$228.75	19	2.89	8.10	$661.97	$220.66	$4.95	$33.81	8.10	0.00%	$661.97	0.00%
Alamogordo	NM	$120.93	9	0.95	6.43	$115.37	$38.46	$91.35	$21.29	6.43	0.00%	$115.37	0.00%
Carlsbad	NM	$142.71	19	2.85	5.70	$417.14	$135.39	$7.04	$48.08	5.70	0.00%	$417.14	0.00%
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Santa Fe	NM	$241.13	19	2.07	[illegible]	[illegible]	$610.13	$56.90	$24.90	[illegible]	[illegible]	[illegible]	[illegible]
Silver City	NM	$107.57	19	2.20	5.13	$236.49	$78.83	$11.88	$60.51	5.13	0.00%	$236.49	0.00%
Dickinson	ND	$207.39	30	2.10	6.79	$436.52	$145.51	$8.97	$40.32	6.79	0.00%	$436.52	0.00%
Ponca City	OK	$118.06	19	2.08	6.41	$245.41	$81.80	$6.26	$42.77	6.41	0.00%	$245.41	0.00%
Brownwood	TX	$93.51	19	2.01	5.30	$187.59	$62.53	$17.36	$51.71	5.30	0.00%	$187.59	0.00%
Moab	UT	$223.18	19	1.31	5.35	$292.69	$97.56	$11.15	$51.23	5.35	0.00%	$292.69	0.00%
Vernal	UT	$213.24	19	2.50	5.07	$412.66	$180.99	$4.13	$0.00	5.07	0.00%	$412.66	0.00%
Bluefield	WV	$194.34	19	1.43	8.41	$278.54	$92.85	$8.85	$32.57	8.41	0.00%	$278.54	0.00%
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	$515.21	[illegible]	$73.25	0.00	100.00%	[illegible]	[illegible]

(a) U. S. Department of Transportation Origin and Destination Ten Percent Passenger Survey, CY 2002.

(b) Official Airline Guide, CY 2002.

(c) Although Mountain Home AK, Spencer IA, Cumberland MD, and Gallup NM were identified as Class III airports in the Regulatory Evaluation, they have subsequently lost scheduled service. Merrill C. Meigs has closed.

Note: Carriers do not receive EAS subsidies at shaded airports.

by evaluating the average revenue curve at the new number of flights. Average revenue paid for subsidy airports remains unchanged.

The impact of part 139 costs on profits—Table A-2—is equal to the decrease in contribution margin plus the increase in part 139 fixed costs. For airports where carriers are not paid EAS subsidies, the contribution margin before the new part 139 costs are imposed (column 2) is given by average revenue (Table A-1, column 6; C in Figure 1) less marginal revenue (Table A-1, column 7; P_0 in Figure 1), which is equal to average variable cost, all multiplied by flights per day (Table A-1, column 5; Q_0 in Figure 1) times 365 days per year. At non-subsidy airports, the contribution margin after imposition of the new part 139 costs (column 3) is given by new average revenue (Table A-1, column 12; D in Figure 1) less the sum of marginal cost—equals to average variable cost—(Table A-1, column 7; P_0 in Figure 1) plus part 139 variable cost (Table A-1, column 9; P_1-P_0 in Figure 1) all multiplied by the new number of daily flights (Table A-1, column 10; Q_1 in Figure 1) times 365 days. This amount is less than the total cost of part 139 compliance because some variable costs are avoided by reducing the number of flights. Total impact on profits is the change in contribution margin (column 4) plus part 139 fixed costs.

At airports where carriers receive EAS subsidies, contribution margin cannot be estimated because marginal revenue may not equal marginal cost because the EAS program may result in flights being flown for which marginal cost exceeds marginal revenue. Nonetheless, the decrease in profits can easily be determined. It is simply the increase in part 139 costs. Because the number of flights is fixed, contribution margin falls by the amount of variable cost. And profits fall buy this amount plus the increase in fixed cost.

Table A-2:

Impact of New Part 139 Costs on Profits

AIRPORT NAME		CONTRIBUTION MARGIN BEFORE P139	CONTRIBUTION MARGIN AFTER P139	CONTRIBUTION MARGIN CHANGE FROM P139	P139 ANNUAL FIXED COST	CHANGE IN PROFITS
(1)		(2)	(3)	(4)	(5)	(6)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Show Low	AZ			-$207,500	$82,723	-$290,223
El Dorado	AR	–	–	-$100,000	$21,756	-$121,756
Harrison	AR	–	–	-$100,000	$26,953	-$126,953
Jonesboro	AR	–	–	-$100,000	$26,455	-$126,455
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Augusta	ME	–	–	-$172,099	$26,657	-$198,756
Bar Harbor	ME	–	–	-$239,450	$56,887	-$296,337
Rockland	ME	–	–	-$100,000	$22,255	-$122,255
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Manistee	MI	–	–	-$100,000	$26,953	-$126,953
Glasgow	MT	–	–	-$100,000	$21,756	-$121,756
Glendive	MT	–	–	-$100,000	$21,501	-$121,501
Havre	MT	–	–	-$100,000	$21,756	-$121,756
Lewistown	MT	–	–	-$100,000	$21,756	-$121,756
Miles City	MT	–	–	-$100,000	$22,255	-$122,255
Sidney	MT	–	–	-$100,000	$21,756	-$121,756
Wolf Point	MT	–	–	-$100,000	$21,999	-$121,999
Chadron	NE	–	–	-$100,000	$21,501	-$121,501
Kearney	NE	–	–	-$100,000	$14,637	-$114,637
Alamogordo	NM	–	–	-$50,000	$214,501	-$264,501
Carlsbad	NM	–	–	-$100,000	$14,637	-$114,637
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Silver City	NM	–	–	-$113,400	$22,255	-$135,655
Dickinson	ND	–	–	-$100,000	$22,255	-$122,255
Ponca City	OK	–	–	-$100,000	$14,637	-$114,637
Brownwood	TX	–	–	-$100,000	$33,574	-$133,574
Moab	UT	–	–	-$100,000	$21,756	-$121,756
Vernal	UT	–	–	$0	$7,637	-$7,637
Bluefield	WV	–	–	-$100,000	$27,167	-$127,167
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL: NON-EAS		$12,042,234	$11,637,553	-$404,681	$108,520	-$513,201
EAS				-$2,782,449	$857,973	-$3,640,422
TOTAL				-$3,187,130	$966,492	-$4,153,623

(a) Although Mountain Home AK, Spencer IA, Cumberland MD, and Gallup NM were identified as Class III airports in the Regulatory Evaluation, they have subsequently lost scheduled service. Merrill C. Meigs has closed.

Note: Carriers do not receive EAS subsidies at shaded airports.