Uzbekistan

Three Local Airports Modernization Project

Field Survey: November 2003

1. Project Profile & Japan's ODA Loan

Project site

Runway at Samarkand Airport

1.1 Background

Under the division of labor system employed by the former Soviet Union Uzbekistan was positioned as a supplier of mineral resources and agricultural produce. In consequence, its external transport routes by rail, road and air, had basically been developed under Moscow-centric networks.

With Uzbekistan's air traffic, the majority of airports were decrepit, with problems including some cracking on runways, reductions in the reliability of air traffic control and safety systems, and difficulties securing spare parts for repairs. The airports were also failing to conform to the technical standards of ICAO (the International Civil Aviation Authority), the global benchmark for air safety. In addition, the economic turmoil that followed the breakup of the former Soviet Union in 1991 resulted in a sharp decline in passenger traffic in Uzbekistan.

The country is the epicenter of Silk Road tours, and the three cities of Samarkand, Bukhara and Khiva (on the outskirts of Urgench) have flourished as oasis towns along the Silk Road and have a wealth of world-class tourist attractions. In 1997, the Uzbekistan government held celebrations to mark the 2,500th anniversary of Bukhara and Khiva with the aim of utilizing the nation's resources to grow the tourist industry. Efforts to promote tourism were hampered by insufficient terminal facilities at the airports in the aforementioned three cities, and the airlines of various countries were experiencing difficulties flying into the airports due to the significant problems outlined above. Accordingly, the Uzbekistan government had identified the development and expansion of these three airports as a key development issue.

1.2 Objectives

Through the development and modernization of the airports at Samarkand, Bukhara and Urgench, all of which are located in signature areas of Uzbekistan, to increase safety, improve their functions as international airports and promote the development of the nation's tourist

industry, as a means of contributing to foreign exchange acquisition and economic development in Uzbekistan.

1.3 Outputs

The outputs of development and modernization work undertaken at Samarkand, Bukhara and Urgench airports are as follows:

(1) Civil works: repaving of runways, taxiways, etc.
(2) Construction: rehabilitation / construction of passenger terminals, construction of cargo terminals, etc.
(3) Air traffic control equipment: installation of lighting equipment such as taxiway lights, radio beacons, radar equipment for monitoring air space, control tower equipment, etc.

1.4 Borrower / Executing Agency

Republic of Uzbekistan / Uzbekistan Airways

1.5 Outline of Loan Agreement

	Phase I	Phase II
Loan Amount	15,526 million yen	2,871 million yen
Disbursed Amount	15,036 million yen	2,786 million yen
Exchange of Notes	October 1996	November 1999
Loan Agreement	December 1996	December 1999
Terms & Conditions		
Interest Rate	2.7% p.a.	2.2% p.a.
Repayment Period	30 years	30 years
(Grace Period)	(10 years)	(10 years)
Procurement	General untied	General unties
Final Disbursement Date	December 2001	January 2003

2. Results & Evaluation

2.1 Relevance

The 1995 Investment Program of the Republic of Uzbekistan for 1996-2002 identifies the necessity of developing the three airports at Samarkand and Bukhara and Urgench, the three areas targeted for development under this project. Decree No. 51 of the Cabinet Ministry (January 28, 1997) makes clear the urgency of developing the airports at Tashkent and the above three cities. Uzbekistan's air transport was developed as a Moscow-centric network during the days of the former Soviet Union, but at the time of appraisal, the majority of domestic airports and navigation support equipment were in a state of dilapidation and were not in conformity with international safety standards and were thus unusable as international airports. In consequence, despite owning Silk Road tourist attractions, the country was unable to raise its tourist revenues sufficiently to have an impact on the economy, and the fact that the development of tourism through the development of these three airports had been made a

priority issue by the government suggests that this project was highly relevant from a political perspective at the time of appraisal.

At the time of evaluation, increasing tourist revenues as a means of earning hard currency continued to be a priority issue for Uzbekistan, thus the development work that was undertaken at the three airports through this project is considered to have been relevant.

2.2 Efficiency

2.2.1 Outputs

For this project, (1) additional repair work was executed on cracks that had appeared on runways due to freak weather conditions in 1997*[1], and (2) changes in the approval procedures for detailed designs used by the Uzbekistan government after appraisal (see section 2.2.3 "Project costs"), all of which were not foreseen at the outset, made additional outputs necessary (and also necessitated additional funding). As evidenced in Figure 1, although some of the outputs detailed in the final plans were not completed, new international passenger terminal and cargo terminal building were not constructed at Bukhara Airport because of budget constraints and the output adjustments that were made on the basis of priority; however, the repaving of existing runways, runway rehabilitation and other major works, as well as the installation of air traffic control equipment were all completed in line with the initial plans. In terms of the project as a whole, approximately 80 percent of the planned outputs were accomplished on a weighted average project cost basis (for details, refer to the "Comparison of Original and Actual Scope" at the end of this report.)

Figure 1: Differences between Planned & Actual Outputs

	Samarkand Airport	Bukhara Airport	Urgench Airport
1. Civil work	○	○	○
2. Construction work			
Construction of new passenger terminal	○	△ Existing terminal rehabilitated	○
Construction of new cargo terminals	×	×	×
3. Air traffic control equipment	○	○	○

○: As planned; ×: Not executed

2.2.2 Project Period

At appraisal, the project's execution period was scheduled to commence in December 1996

[1] The runways at Bukhara and Urgench airports were raised using Iranian asphalt, which has higher ductility and provides better coverage than the Kazakhstan asphalt used during the original work.

(conclusion of the loan agreement) and end in September 2000 (46 months), but the additional runway repairs and adjustments to output etc. resulted in delays of approximately 15 months, with the actual execution period spanning 61 months from December 1996 through December 2001.

2.2.3 Project Costs

Air traffic control equipment used by Uzbekistan Airways

Uzbekistan Airways control tower

Total project costs were 19,338 million yen against the appraisal figure of 17,288 million yen (total for Phases I & II; 112% of the original budget). The reasons for this spring from the cost increases that were produced by the changes made to detailed design approval procedures in the summer of 1996. Because Uzbekistan Airways, the project's executing agency, had discretion in setting the details of the design / work at the time of Phase I appraisal (June 1996), costs were integrated on the basis of ICAO (International Civil Aviation Authority) and FAA (Federal Aviation Administration) construction standards. However, the Uzbekistan State Committee for Architecture and Construction subsequently made detailed design approval mandatory rendering it necessary to conform to Uzbekistan standards in addition to the construction standards mentioned above, resulting in alteration of detailed design with cost increase. In addition, the cost increases can also be attributed to the abnormal weather conditions of 1997, which caused cracking on the runways at Bukhara and Urgench airports, making it necessary to undertake additional repair work.

2.3 Effectiveness

2.3.1. Current Facilities Operating Conditions and Effectiveness

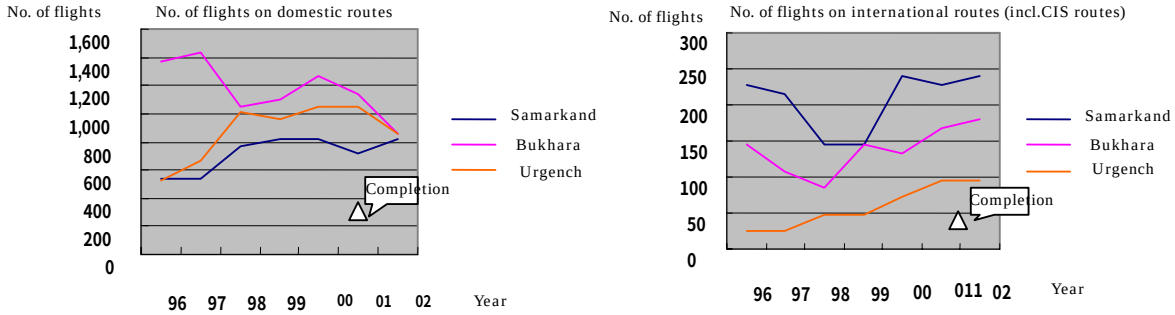
At appraisal, the outcomes of this project were established as (1) improvements in airport safety, (2) increases in flight numbers associated with conformity to ICAO standards, and (3) improvements in the convenience of airport use for passengers resulting from upgrades to airport facilities.

1. Improved Airport Safety

The development work undertaken at the three airports resulted in runway length, paving strength, lighting equipment, landing equipment such as instrument landing systems, radio navigation support equipment such as AFTN (Aeronautical Fixed Telecommunications

Networks)[2] and NDB (Non Directional Radio Beacons)[3], and aviation weather forecasting equipment coming into conformity with ICAO standards, thus the original objective was accomplished. Because data on aircraft accident rates, the percentage of flights taking off / landing on schedule, the number of cancellations, etc. had not been released when this field survey was undertaken, it is not possible to assess the safety of operations in quantitative terms. However, as illustrated in Figure 2, it is considered that the post-project increase in the numbers of international flights have been born out by the improvements in airport safety and convenience.

Fig. 2: Changes in Flight Numbers
(Domestic & international, including both scheduled and chartered flights)



(Source: Uzbekistan Airways)

2. Increased Flight Numbers with ICAO Standard Conformity

Work on this project commenced in 1997 and was completed in 2001. According to the executing agency, all three airports were used during the implementation phases by limiting landings / takeoffs to unpaved runways and usable runway widths (Urgench Airport was closed for a month in 1998). In consequence, there were no excessive decreases in the number of flights. Domestic flights decreased between 1996 (prior to implementation) and 2002 (post-completion) at Bukhara Airport, but increased at Samarkand Airport and Urgench Airport during the same period. By contrast, international flights, including CIS*[4] routes,

[2] The AFTN is designed to ensure the safety and punctuality of international civil aviation and links international airports, air traffic control organizations, and the airlines that fly international routes throughout the world, exchanging a host of information that is critical to navigation, including distress information, emergency communications, flight plans, location, and weather conditions, as well as information on service provision, including changes in flight schedules / aircraft parts replacements.

[3] The NDB is installed at strategic points on the flight path or at airports, emitting non directional radio beams on medium-and long-wave bandwidths to enable aircraft to track the direction of ground facilities (NDB) using the onboard Automatic Direction Finder (ADF).

[4] CIS: the Commonwealth of Independent States; this refers to the republics of the former Soviet Union with the exclusion of the three Baltic States (Estonia, Latvia, and Lithuania).

increased from around 370 in 1996 to some 460 in 2002. The fact that, as the result of this project, the three airports now meet international safety standards is clearly evidenced by their ICAO listings, and it is believed that this finds further corroboration in the increases in international flight numbers.

As to scheduled international flights offered by airlines other than Uzbekistan Airways, since 2002, Aeroflot, the Russian flag carrier, has been flying between Samarkand and Domodedovo Airport (Moscow) twice a week, and is the only foreign airline to be offering scheduled flights to Uzbekistan. From 2004, Pulkovo Airlines (headquartered in St. Petersburg, Russia) plans to start flying between Samarkand and St Petersburg. The scheduled international flights offered by Uzbekistan Airways are as shown in Figure 3.

Figure 3: Uzbekistan Airways Scheduled International Flights (Nov. 2003)

Route	Frequency
Samarkand – Tashkent – Moscow	Summer: 2 flights/week Winter: 1 flight/week (2002) Summer: 3 flights/week Winter: 1 flight/ week (2003)
Samarkand – Simferopol (Ukraine)	1 flight/month (2002) 2 flights/month (2003)
Kazan (Russia) – Samarkand – Fergane (Uzbekistan)	1 flight/month (2003)
Bukhara – Moscow	1 flight/week (2003)
Bukhara – Dubai (United Arab Emirates)	1 flight/month (2003)
Urgench - Moscow	1 flight/week (2003)
Urgench – Mineralnyye Vody (Russia)	1 flight/week (2003)
Urgench – Namangan (Uzbekistan)	Summer: 2 flights/week Winter: 1 flight/week (2003)

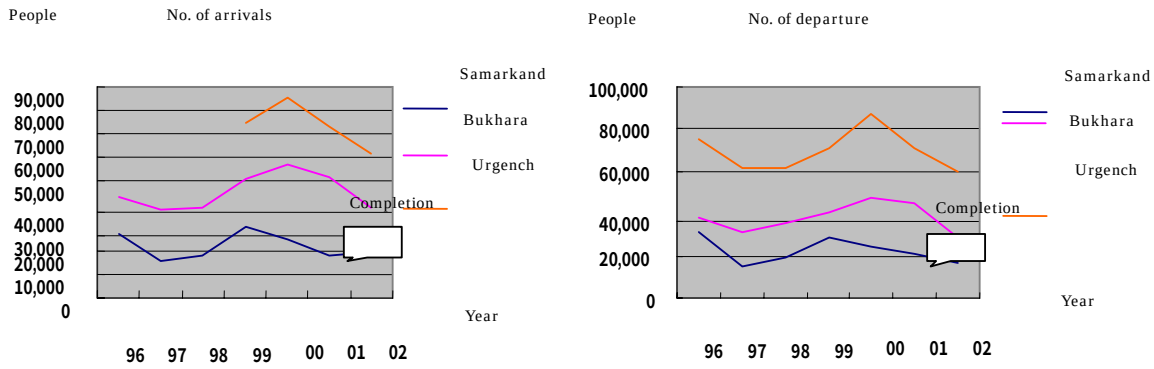
(Source: Uzbekistan Airways)

3. Greater Convenience with Improvements of Airport Facilities

The trends in passenger numbers illustrated in Figure 4 are indicative of the improvements in convenience that have accompanied the modernization of airport facilities[5].

[5] The executing agency has not provided arrival numbers for Urgench Airport prior to 1998 (Figure 4: Numbers of Arrivals at the Three Airports).

Figure 4: Passenger Numbers



(Source: Uzbekistan Airways)

With the exclusion of Samarkand Airport, the numbers of arrivals and departures at the other two airports peaked in 1999 but have declined thereafter. Uzbekitourism, the national tour company, reports that since 2001 passenger numbers have been falling due to the impact of the synchronized terrorist attacks of September 11 as an external cause. Terrorist activity was taking place in Uzbekistan prior to 9/11 and it is suggested that this is also a factor in the declining numbers of air travelers. However, the number of travelers is forecasted to rebound as the sense of crisis over aircraft use is allayed.

According to the results of interviews with travel agencies, the reason Urgench Airport sees the highest numbers of users is because it is located approximately 1,000km from the capital Tashkent and is more difficult to access overland from Tashkent than the other two airports[6]. Further, the results of these interviews have also confirmed direct improvements in convenience, in that Uzbekistan Airways, an airport user, is now able to operate international routes because the airports meet international standards, and that aircraft homing equipment, control towers and power supply equipment, which were either unavailable or non functional prior to the project, are now usable in consequence of its implementation. The travel agencies see improved convenience for passengers, in that airport facilities are now more attractive, luggage turntables have been installed, and direct flights to foreign destinations are now available.

[6] In consequence, it is now the norm for tourists on Silk Road tours who are visiting Khiva (approx. 35km from Urgench), Bukhara and Samarkand, to fly from Tashkent to Urgench, then take bus from there to the other two cities (with overnight stops) before returning to Tashkent or doing the route in reverse.

Urgench Airport radar tower

Urgench Airport Departures Terminal

2.3.2. Recalculation of the Economic Internal Rate of Return (EIIR)

The EIRR was not recalculated due to the lack of available data during this evaluation.

2.4. Impacts

2.4.1. Attainment of Project Goals

The goals of this project were to (1) promote the development of tourism in Uzbekistan and (2) to promote economic development.

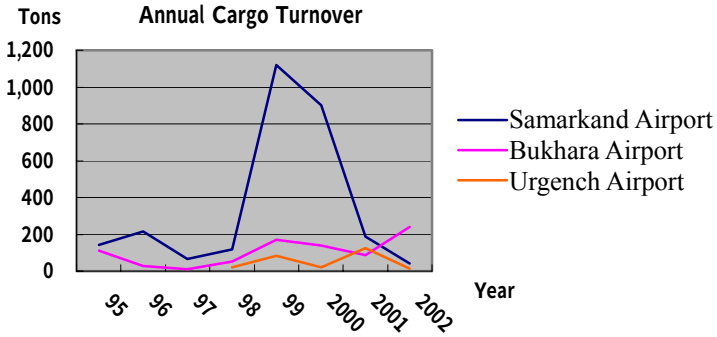
1. Promoting Tourism Development

According to data provided by the Uzbekistan government bureau of tourism, the numbers of foreign tourists to Uzbekistan have been growing annually and increased from 30,000 in 1996 to 87,000 in 2002. There are no statistics on how many of the users of the three airports shown in Figure 4 were tourists. At evaluation, however, Boeing passenger jets were flying between Urgench and Tashkent three times a week, and even given the 1,000km or so distance between the two cities, aircraft use is popular. There is no data evidencing tourist traffic through Urgench Airport, but as Figure 4 illustrates, approximately double the number of people through Bukhara Airport and triple the number through Samarkand Airport pass through Urgench Airport every year, which suggests that Urgench Airport is contributing to the development of tourism in Uzbekistan as a port of attaction for foreign tourists.

2. Promoting Economic Development

Based on basic socioeconomic development indicators for Uzbekistan for 2003, in 2002 GDP (year on year) in the three provinces where the airports are located (Samarkand, Bukhara and Khorezmskaya) increased by 2-7% (for reference: according to Japan Association for Trade with Russia and Central-Eastern Europe: ROTOBO, data, GDP growth in Uzbekistan has averaged 4% per year since 1998). It is believed that the airport developments are making a certain contribution to economic development in each of the three provinces. During this evaluation an attempt was made to evaluate the relationship between GDP growth and cargo traffic at the three airports, but it was not possible to obtain conclusive data and it is thus difficult to measure the impact that physical distribution through the airports is having on economic development.

Figure 5: Changes in Annual Cargo Volumes[7]



Source: Uzbekistan Airways

It is predicted that Tashkent Airport will become the hub of physical distribution, but as detailed hereunder, cargo trade on chartered flights through Samarkand Airport is increasing and is generating profits, which opens up the possibility for the development of a cargo terminal as a means of increasing the number of freight forwarders and packing companies operating out of this airport.

2.4.2 Environmental Impact

According to the executing agency there have been no reports of problems due to air or noise pollution during project implementation or in connection with the subsequent operation of the various airport facilities. This project did not involve any land acquisition or involuntary resettlement.

2.5. Sustainability

In line with established / adjusted civil aviation policy, Uzbekistan Airways is responsible for everything from airport construction, operation and management, through air transport services and the licensing of airline companies. The organizational chart of Uzbekistan Airways is shown in Figure 6, with that for the individual airports given in Figure 7. The numbers of personnel employed in each of the airport's Operation and Maintenance (O&M) departments are given in Figure 8.

2.5.1. Executing Agency

(1) Technical Capacity

The O&M of airport facilities and equipment is undertaken at the airport level under the dictates of individual airport administrators. According to the executing agency, manuals have been created for the equipment that was introduced through this project and there are sufficient spare parts, and of the several hundred people employed in the O&M departments, some 35 engineers are employed at the three airports, including four O&M officers, radar engineers, control tower engineers and NDB engineers, and since these engineers were

[7] The massive gyration in the graph in Figure 5 is primarily believed to be the influence of tobacco company exports, which reduce exports or use transport shipments overland in certain years.

trained in Western Europe no problem is observed in sustainability in terms of personnel or technical capacity.

(2) Operation and Maintenance System

O&M operations at the three airports are carried out under instruction from the airport administrators and are primarily undertaken by the runway departments and the ground facilities operations departments. The airport administrators are members of the ground facilities operations and airport management bureau of Uzbekistan Airways. However, the management of aircraft homing instruments and equipment is the responsibility of the navigation bureau at Uzbekistan Airways headquarters. The numbers of employees belonging to the ground facilities operations and airport management bureau and the navigation bureau vary at each of the three airports, but the results of interviews with airport personnel confirm that, as of evaluation, this situation has not given rise to any problems in the operation of the facilities.

Figure 6: Organizational Chart of Uzbekistan Airways

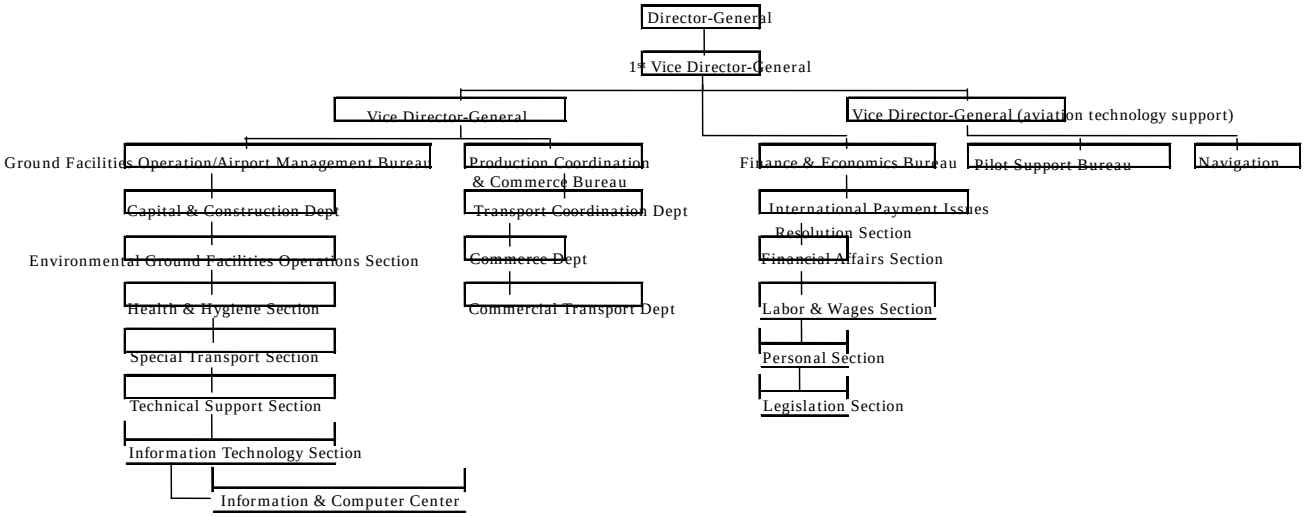


Figure 7: Organizational Charts for Each Airport

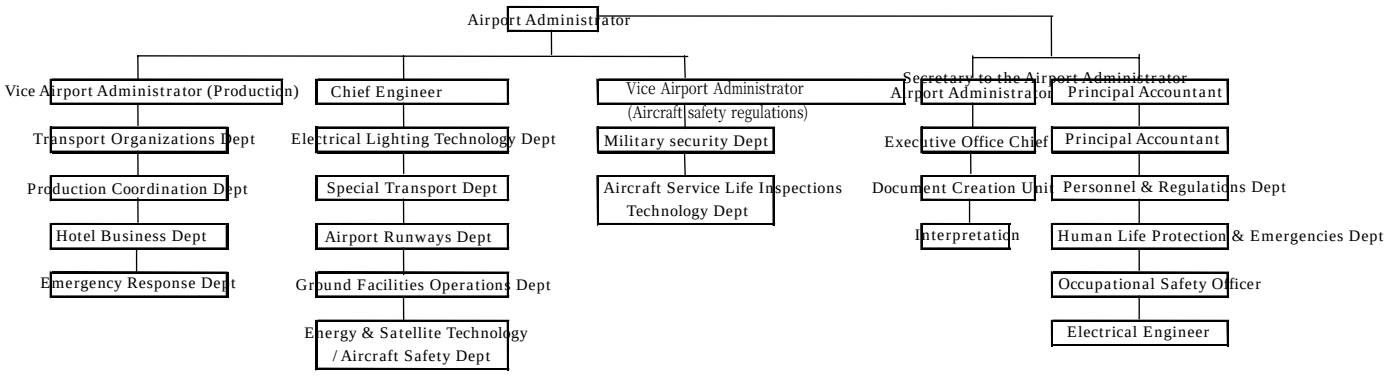


Figure 8: Numbers of O&M Management Dept Employees (November 2003)

	Ground Facilities Operations & Airport Management Bureau	Navigation Bureau
Samarkand Airport	310	200
Bukhara Airport	200	200
Urgench Airport	260	75

(3) Financial Status

The financial viability of the airports can basically be gauged from their cash flow status; however, if the airport budgets for O&M run short, Uzbekistan Airways makes up the shortfall from its own budget. The financial status of the three airports are as shown in Figure 9.

Airport incomes are primarily derived from airport fees, cargo handling charges, excess baggage charges (passengers), a 2% commission on ticket sales, hotel business profits, and profits from VIP lounge use; whilst expenses primarily consist of O&M costs and personnel expenses. As evidenced by the figures, all three airports overspent every year between 1995 and 2002; however the excesses were covered by payouts from Uzbekistan Airways own budget. The general head office budget is the profits from all the departments (excluding the Finance & Economics Bureau) minus the airport budgets, but no data on head office financial status were provided.

Figure 9: Cash Flow Status

Unit: UZS

		1995	1996	1997	1998	1999	2000	2001	2002
Samarkand	Income	53,791	7,564	55,544	72,286	144,781	338,077	406,573	433,175
	Expenditure	53,252	11,098	136,452	168,119	371,309	472,779	607,820	565,997
	Balance	539	-3,534	-80,908	-95,833	-226,528	-134,702	-201,247	-132,822
Bukhara	Income	15,324	26,613	27,935	41,975	122,715	315,036	514,743	700,425
	Expenditure	60,511	118,222	104,241	128,231	290,005	376,902	526,722	604,197
	Balance	-45,187	-91,609	-76,306	-86,256	-167,290	-61,867	-11,978	96,228
Urgench	Income	18,869	31,863	43,304	57,198	100,105	301,773	419,481	517,916
	Expenditure	17,596	33,840	95,510	95,510	230,837	290,233	447,548	614,485
	Balance	1,273	-1,977	-52,206	-38,312	-130,732	11,540	-28,067	-96,568

Source: Uzbekistan Airways

2.5.2 Operation and Maintenance Status

There are no major problems with the O&M status of the project. The position of the aviation sector within the context of the government's current transport sector development program is unclear, but Uzbekistan Airways' Inspection for Air Aviation – its administrative department – was abolished in 2000, and the Agency for Air Administration of the Republic of Uzbekistan was established as a new governmental organization. Uzbekistan Airways has separated its end services division (cleaning, catering, etc.) from the head office and is striving to make it more efficient. The airline is moving towards an exclusive focus on its air transport services division and is believed to be building up its services in preparation for competition with other airlines, which are expected to enter the market in the near future. As this shows, while Uzbekistan Airways has yet to be privatized, managerial reform is underway against a background of market mechanisms introduced by the private sector.

3. Feedback

3.1. Lessons Learned

None

3.2. Recommendations

3.2.1. [To the recipient country / executing agency] Measures to ensure that the project's objective of developing tourism through airport expansions need to be investigated (for example, developing tourism in the areas are located, reviewing the number and scheduling of international flights (direct and transit), etc.)

In consideration of tourist convenience, various measures need to be taken to enhance the appeal of the cities of Samarkand, Bukhara and Urgench as tourist attractions, including the development of infrastructure, accommodation expansions and so forth. Furthermore, the number of foreign flights into the cities, including Uzbekistan Airways flights, must be increased, by, for example, creating a timetable that enables flights that were formerly bound for Tashkent to fly on to the cities via the capital and promoting discussions among relevant parties toward developing tourism.

Comparison of Original & Actual Scope

Item	Planned	Actual
(1) Outputs		
Phase I		
Samarkand Airport		
1) Runway facilities		
- Repaving of existing runways	3,100m × 49m 3,100m × 5.5m	As planned As planned
- Installation of runway side roads	Taxiway: 76,000m^2; Apron: 90,000m^2	Taxiway: 27,110m^2; Apron: 31,160m^2
- Repaving of existing taxiways / aprons	30,000m^2 14,000m^2	5,190m^2 2,650m^2
- Installation of taxiway side roads		
- Widening of existing taxiways	1,870m^2	As planned
2) Terminal facilities	750m^2	As planned
- Construction of new arrivals terminal	1,370m^2 480m^2	Not constructed Not constructed
- Construction of new control tower	3,200m^2	As planned
- Construction of new cargo terminal	3,000m × 49m	3,000m ×45m
- Construction of new fire fighting facilities	3,000m × 7.5m 54,000m^2	As planned 26,050m^2
- Rehabilitation of existing passenger terminal	15,000m^2 2,000m^2	10,310m^2 2,210m^2
Bukhara Airport		
1) Runway facilities	8,400 m^2	Not constructed
- Repaving of existing runways	3,000m^2	As planned
- Installation of runway side roads		
- Repaving of existing taxiways / aprons	1 interior / exterior package	As planned
- Installation of taxiway side roads	750m^2 1,370m^2	As planned Not constructed
- Widening of existing taxiways		
2) Terminal facilities	3,000m×50m	As planned

- Construction of new international terminal	3,000m×5m 8,000m^2	As planned 8,600 m^2 + Apron: 41,330 m^2
- Construction of temporary arrivals terminal	4,000m^2 1,000m^2	6,440 m^2 260 m^2
- Interior / exterior upgrade of existing passenger terminal	4,200m^2	As planned
- Construction of new control tower	3,420m^2	As planned
- Construction of new cargo terminal	750m^2	As planned
<u>Urgench Airport</u>		
1) Runway facilities	480m^2	Not constructed
- Repaving of existing runways	390m^2	Not constructed
- Installation of runway side roads		
- Repaving of existing taxiways / aprons		
- Installation of taxiway side roads		
- Widening of existing taxiways		
2) Terminal facilities		
- Construction of new international terminal		
- Rehabilitation of existing passenger terminal		
- Construction of new control tower		
- Construction of new fire fighting facilities		
- Construction of new cargo terminal		

Item	Planned	Actual
□Outputs		
Phase II		
Samarkand Airport		
1) Air traffic control equipment	1 set	As planned
- Replacement of NDB	1 set	As planned
- Spare taxiway lights, cables, replacement AFL	1 set	As planned
- Installation of CCU / ATC controls, tape recorders	1 set 1 set	As planned As planned
- Replacement of ASR/SSR, VDF -VHF, TX/RX, TRCV	1 set 1 set	As planned (procured during Phase I)
- Installation of AFTN message switching system	1 set 1 set	As planned Switched to different system
- Replacement of airport meteorological equipment	1 set	As planned
- Introduction of weather forecasting equipment	1 set 1 set	As planned As planned
- Replacement of weather reporting equipment	1 set 1 set	As planned As planned
- Installation of power supply facilities	1 set	As planned As planned
Bukhara Airport		
1) Air traffic control equipment	1 set 1 set	As planned (procured during Phase I)
- Replacement of NDB	1 set	As planned
- Spare taxiway lights, cables, replacement AFL	1 set	Switched to different system As planned
- Installation of CCU / ATC controls, tape recorders	1 set 1 set	As planned

- Replacement of ASR/SSR, VDF	1 set	As planned
-VHF, TX/RX, TRCV	1 set	As planned
- Installation of AFTN	1 set	
message switching	1 set	As planned
system		As planned
- Replacement of	1 set	As planned
airport meteorological	1 set	
equipment	1 set	As planned (procured during
- Introduction of	1 set	Phase I)
weather forecasting		As planned
equipment		Switched to different system
- Replacement of		As planned
weather reporting		
equipment		
- Installation of power		
supply facilities		
<u>Urgench Airport</u>		
1) Air traffic control		
equipment		
- Replacement of NDB		
- Spare taxiway lights,		
cables, replacement		
AFL		
- Installation of CCU /		
ATC controls, tape		
recorders		
- Replacement of		
ASR/SSR, VDF		
-VHF, TX/RX, TRCV		
- Installation of AFTN		
message switching		
system		
- Replacement of		
airport meteorological		
equipment		
- Introduction of		
weather forecasting		
equipment		
- Replacement of		
weather reporting		

equipment - Installation of power supply facilities		
Consulting services	Foreign consultants: 375.5M/M Local consultants: 692.0M/M	Foreign consultants: 490.4M/M Local consultants: 633.0M/M
(2) Execution periods (for all 3 airports) **Phase I** 1) Runway facilities - Repaving of existing runways - Installation of runway side roads - Repaving of existing taxiways / aprons - Installation of taxiway side roads - Widening of existing taxiways 2) Terminal facilities - Construction of new arrivals terminals - Construction of new control towers - Construction of new cargo terminals - Construction of new fire fighting facilities - Rehabilitation of existing passenger terminals **Phase II** 1) Air traffic control equipment - Replacement of NDB - Spare taxiway lights, cables, replacement AFL	 Jun. 1997 – Jan. 1998 Jun. 1997 – Jan. 1998 Mar. 1998 – Aug. 1999 Mar. 1998 – Aug. 1999 Mar. 1998 – Aug. 1999 Jun. 1997 – Jan. 1998 Mar. 1998 – Aug. 1999 Mar. 1998 – Aug. 1999 Mar. 1998 – Aug. 1999 Mar. 1998 – Aug. 1999 Oct. 1999 – Sept. 2000 Oct. 1999 – Sept. 2000 Oct. 1999 – Sept. 2000 Oct. 1999 – Sept. 2000 Oct. 1999 – Sept. 2000 Oct. 1999 – Sept. 2000 Oct. 1999 – Sept. 2000 Oct. 1999 – Sept. 2000 Oct. 1999 – Sept. 2000	 Mar. 1997 – Oct. 1998 Mar. 1997 – Oct. 1998 Sept. 1998 – Jun. 2000 Sept. 1998 – Jun. 2000 Sept. 1998 – Jun. 2000 Mar. 1997 – Oct. 1998 Sept. 1998 – Jun. 2000 Sept. 1998 – Jun. 2000 Sept. 1998 – Jun. 2000 Sept. 1998 – Jun. 2000 Jun. 2000 – Dec. 2001 Jun. 2000 – Dec. 2001 Jun. 2000 – Dec. 2001 Jun. 2000 – Dec. 2001 Jun. 2000 – Dec. 2001 Jun. 2000 – Dec. 2001 Jun. 2000 – Dec. 2001 Jun. 2000 – Dec. 2001 Jun. 2000 – Dec. 2001

- Installation of CCU / ATC controls, tape recorders - Replacement of ASR/SSR, VDF - VHF, TX/RX, TRCV - Installation of AFTN message switching system - Replacement of meteorological equipment - Installation of weather forecasting equipment - Replacement of weather reporting equipment - Installation of power supply facilities		
(3) Project costs Phase I Foreign currency Local currency Total ODA loan portion Exchange rate Phase II Foreign currency Local currency Total ODA loan portion Exchange rate	 15,526 million yen 1,762 million yen 17,288 million yen 15,526 million yen 1 UZS = 2.868 yen (June 1996) 2,795 million yen 77 million yen 2,872 million yen 2,871 million yen 1 UZS = 0.740 yen (Nov. 1999)	 15,036 million yen 1,517 million yen 16,552 million yen 15,036 million yen 1 UZS = 2.092 yen (Phase I contract period average) 1 UZS = 1.611 yen (Phase II contract period average) 2,786 million yen 0 2,786 million yen 2,786 million yen