EXECUTIVE SUMMARY

This Report presents economic values, often referred to as "critical values," for use in the conduct of benefit-cost and other evaluations of investments, including certain Airport Improvement Program (AIP) grants, and regulations subject to Federal Aviation Administration decisionmaking. Application of these values to their corresponding physical quantities permits valuation of the physical quantities in dollars. Conceptually, they can be thought of as measures of the dollar sacrifice associated with each physical quantity outcome—avoided fatality, air frame damage, etc.—resulting from a potential investment or regulatory action that society and users should be willing to make to undertake that investment or regulatory action.

Values presented fall into two general groups. Passenger related values consist of the value of passenger time, the value of an avoided fatality, and the value of avoided injuries. Aircraft related values include aircraft capacity and utilization factors, aircraft operating and ownership costs, and aircraft replacement and restoration costs. Passenger related values are established by Department of Transportation policy which is applicable to all Modal Administrations within the Department. Aircraft related values have been developed by the Office of Aviation Policy and Plans from public and proprietary data sources.

Summary values, which are applicable to benefit-cost analyses conducted in 2002, are presented in Table E-1. Passenger related values reflect current Department of Transportation guidance. Aircraft related values are derived from the detailed values presented in the text. Because text aircraft related values represent 1996, values presented in Table E-1 have been made current using the methodology of Appendix A. *These are summary values only. Analysts and other users should refer to the text of the report for further detailed values.* For aircraft related values, detail for most measures is available by specific aircraft, by generic aircraft classification, such as two engine narrow body, four engine wide body, or single engine piston, and by user profiles such as scheduled commercial service, air taxi, general aviation, or commuter. The various generic categories and user profiles have been constructed so as to anticipate the needs of analysts conducting investment and regulatory studies. Other measures can be developed from the underlying source data. Requests for assistance in developing information required for specific projects should be addressed to the Economic Program Officer, Office of Aviation Policy and Plans, APO-3.

The values presented in this report can be expected to change with the passage of time because of price and income level movements, aviation industry changes, advances in theoretical and empirical research, and policy changes. The Office of Aviation Policy and Plans will provide periodic updates to these values to reflect such changes. Pending such updates, aircraft specific values may be adjusted using the methodology contained in Appendix A.

Table E-1

Economic Values for Use in Analyses Conducted in 2002

Physical Unit	Value
Value of Passenger Time per Hour	
Air Carrier:	
Personal	$19.50
Business	$34.50
All Purposes	$26.70
General Aviation:	
Personal	$26.30
Business	$37.50
All Purposes	$31.10
Avoided Fatality	$3,000,000
Avoided Injuries	
Injury Value by AIS Category (per injury):	
Minor (AIS 1)	$6,000
Moderate (AIS-2)	$46,500
Serious (AIS-3)	$172,500
Severe (AIS-4)	$562,500
Critical (AIS-5)	$2,287,500
Fatal after 30 Days (AIS-6)	$3,000,000
Other Costs by AIS Category (per victim):	
Minor (AIS 1)	$2,500
Moderate (AIS-2)	$7,100
Serious (AIS-3)	$21,200
Severe (AIS-4)	$111,600
Critical (AIS-5)	$300,000
Fatal after 30 Days (AIS-6)	$132,700
Injury and Other Costs by ICAO Category (per victim):	
Minor	$42,900
Serious	$580,700

Physical Unit

Aircraft Capacity and Utilization Factors

Scheduled Commercial Service:	
Passenger Capacity	151.9 seats
Crew Size	6
Cargo Capacity	11.6 tons
Passenger Load Factor	69.1%
Cargo Load Factor	44.6%
Daily Utilization	6.9 hours
Average Flight Speed	417 mph
Air Carriers w/o Commuters:	
Passenger Capacity	158.9 seats
Crew Size	6.1
Cargo Capacity	12.2 tons
Passenger Load Factor	69.1%
Cargo Load Factor	44.6%
Daily Utilization	7.4 hours
Average Flight Speed	439 mph
Commuters Only:	
Passenger Capacity	41.7 seats
Crew Size	3
Cargo Capacity	1.6 tons
Passenger Load Factor	57.9%
Cargo Load Factor	33.1%
Daily Utilization	4.5 hours
Average Flight Speed	232 mph
Air Taxi:	
Passenger Capacity	6.6 seats
Passenger Load Factor	44.4%
Useful Load	3,097 lbs.
General Aviation Only:	
Passenger Capacity	5.4 seats
Passenger Load Factor	49.5%
Useful Load	1,894 lbs.
General Aviation and Air Taxi:	
Passenger Capacity	5.5 seats
Passenger Load Factor	49.0%
Useful Load	1,969 lbs.

Physical Unit	
Aircraft Operating Costs	
Scheduled Commercial Service:	
Variable Operating Cost per Hour	$2601
Fixed Cost per Hour	$684
Total Cost per Hour	$3285
Air Carrier w/o Commuter:	
Variable Operating Cost per Hour	$3043
Fixed Cost per Hour	$771
Total Cost per Hour	$3814
Commuters Only:	
Variable Operating Cost per Hour	$608
Fixed Cost per Hour	$292
Total Cost per Hour	$900
Air Taxi:	
Variable Operating Cost per Hour	$451
Fixed Cost per Hour	$387
Total Cost per Hour	$838
General Aviation Only:	
Variable Operating Cost per Hour	$199
Fixed Cost per Hour	$409
Total Cost per Hour	$608
General Aviation and Air Taxi:	
Variable Operating Cost per Hour	$322
Fixed Cost per Hour	$407
Total Cost per Hour	$729
Military: Variable Operating Cost per Hour	$1,687
Replacement Costs of Destroyed Aircraft	
Scheduled Commercial Service	$18,631,000
Air Carriers w/o Commuters	$22,268,000
Commuters Only	$4,281,000
Air Taxi	$760,000
General Aviation Only	$608,000
General Aviation and Air Taxi	$596,000
Military	$24,677,000

Physical Unit	
Restoration Costs of Damaged Aircraft	
Scheduled Commercial Service	$2,515,000
Air Carriers w/o Commuters	$3,006,000
Commuters Only	$573,000
Air Taxi	$164,000
General Aviation Only	$152,000
General Aviation and Air Taxi	$152,000
Military	$3,333,000