

TABLE 2.—TEN-YEAR COST SAVINGS TO OPERATORS—Continued

Cost-savings to—	Cost savings	Present value
13 3- or 4-engine Operators	207,660,700	143,142,935
81 Part 135 Operators	777,600,000	546,108,480
Total Cost Savings	1,089,210,700	762,255,500

The net cost-savings to the industry are reduced by the costs incurred by the operators and manufacturers. These

costs are addressed in the Cost section. These costs are estimated to be less than the estimated savings and the net cost-

savings to the industry are estimated at \$823.9 million or \$530.2 million, discounted as shown in Table 3.

TABLE 3.—TEN-YEAR NET COST-SAVINGS OR COSTS TO INDUSTRY

Category	Cost savings or cost	Present value
Existing 2-engine Operators	\$20,449,500	14,341,826
7 New 2-engine Operators	72,019,500	50,571,560
13 3- or 4-engine Operators	159,866,200	106,879,435
81 Part 135 Operators	694,137,600	486,079,380
Reporting and Certification Costs for:		
3 models of 3- or 4- engine airplanes	(11,875,500)	(9,797,100)
5 Business Aircraft Manufacturers Part 25 costs	(36,065,000)	(33,720,900)
5 Business Aircraft Manufacturers Part 33 Costs	(50,625,000)	(47,337,500)
Current Part 135 Operators:		
Aircraft Replacement Costs	(24,000,000)	(22,440,000)
Total Net Cost Savings	823,907,300	530,234,875

In addition to cost savings to operators there are other benefits of the proposed rule.

Benefits

Accidents due to diversions are non-existent for twin-engine aircraft operating under parts 121 or 135 and for more than two engine aircraft operating under part 121. The FAA believes the proposed weather provisions of the rule would reduce the probability of an accident occurring and the provision requiring rescue fire fighting services at ETOPS alternate airports would minimize the impact if an accident were to occur. In addition, the FAA believes the proposed requirements to require certificate holders to develop and implement passenger recovery plans for ETOPS alternate airports would better protect passengers and crew if a diversion is made for any reason.

Benefits cannot be assigned to specific provisions of the proposed rule; rather, it is assumed that the proposed revisions would work together to prevent diversions and to reduce the impact of any diversions that do occur. Aviation routes not supported within 180-minute diversion authority tend to be routes over remote areas of the world that are uniquely challenging. The additional operational challenges of these routes are equally demanding of all airplanes, regardless of the number of engines, and require all operators to

equip their aircraft and train their personnel to prevent diversions and to minimize the impact of diversions that do occur. All operators must support any diversion that occurs and the subsequent recovery by providing the added planning, training and expertise demanded by the event. The FAA believes the requirements of the proposed rule provide the support and procedures necessary to minimize the stress on the airplane, crew, and passengers inherent in a diversion experience.

The FAA believes that the proposed ETOPS requirements would increase the system reliability of an operator that decides to conduct ETOPS operations and thus costly diversions could be reduced. One study that only addressed the cost of an "irregular" operation, unrelated to an ETOPS-type diversion, estimated the cost of a single diversion of a wide-body international flight with passengers having an overnight stay at another airport at between \$89,400 and \$181,800¹. The estimate is based on 200 passengers and 400 passengers and includes allowance for hotel, meals and telephone, aircraft operating costs, lost opportunity cost, and revenue lost from the diverted flight to passengers

¹ "Improving Airline Profitability Through Better Estimated Times of Arrival and Terminal Area Flight Information: a Benefit Analysis of PASSUR" Darryl Jenkins and Bill Cotton. Available at <http://www.passur.com/report>.

switching to another carrier. Omitting the opportunity cost would reduce these estimates by \$10,000 resulting in a minimum cost of approximately \$79,000. The cost of a diversion to a remote site would incur significant costs since recovery times as long as 48 hours are anticipated and per passenger costs may exceed the estimate included in the study. A worst-case scenario presented by Airbus in a CD labeled LROPS involves an engine loss and diversion to an airport in Siberia. Airbus estimated the recovery costs could be as high as \$1 million including passenger accommodations, chartering an airplane to ferry the passengers to their destination, chartering an airplane to ferry a replacement engine, ferrying the repaired airplane to its station, and loss of airplane use. The FAA requests comments on the number of diversions that might be avoided on flights beyond 180-minutes as a result of the proposed rule and seeks diversion cost data.

Costs

Compliance with the proposed rule is voluntary for all operators, airframe-engine manufacturers. Since the decision is voluntary, the FAA has estimated the cost to current ETOPS operators for the cost of provisions not incurred by current practices and has estimated the cost savings and costs to individual operators, and airframe and engine manufacturers. The FAA has also