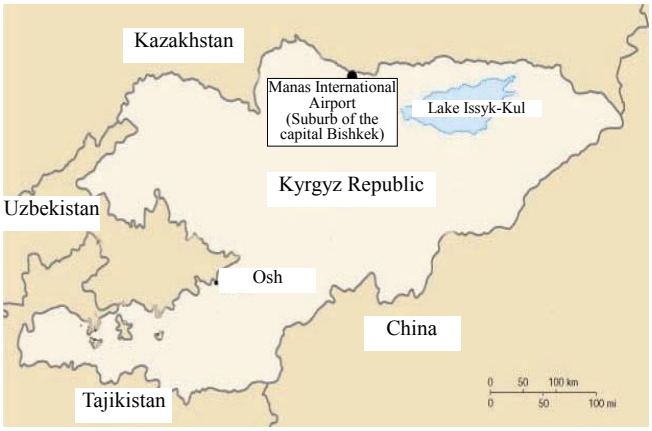
Kyrgyz

Bishkek-Manas International Airport Modernization Project

Report Date: February 2003

Field Survey: November 2002

1. Project Profile and Japan's ODA Loan



Project

Loading bridge delivered under the project

1.1 Background

In the Kyrgyz Republic, there are ten airports that have a runway with a length of 1,000m or more, and major airports include Manas International Airport (MIA) in the capital city of Bishkek, Osh Airport in the south of the country and Karakol Airport in the east. Located approximately 30km northwest of Bishkek, MIA has a runway of 4,200m in length and is the largest international airport in the country. The airport was built in 1974, and passenger terminal buildings were constructed in 1980. Approximately 80% of air transport volumes in the country went through the airport, and as of 1996, the airport was served by five international flights, 46 inter-CIS flights and 72 domestic flights a week. In 1993, air transport volumes substantially declined due to the economic stagnation that accompanied the transition to a market economy after the country's independence from the former Soviet Union, and to a sharp rise in air fares and other factors. In 1996, however, air transport demand began to recover as the economy stabilized and inflation subsided. In 1994, since air transport volumes fell because of difficulties in obtaining airplane fuels due to the lack of foreign exchange , the emergency procurement of airplane fuels using Japan's ODA loan (rehabilitation loan) was also carried out.

MIA was an important gateway to the Kyrgyz Republic, a landlocked country, but did not meet the technical standards of the International Civil Aviation Organization (ICAO)[1] because it was developed in accordance with the former Soviet Union's standards in the former Soviet Union period. In addition, part of the pavement on the old runway had come off, the reliability of the airport had declined due to the superannuated air traffic control and safety systems, and it had become difficult to obtain repair parts. These factors constituted a hindrance to the safe operation of airplanes. Moreover, the airport failed to function properly as an airport in the capital city of an independent country due to

[1] ICAO is an organization of the United Nations established in accordance with the Convention on International Civil Aviation of 1994. The objectives are to ensure the safe and systematic development of international civil aviation as well as healthy and economical administration of international air transport operations. The organization is carrying out various technical, legal and other activities to achieve the objectives.

insufficient facilities in the passenger terminal buildings, and urgent improvement of the airport was considered necessary.

1.2 Objectives

The objective was to improve and modernize MIA, located in the capital of the Kyrgyz Republic, thereby enhancing the safety of the airport as well as improving its functions as an international airport and contributing to the economic development of the country.

1.3 Project Scope

The scope of the project was as follows:

(1) Civil work (improvement of the runway, taxiways and aprons, etc.)
(2) Improvement of passenger facilities (repair of the terminal buildings, as well as the installation of baggage handling systems and other special facilities)
(3) Aviation support and lighting facilities (landing support facilities, runway lights, etc.)
(4) Air traffic control facilities (wireless equipment, etc.)
(5) Utilities (water supply equipment for aircraft and sanitation facilities)
(6) Equipment (fire engines, etc.)
(7) Consulting services

The costs for (6) equipment and (7) consulting services as well as the foreign currency portion of the remaining part of the project were covered by Japan's ODA loan.

1.4. Borrower/Executing Agency

The government of the Kyrgyz Republic/Kyrgyzstan Airlines[2]

1.5 Outline of Loan Agreement

Loan Amount Loan Disbursed Amount	5,454 million yen 5,336 million yen
Exchange of Notes Loan Agreement	June 1996 June 1996
Terms and Conditions -Interest Rate -Repayment Period (Grace Period) -Procurement	 2.7% 30 years (10 years) General untied
Final Disbursement Date	July 2001

2. Results and Evaluation

2.1 Relevance

Geographically, the Kyrgyz Republic is a landlocked country located on plateaus with 94% of its land surface at an altitude of 1,500m or over (40% at an altitude of 3,000m or over). Therefore, a role

[2] As of 2000, Kyrgyzstan Airlines, the executing agency, was divided in phases into four entities: Kyrgyzstan Airlines, Manas International Airport (MIA), Kyrgyzstan Air Navigation (an air traffic control firm) and a fuel supplier. With this move, MIA became the executing agency of this project.

of transport sector is crucial for the movement of people and goods between Kyrgyz and its neighboring countries. Since there are many mountains in the country, and road and railway transport has its limits, air transport plays an important role in the country. MIA, which was covered by the project, is located close to the capital city of Bishkek and was the only international airport that had a runway with a length of 4,000m or over. Maintaining the safe operation of airplanes through the improvement of the airport's old facilities was considered essential to ensure the functions of the airport as a gateway to other countries. Thus the plans examined at the time of appraisal are deemed relevant.

There are currently 54 airports in the country, but only 14 of them have paved runways. MIA in Bishkek and Osh Airport in the south of the country are operated as international airports, but the former is still the only airport with a 4,000m-long-runway. The Ministry of Finance, Ministry of Transport and Communications, Kyrgyzstan Air Navigation and MIA, consider that because the country is located between Asia and Europe, MIA can be made into a Central Asian hub airport that will contribute to industrial, economic and social development of the country. In July 2002, the Ministry of Transport and Communications conducted a survey concerning cargo transport plans for the airport[3].

Thus, the importance of MIA is recognized in government policies, and it is expected that the airport will become more important in the future. The project therefore maintains its relevance to date.

2.2 Efficiency

2.2.1 Project Scope

The scope of the project was changed substantially during implementation. Air traffic control facilities (improvement of wireless equipment and other air traffic control facilities), utilities (improvement of water supply equipment for aircraft and sanitation facilities) and equipment (provision of fire engines and other fire fighting equipment) were excluded from the scope of the project. This was because there was a large gap between the estimated project cost and bidders' proposed prices, resulting in an excess of the latter over the former. This revision was determined through full consultation between the then related organizations, and gave priority to enhancing the safety of the airport urgently. Top priority was given to improvement of the infrastructure, including aviation support and lighting facilities, and civil engineering work, including the repair of the runway, taking the following factors into account: 1) aviation support and lighting facilities are indispensable to safe landings and take-offs; 2) civil work such as repair of the runway was too costly for the country's own budget; 3) bearing in mind the future repayment of the project cost, the expected profitability of the work was rated highly. Meanwhile, the improvement of air traffic control facilities was excluded from the scope because it was less urgently needed than aviation support and lighting facilities, and there was also a possibility that the government might be able to separately attract investors for these facilities.

At that time, there was a possibility that the European Bank for Reconstruction and Development (EBRD) might provide loan to improve air traffic control facilities which were not included in the project. However, it was not realized, and even today, these facilities remain to be improved.

[3] Bishkek Airport Cargo Development – Analysis and Evaluation, Kyrgyz Republic Ministry of Transport and Communications (by Deutsche Aero Consult), July 2002

According to Kyrgyzstan Air Navigation, which currently controls these facilities, the existing facilities are becoming deteriorated, and renewal in particular of the radar system, communications facilities and meteorological monitor facilities, all of which were manufactured by the former Soviet Union, is an urgent task. Therefore, immediate renewal of air traffic control facilities is hoped for, and a feasibility study has already been conducted for that purpose (the total project cost is estimated at 22 million U.S. dollars)[4].

As described above, air traffic control facilities today are in the same condition as prior to project implementation. Although the results of the feasibility study are available, since there are no firm prospects of finance, they will inevitably deteriorate even more over time.

2.2.2 Implementation Schedule

The implementation schedules for civil work, improvement of passenger facilities and aviation support/lighting facilities were set for April - October 1999, February - September 1998 and April 1998 - October 1999, respectively. All these works were completed as scheduled. With respect to aviation support and lighting facilities, work was completed almost as scheduled. Meanwhile, the improvement of passenger facilities began two months behind schedule and the construction work was prolonged by approximately one year. The reason the start of each item of work was delayed was that the conclusion of contracts with contractors was delayed, and this in turn was due to the change in the scope of the project as described in 2.1.1. The reason the project was completed later than initially planned was that the executing agency applied for a change of the contract for one loading bridge and additional work for lighting and other facilities, and that an order for such additional work was placed within the loan amount.

2.2.3 Project Cost

In the end, the total project cost, including the foreign and local currency portions, remained within the planned amount.

In this project, the price tendered by each of the three European bidders ranged from 12,000 million yen to 13,000 million yen, significantly larger than the budget of approximately 5,000 million yen allocated by the Kyrgyz government. Therefore, negotiations were held between the executing agency and the bidder offering the lowest bidding price to keep the contract price within the budget. As a result, work that could be carried out by the executing agency independently was excluded from the scope of the project, and several changes, including postponing part of the work and excluding procurement of air traffic control equipment from the project, were made to the initial scope of the project.

According to the executing agency, the bidding price exceeded the budget because three European companies estimated prices based on larger volume of work than that originally projected, for the civil work in particular.

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[4] Feasibility Study for Phase II Development of Bishkek-Manas International Airport Modernization Project, Kyrgyzstan Navigation, Ministry of Transport and Communications, (by Japan Airport Consultants Inc.), November 2001

2.3 Effectiveness

2.3.1 Raising the Safety of the Airport and Other Facilities

Under the project, in order to raise the safety of MIA, the improvement of the runway, taxiways, and aviation support and lighting facilities, as well as renewal of electricity supply facilities and passenger terminal security systems, was carried out. The extent to which the safety of the airport has been raised can be judged by looking at its conformity to ICAO standards. ICAO has established international standards related to overall airport facilities and recommends that all airports should improve their facilities in accordance with these standards. Although ICAO does not have a system for giving approval or permission to airport facilities, its standards provide guidelines for measuring the safety of airports. ICAO has detailed standards, and those for designing and operating facilities and equipment located in tracts of land used for take-offs, landings and taxiing by aircraft, as well as water-related facilities and equipment, apply to the facilities covered by the project[5]. Particularly, the runway section where the instrument landing system (ILS) is installed, which was improved as part of the aviation support facilities, meets the definition of a precision approach runway set out in the ICAO standards. In addition, as shown in Table 1, runways are divided into three categories according to their ILS functions, and runways in a higher category enable visually safer landing by aircraft[6]. The current runway at MIA belongs to Category I thanks to aviation support and lighting facilities having been improved under the project. Taxiways to the runway, electricity supply facilities and passenger terminal security systems were also improved to conform to standards recommended by ICAO.

This conformance to ICAO standards proves that the objective of the project — to raise the safety of the airport — has been achieved. Since European airports have Category II precision approach runways, however, foreign airline companies have requested that MIA improve its facilities to make them conform to Category II standards in order to ensure safer landings. For enhanced safety, a new improvement plan may be necessary in future after the current facilities have been used for a certain period of time, in consideration of factors such as MIA's weather conditions and the required costs for initial investment and maintenance.

Currently, the air traffic control facilities, which were not covered by the project, do not present a problem from the standpoint of aircraft safety, but since it has been pointed out that they are becoming increasingly aging, future improvement is desirable.

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[5] International Standards and Recommended Practices AERODOMES Annex14, AERODOME DESIGN AND OPERATIONS, July 1995

[6] This is called the instrument landing system. Ground ILS facilities installed at the airport send landing aircraft two types of guiding signal to show the direction of approach and the course of descent. Even in bad weather, pilots can use these signals to follow the designated course and land their aircraft safely.

Table 1: Categories of Precision Approach Runways

Category	Description
Category I	Runways are equipped with ILS and visual aids that allow a decision altitude[7] of not less than 60n and a runway visual range of not less than 800m, or a runway center line visual light spacing of 550n or less.
Category II	Runways are equipped with ILS and visual aids that allow a decision altitude of not less than 30m and a runway visual range of not less than 350m.
Category III	Runways are served by ILS to and along the surface of the runway and: - allow a decision altitude of not less than 30m or to a runway visual range of not less than 200m - allow a decision altitude of not less than 15m or to a runway visual range of not less than 50m - no decision altitude or runway visual range are required (landing and taxiing without reliance on visual reference are possible)

Source: International Standards and Recommended Practices AERODROMES Annex14, July 1995

Interviews were conducted with representatives of five domestic and international airline companies (Turkish Airlines, Uzbekistan Airways, China Xijing Airlines, Itek Air and Kyrgyzstan Airlines) that use MIA, as well as with a pilot from Kyrgyz Air (who formerly worked for Kyrgyzstan Airlines). Some responded that aircraft jolts when landing because the surface of the runway is not in a good condition, while others stated that the improved lighting facilities of the runway enhanced the safety of the airport.[8] With respect to the security systems in the passenger terminals, the majority stated that they are better maintained than those in neighboring countries. It can be concluded that the latest security equipment introduced under the project has helped raise the safety of aircraft operations.

2.3.2 Changes in the Condition of Airport Use

The condition of use of MIA after the project is shown in Table 2. The number of international flights running on the 2002 winter schedule was more than four times that in 1996, including four flights to/from Hanover (Germany), four flights to/from Istanbul (Turkey), three flights to/from Frankfurt (Germany), three flights to/from London (U.K.), two flights to/from Delhi (India) and two flights to/from Wulumuqi (China) in one week. Flights to/from Hanover, Frankfurt and Istanbul were also available in 1996, but the numbers of flights to/from these cities all increased. In addition, British Airways increased the number of its flights between London and Bishkek from one to three a week, and Turkish Airlines is considering increasing the number of its flights in the future. Meanwhile, the number of domestic flights decreased in parallel with the progress of domestic road network improvement.

[7] The decision altitude refers to an approach limit altitude at which pilots make a decision whether to land or not when they approach the runway for landing, and is expressed as an altitude above the mean sea level. They do not approach the runway unless they can visually confirm the target when they reach the approach limit altitude.

[8] One representative from each airline company, such as the branch manager, was interviewed, and three pilots were interviewed.

Table 2: Changes in the Number of Flights Serving MIA

(Unit: Flights a week)

	1996	2002 [1)]
International flights	5	21
Inter-CIS flights	46	34
Domestic flights	72	34
Total	123	89

Source: MIA

Note 1: Based on the winter schedule for the period from October 2002 to March 2003

As shown in Table 3, both domestic and international passenger transport volumes at MIA have continued to decline, partly because of the relatively expensive air fares. Cargo transport volumes continued to rise until 1999 and subsequently fell, but the decline is leveling out. The Kyrgyz government, including the Ministry of Transport and Communications, has expressed its intention to increase cargo transport volumes (which are recovering) in the future.

Table 3: Changes in Transport Volumes at MIA

		1995	1996	1997	1998	1999	2000	2001	2002[1]
Passenger transport volumes (1,000 persons)	**Domestic**	251	309	217	272	176	128	94	78
	International	160	150	140	118	113	131	115	103
	Total	411	459	357	390	289	259	209	181
Cargo transport volumes (tons)		3,707	3,894	5,798	6,556	9,928	7,603	7,873	7,378
Number of aircraft take-offs (airplanes)		6,971	7,632	6,581	6,582	4,715	4,289	3,791	3,160

Source: MIA

Note 1: Figures for January – November 2002

The following indicates the effectiveness of the project: 1) facilities were improved and modernized so as to conform to ICAO standards, meaning safety was enhanced; 2) the number of international flights has increased and MIA's function as an international airport has improved significantly, because renewed ILSs facilitated entry of foreign airline companies, particularly European ones, which had previously not used MIA. Given these two factors, it is considered that the objectives of the project have almost been achieved.

2.3.3 Recalculation of the Economic Internal Rate of Return (EIRR)

At the project planning stage, EIRR was calculated at 15.9% under the following preconditions:

(1) Costs: Project cost and operations/maintenance costs

(2) Benefits: Increased revenues from air fares and airport use fees, increase of people entering Kyrgyz from Almaty and other cities in neighboring countries by land, and time savings enabled by airplanes that fly into Bishkek

Since sufficient data on costs and benefits were not provided by the executing agency, and the data on basic operations and effects indicators required for the recalculation of EIRR was not available, the recalculation of EIRR was impossible.

2.4 Impact

2.4.1 Economic Development

According to related organizations and the executing agency, improving airport facilities as part of Kyrgyz's infrastructure was essential to economic development in the country. They highly rated the project in that it enabled large aircraft to land on and take off from MIA and provided direct access to various foreign countries, thereby promoting the exchange of people and goods.

2.4.2 Tourism Promotion

According to the organization responsible for tourism[9], the annual number of tourists visiting Kyrgyz from overseas increased from 48,601 in 1996 to 98,558 in 2001 (see Table 4). This was because foreign airline companies were allowed to fly into the country after 1995, when liberalization policies were adopted and British Airways and Turkish Airlines entered service for Bishkek in 1997, making it possible to enter the country directly from Europe and other regions without going by way of other countries. In 1998 and 1999, the embassies of the U.S. and the EU countries issued a recommendation that visitors should be careful when visiting Kyrgyz, due to the instability of public security in the south of the country. Therefore, the number of visitors decreased temporarily in those years. However, visitor numbers have picked up since 2000.

According to tourism-related organizations, 78% of visitors come from Kazakhstan, 5% from Russia and the remainder from non-CIS countries, and the number of visitors from the U.K., Germany and Switzerland is relatively large. There is no statistical data on the means of transportation used by visitors from overseas when they enter the country, but international flights between Europe and Kyrgyz arrive at and depart from MIA, and it is considered a major gateway for foreign tourists. For these reasons, it is presumed that the airport improvements under the project are making definite contributions to tourism development. Meanwhile, in order to promote the development of the tourism industry, improving services through personnel training, through enhancing cooperation between Kyrgyzstan Airlines, tourism-related organizations, and the Ministry of Transport, and through other efforts will be necessary.

Table 4: Changes in the Number of Foreign Tourists

(Unit: Persons)

	1996	1997	1998	1999	2000	2001
Number of tourists	48,601	87,386	59,363	48,272	58,756	98,558

Source: The State Committee of Kyrgyz Republic for Tourism, Sport and Youth Policy

2.4.3 Environmental Impact

According to the executing agency, noise from airplanes does not pose a problem. However, contamination of rivers and soils caused by the wastewater discharged from the existing drainage facility is thought to be a problem. Rehabilitation of the existing drainage facility is an issue to be solved. Neither land acquisition nor relocation of residents was required under the project.

[9] The State Committee of Kyrgyz Republic for Tourism, Sport and Youth Policy

2.5 Sustainability

The project aimed at raising the safety of MIA, and the improvement of the runway, passenger facilities and aviation support facilities was carried out. Currently, all these facilities are used for service as planned and have been evaluated as contributing to raising the safety of the airport. In order to ensure the sustainability of the airport operation, MIA needs to improve in terms of organization, personnel, techniques and finance. MIA, which was separated from the state-owned Kyrgyzstan Airlines and was privatized in 2001, is still in the process of organizational reforms though more than one year has passed since its privatization. According to MIA, it seems that personnel changes frequently take place and that newly hired employees are performing duties with which they are not familiar. It is clear that no progress has been made in organizing financial data at MIA since its separation and privatization, and it is necessary to establish a strong organization at MIA, and particularly to introduce a financial system, as soon as possible. The following paragraphs will discuss, item by item, the present condition of MIA and issues it should address in the future.

2.5.1 Organizational System

The division and privatization of the aviation sector were promoted as part of government policy since 1999, and the state-owned Kyrgyzstan Airlines, the initial executing agency for the project, was divided and privatized in phases since 2000. Kyrgyzstan Air Navigation was established in September 2000, Kyrgyzstan Airlines in April 2001 and Manas International Airport (MIA) in May of the same year. This made MIA the operations and maintenance organization for the project. After the division, the government holds a stake of over 80% in MIA.

Manas Airport is operated by MIA, but in order to contribute to improving customer service in the airport, there is a move in the service sector, including the catering service, to actively introduce private financing for competition. MIA, which is currently in the process of organizational reforms, needs to have clear plans as an independent organization. Further, it is essential to formulate specific action plans for long-, medium- and short-term goals, and establish personnel systems as early as possible.

As shown in Table 5, MIA had a total of 1,040 personnel at the end of 2002, and 94% of them were technical employees. A look at the changes in the number of personnel after 1998 indicates that the number has continued to decrease slightly. The organization of MIA is divided into 12 divisions under the direct control of the chief executive officer, and these are further dived into 24 subdivisions under the direct control of two vice presidents. One of these subdivisions is responsible for facility operations and maintenance.

Table 5: Number of Employees of MIA

(Unit: persons)

	1998	1999	2000	2001	2002
Management	11	9	-	5	5
Administrative staff	53	54	-	47	53
Engineers	1,312	1,214	-	982	982
Total	1,376	1,277	-	1,034	1,040

Source: prepared based on the MIA data

2.5.2 Personnel and Technical Capacity

MIA personnel currently assigned to the facility operations and maintenance division have

sufficient technical competency, and necessary technical training is commissioned to a private aviation-related training school in Bishkek. With respect to the operation of facilities procured under the project, their suppliers provided on-site training to MIA personnel. The division responsible for the security of passenger terminal buildings has approximately 200 personnel, of whom 25 are responsible for scanning baggage, 20 for the security of other facilities, 15 for fire fighting and 140 for the security of the runway.

Meanwhile, referring to the technical level of MIA personnel, the tourism organization, Kyrgyzstan Airlines and several private airline companies pointed out that they lack skill in equipment operation, that they lack the management ability to handle passengers when a large number of passengers flock to the terminal buildings at one time, and that the service they give airport users lacks spirit. MIA does not consider that there is a problem with the current technical level of its personnel, and does not perceive a necessity to train them either. In order to ensure favorable airport operations in the future, however, it is important to listen to the opinions of private airline companies, which are familiar with passenger services at many other airports. It is necessary for MIA to conduct an objective survey to clarify the current technical level of its personnel and issues to be addressed, and to develop plans for necessary technical training and other programs.

As mentioned in the section on "Effectiveness", the up-to-date security equipment was introduced to enhance airport safety. In turn, improving and maintaining the technical capability of the staff who operate the equipment is important.

2.5.3 Financial Status

The executing agency did not provide sufficient evidence of its financial condition, and it was impossible to analyze the financial condition of the agency before and after its separation and privatization. According to the interview with MIA, after its separation and privatization, the agency has become able to allocate a sufficient portion of airport operation revenues to cover operations and maintenance expenses for airport facilities. Prior to the separation and privatization, higher priority was given to expenditure on aircraft fuel, and as a result, sufficient facility maintenance budgets, including fuel and other expenses for passenger and other facilities, could not be secured. MIA has explained that, currently, sufficient heating fuel budgets are secured.

It is impossible to make judgments on the financial sustainability of MIA because sufficient materials were not available. Given the fact that the agency still does not prepare financial statements though more than one year has passed since its separation and privatization, establishing a financial accounting system and enhancing the capabilities of the financial managers are considered urgent tasks to be addressed.

The agency has already performed apron expansion work using its own funds and has nearly doubled personnel salaries as compared to the 2001 level. It is undesirable for the agency to continue operations without a sufficient financial management system.

The financial sustainability of MIA, whose principal financial source is revenues related to aircraft landings, is affected by future developments in the air transport sector including passenger transport, freight transport, and number of aircraft landings. In order to ensure the amount of revenue per aircraft, it is necessary to maintain the number of landings and take-offs by large aircraft. Therefore, it is essential to appropriately maintain the runway and other facilities which are likely to become worn.

2.5.4 Future Plans

MIA currently does not have master, business and other plans. It intends to develop such plans, but specific action, including setting the target date for completing such plans, has not been taken. According to MIA, priority issues in future airport facility improvement are as listed below, and some of them have already been addressed.

(1) Aircraft parking space improvement: There is not sufficient aircraft parking space, and MIA plans to invest two million U.S. dollars in apron expansion. It has invested five million U.S. dollars using its own funds and is currently improving the aprons so that five B747 jetliners can be parked at one time. The start of service is scheduled for 2003.
(2) Renewal of snow removers: MIA is negotiating with suppliers to renew old snow removal equipment.
(3) Addition of passenger boarding bridges: The two new boarding bridges procured under the project are well received by airline companies because they are not available at other neighboring airports, and the goal is to add four to six more boarding bridges if possible.
(4) Other issues: Kyrgyzstan Air Navigation and airline companies hope that the center line and lights of the runway will be improved to make the runway conform to ICAO's Category II standards for precision approach runways. MIA, however, gives low priority to such improvements in its future improvement plans and is of the opinion that meeting Category I requirements as it does suffices for the safety of the airport.

There are no prioritization standards in the current facility improvement plans for MIA, and it does not appear that a feasibility study has been conducted for the improvement of each facility. In order to ensure the sustainability of MIA, it is necessary to formulate a comprehensive future plan which shows a future vision for the airport, covers organizational, personnel, technical and financial aspects, and includes long-, medium- and short-term action plans.

3. Feedback

3.1 Lessons Learned

3.1.1 In determining the cost and scope of the project at the time of planning, it is necessary to verify the feasibility study that becomes the basis for the project from various respects, and carefully appraise the bidding-related documents.

3.2 Recommendations

(To the executing agency)

3.2.1 It is necessary to strengthen the organization of the executing agency multilaterally.

To ensure sustainability in the operation of facilities at MIA, stepwise improvements of MIA in terms of organization, personnel, techniques and finance will be necessary.

Comparison of Original and Actual Scope

Item	Plan	Actual
1 Project Scope	1. Civil work (1) Runway repair: 252,000m^2 (2) Taxiway improvement: 115,8000 m^2 (3) Apron improvement: 130,000 m^2 (4) Drainage facilities: Two adjustment ponds (5) Removal of old fences and construction of new 6,000-meter-long fences 2. Improvement of passenger facilities (1) Repair of passenger terminal buildings: 4,800 m^2 (2) Special facilities: -Baggage Handling DEP 106m, ARR 131m -Security X-Ray: 2 -Loading bridge: 1 3. Aviation support and lighting facilities (1) ILS renewal (2) Renewal of runway lights (3) Renewal of taxiway lights (4) Renewal of apron lights (5) Renewal of approach lights (6) Renewal of other lights (7) PAPI introduction (8) Renewal of power source facilities 4. Air traffic control facilities (1) PSR/SSR renewal (2) Approach center (3) En-route center (4) VHF radio (5) Other air traffic control facilities (6) Renewal of power source facilities 5. Utilities (1) Water supply (2) Sanitation facilities 6. Equipment (1) Ground Service (2) Fire engines 7. Consulting costs: Foreign consultants (157MM)	1. Civil work (1) After change: 20,000m^2 (2) After change: 85,000m^2 (3) After change: 8,000m^2 (4) Addition of infield grading (5) As planned 2. Improvement of passenger facilities (1) Waiting lounge seats and ceiling work added (2) -As planned -Addition of hand-held screening devices -Addition of one loading bridge (two in total) 3. As planned 4. Not implemented 5. Not implemented 6. Not implemented 7.Consulting costs: 168MM
2. Implementation Schedule	Civil work Apr. 1998 – Oct. 1999 Improvement of passenger facilities Feb. 1998 – Sep. 1998 Aviation support and lighting facilities Apr. 1998 – Oct. 1999	Civil work Jul. 1998 – Oct. 1999 Improvement of passenger facilities Apr. 1998 – Dec. 1999 Aviation support and lighting facilities Mar. 1999 – Nov. 1999
3. Project Cost Foreign currency Local currency Total ODA loan portion Exchange rate	 5,454 million yen 529 million yen (58,590,000 SOM / 7,560,000DM) 6,135 million yen 5,454 million yen 1DM = 70.02 yen / 1DM = 7.75SOM (As of Feb. 1996)	 5,336 million yen 335 million yen (150,798,000 SOM / 6,444,380.03DM) 5,789 million yen 5,336 million yen 1DM = 52.00 yen / 1DM = 23.40SOM (Average for 1998 – 2000)

Third Party Evaluator's Opinion on
Bishkek-Manas International Airport Modernization Project (KYR-P1)

Olga Kan
Head of International Department
Academy of Management under the President of the Kyrgyz Republic

Relevance

According to the National Public Investment Program (part of the National Development Plan) the Manas International Airport (MIA) modernization has had one of the highest priorities in the transportation sector. It took place at the time of Project appraisal and relevant now. The main objective of the Project to modernize the MIA to meet international standards was generally achieved. The outcomes are the following: 1) ICAO accepted the MIA as airport of Category I; 2) international flights increased; 3) opened the flight entry to Peking (China); 4) the International Aviation Committee certified the MIA and recognized it as the best airport in CIS countries. But, some needs were not satisfied due to the lack of financial support: 1) the run-way reconstruction was not completed in a full volume; 2) the air traffic control facilities, utilities and fire equipment were not implemented. The cause of the lack of finance could be an underestimation of Project cost or unforeseen of exchange risk (since the signing of the Loan Agreement to the moment of signing implementation contracts the amount of the loan (in hard currency) reduced approximately to 20-24%. Nevertheless, the MIA modernization project has had the strongest position in compare with another similar project in this sector: Reconstruction of Air Traffic Control System in Osh International Airport, implemented due to the loan of Natexis Banque (France). That Airport has much more less workload than MIA and so, had less demand for new navigation equipment. Additionally, the investment to modernization of MIA is the long-term, and due to the appropriate loan conditions the Project could provide the economic defense of the Kyrgyz Republic. I am not sure about the reliability of financial data, just can provide the officially published Income Statements for the last three years (thousand som)*:

Indicator	2000	2001	2002	2002/2001 (%)
Income	71,955	249,179	797,579	320
Gross Profit	29,661	87,526	448,555	512
Operational Profit	- 3,005	47,644	382,762	803
Net Profit	446	4,333	158,429	3,656

Impact

The Project impact is outstanding: the MIA now is working as international airport; the passengers' service meets to international standards. The main objective has undoubtedly achieved by the Project implementation. The degree of achievement is not one hundred percent only due to a lack of finance. The external factor was exchange rate. The negative environment impact is unessential for consideration; it seems the same as it was at the period of Project appraisal. The increasing of local population employment during the Project implementation was the intended positive factor. However, after the Project completion the Kyrgyz Airline Company was divided into three separate companies: MIA, Airlines Company "Aba Joldoru", and Kyrgyzstan Air Navigation; and the total number of employees were reduced. Nevertheless, that factor could be considered as unintended, but positive due to increasing of positive competition between airline companies and improving of financial data of MIA. Concerning impacts on laws and regulations it had direct positive impact: before Project implementation the Kyrgyz Airlines itself initiated and was the author of regulations in the sphere of Civil Aviation; now the Division of Air Transportation under the Ministry of Transport and

Communications is working on creation and regulation of legal base of the sector, licensing and certifying activities in the transportation sector.

Conclusion: the MIA needs now development of organizational and financial management.