

CIVIL AVIATION AUTHORITY OF THAILAND  
MINISTRY OF TRANSPORT  
THE GOVERNMENT OF KINGDOM OF THAILAND

**KINGDOM OF THAILAND**  
**THE PROJECT FOR CIVIL AVIATION**  
**SAFETY OVERSIGHT IMPROVEMENT**  
**PROJECT COMPLETION REPORT**

**September 2018**

**Japan International Cooperation Agency (JICA)**

EI
JR
18-114

## Project Completion Report

**Project Title : Civil Aviation Safety Oversight Improvement**

---

**Name: Chula Sukmanop**

**Title: Project Director**

**Name: Kenji Watanabe/ Kosuke Najima**

**Title: Chief Advisor/Expert**

**Submission Date: September 21, 2018**

### Table of Contents

#### I. Basic Information of the Project

1. Country
2. Title of the Project
3. Duration of the Project
4. Background
5. Overall Goal and Project Purpose
6. Implementing Agency

#### II. Results of the Project

1. Results of the Project
  - 1-1 Input by the Japanese side
  - 1-2 Input by CAAT side
  - 1-3 Activities
2. Achievements of the Project
  - 2-1 Outputs and indicators
  - 2-2 Project Purpose and indicators
3. History of PDM Modification
4. Others
  - 4-1 Results of Environmental and Social Considerations
  - 4-2 Results of Considerations on Gender/Peace Building/Poverty Reduction

#### III. Results of Joint Review

1. Results of Review based on DAC Evaluation Criteria
2. Key Factors Affecting Implementation and Outcomes
3. Evaluation on the results of the Project Risk Management
4. Lessons Learnt

IV. For the Achievement of Overall Goals after the Project Completion

1. Prospects to achieve Overall Goal
2. Plan of Operation and Implementation Structure of CAAT to achieve Overall Goal
3. Recommendations for CAAT
4. Monitoring Plan from the end of the Project to Ex-post Evaluation

ANNEX 1: Results of the Project

ANNEX 2: List of Products (Report, Manuals, Handbooks, etc.) Produced by the Project

ANNEX 3: PDM (All versions of PDM)

ANNEX 4: R/D, M/M, Minutes of JCC (copy) (\*)

ANNEX 5: Monitoring Sheet (copy) (\*)

(Remarks: ANNEX 4 and 5 are internal reference only.)

## Acronyms

AIR	Airworthiness and Aircraft Engineering Department
AOC	Air Operator Certificate
CAAT	Civil Aviation Authority of Thailand
DAC	Development Assistance Committee
EASA	European Aviation Safety Agency
ICAO	International Civil Aviation Organization
JCAB	Japan Civil Aviation Bureau
JCC	Joint Coordinating Committee
LCC	Low Cost Carriers
M/M	Minutes of Meeting
MOT	Ministry of Transport
MRS	Mandatory Reporting System
PDM	Project Design Matrix
R/D	Record of Discussion
SDR	Service Difficulty Report
SMG	Safety Management Group
SSC	Significant Safety Concern
TF	Task Force
UK CAAi	United Kingdom Civil Aviation Authority international
USOAP	Universal Safety Oversight Audit Programme

## I. Basic Information of the Project

**1. Country:** Kingdom of Thailand

**2. Title of the Project:** The Project for Civil Aviation Safety Oversight Improvement

**3. Duration of the Project (Planned and Actual):**

April 2016 – September 2018 (same as plan)

**4. Background (from Record of Discussions(R/D)):**

The Kingdom of Thailand is located in the center of the Southeast Asia and the country has the Suvarnabhumi International Airport in the suburb of the capital Bangkok. The airport is one of the most important international hubs of the region comparable to Singapore Changi Airport and Hong Kong Airport. It constitutes a number of air routes between Bangkok and many other cities in different regions of the world. The air carrier of Thailand is operating under authorization of Civil Aviation Authority of Thailand (CAAT) under the Ministry of Transport (MOT).

In February 2015, Thailand has been addressed the Significant Safety Concern (SSC) identified on its civil aviation system under Universal Safety Oversight Audit Programme (USOAP) of International Civil Aviation Organization (ICAO).

The SSC relates to the certification process of Thailand for the issuance of air operator certificates and the authorization for transport of dangerous goods by air. It shows that Thailand does not have appropriate capability to conform to the certain level of the ICAO standards and, as the result, Thai airlines have been restricted to establish new air routes, increase frequency of flights, change schedule or change type of aircraft to/from Japan, Korea, the United States etc. Such restrictions have possibility to expand to other countries.

Economic growth of Thailand and surrounding countries causes rapid increase of air transport demand and emerging of Low Cost Carriers (LCC). If the restrictions continue for a long time until lifting of the SSC, it will greatly affect the Thai economy. In addition, declining in the number of tourists travelling from Thailand to Japan could adversely affect Japanese economy.

It is essential for Thai CAAT not only to address the items found in ICAO SSC, but also to upgrade the safety audit system for air carriers and Mandatory Reporting System in aircraft maintenance area in order to improve overall safety oversight of civil aviation system in Thailand.

To re-establish the capability of air carrier oversight system and to carry out the state of

the operator's responsibility, the Government of the Kingdom of Thailand has made an urgent request to the Government of Japan for technical cooperation on capacity development on air carrier safety audit system and Mandatory Reporting System in aircraft maintenance area.

**5. Overall Goal and Project Purpose (from Record of Discussions(R/D))**

**Overall Goal:** To improve a civil aviation oversight system in Thailand

**Project Purpose:** To develop capacity of CAAT in safety oversight of Thai air carriers

**6. Implementing Agency: CAAT**

## II. Results of the Project

### 1. Results of the Project : refer to Annex 1

#### 1-1 Input by the Japanese side

(1) Total cost: 28 (million Japanese Yen)

(2) Dispatch of Experts: 5 experts have been assigned to the project

##### Long-term: 1 expert

Safety Audit expert has been resident in Thailand to conduct the technical cooperation of the safety audit area as a Long-term Expert from October 2016 to September 2018.

##### Short-term: 4 experts

Safety Audit experts (2 experts) and Mandatory Reporting System experts (2 experts) visited CAAT office and conducted activities.

Mandatory Reporting System experts visited CAAT office and conducted activities once a month.

(3) Overseas Training:

Training was held in Japan as below.

Title: Training for Safety Audit System

Duration: 5-13 December 2017

Participants: 2 members of CAAT

(4) Equipment provided to CAAT: None

(5) Overseas Activities Cost: 1 (million Japanese Yen)

Overseas Activities Cost were used for employment expenses of project assistant, transportation expenses and stationery purchase expenses.

#### 1-2 Input by CAAT side

(1) Counterpart:

Project Director: 1 (Director General of CAAT)

Project Manager: 1 (Manager of AIR)

Project Coordinator: 1 (AIR, concurrently with Task Force member)

Task Force member: 4 (Safety Audit: 2 (AIR), Mandatory Reporting: 2 (AIR))

(AIR: Airworthiness and Aircraft Engineering Department)

(2) Office space and equipment

CAAT provided office space with necessary equipment for JICA experts in CAAT office.

(3) Running expenses necessary for the implementation of the project

Employment expenses for project assistant was shared with Japanese side.

CAAT provided expenses of meeting and inspection for the project.

1-3 Activities

Refer to Annex 1



## 2. Achievements of the Project

### 2-1 Outputs and indicators

(Target values and actual values achieved at completion)

#### (1) Safety Audit System

Indicator	Achievement Rate (%)	Remarks
1-1 Task force members have been assigned.	100	Two CAAT staffs have been assigned as task force members.
1-2 Duty and responsibility of the task force members have been decided.	100	One of the members has been assigned as team leader.
1-3 Improved safety audit workflow has been developed.	100	Task force members developed improved workflow. Task force members improved the workflow repeatedly through activity of 1-4.
1-4 The improved manual including follow-up procedures has been adopted	100	Procedures for safety audit were improved and moved from the handbook to "Surveillance Policy and Procedures Manual". The manual includes procedures for follow-up. Inspectors have been conducting safety audit by the manual.
1-5 Training of the improved manual has been conducted for at least 20 airworthiness inspectors	100	26 Inspectors received training for the manual. Inspectors receive training as needed when the manual is changed.
1-6 Safety audit is conducted with the improved manual	100	Inspectors have been conducting safety audit with the manual. Safety audit for each company is conducted one time at least per year in according with the manual.
1-7 Documents/records control of safety audit result have been conducted with the improved manual	100	Inspectors have been conducting documents/records control of audit result with the manual. (Surveillance Plan and Control in AIR

		Share Drive)
1-8 Follow-up of safety audit has been conducted with the improved manual	100	Inspectors have been conducting follow-up with the manual. (Surveillance Plan and Control in AIR Share Drive)

## (2) Mandatory Reporting System

Indicator	Achievement Rate (%)	Remarks
2-1 Task force members have been assigned.	100	Although Task force members changed several times because they were assigned to another job, two staffs are always assigned as task force members.
2-2 MRS follow-up inspectors have been assigned.	100	TF leader has started to assign MRS follow-up inspectors weekly since 29/5/2017.
2-3 Improved MRS workflow has been developed.	100	Experts and task force members have developed the improved MRS workflow. Present workflow is revision 10.
2-4 Improved handbook with MRS procedures has been adopted	100	Expert and TF members have studied the description of present handbook and updated it more detailed and clear than old version and approved by director of general.
2-5 Training of the improved handbook has been conducted for at least 10 airworthiness inspectors	100	10 experts have been trained about MRS in accordance with improved handbook before assigned to follow-up each SDR.
2-6 MRS procedures with the improved handbook are conducted.	100	MRS procedures with the improved handbook has been started since 29/5/2017.
2-7 Documents/records control of mandatory reports have been conducted with the improved handbook	100	Task force members have been conducting the record keeping of received SDRs and maintain the index for the quick reference for every SDR.
2-8 Follow-up of mandatory reports has been conducted with the improved handbook	100	Follow-up of mandatory reports with the improved handbook has started since 29/5/2017.

## 2-2 Project Purpose and indicators

(Target values and actual values achieved at completion)

Project Purpose: To develop capacity of CAAT in safety oversight of Thai air carriers

### (1) Safety Audit System

Indicator 1(original): Main base safety audits on aircraft maintenance for air carriers with more than 10 aircraft have been conducted at least 10 times per year with the improved manual

Indicator 1(revised): Main base safety audits on aircraft maintenance for air carriers with more than 10 aircraft have been conducted at least 7 times per year with the improved manual

Explanation of revision: The number of company which meets requirement "Air carriers with more than 10 aircraft" is 7(as of Dec. 2017) and main base audit for each company is conducted one time per year in accordance with CAAT manual. Therefore, number of audit times was changed to 7 times from 10 times(Mar. 2018).

Main base safety audits on aircraft maintenance for air carriers with more than 10 aircraft have been conducted 7 times per year with the improved manual.

These audits were conducted in accordance with Surveillance Policy and Procedures Manual revised on 15 September 2017 and yearly surveillance(audit) plan of 2018.

In order to achieve it, CAAT built a system to record and monitor implementation status. CAAT staff acknowledged that it is important to make yearly audit plan appropriately and conduct audit surely in accordance with the plan.

The improved manual includes procedures for documents/records control and follow-up, therefore inspectors conducted appropriately not only actual audit but also documents/records control and follow-up after actual audit.

CAAT staff acknowledged that audit is not completed by pointing out problems but follow-up after that is important. Especially, the staff got to pay attention to root cause of the problem and deadline of corrective action.

### (2) Mandatory Reporting System

Indicator 2: MRS with the improved handbook has been operational at least 12 months

Since previous handbook contents was vague and insufficient, development of improved handbook is necessary to do MRS as a routine work.

Additionally, to confirm the improved handbook is clear and sufficient, 12 months was set as a monitoring term whether CAAT can operate MRS as a routine work in accordance with the handbook contents.

### 3. History of PDM Modification

Main modifications of PDM are as below.

These modifications were conducted on March 2018.

	Indicator (original)	Indicator (modified)	Reason
Project Purpose; <u>Indicator 1</u>	Main base safety audits on aircraft maintenance for air carriers with more than 10 aircraft have been conducted at least <u>10 times</u> per year with the improved handbook	Main base safety audits on aircraft maintenance for air carriers with more than 10 aircraft have been conducted at least <u>7 times</u> per year with the improved manual	"air carriers with more than 10 aircraft": 7 companies  main base audit: 1 time per year
Outputs 2; <u>Indicator 2-5</u>	Training of the improved handbook has been conducted for at least <u>20 airworthiness inspectors</u>	Training of the improved handbook has been conducted for at least <u>10 airworthiness inspectors</u>	Airworthiness Experts are assigned for MRS activities.  There are only 10 experts

### 4. Others

4-1 Results of Environmental and Social Considerations (if applicable)

Not applicable

4-2 Results of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

Not applicable

### III. Results of Joint Review

#### 1. Results of Review based on DAC Evaluation Criteria

##### (1) Relevance

Relevance of the project is high.

Triggered by SSC of ICAO USOAP, CAAT set the mission not only to resolve the SSC but also "To resolve all findings identified by ICAO" and "To establish a fair and international standard regulatory system" etc.

Activities of the project were set based on ICAO Standard, which is an international standard, therefore the project is relevant to mission of CAAT.

Since CAAT aims to improve all items, European Aviation Safety Agency(EASA) and French Civil Aviation Authority(DGAC) provide a wide range of support. Our project covers only a part of Airworthiness area. In addition, UK CAA international(UK CAAi: wholly owned subsidiary of the United Kingdom Civil Aviation Authority) mainly supports for the item of SSC.

##### (2) Effectiveness

Effectiveness of the project is high.

Indicator of project purpose for audit system is "Main base safety audits on aircraft maintenance for air carriers with more than 10 aircraft have been conducted at least 7 times per year with the improved manual".

The system to monitor implementation status of audit against plan was established through activities of the project.

It got possible to find gaps between actual status and plan and to take actions appropriately.

Therefore, audits were conducted appropriately and it is assumed that the project could achieve the indicator of project purpose for audit system.

Indicator of project purpose for MRS is "MRS with the improved handbook has been operational at least 12 months".

The handbook was revised on 29 May, 2017. Much information for operation of MRS was added to the handbook.

MRS with the handbook has been operational for about 15 months as of September 2018. The format for meeting material etc. have been revised, however main procedures of the handbook have not been changed since 29 May, 2017. Therefore, it is assumed that the project could achieve the indicator of project purpose for MRS.



(4) Impact

Impact of the project is high.

Overall Goal Indicator 1: CAAT conducts audits of all air carriers on aircraft maintenance in accordance with audit plans

- The system to monitor implementation status of audit against plan was established and actual status is getting better. Therefore, it is expected that the indicator of overall goal will be achieved soon. (refer to IV.1 for details)

Overall Goal Indicator 2: MRS has been operational as routine work of CAAT

- Based on the set workflow, reports from operators are received every weekday and index is made weekly basis, then follow-up responsibilities are assigned. Assigned follow-up inspector conducts feedback to operators and follow-up, and confirms actions and prevention measures on reports. Then, at the MRS Quarterly Meeting, which is held once every three months, status of follow-up is shared in AIR department. These procedures have been conducting over a year, therefore it is assumed that these procedures are rooted in routine work. (refer to IV.1 for details)

Through activities of the project, the project focused on the way of thinking of "preventing reoccurrence" and the necessity of fostering a safety culture, and these are infiltrated among the counterpart. Therefore, it is assumed that impact of the project is high.

(5) Sustainability

Sustainability of the project is high.

The necessary organization and structure for sustainability has been established.

Each assigned person conducts each operation under instructions of Chief of Air Operator Division. Manager of AIR manages the entire AIR operation including audit system and MRS.

It is assumed that financial resource is sufficient, because the fees from air operators corresponding to the number of takeoff and landing in Thailand and the number of passengers, and so on are applied to the financial resources.

IT development and increasing staff are progressing throughout CAAT by abundant financial resources, and the work burden of each staff tends to be alleviated. The number of staffs in AIR is currently 35, but it is planned to increase to about 50 staffs in the future. Therefore, it is assumed that sustainability of the project is high.

## **2. Key Factors Affecting Implementation and Outcomes**

One reason of SSC from ICAO is that some Air Operator Certificate(AOC) were not properly issued. Therefore, CAAT reviewed the structure, standards, procedures, etc. relating to the issuance of AOC and decided to inspect every AOC holders based on new standards etc. and re-issue AOC.

Because dealing with SSC is a priority for CAAT, efforts concentrated on the work related to AOC re-issue for a while. Therefore, activities of our project had to be limited for a while.

## **3. Evaluation on the results of the Project Risk Management**

### **(1) Result of risk management**

The effort concentrated on the work related to AOC re-issue for a while and it was inevitable, however CAAT cooperated with the project as much as possible.

The main purpose of audit system is to confirm whether the level at the time of issuance of AOC is maintained after issue of AOC based on the AOC standards. And MRS reports are submitted from AOC holders. For this reason, reviewing standards etc. relating to AOC issuance and re-issue of AOC are also prerequisite elements on the project and it was a positive factor as a result.

### **(2) Result of lesson learned**

Not applicable

## **4. Lessons Learnt**

The object of the project is only concerning maintenance of Air Carrier and the counter part is AIR department. Maintenance area and operation area are closely related in the field of Air Carrier. Therefore, if the project included operation area, there was a possibility that experts could conduct activities of the project more easily and the merit of the project was higher.



## **IV. For the Achievement of Overall Goals after the Project Completion**

### **1. Prospects to achieve Overall Goal**

Overall Goal Indicator 1: CAAT conducts audits of all air carriers on aircraft maintenance in accordance with audit plans

- The system to monitor implementation status of audit against plan was established and actual status is getting better. Therefore, it is expected that the indicator of overall goal will be achieved in at least 3 years.

The indicator of project purpose is targeted only to large-scale air carriers (companies with more than 10 aircraft) and it has been achieved. Therefore, if it continues to be implemented through the same way, it is expected that indicator of overall goal is also achieved. In addition, the number of inspectors is increasing, and it is expected to be a positive factor.

Overall Goal Indicator 2: MRS has been operational as routine work of CAAT

- Workflow was set to make MRS work to routine work.

Procedures in the workflow are as below.

Reports from operators are received daily, index is made weekly and follow-up responsibilities are assigned to each staff weekly.

Assigned follow-up inspector conducts feedback to operators and follow-up, and confirms actions and prevention measures on reports.

Then, at the MRS Quarterly Meeting, which is held once every three months, status of follow-up is shared in AIR department.

These procedures have been conducting for a long time, therefore it is assumed that these procedures are rooted in routine work already.

While, level of the report depends on operators, therefore inspectors should lead operators to make report better. It leads to increase safety level of operators and decrease workload of inspectors for follow-up and feedback as a result.

## **2. Plan of Operation and Implementation Structure of CAAT to achieve Overall Goal**

Each assigned person keeps conducting each operation under instructions of Chief of Air Operator Division.

Particularly, assigned person to control and monitor of the implementation status of audit, continues to control and monitor the implementation status surely and report the situation to the Chief of Air Operator Division as appropriate. The Chief of Air Operator Division receives the report and carries out appropriate measures such as instructing plan change and issuing official warning letter to the company.

Manager of AIR manages the entire AIR operation including audit and MRS.

When there is a necessity for change to better procedures etc., procedures such as manual will be changed as appropriate.

## **3. Recommendations for CAAT side**

Since it is in principle that audit should be implemented based on plan, it is necessary to make a feasible plan. And, when making plan, it is effective to utilize various information including past audit results and MRS etc.

In the case which audit is forced to be postponed, the reason should be clarified and plan should be changed appropriately taking feasibility into consideration.

About corrective action for findings of audit, root cause and due date should be dealt with more strictly. It is assumed that it leads to increase safety of operators.

In addition to the fact that level of MRS report depends on operators, the number of MRS reports from operators has exceeded than expected.

Some MRS reports seem to be not in charge of AIR based on contents/causes of problem, and it is one of causes of workload for AIR. It is assumed that how to process those as CAAT is one of the remaining problems.

CAAT is planning to start operating new software for report management called ECCAIRS since January 2019, and Safety Management Group(SMG) will be the main body to operate it.

It is necessary for AIR to coordinate with SMG actively as a member of related departments and to cooperate so that SMG can appropriately allocate reports to each division.

It leads that the number of reports gets to be appropriate, and AIR can deal with contents only related to AIR.

**4. Monitoring Plan from the end of the Project to Ex-post Evaluation**

(If the Project will be continuously monitored by JICA after the completion of the Project, mention the plan of post-monitoring here.)

Not applicable

**ANNEX 1: Results of the Project**

(List of Dispatched Experts, List of Counterparts, List of Trainings, etc.)

**ANNEX 2: List of Products (Report, Manuals, Handbooks, etc.) Produced by the Project**

**ANNEX 3: PDM (All versions of PDM)**

**ANNEX 4: R/D, M/M, Minutes of JCC (copy) (\*)**

**ANNEX 5: Monitoring Sheet (copy) (\*)**

(Remarks: ANNEX 4 and 5 are internal reference only.)



10	20 Feb. 2017	24 Feb. 2017		✓		
11	9 Mar. 2017	16 Mar. 2017		✓		
12	18 Apr. 2017	21 Apr. 2017		✓		✓
13	23 May 2017	26 May 2017				✓
14	26 Jun. 2017	30 Jun. 2017			✓	✓
15	18 Jul. 2017	21 Jul. 2017				✓
16	22 Aug. 2017	25 Aug. 2017				✓
17	9 Oct. 2017	12 Oct. 2017				✓
18	28 Nov. 2017	1 Dec. 2017				✓
19	12 Dec. 2017	15 Dec. 2017				✓
20	22 Jan. 2018	26 Jan. 2018				✓
21	13 Feb. 2018	16 Feb. 2018				✓
22	13 Mar. 2018	16 Mar. 2018				✓
23	9 Jul. 2018	13 Jul. 2018				✓
24	3 Sep. 2018	7 Sep. 2018				✓

KW:Kenji Watanabe

HS:Hidenori Shinada

TT:Tomohiro Toyoda

KN:Kosuke Najima

☑:Safety Audit System

✓:Mandatory Reporting System

## (3) Overseas Training: Training was held in Japan as below

Title: Training for Safety Audit System

Duration: 5-13 December 2017

Participants: 2 members of CAAT

Name	Position
Mr.Udomporn Saelim	Aviation Safety Inspector Airworthiness and Aircraft Engineering Department, CAAT
Mr.Athijit Khantharat	Aviation Safety Inspector Airworthiness and Aircraft Engineering Department, CAAT

## Course Objective:

To observe Japanese audit for air operator and to understand procedures related to safety audit(maintenance site)

## Contents:

- safety audit procedure(make a plan(preparing) for each audit): class room
- join to Japanese audit(AOC maintenance site): actual site
- safety audit procedure(after audit (review and follow-up finding)): class room
- analyze/review audit data: class room
- make yearly audit plan by using analyzing/reviewing data: class room

(4) Equipment provided to CAAT: None

(5) Overseas Activities Cost: 1 (million Japanese Yen)

Overseas Activities Cost were used for employment expenses of project assistant, transportation expenses and stationery purchase expenses.

## 1-2 Input by CAAT side (Planned and Actual)

Input by CAAT side was same as a plan.

## (1) Counterpart:

Project Director: 1 (Director General of CAAT)

Project Manager: 1 (Manager of AIR)

Project Coordinator: 1 (AIR, concurrently with Task Force member)

Task Force member: 4 (Safety Audit: 2 (AIR), Mandatory Reporting: 2 (AIR))

(AIR: Airworthiness and Aircraft Engineering Department)

(Table 1-1-2 Project organization)

Project position	Name	CAAT position	Period
Project Director	Dr. Chula Sukmanop	Director General	Apr. 2016 and Oct. 2016 -
	Capt. Alongot Pullsuk	Director General	May 2016 -Sep. 2016
Project Manager	Mr. Kajonpat Maklin	Manager of AIR	Apr. 2016 -
Project Coordinator	Ms. Pattaraporn Leedumrongwattanagul	AIR member	Apr. 2016 - May 2016
	Mr. Naratip Pholthavee	AIR member	Jun. 2016 - Jan. 2017
	Ms. Narisara Arsai	AIR member	Feb. 2017 -
Assistant Project Coordinator	Mr. Auttapon Wijitphum	AIR member	Apr. 2016 - Aug. 2016
	Ms. Narisara Arsai	AIR member	Nov. 2016 - Jan. 2017

(Table 1-1-3 Task Force members for Safety Audit System)

Leader	Mr. Athijit Khantharat	Inspector	Apr. 2016 -
Member	Mr. Udornporn Saelim	Inspector	Apr. 2016 -
	Mr. Chaiyuth Yukthirat	Inspector	Apr. 2016 - Jun. 2016

(Table 1-1-4 Task Force members for Mandatory Reporting System)

Leader	Ms. Pattaraporn Leedumrongwattanagul	Inspector	Apr. 2016 - May 2016
	Mr. Auttapon Wijitphum	Inspector	Jun. 2016 - Aug. 2016
	Mr. Pannatat Chaleesombut	Inspector	Sep. 2016 -
Member	Mr. Auttapon Wijitphum	Inspector	Apr. 2016 - May 2016
	Ms. Narisara Arsai	Inspector	Nov. 2016 -



(2) Office space etc. provided to Japanese side

CAAT provided necessary support for JICA experts as below(in-kind).

- (a) office space with desks/chairs
- (b) personal computer with internet connection
- (d) printer, copier, scanner

(3) Running expenses necessary for the implementation of the project

Employment expenses for project assistant was shared with Japanese side.

CAAT provided expenses of meeting and inspection for the project.

## 1-3 Activities (Planned and Actual)

Actual activities were conducted based on planned activities.

## (1) Safety Audit System

Activities	Remarks
1-1 Organize safety audit task force	As below
1-1-1 Assign safety audit task force members	Refer to Table 1-1-3.
1-1-2 Decide task force members' duty and responsibility	Three staffs of CAAT were assigned as task force members at first. One of them left from task force members in June 2016 because he was assigned to another job.
1-2 Learn Japanese practice of safety audit	Experts conducted classroom lectures about the followings: (1)JCAB surveillance system / Maintenance area of air operator certificate(AOC) (2)Qualification and training system in Japan  Training in Japan was conducted Title: Training for Safety Audit System Duration: 5-13 December 2017 Participants: 2 CAAT staffs
1-3 Identify present problems and develop corrective action plans	As below
1-3-1 Analyze the present workflow of safety audit	Task force members made workflow of CAAT safety audit system based on procedures and practices at the time.
1-3-2 Identify present problems of safety audit system	Task force members analyzed the workflow of safety audit system to identify problems.
1-3-3 Develop corrective action plans	Task force members improved the workflow repeatedly through activity of 1-4.
1-3-4 Develop improved workflow of safety audit	
1-4 Review and improve manual	As below
1-4-1 Review manual through activity 1-3	Task force members reviewed "airworthiness handbook" base on the improved workflow. Procedures for safety audit were improved and moved from the handbook to "Surveillance Policy and Procedures Manual".
1-4-2 Conduct safety audit by the improved manual	Inspectors have been conducting safety audit by

	"Surveillance Policy and Procedures Manual".
1-4-3 Improve workflow and manual by repeating activities 1-3 and 1-4	Task force members improved the workflow and/or manual repeatedly. If members find any problem after this, they will revise the manual.
1-4-4 Adopt the improved manual including follow-up procedures	"Surveillance Policy and Procedures Manual" includes procedures for follow-up(Post Surveillance/Inspection Follow-up Action).
1-5 Conduct training for the inspectors	Inspectors received training for "Surveillance Policy and Procedures Manual". Date: 5 January, 2018 Participants: 26 inspectors Inspectors receive training as needed when the manual is changed.
1-6 Conduct safety audit with the improved manual	Inspectors have been conducting safety audit by "Surveillance Policy and Procedures Manual". Safety audit for each company(34 companies) is conducted one time at least per year in according with the manual.
1-7 Conduct follow-up and documents/records control of safety audit result with the improved manual	As below
1-7-1 Conduct documents/records control	Inspectors have been conducting safety audit by "Surveillance Policy and Procedures Manual". The manual includes procedures for documents/records control(Surveillance Plan and Control in AIR Share Drive).
1-7-2 Conduct analysis of safety audit results for the next audit	Task force members have conducted analysis of audit results since quarterly meeting in May 2018.
1-7-3 Conduct periodic meeting to review safety audit results	Quarterly meeting has been conducted two times since May 2018. At the first meeting, safety audit results of 2017(Jan.-Dec. 2017) and results of Jan.-Apr. 2018 were reviewed.
1-7-4 Use the past safety audit results for the next safety audit	Results from quarterly meeting have been utilized for the next audit.(e.g. Inspectors focus on the expected weak point.) Inspectors access and utilize records of the past audit.(e.g. Inspectors check effectiveness of corrective action for finding.)

## (2) Mandatory Reporting System

Activities	Remarks
2-1 Organize Mandatory Reporting system task force	As below
2-1-1 Assign MRS task force members	Refer to (Table 1-1-4).
2-1-2 Assign MRS follow-up inspectors	TF leader has assigned MRS follow-up inspectors weekly since 29/5/2017.
2-2 Learn Japanese practice of Mandatory Reporting System	Experts conducted classroom lecture for TF member to learn Japanese practice whenever TF member was changed.
2-3 Identify present problems and develop corrective action plans	Experts and task force members have developed the improved MRS workflow and workstyle.
2-3-1 Analyze the present workflow of MRS	TF member analyzed whenever any problem happen.
2-3-2 Identify the present problems of MRS	After analyzed, TF member could identify what is the problem.
2-3-3 Develop corrective action plans	After finding a problem, TF member could develop corrective action plans with Expert discussion.
2-3-4 Develop improved workflow of MRS	Developed and started current improved workflow of MRS (Ver.10).
2-4 Review and improve airworthiness handbook (Chapter 26 → Chapter 7).	TF members have updated airworthiness handbook and approved by their director of general. It is included the current work-flow, how to receive SDR, who has each responsibility, and so on.
2-4-1 Review the handbook through activity 2-3	Finished to review temporary and update the handbook. Current handbook may be reviewed again in the future if we find any problem. (no problem at the moment)
2-4-2 Conduct MRS procedures by the improved handbook	It has been started since 29/5/2017. It will be changed if handbook is revised.
2-4-3 Improve MRS workflow and the handbook by repeating activities 2-3 and 2-4	Monitoring activities 2-3 and 2-4 in current work-flow.
2-4-4 Adopt the improved handbook for MRS	Already approved by their director of general.
2-5 Conduct training for the assigned personnel for MRS	Task force members have conducted training for the all assigned inspectors.

2-6 Operate MRS with the improved handbook	It has been started since 29/5/2017.
2-6-1 Announce for the airlines (if necessary)	Already announced to each airline in July 2017.
2-6-2 Conduct MRS procedures by the improved handbook	It has been started since 29/5/2017. It will be changed if handbook is revised.
2-7 Conduct follow-up and documents/records control of mandatory reports with the improved handbook	Documents/records control are conducted by TF members appropriately. Follow-up by inspectors have been started to conduct since 29/5/2017.
2-7-1 Conduct documents/records control	Task force members have been conducting the record keeping of received SDRs and maintain the index for the quick reference for every SDR.
2-7-2 Conduct analysis of mandatory reports for safety audit usage	TF members have analyzed mandatory report, which has been started since first quarterly meeting in March 2017.
2-7-3 Conduct periodic meeting to review mandatory reports	Quarterly meeting has been conducted since Mar. 2017. It was reviewed and changed the style of meeting step by step.
2-7-4 Use mandatory reports for safety audit	TF members have used the result from first quarterly meeting to prepare scope of mainbase audit (such as some operator never sent SDR to CAAT, they brief their inspector who in charge to surveillance that operator to make sure that such operator understand clearly about how to send SDR or how to classify that which SDR should be sent.)

## List of Products Produced by the Project

No.	Name	Remarks
1-1	Surveillance Plan and Control in the AIR Share Drive (for illustrative purpose)	Audit
1-2	Safety Audit Workflow	Audit
1-3	Surveillance Policy and Procedures Manual	Audit
1-4	Quarterly Meeting Material (sample)	Audit
1-5	JCAB surveillance system, Maintenance area of AOC	Audit
1-6	Qualification and training system in Japan	Audit
1-7	Basic knowledge of audit	Audit (training in Japan)
1-8	Maintenance Safety Audit	Audit (training in Japan)
2-1	AW handbook chapter 7	MRS
2-2	Reporting SDR index sheet (sample)	MRS
2-3	SDR follow-up sheet (sample)	MRS
2-4	Quarterly Meeting Material (sample)	MRS
2-5	Importance of Mandatory Incident Reporting System	MRS
2-6	To learn Japanese practice of MRS	MRS
2-7	MRS workflow in Japan	MRS
2-8	Review and Analyzing in Japan	MRS
2-9	Reporting System	MRS (presented by JAL Bangkok Station)
2-10	MRS workflow	MRS
2-11	MRS case study material part1~3	MRS
2-12	SPI setting method	MRS
2-13	SDR follow-up process	MRS
2-14	How to confirm operators level of understanding	MRS

**Annex 1: Project Design Matrix (PDM)**

**Version 1.0**  
January 22, 2016

**Project Title: The Project for Civil Aviation Safety Oversight Improvement**

Implementing Agency: Civil Aviation Authority of Thailand (CAAT)

Target Group: CAAT Staff

Period of the Project: 2.5 years Project Site: CAAT

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
To improve a civil aviation oversight system in Thailand.	Indicator 1: CAAT conducts audits of all air carriers on aircraft maintenance in accordance with audit plans Indicator 2: MRS has been operational as routine work of CAAT.	Survey			
<b>Project Purpose</b>					
To develop capacity of CAAT in safety oversight of Thai air carriers	Indicator 1: Main base safety audits on aircraft maintenance for air carriers with more than 10 aircraft have been conducted at least 10 times per year with the improved handbook. Indicator 2: MRS with the improved handbook has been operational at least 12 months.	Project Monitoring Sheet	Capacity of CAAT in safety oversight of air navigation services and aerodrome is developed.		
<b>Outputs</b>					
Output 1: To improve safety audit system for air carriers (aircraft maintenance)	Indicator 1-1: Task force members have been assigned. Indicator 1-2: Duty and responsibility of the task force members have been decided. Indicator 1-3: Improved safety audit workflow has been developed. Indicator 1-4: The improved handbook including follow-up procedures has been adopted Indicator 1-5: Training of the improved handbook has been conducted for at least 20 airworthiness inspectors Indicator 1-6: Safety audit is conducted with the improved handbook. Indicator 1-7: Documents/records control of safety audit result have been conducted with the improved handbook. Indicator 1-8: Follow-up of safety audits has been conducted with the improved handbook.	Project Monitoring Sheet	Safety audit system for air carriers (flight operation) is improved.		
Output 2: To improve Mandatory Reporting System for air carriers (Service Difficulty Report-SDR)	Indicator 2-1: Task force members have been assigned. Indicator 2-2: MRS follow-up inspectors have been assigned. Indicator 2-3: Improved MRS workflow has been developed. Indicator 2-4: Improved handbook with MRS procedures has been adopted Indicator 2-5: Training of the improved handbook has been conducted for at least 20 airworthiness inspectors Indicator 2-6: MRS procedures with the improved handbook are conducted. Indicator 2-7: Documents/records control of mandatory reports have been conducted with the improved handbook Indicator 2-8: Follow-up of mandatory reports has been conducted with the improved handbook	Project Monitoring Sheet			

Activities	Inputs		Important Assumption
	Japanese side	Thai side	
<p><b><u>To improve safety audit system for air carriers (aircraft maintenance)</u></b></p> <p>1-1: To organize safety audit task force  1-1-1: To assign safety audit task force members  1-1-2: To decide task force members' duty and responsibility</p> <p>1-2: To learn Japanese practice of safety audit</p> <p>1-3: To identify present problems and develop corrective action plans  1-3-1: To analyze the present workflow of safety audit  1-3-2: To identify present problems of safety audit system  1-3-3: To develop corrective action plans  1-3-4: To develop improved workflow of safety audit</p> <p>1-4: To review and improve airworthiness handbook (Chapters 9, 11 and related chapters)  1-4-1: To review airworthiness handbook (Chapters 9, 11 and related chapters) through activity 1-3  1-4-2: To conduct safety audit by the improved handbook  1-4-3: To improve workflow and the handbook by repeating activities 1-3 and 1-4  1-4-4: To adopt the improved handbook including follow-up procedures</p> <p>1-5: To conduct training for the inspectors</p> <p>1-6: To conduct safety audit with the improved handbook</p> <p>1-7: To conduct follow-up and documents/records control of safety audit result with the improved handbook  1-7-1: To conduct documents/records control  1-7-2: To conduct analysis of safety audit results for the next audit  1-7-3: To conduct periodic meeting to review safety audit results  1-7-4: To use the past safety audit results for the next safety audit</p> <p><b><u>To improve Mandatory Reporting System for air carriers (Service Difficulty Report-SDR)</u></b></p> <p>2-1: To organize Mandatory Reporting system task force  2-1-1: To assign MRS task force members  2-1-2: To assign MRS follow-up inspectors</p> <p>2-2: To learn Japanese practice of Mandatory Reporting System</p> <p>2-3: To identify present problems and develop corrective action plans  2-3-1: To analyze the present workflow of MRS  2-3-2: To identify the present problems of MRS  2-3-3: To develop corrective action plans  2-3-4: To develop improved workflow of MRS</p> <p>2-4: To review and improve airworthiness handbook (Chapter 26).  2-4-1: To review the handbook through activity 2-3  2-4-2: To conduct MRS procedures by the improved handbook  2-4-3: To improve MRS workflow and the handbook by repeating activities 2-3 and 2-4  2-4-4: To adopt the improved handbook for MRS</p> <p>2-5: To conduct training for the assigned personnel for MRS</p> <p>2-6: To operate MRS with the improved handbook  2-6-1: To announce for the airlines (if necessary)  2-6-2: To conduct MRS procedures by the improved handbook</p> <p>2-7: To conduct follow-up and documents/records control of mandatory reports with the improved handbook  2-7-1: To conduct documents/records control  2-7-2: To conduct analysis of mandatory reports for safety audit usage  2-7-3: To conduct periodic meeting to review mandatory reports  2-7-4: To use mandatory reports for safety audit</p>	<p>Long-term Experts:  - Chief Advisor/Aviation Safety Audit Expert</p> <p>Short-term Experts:  - Mandatory Reporting System Expert  - Others as necessary</p> <p>Training in Japan and/or third countries  - To be determined in accordance with needs and necessity.</p>	<p>Counterparts:  - Project Director  - Project Manager  - Project Coordinators  - Assistant Project Coordinator  - Aviation Safety Audit Task Force  - Mandatory Reporting System Task Force</p> <p>Project Office with Desks/Chairs and Internet Connection in CAAT</p> <p>Running Cost:  - Running Expenses necessary for the Implementation of the Project</p>	<p><b>Important Assumption</b></p>
			<p><b>Pre-conditions</b></p> <ul style="list-style-type: none"> <li>- CAAT implements the Project with sufficient ownership</li> <li>- Organization structure and authority of CAAT are not changed.</li> <li>- Task force members, inspectors and assigned personnel will be released from their daily duties during training period.</li> </ul>



**Annex 1: Project Design Matrix (PDM)**

**Version 2.0**

March 29, 2018

**Project Title: The Project for Civil Aviation Safety Oversight Improvement**

Implementing Agency: Civil Aviation Authority of Thailand (CAAT)

Target Group: CAAT Staff

Period of the Project: 2.5 years Project Site: CAAT

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<b>Overall Goal</b>					
To improve a civil aviation oversight system in Thailand.	Indicator 1: CAAT conducts audits of all air carriers on aircraft maintenance in accordance with audit plans Indicator 2: MRS has been operational as routine work of CAAT.	Survey			
<b>Project Purpose</b>					
To develop capacity of CAAT in safety oversight of Thai air carriers	Indicator 1: Main base safety audits on aircraft maintenance for air carriers with more than 10 aircraft have been conducted at least 7 times per year with the improved manual. Indicator 2: MRS with the improved handbook has been operational at least 12 months.	Project Monitoring Sheet	Capacity of CAAT in safety oversight of air navigation services and aerodrome is developed.		
<b>Outputs</b>					
Output 1: To improve safety audit system for air carriers (aircraft maintenance)	Indicator 1-1: Task force members have been assigned. Indicator 1-2: Duty and responsibility of the task force members have been decided. Indicator 1-3: Improved safety audit workflow has been developed. Indicator 1-4: The improved manual including follow-up procedures has been adopted Indicator 1-5: Training of the improved manual has been conducted for at least 20 airworthiness inspectors Indicator 1-6: Safety audit is conducted with the improved manual. Indicator 1-7: Documents/records control of safety audit result have been conducted with the improved manual. Indicator 1-8: Follow-up of safety audits has been conducted with the improved manual.	Project Monitoring Sheet	Safety audit system for air carriers (flight operation) is improved.		
Output 2: To improve Mandatory Reporting System for air carriers (Service Difficulty Report-SDR)	Indicator 2-1: Task force members have been assigned. Indicator 2-2: MRS follow-up inspectors have been assigned. Indicator 2-3: Improved MRS workflow has been developed. Indicator 2-4: Improved handbook with MRS procedures has been adopted Indicator 2-5: Training of the improved handbook has been conducted for at least 10 airworthiness inspectors Indicator 2-6: MRS procedures with the improved handbook are conducted. Indicator 2-7: Documents/records control of mandatory reports have been conducted with the improved handbook Indicator 2-8: Follow-up of mandatory reports has been conducted with the improved handbook	Project Monitoring Sheet			

Activities	Inputs		Important Assumption
	Japanese side	Thai side	
<p><b><u>To improve safety audit system for air carriers (aircraft maintenance)</u></b></p> <p>1-1: To organize safety audit task force  1-1-1: To assign safety audit task force members  1-1-2: To decide task force members' duty and responsibility  1-2: To learn Japanese practice of safety audit  1-3: To identify present problems and develop corrective action plans  1-3-1: To analyze the present workflow of safety audit  1-3-2: To identify present problems of safety audit system  1-3-3: To develop corrective action plans  1-3-4: To develop improved workflow of safety audit  1-4: To review and improve manual  1-4-1: To review manual through activity 1-3  1-4-2: To conduct safety audit by the improved manual  1-4-3: To improve workflow and the manual by repeating activities 1-3 and 1-4  1-4-4: To adopt the improved manual including follow-up procedures  1-5: To conduct training for the inspectors  1-6: To conduct safety audit with the improved manual  1-7: To conduct follow-up and documents/records control of safety audit result with the improved manual  1-7-1: To conduct documents/records control  1-7-2: To conduct analysis of safety audit results for the next audit  1-7-3: To conduct periodic meeting to review safety audit results  1-7-4: To use the past safety audit results for the next safety audit</p> <p><b><u>To improve Mandatory Reporting System for air carriers (Service Difficulty Report-SDR)</u></b></p> <p>2-1: To organize Mandatory Reporting system task force  2-1-1: To assign MRS task force members  2-1-2: To assign MRS follow-up inspectors  2-2: To learn Japanese practice of Mandatory Reporting System  2-3: To identify present problems and develop corrective action plans  2-3-1: To analyze the present workflow of MRS  2-3-2: To identify the present problems of MRS  2-3-3: To develop corrective action plans  2-3-4: To develop improved workflow of MRS  2-4: To review and improve airworthiness handbook (Chapter 26).  2-4-1: To review the handbook through activity 2-3  2-4-2: To conduct MRS procedures by the improved handbook  2-4-3: To improve MRS workflow and the handbook by repeating activities 2-3 and 2-4  2-4-4: To adopt the improved handbook for MRS  2-5: To conduct training for the assigned personnel for MRS  2-6: To operate MRS with the improved handbook  2-6-1: To announce for the airlines (if necessary)  2-6-2: To conduct MRS procedures by the improved handbook  2-7: To conduct follow-up and documents/records control of mandatory reports with the improved handbook  2-7-1: To conduct documents/records control  2-7-2: To conduct analysis of mandatory reports for safety audit usage  2-7-3: To conduct periodic meeting to review mandatory reports  2-7-4: To use mandatory reports for safety audit</p>	<p>Long-term Experts:  - Chief Advisor/Aviation Safety Audit Expert</p> <p>Short-term Experts:  - Mandatory Reporting System Expert  - Others as necessary</p> <p>Training in Japan and/or third countries  - To be determined in accordance with needs and necessity.</p>	<p>Counterparts:  - Project Director  - Project Manager  - Project Coordinators  - Assistant Project Coordinators  - Aviation Safety Audit Task Force  - Mandatory Reporting System Task Force</p> <p>Project Office with Desks/Chairs and Internet Connection in CAAT</p> <p>Running Cost:  - Running Expenses necessary for the Implementation of the Project</p>	<p><b>Important Assumption</b></p>
			<p><b>Pre-conditions</b></p> <ul style="list-style-type: none"> <li>- CAAT implements the Project with sufficient ownership</li> <li>- Organization structure and authority of CAAT are not changed.</li> <li>- Task force members, inspectors and assigned personnel will be released from their daily duties during training period.</li> </ul>