





WORLDWIDE AVIATION MARKETING AND MANAGEMENT SERVICE

# TRANSPORT AIRCRAFT VALUES<sup>TM</sup>



Tupolev Tu-204-100 Photo Courtesy: Red Wings Airline

February 2009

## **AVMARK CAPABILITIES**

Since its establishment in 1962, AVMARK has been providing consulting management services to all sectors of the aviation community. From offices in Washington DC and Singapore, together with associates based in United States (North America), Ecuador (South America), Spain (Europe), Congo (Africa), New Delhi (India and Asian Market), we serve a worldwide clientele. Our staff is comprised of professionals with extensive, successful careers in technical, commercial and managerial areas of aviation enterprises; combining real world operational experience with sophisticated analytical tools to provide our clients with the most effective solutions to their problems.

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AVMARK's Transport Aircraft Values (TAV); reports current fair market values by year of build and projects the future value of all transport category aircraft.

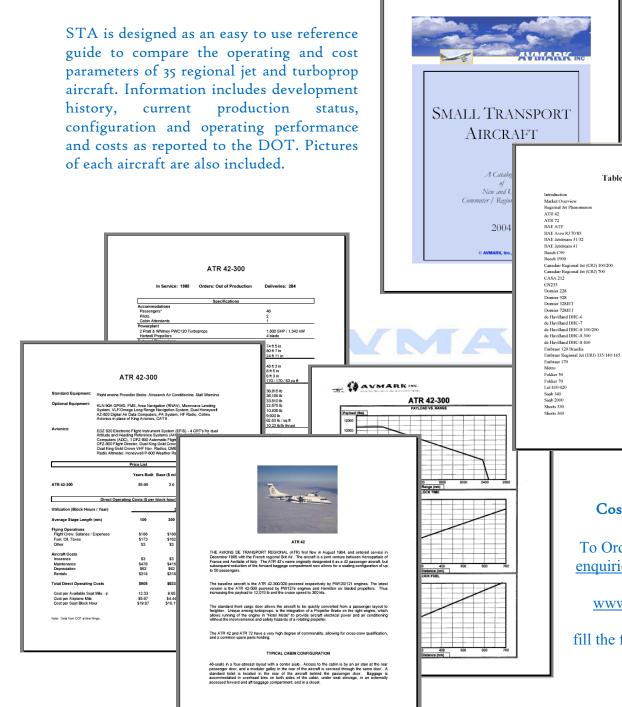
AVMARK's Historic Jet and Turboprop Values; summary of the then current fair market values as published in the AVMARK Newsletter for all jets and turboprops in service.

AVMARK's Small Transport Aircraft Catalogue (STA); designed as an easy to use reference guide to compare the operating and cost parameters of 35 regional jet and turboprop aircraft.



## Sample of Avmark Publication

# SMALL TRANSPORT AIRCRAFT CATALOGUE



Cost: US \$ 350.00

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#### **FOREWORD**

2009 is the 34<sup>th</sup> year of publication of Transport Aircraft Values (**TAV**). Since our first issue was published in 1976, we have continuously made improvements to ensure that the **TAV** provides up to date and accurate data in a format most useful for the users.

In 1996, **AVMARK** introduced a CD-ROM version of the **TAV**. In addition to the **TAV** numbers, the CD-ROM contains the Commercial Aircraft Value Analysis System (CAVAS), which permits on-screen display of the data, in both tabular and graphical form, print output and electronic manipulation of the data for use in other financial programs.

AVMARK keeps updating the TAV. February 2009 issue comes with some corrections that were made to the manufacturing years of some aircraft. Due to the changes in manufacturing years, the values have been adjusted accordingly. AVMARK encourages all readers to please send us ideas and corrections that will improve our publication for your own benefit.

# Manufacturing Year Corrections

Aircraft Type	Previously Pu	iblished Years	Correcti	ons	
TA DE	The same of the sa	Production	Years	OFMENT OF DATE	
	First	Last	First	Last	
BOEING B747-400	1989	2008	1989	2005	
BOEING B747-400 ER	2002	2008	2002	2003	
BOEING B767-300	1986	2008	1986	2001	
<b>BOEING B767-300F</b>	1995	2008	1995	2007	
<b>BOEING B777-200</b>	1995	2008	1995	2007	
BOEING B777-200 ER	1996	2008	1997	2009	
BOEING B777-300	1998	2008	1998	2006	
BOEING B717-200	1996	2005	1996	2006	
BOEING B737-600	1998	2008	1998	2006	
BOEING B737-900	2001	2008	2001	2005	
BOEING B757-200	1982	2004	1982	2005	
EMBRAER ERJ-135	1999	2008	1999	2006	
EMBRAER ERJ-140	2001	2008	2001	2006	



#### THE AVMARK AIRCRAFT VALUE FORECAST MODEL

The **TAV** model has been developed to predict future worth of commercial jet aircraft in service today. The model is simple in theory, but quite complex in construction. Future values are generated using a financial model, which calculates a discount curve from projected cash flows over the remaining life of the aircraft. The curve is then applied to **AVMARK's** own assessments of fair market base-value of each type, which are regularly updated and revised. The basic premise of the model is that the value of a revenue-generating asset (the aircraft) is directly tied to its ability to produce profit for the owner. Hence, the greater the potential profits a specific aircraft is capable of generating, the greater its value should be in relation to other similar aircraft.

A distinction must be drawn between the terms "value" and "price". The price of an aircraft is a function of two primary factors: the worth of the aircraft as a profit-generating asset (as mentioned above), and the amount that a buyer is willing to pay for the profit potential of the aircraft--in the market conditions prevalent at the time of sale.

The profit potential of a specific aircraft model is a function of a myriad of factors that include operating characteristics of the aircraft, the routes flown, passenger acceptance of the aircraft relative to alternatives, and cost of fuel and services. In essence the revenue generated by the aircraft over its operating lifetime gives the aircraft its economic value.

The market cost of an aircraft is a function of a variety of other factors as well, including: investors' perceptions of the certainty (risk) of revenue and profit potential, the cost and availability of funds, competition for ownership of individual aircraft models, scarcity or ubiquity of specific models, and perhaps most importantly urgency of the seller.

While these two principal factors are inextricably tied together, rarely if ever, are "price" and "value" the same. Moreover, the **TAV** financial model is based on average aircraft as described below, rather than individual serial numbers, which is how aircraft are generally bought and sold.

The mechanism by which the **TAV** estimates profitability is a detailed multi-year cash profit and loss (P&L) analysis for each of the aircraft models. The purpose of the P&L is to forecast the cash that can be generated over the life of the aircraft. From this forecast, we then construct a profitability curve, the structure of which provides the factors for future value estimates. The financial model requires input data encompassing all costs and revenues accruing to each aircraft model over the remaining anticipated service life.



#### MAJOR FACTORS BEARING ON AIRCRAFT VALUES

**AVMARK** has made a number of basic assumptions that are standard for all of the aircraft entered in the database.

- The aircraft is in an overall "Good" condition by industry standards.
- The aircraft is certified for U.S. FAR Part 121 or similar government agency operation.
- With the exception of the first few years in service, the aircraft is considered to be in "half-life" condition, that is, halfway between major maintenance (D-check) overhauls. This status applies to engines and high value components, as well as airframes.
- The aircraft is deemed airworthy and in compliance with all Airworthiness Directives and mandatory Service Bulletins.
- The aircraft is not in a unique configuration, with seating capacity based on industry norms.
- The aircraft utilization is average given the number of years that it has been in service.
- The aircraft is free of liens or other encumbrances, which would otherwise hinder an arms-length, non-distress transaction. AVIATION MARKETING AND MANAGEMENT SERVICE
- The supply and demand for used aircraft is in a reasonable state of equilibrium.

Each model of aircraft is then individually evaluated by assuming a weighted average stage length similar to current industry usage of the particular type. Load factors are assumed constant in the early years of aircraft service life, and then vary over the remainder of the life of each aircraft based on the ubiquity, age, and industry capacity forecasts. Revenue yields are forecast using current worldwide actual yields as the base. AVMARK collects relevant fare data and determines by regression analysis the most likely yields for specific stage lengths. Fare commissions are scrutinized and analyzed by stage length for both U.S. domestic and non-U.S. international services.

Operating expenses incurred in service are estimated based on average actual data culled from industry sources by AVMARK. Both crew and maintenance expenses are applied from actual experience by aircraft model. Maintenance costs vary according to the age of the aircraft, with D-Check expense accruing to the point at which the aircraft is considered in half-life condition.



# **Airbus A300-B4-200F**

#### **DESCRIPTION**

A basic medium haul cargo aircraft, the B4-200F is also designated as the A300 C4 and A300 F4. The C4/F4 aircraft were equipped with a cargo door, a reinforced cabin floor and a floor loading system. The C4 is a combi version. The F4 is the cargo/frighter version with passenger windows blanked out.

# SPECIFICATIONS

Aircraft:	A300-B4-/200F	Max Payload, lbs:	101,400
Type:	2 Engine Wide Body	Max Zero Fuel Weight, lbs:	277,780
Engines:	CF6-50C2	Max Takeoff Weight, lbs:	363,760
U.S. FAR Part 36:	Stage 3	Max Landing Weight, lbs:	299,800
Flight Crew:	3	Max Range, nm:	3,340
Seating Capacity:	N/A	Last Year of Production:	1986
First Delivery:	1975		



Model:- Airbus A300B4-200F

**Description:-** Widebody 2 Engine Freighter

**Display:-** Constant Dollars

Year	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
2009	5.75	5.80	5.90	6.05	6.24	6.49	6.78	7.13	7.52	7.97	8.46	9.00
2010		3.90	5.11	5.63	5.95	6.24	6.55	6.90	7.29	7.73	8.22	8.75
2011			3.54	4.91	5.54	5.95	6.31	6.67	7.06	7.50	7.98	8.50
2012				3.42	4.84	5.54	6.01	6.41	6.82	7.26	7.73	8.25
2013					3.39	4.84	5.59	6.11	6.56	7.00	7.48	8.00
2014						3.39	4.88	5.68	6.24	6.73	7.22	7.73
2015							3.41	4.95	5.79	6.40	6.93	7.46
2016								3.45	5.04	5.93	6.58	7.16
2017									3.50	5.14	6.09	6.79
2018										3.55	5.26	6.27
2019											3.62	5.40
2020												3.69



Model:- Airbus A300B4-200F

**Description:-** Widebody 2 Engine Freighter

Display:- Current Dollars

Year	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
2009	5.75	5.80	5.90	6.05	6.24	6.49	6.78	7.13	7.52	7.97	8.46	9.00
2010		3.99	5.23	5.76	6.09	6.38	6.70	7.06	7.46	7.91	8.41	8.95
2011			3.71	5.14	5.80	6.23	6.60	6.98	7.39	7.85	8.35	8.90
2012				3.66	5.18	5.93	6.44	6.86	7.30	7.77	8.28	8.84
2013					3.71	5.30	6.12	6.69	7.19	7.67	8.20	8.77
2014						3.80	5.47	6.37	6.99	7.54	8.09	8.67
2015							3.91	5.68	6.64	7.34	7.95	8.56
2016								4.05	5.91	6.96	7.72	8.40
2017									4.20	6.17	7.31	8.15
2018										4.36	6.46	7.70
2019											4.55	6.79
2020												4.74



# **Airbus A300-B4-600**

#### **DESCRIPTION**

An enhanced A300 incorporating A310 systems and technology to produce higher passenger and cargo capacity. The -600 has an advanced two-man "glass cockpit" and up to nine-abreast seating for high-density operations. The range with 267 passengers and baggage is 3,700 nm, with international fuel reserves.

# SPECIFICATIONS

Aircraft:	A300B4-600	Max Payload, lbs:	82,000
Type:	2 Engine Wide Body	Max Zero Fuel Weight, lbs:	286,600
Engines:	CF6-80C2/PW4000; JT9D-7R	Max Takeoff Weight, lbs:	378,530
U.S. FAR Part 36:	Stage 3	Max Landing Weight, lbs:	304,200
Flight Crew:	3	Max Range, nm:	3,700
Seating Capacity:	267 (2 Class)	Last Year of Production:	1992
First Delivery:	1983		



Model:- Airbus A300B4-600

**Description:-** Widebody 2 Engine Passenger

Display:- Constant Dollars

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
2009	6.00	6.13	6.40	6.80	7.33	8.00	8.80	9.73	10.80	12.00
2010	5.21	5.60	5.99	6.44	6.99	7.66	8.44	9.36	10.40	11.56
2011	4.10	4.90	5.48	6.02	6.61	7.29	8.07	8.97	9.98	11.12
2012	2.49	3.90	4.81	5.51	6.18	6.88	7.67	8.56	9.55	10.66
2013		2.40	3.84	4.83	5.64	6.41	7.23	8.11	9.10	10.18
2014			2.37	3.86	4.93	5.84	6.71	7.63	8.61	9.68
2015				2.38	3.92	5.08	6.09	7.06	8.06	9.13
2016					2.41	4.02	5.27	6.37	7.44	8.53
2017						2.45	4.15	5.49	6.68	7.84
2018							2.51	4.29	5.72	7.00
2019								2.57	4.43	5.96
2020									2.63	4.58
2021										2.69



Model:- Airbus A300B4-600

**Description:-** Widebody 2 Engine Passenger

Display:- Current Dollars

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
2009	6.00	6.13	6.40	6.80	7.33	8.00	8.80	9.73	10.80	12.00
2010	5.33	5.73	6.13	6.59	7.15	7.84	8.63	9.58	10.64	11.83
2011	4.29	5.13	5.74	6.30	6.92	7.63	8.45	9.39	10.45	11.64
2012	2.67	4.18	5.15	5.90	6.62	7.37	8.21	9.17	10.23	11.42
2013		2.63	4.21	5.29	6.18	7.02	7.92	8.89	9.97	11.15
2014			2.66	4.33	5.53	6.55	7.52	8.55	9.65	10.85
2015				2.73	4.50	5.83	6.98	8.10	9.24	10.47
2016					2.83	4.72	6.18	7.47	8.73	10.01
2017						2.94	4.98	6.59	8.02	9.41
2018							3.08	5.27	7.03	8.60
2019								3.23	5.57	7.49
2020									3.38	5.89
2021										3.54