

estimated the total cost to industry based on a set of assumptions as to the number of operators and airplane manufacturers that would voluntarily participate.

The FAA estimates that the cost of the rule to a new entrant part 121 operator of a twin-engine airplane would be approximately \$106,500 over 10 years more than the operator would incur under the existing deviation policy and procedures. This reflects the cost of preparing and maintaining passenger recovery plans and maintenance investigation and resolution costs for a four-airplane ETOPS operation.

A part 121 operator of a three- or four-engine fleet serving a single route beyond 180-minutes would incur costs of approximately \$3.7 million over 10 years. It is assumed that the route would require a four-airplane fleet with 60 crewmembers, supported by 2 dispatchers and 20 mechanics.

A part 135 operator seeking authorization to conduct ETOPS operations beyond 180-minutes would incur costs of approximately \$1.0 million over 10 years. This estimate is based on a fleet of 4 airplanes flown by

a crew of 16 pilots and maintained by 2 certified mechanics, and each aircraft conducts a monthly ETOPS operation. The fleet excludes aircraft with a Class C cargo compartment. Aircraft with Class C cargo compartments would add \$1.5 million to the cost. All aircraft are capable of operating between the West Coast-Hawaii. Currently 6 operators that are authorized to fly between the West Coast and Hawaii only operate airplanes that would not be acceptable to the FAA under the proposed rule. These operators would have to upgrade to an acceptable aircraft at an estimated cost of \$4 million per aircraft to continue these flights.

A business aircraft manufacturer would incur reporting and investigation costs that would be required by the proposed provisions of part 21 estimated at \$3.2 million over 10 years. This expenditure would be incurred to fund 2 full-time staff for reporting purposes and a full-time staff member to conduct investigations of incidents. The manufacturer would also incur airplane ETOPS certification costs of \$7.2 million. This would consist of design costs of \$6 million, and assessment and

validation costs of \$1.2 million. Engine certification costs that would be required to make an engine ETOPS eligible would cost \$10.1 million. This would consist of design costs \$3.2 million, testing costs of \$6.5 million and establishing engine-monitoring procedures at a cost of \$400,000. The total cost to a business aircraft manufacturer for reporting and investigation, and airframe and engine certification would be \$20.6 million.

The manufacturer of an existing three- or four-engine airplane would incur additional reporting costs under part 21 of \$1.9 million to include operators that choose to fly beyond 180-minutes, supplemental certification costs of \$1.9 million to allow operators of existing three- or four-engine airplanes to increase the capacity of the cargo fire suppression system required for beyond 180-minute ETOPS and other required costs of \$200,000 for a total cost of \$4 million.

The quantified costs to all the individual entities affected by the proposed rule are summarized in Table 4. The FAA requests comments and data addressing these estimates.

TABLE 4.—ESTIMATED TEN YEAR QUANTIFIED COSTS OF PROPOSED RULE TO INDIVIDUAL ENTITIES

Cost area	Total cost	Present value
Cost to a New Part 121 Twin-Engine ETOPS Operator .....	\$106,500	\$75,900
Cost to a 3- or 4-Engine Operator .....	3,676,500	2,789,500
Cost to a Part 135 Operator .....	1,030,400	741,100
Costs to a Business Aircraft Manufacturer for Reporting and Investigation, and Certification of Airframe and ETOPS-Eligible Engine .....	20,560,000	18,474,500
Reporting and Certification Costs to Manufacturer of 3- or 4-engine airplane .....	3,958,500	3,265,700

In addition, the total cost of the provisions of the proposed rule for existing two-engine ETOPS operators over a ten-year period beyond those incurred to comply with the existing policy and guidance is estimated at \$10.7 million or \$7.6 million, discounted.

The total costs to the industry are estimated at \$265.3 million over a ten-year period or \$217.7 million, discounted as shown in Table 5. These costs are based on the following assumptions:

- Costs to existing 2-engine operators as shown in the Regulatory Evaluation.

- Costs for a single operator, as shown in the Regulatory Evaluation, are multiplied by the number in the first column for each row to obtain the Total Cost and Present Value columns.

- There are currently 7 “low cost” passenger carriers (AirTran, America West, ATA, Frontier, JetBlue, Southwest, and Spirit as defined by the *Aviation Daily*). It is assumed each would operate 4 ETOPS airplanes on a single route.

- There are currently 13 U.S. operators of 3- or 4-engine aircraft and it is assumed each would operate 1 route beyond 180 minutes.

- There are 81 Part 135 operators that both meet the proposed aircraft and maintenance requirements.

- There are 3 “makes” of 3- or 4-engine airplanes (B-747, DC-10, MD-11).

- There are 5 “major” business airplane manufacturers serving this market segment. (Boeing, Cessna, Gulfstream, Raytheon, and Sabreliner)

There are 6 current Part 135 operators using airplanes that could not be upgraded to meet the specifications of the proposed rule. It would cost each operator approximately \$4 million to replace a single airplane to meet the specifications.

TABLE 5.—ESTIMATED TEN-YEAR COSTS TO INDUSTRY

Costs incurred by—	Total cost	Present value
Existing 2-engine Operators .....	\$10,735,500	\$7,559,400
7 New 2-engine Operators .....	745,500	531,300
13 3- or 4-engine Operators .....	47,794,500	36,263,500
81 Part 135 Operators .....	83,462,400	60,029,100
Reporting and Certification Costs for:		