



AERONAUTICAL RADIO OF THAILAND LTD.
2018 ANNUAL REPORT
(1 OCTOBER 2017 - 30 SEPTEMBER 2018)

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Message from the Chairman

Aeronautical Radio of Thailand Limited has been commissioned by the Government to be the provider of air navigation services. This is an important mission in the country's transport system to connect different regions of the world. It has continued to develop effective services with flexibility and rapidity according to international standards for the safety of airlines for the past 70 years.

In 2018, the country's aviation industry continues to face challenges from events that affect the flight volume. Nevertheless, the number of flights in the country as a whole and in the Asia/Pacific region has continued to increase. The Company has to be prepared to develop the aviation infrastructure, deploy advanced technology, increase staff's efficiency as well as improving service standards. The Company has cooperated with other aviation organizations to increase its service efficiency and to accommodate the increasing volume of air traffic.

The Company has invested in the crucial strategic projects. These are making significant progress such as the Air Navigation Services Infrastructure Development Project, the Establishment of ATM Network Management Centre as well as the improvement of capacity of communications and navigation aid systems at major airports nationwide. This development of air transport systems to meet the standards and to accommodate the volume of flights in the region is implemented according to global aviation development plan set by the International Civil Aviation Organization (ICAO).

In addition, the Company has integrated partnerships with government agencies and the private sector to promote and develop the capacity to provide air transport services and the development of the country's logistics according to government policy. This includes cooperation with international organizations to be allies to develop knowledge and concept of new technology and practices for air navigation services and approaches to address the challenges and opportunities both regional and international.

The Company recognizes the importance of its personnel by implementing projects to develop the skills, knowledge, abilities continuously. The personnel management has been carried out by recruiting sufficient personnel to work to support the growing volume of air traffic. In addition, staff are encouraged to promote innovations which will be beneficial to the Company's mission and the community. The Company also supports projects that are social and environmental benefits.

The management of the Company is adhering to the principle of “Good Governance” in conjunction with participation in corporate social responsibility and the environment through the activities and projects with the co-operation with other organizations and communities.

For the future, on the challenges of global aviation, the Company will continue to enhance the quality of service to meet the expectations of all stakeholders. The conviction that the advancement of the organization will help promote sustainable growth of aviation in the country and the region.

On behalf of the Board of Directors who provides policy, oversees and monitors the performance of this major mission, I would like to take this opportunity to thank the shareholders, service users, stakeholders, the management and staff. I can ensure you that the Company will strive to develop and provide efficient ongoing services for the benefit of shareholders and stakeholders.

Air Chief Marshal

(Siwakiat Jayema)

Chairman of the Board of Directors

Message from the President

In fiscal year 2018 the volume of air traffic in Thailand increased by 8 percent from the previous year with a total of 1.03 million flights and is forecasted to rise to 1.10 million flights in 2019. The trend of air traffic worldwide in the next 20 years is estimated to grow at an average of 4.4 percent per year. The Company is well prepared to handle the volume of air traffic which is increasing steadily with the development of infrastructure for providing air navigation services, deployment of standard practices and state-of-the-art technology as well as the flexible use of airspace management.

The crucial strategic projects of the Company have continued to progress significantly such as Thailand Modernization CNS/ATM System to increase the capacity to accommodate the volume of flights. Presently, installation of equipment and systems have been completed nationwide and is in the process of transferring the operation of the current system to the new system. The Establishment of Air Traffic Management Network Management Centre is the integration of collaboration between civil and military sectors under the concept of ICAO “Network to Move the World”. Both projects will be completely operational and providing services in 2019.

The Company has initiated the design and evaluation of airspace capacity and set guidelines for the National Capacity Enhancement to conduct the analysis, design and develop the nation’s aviation systems, both Airspace System and Airport System as well as other necessary plans.

In addition, the Company collaborates with partner agencies to carry out the development of air navigation systems, both globally and in the Asia/Pacific region such as Air traffic Flow Management, ASEAN ATM Master Plan to support ASEAN Single Aviation Market, System-Wide Information Management and Global Air Navigation Plan of ICAO.

This year the Company, on behalf of Thailand, was honored to host the annual meetings of Air Navigation Services Organization (CANSO) such as the CANSO Asia Pacific Conference and CANSO Global ATM Submit & the 22nd Annual General Meeting which are the venues for representatives of aviation organizations to share/exchange their knowledge, comments on technology, new practices of air navigation services, challenges and opportunities.

In addition, the Company also develops standards for air navigation services to ensure compliance with laws/regulations. The Company is making preparation to apply for the certificate to provide air navigation services in the Country according to the regulations of the Civil Aviation Authority of Thailand. A Committee was appointed to develop measurement for air navigation services in order to set up standardized

systems for Air Traffic Services, Communications/Navigation/ Surveillance, Aeronautical Information Service and Aeronautical Chart and Instrument Flight Procedures Design.

The Company is aware of the development of services along with the creation of sustainability of the organization by creating and developing the capabilities of personnel in various fields. The Company develops efficiency in good governance and social responsibility with the commitment to operating with transparency and fairness and promoting social activities such as community innovations, youth sports and social responsibility through its main function such as reducing greenhouse gas emissions and noise pollution from aviation.

The major result of the Company's performance has been evaluated for the year 2018 from TRIS Rating Co. Ltd, and has affirmed at "AAA" level of the rating with the outlook assigned as stable. The rating reflects a strong financial position and experienced management.

In terms of management, the Company has implemented business continuity management system and is applying for the accreditation of ISO22301:2012 with the goal of certifications for the headquarters (Tung Mahamek, Don Mueang and Suvarnabhumi) and 9 provincial air traffic control centres in the fiscal year 2019. The Company continues to assess the risk to the occurrence of events that may affect the mission and conducted risk management exercises with different scenarios at the central and all provincial air traffic control centres so that the Company will be prepared for any event that may occur.

On the occasion of the Company's 70th anniversary, the Company is extremely proud to deliver quality services to its airline users and create benefits for national and regional aviation with social and environmental responsibility. For the next growing years, the Management and staff are committed to working at full capacity to lead the organization to move forward steadily and sustainably.

On behalf of the Company, I would like to thank shareholders, service users and stakeholders who have always given their trust and supported the Company's operations.


(Mr. Somnuk Rongthong)
President

Corporate Information

■ Company's Background

After the First World War the Post and Telegraph Department had been assigned by the Royal Thai Government to assume responsibility of providing Air Traffic Control and Aeronautical Communications to international aircraft passing over and landing in Thailand. These ceased with the expansion of the Second World War to Asia which prevented commercial aircraft taking to the sky. When the Second World War ended, international civil aviation resumed. On 15 April 1948, Aeronautical Radio Inc. (ARINC) of the United States of America, International Aeradio Ltd. (IAL) of the United Kingdom and various airlines operating services to Thailand jointly founded Aeronautical Radio of Siam Limited. (AEROSIAM) with the consent of the Royal Thai Government to provide Air Traffic Control services and Aeronautical Communications services in accordance with ICAO's standards and recommended practices.

Later the Thai Government recognized its capability and the importance of the Company's responsibility concerning national security and aviation development. Therefore, the Government acquired a majority of the share capital from the founding airlines and changed its name to Aeronautical Radio of Thailand Limited (AEROTHAI) on 1 November 1963.

International airlines operating services to Thailand were also welcomed as shareholders. The Company's status has since become a state enterprise under the Ministry of Transport, operating as a limited company. The Company operates on behalf of the Government as a non-profit organization to provide safety services which are Air Traffic Control and Aeronautical Telecommunications services in the Bangkok Flight Information Region (FIR) with the network linking with other countries. In addition, there is a business sector which provides aviation related services, both domestic and overseas.

The Company operates with a commitment to maintaining a quality of service in accordance with international standards and to upgrade technology and human resources with the goal to enhance national capacity and develop the aviation industry in the country.

■ Vision

“To be Navigation Service Provider with International Standards of Excellence”
(Vision for AEROTHAI development and operations in the strategic framework 2018-2022)

■ Mission

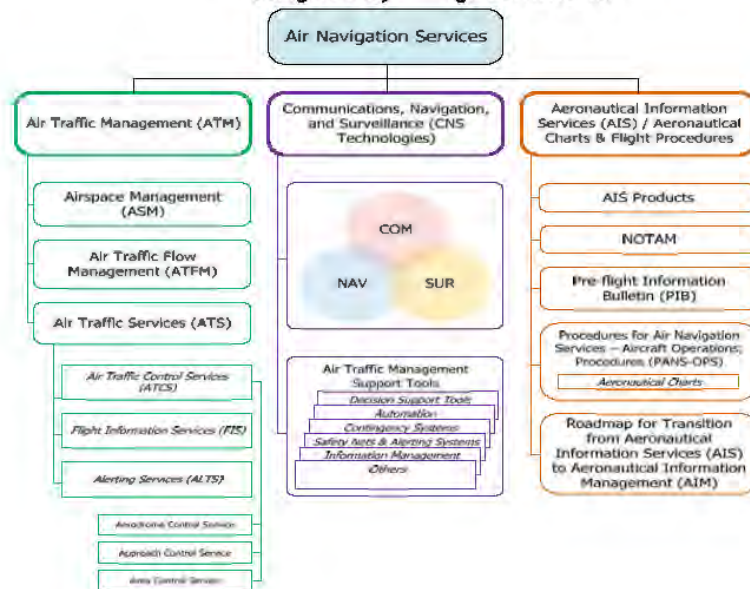
“To be the national air navigation service provider that meets users’ requirements in safety, standards, and efficiency while realizing the responsibilities to all stakeholders and national interests”

■ Role and Responsibilities

AEROTHAI’s role and responsibilities include:

1. Air Traffic Management (ATM) within the Bangkok Flight Information Region (Bangkok FIR) for the safety and efficiency of airspace users’ flights in Thailand
2. Aeronautical Communications, Navigation and Surveillance (CNS) System/Services, and
3. Aeronautical Information Services (AIS) and Aeronautical Charts

Also included also is the related aeronautical communications services to airline operators and other work assigned by the government.



The overall picture of AEROTHAI Air Navigation Services

The Company provides air navigation services within Bangkok Flight Information Region (Bangkok FIR) with Aerodrome Traffic Zone (ATZ) and Terminal Control Area at 35 airports nationwide, including Area Control for ATS En-routes utilizing the Air Traffic Management/Communications, Navigation and Surveillance System (ATM/CNS)

In summary, services related to air navigation services which are provided to aircraft operators are described below.

1. AEROTHAI Air Traffic Management (ATM) comprises of:

- (i)* Airspace Management (ASM)
- (ii)* Air Traffic Flow Management (ATFM)
- (iii)* Air Traffic Services (ATS), which consists of:
 - a. Air Traffic Control Services (ATCS), which can be further categorized based on the service areas as follows:
 - Aerodrome Control Service; providing the control service for all traffic on the maneuvering area of an aerodrome and all aircraft flying in the vicinity of an aerodrome,
 - Approach Control Service; providing the traffic control service for arriving and departing controlled flights to/from an aerodrome. Approach Control Units; established to provide approach control services, are located either at the AEROTHAI headquarters or at airports.
 - Area Control Service; providing the control service to all controlled flights flying in Bangkok FIR. Area Control Centre (ACC) is located at AEROTHAI headquarters.
 - b. Flight Information Services (FIS), and
 - c. Alerting Services (ALTS)

2. Communications, Navigation, and Surveillance (CNS) infrastructure service comprises of:

- (i)* Communications System: for provision of the Aeronautical Fixed Service (AFS) for domestic communications via Aeronautical Telecommunication Network (ATN), as the main network and via Aeronautical Fixed Telecommunication Network (AFTN) for organizations in the country and abroad, together with the communication between air to ground units used by air traffic controllers and pilots.
- (ii)* Navigation System; for the provision of navigation of the aircraft accurately and unerringly, all in en route area, approach area and aerodrome area. The system also includes the Performance Based Navigation (PBN).
- (iii)* Surveillance System; for provision of location, co-ordinates and height level of the aircraft in order to provide the information and to follow the aircraft's route for air

traffic services. The system consists of the types that are used for aerodrome, approach and en route air traffic service as well as those used to keep track of the aircraft and vehicles moving in the airport surface.

Also included is the provision of ATM Automation/Support Tools, e.g. Flight Data Processing System (FDPS), Surveillance Data Processing System (SDPS), for supporting overall air navigation services.

3. Aeronautical Information Service (AIS) is the provision of aeronautical information and messages necessary for the safety, regularity and efficiency for aviation.

AEROTHAI's Aeronautical Information and Flight Data Management Centre provides the following services:

- (i) Notice to Airmen (NOTAM) as International NOTAM Office
- (ii) Meteorological data Service as the Asia/Pacific Regional OPMET Data Bank and the Main Collection Centre under ICAO ROBEX Scheme. AEROTHAI collects and disseminates the operational meteorological information of 33 aerodromes in Bangkok FIR and in the area of responsibilities of Asia/Pacific region through the AFTN and ATN
- (iii) Air traffic services Reporting Office (ARO) for aircraft operators to submit flight Plan and associated messages (e.g. Change, Delay, and Cancel) directly to the AFTN

Additionally, AEROTHAI provides Procedure for Air Navigation Services Aircraft Operation in accordance with ICAO Doc 8168 (PANS-OPS)

Other than the above mentioned responsibilities and services, AEROTHAI uses its expertise and research and development (R&D) capability to provide other related services to further fulfill customers' requirements within aviation industry of Thailand and beyond. Such services include trunked radio for airlines and users at airports, communication networks, product manufacture and development, flight inspection, training and consultancy, aeronautical information data, calibration services, as well as turnkey projects supporting other organizations.

■ Statement of Directions (SODs)

State Enterprise Policy

“To be the mechanism driving economic and social strategies on the basis of effective operation in line with good corporate governance”.

State Enterprise in Transportation Field Policy

To develop infrastructure and transporting systems that meet the standard connecting transport networks and to provide services in order to support logistics and system development that will increase the country’s competitive capability as well as to promote the private sectors’ role.

Corporate Policy

To develop networks, equipment and work system with innovation and state-of-the-art technology as well as to provide air navigation services with safety, rapidity, punctuality, meeting international standards and increasing capability to earn additional income from related services.

■ Corporate Plan

Under the vision “To be Navigation Service Provider with International Standards of Excellence” which focuses on maintaining standards and improving quality of services to be comparable to the best practices. AEROTHAI strategic development and operation from 2018-2022 are as follows:

Strategic Issue	Strategic Objective
1. Safe and Efficient Air Navigation Service	1. To ensure safety with standards in all phases of flights. 2. To increase capacity and efficiency in air navigation services and to be environmentally friendly.
2. Creating Professionals	3. To have sufficient number of professionals and to develop human resource systems in driving organization’s vision for sustainable growth. 4. To have dedicated personnel with employees’ engagement and good workplace environment.
3. Becoming High Performance Organization (HPO)	5. To improve corporate performance through Total Quality Management (TQM) and change Management for sustainable efficiency. 6. To enhance Good Corporate Governance (Best in Class).

	<p>7. To be an organization of innovation through Improving information technology and knowledge Management.</p> <p>8. To efficiently and fairly manage the organization's finance and cost so that the air navigation charges are fair, transparent and competitive.</p>
4. Creating Value for the Aviation Industry and Stakeholders	9. To increase customers' satisfaction and value creation for the aviation industry
5. Improving National Competitiveness	<p>10. To improve air navigation services infrastructure in order to support the growth of Thai aviation Industry.</p> <p>11. To increase the aviation capacity to support the national competitiveness.</p>

■ Company's Services

AEROTHAI is a state enterprise under the Ministry of Transport. The Ministry of Transport assigned AEROTHAI to provide air navigation services including air traffic control service, aeronautical communication service, and other related services. AEROTHAI provides safe and efficient services according to Standards and Recommended Practices (SARPs) recommended by the International Civil Aviation Organization (ICAO). Under the contract with Ministry of Transport, AEROTHAI agreed to serve all users without making any profit, and receive the service fees through the air navigation service charges paid by the users in a fair manner.

Location and Website

AEROTHAI Head Office

102 Soi Ngamduplee, Tung Mahamek, Sathon,
 Bangkok 10120 Thailand
 Tel: 0 2287 3531-41
 Fax: 0 2287 3131
 Website: www.aerothai.co.th

Hat Yai Air Traffic Control Centre

100, Moo 3, Sanambin Road,
 Klong La Sub-district, Klong Hoi Kong District,
 Songkhla 90115
 Tel: 0 7425 1051-60
 Fax: 0 7425 1339

Phuket Air Traffic Control Centre

200 Khao Bo Sai, Maikhaow Sub-district, Thalang District,
Phuket 83110

Tel: 0 7632 7251-5

Fax: 0 7632 7258-9

Surat Thani Air Traffic Control Centre

Surat Thani Airport, Huateuy Sub-district,
Phunphin District, Surat Thani 84130

Tel: 0 7744 1132

Fax: 0 7744 1133

Chiang Mai Air Traffic Control Centre

60 Sanambin Road, Suthep Sub-district,
Mueang District, Chiang Mai 50200

Tel: 0 5327 7776

Fax: 0 5327 7600

Phitsanulok Air Traffic Control Centre

Sanambin Road, Arunyik Sub-district,
Mueang District, Phitsanulok 65000

Tel: 0 5530 1422

Fax: 0 5530 1450

Nakhon Ratchasima Air Traffic Service Engineering and Operating Centre

Baan Piman, Tha Chang Sub-district,
Chalermprakiat District, Nakhon Ratchasima 30230

Tel: 0 4425 7670

Fax: 0 4425 6576

Udon Thani Air Traffic Control Centre

Mak Khaeng Sub-district,
Mueang District, Udon Thani 41000

Tel: 0 4224 3735

Fax: 0 4224 9734

Ubon Ratchathani Air Traffic Control Centre

Thepyotee Road, Naimueng Sub-district,
Mueang District, Ubon Ratchathani 34000

Tel: 0 4524 0798

Fax: 0 4524 0798

Hua Hin Air Traffic Control Centre

Mooban Bofai, Hua Hin Sub-district, Hua Hin District,

Prachuap Khiri Khan 77110

Tel: 0 3252 0831

Fax: 0 3252 0833

■ Summary of the Financial Reports

	2018	2017	2016
Operating Performance (Baht : Million)^{1/}			
Total Income	13,115.85	12,194.11	11,638.93
Total Expenditure	10,757.41	10,193.64	9,276.06
Overcollection to be refunded to Member Airlines	2,358.44	2,000.47	2,362.87

Remark 1/ Separated Financial Statements

Financial Status (Baht : Million) ^{2/}			
Total Assets	15,877.71	14,428.62	13,385.61
Total Liabilities	14,877.73	13,463.86	12,465.33
Total Shareholders' Equity	999.98	964.76	920.28

Financial Ratio

Debt-to-Equity Ratio (times)	14.88	13.96	13.55
Debt-to-Equity Ratio (times) (Not including accumulated Overcollection)	5.54	6.31	7.19
Fix Charge Coverage Ratio (times)	2.11	1.64	1.44

Remark 2/Consolidated Financial Statements

■ Factors Impacting Performance

1.1 ICAO's Global and Regional Air Navigation Plans

In 2016, the 39th Session of the ICAO Assembly adopted the fifth edition of Global Air Navigation Plan (GANP), Doc 9750, as a strategic direction for global air navigation system development. Compared to the previous edition, the significant change made in the current edition of GANP is the adjustment of target availability timelines of technologies and procedures specified in Aviation System Block Upgrades (ASBUs), the major element of GANP presenting the strategic implementation approach. Particularly, the implementation period of each ASBU Block is extended to 6 years instead of the 5-year period previously defined in the fourth edition. The Performance Improvement Areas (PIAs) are still categorized into 4 areas as follows:

- 1) Airport Operations;
- 2) Globally Interoperable System and Data –through Globally Interoperable System Wide Information Management (SWIM);
- 3) Optimum Capacity and Flexible Flights – through Global Collaborative ATM;
- 4) Efficient Flight Path – through Trajectory-Based Operations

At the regional level, also in 2016, the 27th Meeting of ICAO Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/27) adopted the Asia/Pacific Seamless ATM Plan, Version 2.0 as the regional strategic objectives to achieve the seamless ATM operations in Asia/Pacific region. In the Asia/Pacific Seamless ATM Plan, technologies and procedures stated in ASBUs which are considered necessary for Asia/Pacific's operational environment are specified together with their corresponding implementation priorities. Moreover, to further enhance the seamless ATM operations, performance objectives in terms of Preferred Aerodrome/Airspace and Route Specifications (PARS) and Preferred ATM Service Levels (PASL) are also identified, including human performance as well as civil/military cooperation. Compared to the previous version of Asia/Pacific Seamless ATM Plan, the target implementation date specified in the current version is extended from 2018 to 2019 in order to have it in-lined with the fifth edition of GANP. Furthermore, some of Block 1 ASBU modules considered essential for Asia/Pacific region are included as well.

Taking into account the importance of aforementioned global and regional plans, AEROTHAI has set its strategic objectives and strategies in accordance with those plans and continuously ensured that the required developments are in place in a timely manner.

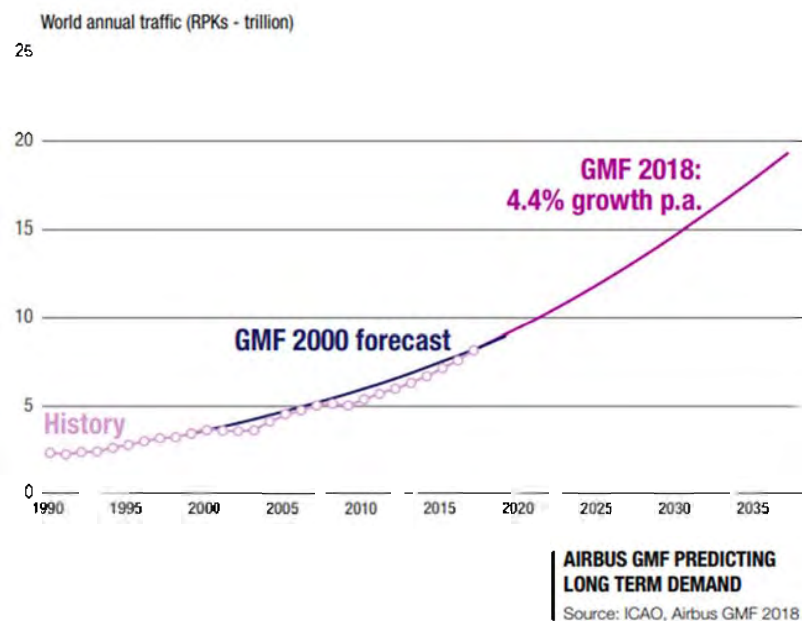
1.2. ASEAN Economic Community (AEC)

The ASEAN Economic Community (AEC) was officially established on 31 December 2015. In the area of air transport, ASEAN plans to establish ASEAN Single Aviation Market (ASAM) to support AEC's objective in harmonizing airspace of member states to ensure safe, secure, and efficient air transport within ASEAN and beyond. To support the ASAM Roadmap, the ASEAN Transport Strategic Plan 2016-2025 (also known as Kuala Lumpur Transport Strategy Plan: KLTSP) has addressed specific goals, actions and milestones, particularly, in the area of Air Traffic Management (AT-4 Enhance Air Traffic Management Efficiency and Capacity through a Seamless ASEAN Sky). AEROTHAI as part of the Thailand delegation, has participated in various ASEAN forums in order to push forward the actions and milestones of supporting ICAO's efforts and implementation plan for ATM in the APAC region, developing and implementing the ASEAN Air Traffic Management (ATM) Master Plan in accordance with ICAO's Asia Pacific Seamless ATM Plan and the Global Air Navigation Plan's ASBU Framework, and exchanging information on ASEAN air navigation infrastructure and services.

In 2017, the year which ASEAN celebrated its 50th anniversary, the ASEAN ATM Master Plan was adopted and recognized as part of an outstanding achievement under the KLTSP. The plan is a five-year plan to guide member states in harmonizing their implementation plans in order to realize the concept of Seamless ASEAN Sky in delivering harmonized, interoperable and safe ATM operations in contiguous airspace within the region and enabling all airspace users to transit smoothly across boundaries without any noticeable change in the type or quality of air traffic services received. Development programmes are categorized into five focus areas, i.e. Aerodrome, Terminal, En-route, Civil/Military Cooperation and Information Management. In 2018, AEROTHAI is one of the main contributors in ASEAN to the development of the plan and continues to support its implementation under the ASEAN framework, namely the ASEAN Air Transport Working Group (ATWG), the ASEAN Air Transport Technical Cooperation Sub-Working Group (ATTC) and the ATM Strategic Planning Group (ATM SPG).

■ Outlook of Aviation Industry and Trends in Air traffic

The outlook of aviation industry and future trends of air traffic illustrates that the aviation industry is one of the industries with increasing growth and value. Airbus forecasts that air traffic will grow at the estimated annual growth rate of 4.4% during the period of 2018-2037 (the next 20 years), and air traffic will double itself every 15 years. In fact, the forecast also indicates that Asia/Pacific region will experience the highest annual growth rate at the rate of 5.5%, with a three-fold increase in this region. Flights in China will become the largest traffic, which is forecasted to increase 3.5 times of the flights in USA.

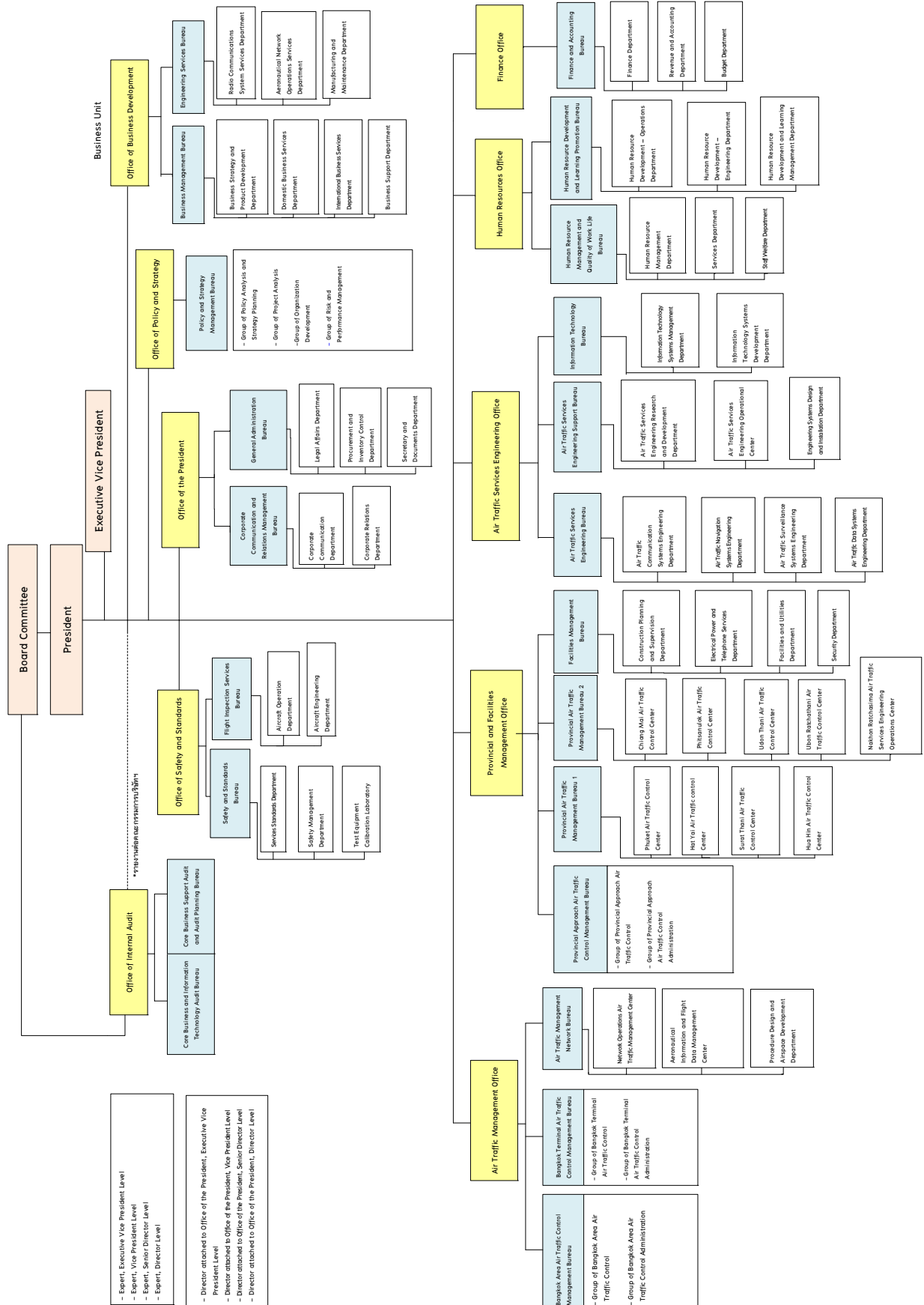


For Bangkok FIR, traffic has continued to grow, despite several events or factors which have caused short term effects on traffic volume from time to time. Over the past 10 years, traffic grew at the annual growth rate of 8% (CAGR) and accumulative 10-year to increase 1.2 times. (Compared 2018 with 2008). In 2018, total air traffic in Bangkok FIR was 1,027,689 flights, 8% increase from the previous year (950,661 flights). It is expected to reach more than 1.1 million flights in 2019.

In the fiscal year 2018, the overall flight rate increased at a high rate. In particular, international flights increased by 12%, while overfly flights increased by 7% and domestic flights increased by 5%. The trend in 2019 is likely to grow continuously. Both the government and the military sector are aware of the need and are actively involved in supporting and promoting the solution and development of the aviation system in the country.

■ Company's Structure

Organization Chart



■ Functions

The Company's organizational structure has the Board of Directors as the overseer who monitors the operations of the Company with the President holding the highest executive management position. The structure is divided into 10 bureaus with the Vice President responsible for each division. Details of the branches are as follows:

1. The Office of President is responsible for good corporate governance and social responsibility, codes of conduct, supporting the Boards of Directors and shareholders, legal matters, procurement, documentation, communications and stakeholder relationship management.

2. The Office of Internal Audit is responsible for the independent audit, review and evaluation of the reliability and completeness of work systems and directly reports the findings to the Audit Committee.

3. The Office of Policy and Strategy is responsible for the policy analysis, strategy planning, organization development, project analysis, performance monitoring and risk management.

4. The Office of Business Development is responsible for the business strategy and activities with governmental and private sectors both domestic and overseas.

5. The Office of Safety and Standards is responsible for the standards of services and safety management of the core business operations.

6. Air Traffic Management is responsible for the efficient provision of air traffic management with the following areas:

En-route within the Bangkok Flight Information Region (Bangkok FIR)

Aerodrome and Approach Control

Airspace Management and Flexible Use of Airspace

Aeronautical Information Service

Flight Procedures Design and Airspace Development

7. Provincial and Facilities Administration is responsible for the provision of air traffic control services in the Bangkok FIR in provincial airports, administration of the provincial air traffic control centres, power supply system, utilities, building and premises, security system, and safety, occupational health and working environment management.

8. Air Traffic Service Engineering is responsible for the administration of air traffic service engineering in design, procurement, development, installation, maintenance and management of supporting systems for the provision of air traffic services as well as efficiently and effectively developing and administering the information technology systems.

9. Human Resource is responsible for the administration and development of human resource so that the Company's personnel will have the potential, behavior and rewards in compliance with the Company's strategy.

10. Finance is responsible for the efficient administration of budget, finance, revenue and accounting.

■ The Committees

There are Committees as follows:

1. The Board of Directors
2. The Executive Committee
3. The Audit Committee
4. The Risk Management Committee
5. The Remuneration Committee
6. The Corporate Governance and Corporate Social Responsibility Committee
7. The Legal Committee
8. The Dependent Directors
9. The Labour Relations Committee

The composition of the Board of Directors at the end of fiscal year 2018 are as follows (names and details of Directors and the changes during the year in accordance with Section 2)

- | | |
|---|---------------|
| 1. Air Chief Marshal Siwakiat Jayema | Chairman |
| 2. Police General Dechnarong Sutticharnbancha | Vice Chairman |
| 3. Mr. Puttipong Prasarttong-Osoth | Director |
| 4. Squadron Leader Pongtorn Thepkanjana | Director |
| 5. Mrs. Phongsaward Guyaroonsuith | Director |
| 6. Police Major General Surachate Hakparn | Director |
| 7. Colonel Peerawat Promkladpanao | Director |
| 8. Mr. Somnuk Rongthong | Director |

The Board of Directors



Air Chief Marshal
Siwakiat Jayema
Chairman



Police General Dechnarong Sutticharnbancha
Vice Chairman



Mr. Puttipong Prasarttong-Osoth
Director



Squadron Leader Pongtorn Thepkanjana
Director



Mrs. Phongsaward Guyaroonsoth
Director



Police Major General Surachate Hakpam
Director



Colonel Peerawat Promkladpanao
Director



Mr. Somnuk Rongthong
Director

■ Company's Management



Mrs. Sarinee Angsusingha
President



Mr. Somnuk Rongthong
President

(Appointed as President on 5 June 2014 – 4 June 2018) (Appointed as President on 1 August 2018 – Present)



Mr. Tinnagorn Choowong
Executive Vice President



Mr. Suttipong Kongpool
Executive Vice President



Mrs. Onuraj Kornain
Executive Vice President



Mr. Sukluer Chiawarcheep
Expert
Executive Vice President Level



Miss Waraporn SongCharoen
Vice President
(Office of the President)



Miss Duongta Samitsuan
Vice President
(office of Internal Audit)



Mrs. Chidkamol Soonthornst
Vice President
(Finance)



Mrs. Sirikes Niemloy
Vice President
(Air Traffic Management)

Company's Management



Mr. Nuttawat Supanundha
Vice President
(Office of Business
Development)



Miss Tipaporn Nippakakorn
Vice President
(Office of Policy and
Strategy)



Mr. Channarong Chuacharoen
Vice President
(Air Traffic Service Engineering)



Mr. Sukluer Chiawarcheep
Acting Vice President
(Human Resource)



Mr. Chattri Sasipayungsak
Vice President
(Office of Standards and
Safety)



Mr. Churnnan Ruechal
Vice President
(Provincial and Facilities
Administration)



Mr. Teekayu Muratha
Expert, Vice President Level



Miss Voraporn Rhodyoo
Expert, Vice President Level

Company's Senior Management

1. Mr. Somnuk Rongthong

Present Position: President

Date of Birth: 7 July 1961

Age: 57

Starting Work: 15 May 1984

Education:

- Bachelor of Engineering, Kasetsart University

Additional Education Qualifications:

- National Defence College (Class of 56)

- Air War College (Class of 36 in 2002)

- Advance Management Program (AMP), Wharton, University of Pennsylvania
(Year 2013)

- Diploma, Joint State-Private Sector Course, National Defence College, National Defence
Studies Institute (Class of 26 in 2014)

Work Experiences:

- 1 August 2018 – Present President

- Years 2012 – 2018 Executive Vice President

- Years 2010 - 2012 Vice President (Air Traffic Services Engineering)

2. Mrs. Onurai Komain

Present Position: Executive Vice President

Date of Birth: 1 December 1957

Age: 60

Starting Work: 17 June 1985

Education:

- Bachelor of Accountancy, College of Commerce, University of The Thai Chamber
Of Commerce

- Master of Accountancy (Banking and Finance), Chulalongkorn University

Additional Education Qualifications:

- Advanced Certificate Course in Public Economics Management for Executives,
Year 2005, King Prajadhipok's Institute

- Executive Finance Management Program, Year 2013, Academy of Economy and
Finance

Work Experience:

- Years 2015 – 2018 Executive Vice President
- Years 2014 – 2015 Expert, Executive Vice President level
- Years 2010 – 2014 Vice President (Finance)

3. Mr. Tinnagorn Choowong

Present Position: Executive Vice President

Date of Birth: 19 September 1962

Age: 56

Starting Work: 1 July 1986

Education:

- Diploma in Aviation Communication, Civil Aviation Training Centre (Thailand)
- Bachelor of Political Science, Ramkhamhaeng University

Additional Education Qualifications:

- Air War College (Class of 47 in 2013)
- Leadership Succession Program (LSP), IRDP (Class of 3 in 2015)

Work Experience:

- Years 2015 – Present Executive Vice President
- Years 2012 – 2015 Vice President (Air Traffic Management)

4. Mr. Suttipong Kongpool

Present Position: Executive Vice President

Date of Birth: 14 January 1966

Age: 52

Starting Work: 1 July 1990

Education:

- Bachelor of Communication Arts, Bangkok University

Additional Education Qualifications:

- Air War College (Class of 46 in 2012)
- Leadership Succession Program (LSP), IRDP (Class of 3 in 2014)
- Advanced Executive Program (AEP), Northwestern University (Class of 2 in 2014)

Work Experience:

- Years 2015 – Present Executive Vice President
- Years 2014 – 2015 Vice President (Policy and Strategy)

5. Mr. Sukluer Chiawarcheep

Present Position: Expert, Executive Vice President Level

Date of Birth: 10 March 1963

Age: 55

Starting Work: 1 July 1986

Education:

- Bachelor of Engineering, Kasetsart University
- Master of Business Administration, Kasetsart University

Additional Education Qualifications :

- Air War College (Class of 40 in 2006)
- Leadership Succession Program (LSP), IRDP (Class of 5 in 2015)

Work Experience:

- Years 2017 – Present Expert, Executive Vice President Level

Human Resource and Organization Development

At the end of the Fiscal Year 2018 (30 September 2018), the total number of staff employed by AEROTHAI was 3,122 distributed as follows:

Head Office	1,739
Suvarnabhumi Airport	410
Don Mueang International Airport	196
Phuket Air Traffic Control Centre	149
Hat Yai Air Traffic Control Centre	116
Surat Thani Air Traffic Control Centre	83
Hua Hin Air traffic Control Centre	43
Chiang Mai Air Traffic Control Centre	137
Phitsanulok Air Traffic Control Centre	100
Udon Thani Air traffic Control Centre	75
Ubon Ratchathani Air Traffic Control Centre	37
Nakhon Ratchasima Air Traffic Service Engineering and Operating Centre	37

As of 30 September 2018, the total number of temporary employees employed by AEROTHAI was 34 with the following details:

Male	13
Female	21

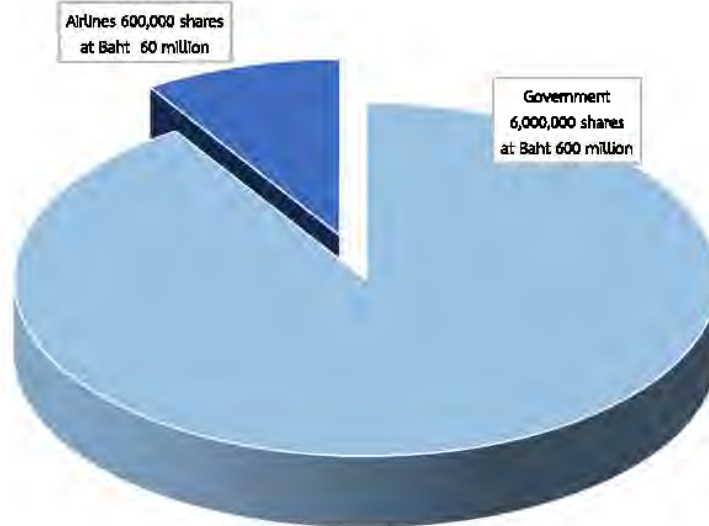
Total Staff and Contracted Employees Expenditure

Unit: Million Baht

Description	2018	2017	2016
Staff's Expenditures and Benefits	7,630.23	7,592.85	6,941.14
Temporary Employees Expenditures	10.66	10.26	9.89

Share Capital and shareholders Structure

Airlines Shareholders 109 (as at 1 August 2018)



In the fiscal year 2018, The A Shareholders and B Shareholders were as follows:

The A Shareholders	Number of shares
The Ministry of Finance	6,000,000

The B Shareholders

		No. of shares
1	ASIANA AIRLINES	1,174
2	AEROFLOT RUSSIAN AIRLINES	1,174
3	AIR FRANCE	419
4	AIR HONGKONG LTD.	503
5	AIR-INDIA	2,348
6	THAI AIRASIA CO.,LTD.	111,349
7	SRILANKAN AIRLINES LIMITED	1,425
8	AIR MACAU CO.,LTD.	1,174
9	ALL NIPPON AIRWAYS CO.,LTD.	3,438
10	PEACH AVIATION LIMITED	587
11	AUSTRIAN AIRLINES AG	587
12	INDONESIA AIR ASIA	2,096
13	AIR ASIA SDN BHD	10,901
14	BRITISH AIRWAYS PLC.	587
15	BIMAN BANGLADESH AIRLINES	587
16	BANGKOK AIRWAYS PUBLIC COMPANY LIMITED	53,162
17	AEROLOGIC GMBH.	587
18	BHUTAN AIRLINES (TASHI AIR PVT. LIMITED)	587
19	CHINA AIRLINES	3,438
20	BEIJING CAPITAL AIRLINES	335
21	AIR CHINA LIMITED	6,373
22	SHANDONG AIRLINES	2,096
23	CEBU PACIFIC AIR	587
24	CHINA EASTERN AIRLINES	12,075
25	HAINAN AIRLINES HOLDING COMPANY LIMITED	2,935
26	CHINA CARGO AIRLINES	503
27	CARGOLUX AIRLINES INT'L S.A.	503
28	CATHAY PACIFIC AIRWAYS	6,205

		No. of shares
29	SPRING AIRLINES	10,565
30	HONG KONG AIRLINES LTD	2,767
31	SICHUAN AIRLINES	3,857
32	SHANGHAI AIRLINES	5,199
33	CHINA SOUTHERN AIRLINES	9,224
34	SHENZHEN AIRLINES	3,186
35	JUNEYAO AIRLINES CO.,LTD	4,696
36	LUFTHANSA GERMAN AIRLINES	587
37	MALDIVIAN	503
38	DRUK AIR	839
39	EASTAR JET	2,348
40	ETIHAD AIRWAYS	1,761
41	ETHIOPIAN AIRLINES CORPORATION	671
42	EVA AIRWAYS CORP.	3,857
43	FEDERAL EXPRESS CORP.	1,006
44	FINNAIR OYJ	839
45	GULF AIR B.S.C. (C)	587
46	GARUDA INDONESIAN AIRWAYS	1,174
47	HONG KONG DRAGON AIRLINES LTD.	1,174
48	HONG KONG AIR CARGO CARRIER LIMITED	503
49	HONG KONG EXPRESS AIRWAYS LTD.	1,677
50	VIETNAM AIRLINES JSC	3,522
51	INTERGLOBE AVIATION LTD.	1,174
52	MAHAN AIR	587
53	JET AIRWAYS (INDIA) LIMITED	2,935
54	JAPAN AIRLINES CO.,LTD.	3,522
55	JEJU AIR	2,096
56	JIN AIR	1,509

		No. of shares
57	JETSTAR ASIA AIRWAYS PTE LTD.	4,276
58	JETSTAR AIRWAYS PTY LTD.	922
59	KUWAIT AIRWAYS CORPORATION	671
60	KOREAN AIRLINES CO.,LTD.	3,270
61	KLM ROYAL DUTCH AIRLINES	587
62	K-MILE AIR CO., LTD.	839
63	KUNMING AIRLINES	503
64	KENYA AIRWAYS PLC	1,174
65	AIR ASTANA JSC	252
66	LAO AIRLINES	2,264
67	YUNNAN LUCKY AIR CO.,LTD	1,258
68	MALAYSIA AIRLINES BERHAD	5,283
69	MYANMAR AIRWAYS INTERNATIONAL CO.,LTD.	2,348
70	EGYPT AIR	252
71	MALINDO AIRWAYS SDN BHD	2,348
72	NORWEGIAN AIR SHUTTLE ASA	252
73	NIPPON CARGO AIRLINES CO.,LTD.	503
74	NOKSCOOT AIRLINES CO.,LTD	3,438
75	NEPTUNE AIR	168
76	NOK AIRLINES PUBLIC COMPANY LIMITED	56,684
77	NORDWIND AIRLINES	335
78	OKAY AIRWAYS COMPANY LIMITED "OKAYJET"	839
79	OMAN AIR (SAOC)	1,174
80	PHILIPPINE AIRLINES	2,348
81	JETSTAR PACIFIC AIRLINES AVIATION JOINT STOCK COMPANY	1,342
82	QANTAS AIRWAYS LTD.	587
83	QATAR AIRWAYS COMPANY	5,953
84	ROYAL BRUNEI AIRLINES SDN BHD	503

		No. of shares
85	AIR AUSTRAL	168
86	REGENT AIRWAYS	335
87	ALIA-THE ROYAL JORDANIAN AIRLINES (ROYAL JORDANIAN)	1,174
88	NEPAL AIRLINES CORPORATION	252
89	SIBERIA AIRLINES	168
90	SPICEJET	1,761
91	SINGAPORE AIRLINES LTD.	3,522
92	SILKAIR(SINGAPORE) PRIVATE LTD	2,935
93	URAL AIRLINES	503
94	SWISS INTERNATIONAL AIR LINES LTD.	587
95	THAI AIRASIA X CO.,LTD.	4,696
96	SCOOT TIGERAIR PTE.LTD.	7,547
97	THAI AIRWAYS INTERNATIONAL PUBLIC CO.,LTD.	59,618
98	THAI SMILE AIRWAYS COMPANY LIMITED	29,851
99	TURKISH AIRLINES INC.	1,258
100	THAI LION MENTARI CO.,LTD.	52,785
101	THAI VIETJET AIR JOINT STOCK CO.,LTD	11,739
102	T' WAY AIR	1,174
103	EMIRATES	5,870
104	MYANMAR NATIONAL AIRLINES	1,593
105	US- BANGLA AIRLINES	252
106	UNITED PARCEL SERVICE CO., LTD.	419
107	UZBEKISTAN AIRWAYS	168
108	NEW GEN AIRWAYS COMPANY LIMITED	7,630
109	VIETJET AVIATION JOINT STOCK COMPANY	3,522
		600,000

Remark: Names of Shareholders allocated shares on 1 August 2018

■ State Enterprise's Loans

Unit: Million Baht

Bank	Credit Limit	Balance as at 30 September			Type of Guarantee
		2018	2017	2016	
Government Savings	1,650.00	571.01	697.95	824.89	none
Government Savings	3,480.00	-	1.00	1.00	none
Krungsri	2,075.43	-	660.34	2,075.43	none
Total	7,205.43	571.01	1,359.29	2,901.32	

■ Major Plans and Projects

AEROTHAI has important plans and projects as contained in the Corporate Plan 2018-2022 as follows:

1. Air Navigation Service Infrastructure Development Project

(Implementing Year 2012-2019 with an investment budget of Baht 4,460.31 million)

The Air Navigation Service Infrastructure Development Project was approved in principle by the Government on 3 May 2011 with an investment budget of Baht 4,460.31 million. The objective is to enhance the infrastructure for the air navigation service of Thailand in order to match new international standards and capacity and to support the growing air traffic volume in the future. The project is in line with the concept and requirements of the global air traffic management system. The project can be broken down into 3 individual parts as follows:

(1) Establishment of Air Traffic Management Centre (ATMC)

To support the role of air traffic management hub of Thailand and connect with neighboring countries. The system will enhance AEROTHAI's ability to provide air traffic control service on all airways across Thailand with a new concept of operation that is supplemented by new elements of airspace management and air traffic flow management in an efficient, automated, and environmentally friendly concept, while maintaining the highest level of safety as a priority.

(2) CNS System Enhancement and ATM Network Integration

To enhance nationwide communications, navigation, surveillance infrastructures as well as a network of information/data for air traffic management between the headquarters and provincial units across the country within the same level of capability and standards, thus ensuring the fullest extent of safety, efficiency, and capacity through the service to passengers and airlines/airspace operators.

(3) Procurement of High Performance Flight Inspection Aircraft:

To meet the demands of the flight inspection of air navigation service infrastructure both in terms of quantity and capability for the increasing flight inspection requirements. This includes the support for new technology of systems that AEROTHAI has planned to deploy in the future as well as other required functions to promptly and accessibly support AEROTHAI's operations. This project was completed where the high performance aircraft had been acquired in March 2016.

In 2016, AEROTHAI completed the installation as well as system integration and system continuity testing activities of the newly acquired air traffic management system in this project. In 2017 AEROTHAI trained air traffic controllers and engineers continuously throughout the year to prepare them for the new system. The shadowing process, where the current system runs as the main system, while the new system runs parallel, began at Bangkok Approach Control (Suvarnabhumi Airport) on 25 April 2017, Don Mueang Control Tower on 13 July 2018 and Chiang Mai Air Traffic Control Centre on 29 August 2018. For the remaining Air Traffic Control Centres, Bangkok Area Control Centre and Bangkok Approach Control Centre will start in 2019. The new system will be used as the main system while the current system will be used as standby system after receiving approval from the Civil Aviation of Thailand. Thereafter, the new system will be operational.

2. Establishment of ATM Network Management Centre (ATM NMC)

(Implementing Year 2014-2019 with an investment budget of Baht 438.42 million)

AEROTHAI aims to improve air traffic flow efficiency as well as airspace capacity and utilization according to the concept of Flexible Use of Airspace (FUA) by managing and making use of relevant flight data from all concerned units to increase capacity and efficiency of airspace management. The establishment of the ATM Network Management Center is planned for this very purpose. In doing so, airspace capacity optimization and an increased level of safety as well as reduced air traffic controllers' workload are hoped to be achieved. In 2017 AEROTHAI reviewed and compiled the technical data for the procurement of system and equipment as well as improving the system. In 2018, contract was signed on 27 September 2018 and it is pending equipment delivery. The system is expected to be procured and fully installed by 2019.

3. Acquisition and Installation of additional Controller Working Positions (CWPs) for air traffic control centres at Tung Mahamek and Suvarnabhumi Airport expansion as well as an Independent Backup System (IBS)

(Implementing Year 2015-2018 with investment budget of Baht 116.17 million)

Air traffic controllers have experienced rapid increases in workloads and are currently working at full capacity as a result of recent traffic growth. AEROTHAI needs additional CWPs in order to cope with this increasing demand in the future as well as to alleviate controllers' fatigue issues arising from increased workloads.

In 2017 the CWPs were procured and fully installed and are currently under continuous testing. The Voice Communication Control System (VCCS) equipment for the headquarters has been fully installed and testing has been completed. The VCCS equipment for Suvarnabhumi Airport will be procured by 2019.

4. Construction of New Air Traffic Control Tower (to commemorate the 7th cycle Royal Birthday Anniversary of His Majesty King Bhumibol Adulyadej, 5 December 2011) and Implementation of New Air Traffic Management System at Don Mueang International Airport (Implementing Year 2011-2019 with investment budget of Baht 286.53 millions)

AEROTHAI has been providing air traffic services at Don Mueang International Airport by renting office space and an air traffic control tower from Airport of Thailand PLC (AOT). Later on AOT has started to change and improve the use of various buildings in Don Mueang International Airport, which led AEROTHAI to reevaluate our use of space at the airport. The conclusion was that the rented control tower building had limited space and could not accommodate the upgrade of the air traffic control systems/equipment in the near future.

Hence, AEROTHAI underwent a construction of the new air traffic control tower at the airport to replace the original tower, with the installation of the new and modern air traffic control systems/equipment in order to provide information for use in air traffic control, as well as provide situational awareness on aircraft and vehicles in the airport to increase the safety in airport surface operation and link information automatically and interoperate with both the air traffic control tower at Suvarnabhumi Airport and Bangkok Area Control Centre. AEROTHAI will continue to use the existing tower together with a new one to improve visibility in air traffic control, and use as contingency unit in a distant location (Offsite Backup) in case of emergency. The construction of the tower was completed in February 2014, with Voice Communication Control System (VCCS) successfully procured and installed in 2015. In 2016, AEROTHAI has completed the installation as well as system integration of the new air traffic management system under the Air Navigation Service Infrastructure Development Project. In 2018, the new system has been utilized for parallel trial since 13 July 2018 as preparation for operating in accordance with the opening of the Air Navigation Service Infrastructure Development Project.

5. Acquisition of Multilateration (MLAT) systems at Phuket and Chiang Mai Airports

(Implementing Year 2015-2020 with investment budget of Baht 112.86 million)

MLAT system utilizes new technology to provide surveillance data that includes aircraft and vehicles identification as well as highly accurate positioning. AEROTHAI has chosen to implement MLAT at high density regional airports in order to gain ground surveillance on runways, taxiways, and gate areas, as well as an ability to better detect runway incursions.

In 2017 a suitable MLAT coverage area was evaluated in accordance with airport development plans for these 2 airports. In 2018, the drafting of details and technical specifications for procuring the equipment has been approved and the procurement process will be done in 2019-2020.

6. Acquisition of network equipment to support Multilateration (MLAT) systems at Phuket and Chiang Mai Airports

(Implementing Year 2015-2020 with investment budget of Baht 42.20 million)

MLAT system is implemented to provide ground surveillance as required for high density traffic movements at Phuket and Chiang Mai Airports. Such MLAT installation requires an appropriate communication network infrastructure in order to support an efficient air traffic service. In 2017, a suitable MLAT coverage area was evaluated in accordance with airport development plans for these 2 airports and certain equipment was procured by drafting details and technical specifications for procuring the equipment in line with the MLAT installation sites. The procurement and installation process will be completed in 2019-2020.

7. Acquisition of Doppler Very High Frequency Omni-directional Range/Distance Measuring Equipment (DVOR/DME) at Chumphon, Mae Sot, Buri Ram, and Krabi Airports and Construction of DVOR/DME Station Building at Mae Sot Airport

(Implementing Year 2015-2019 with investment budget of Baht 111.14 million)

DVOR/DME systems that have exceeded 15 years of usage often show signs of degraded performance and require additional emergency corrective maintenance. AEROTHAI therefore needs to acquire new DVOR/DME systems at these 4 airports in order to replace the existing aged systems. Construction of a new DVOR/DME Station Building as a replacement to the existing one was also required at Mae Sot Airport in accordance with the government's Mae Sot Airport master plan. In 2016, a construction contract for DVOR/DME Station Building at Mae Sot Airport was completed in June 2017. In 2018, procurement contracts have been signed and equipment installed at Mae Sot and Krabi with flight checks. Equipment installation and flight checks for Chumphon and Buri Ram will be completed and in operation in 2019.

8. Acquisition of Instrument Landing System/Distance Measuring Equipment (ILS/DME) at Don Mueang International Airport for Runway 21L

(Implementing Year 2015-2018 with investment budget of Baht 27.98 million)

ILS/DME systems, that have exceeded 15 years of usage are showing signs of degraded performance and requiring additional emergency corrective maintenance, need replacement. AEROTHAI therefore needs to acquire new ILS/DME system at Don Mueang International Airport in order to replace the existing aged system on Runway 21L. In 2018 Installation and flight check was completed and certified by the Civil Aviation Authority of Thailand.

9. Strategic Work to Support ATM Activities under ASEAN Single Aviation Market Establishment Plan and Seamless ASEAN Sky Concept

(Implementing Year 2016-2020)

As the work on ASEAN Single Aviation Market (ASAM) and Air Traffic Management (ATM) were prioritized as one of the top technical works, AEROTHAI has continuously participated in ASEAN Air Transportation Working Group (ATWG) meetings since 2009 as Thailand delegation's supporting representatives, who have played important roles in considering/proposing/executing in ATWG to support the work under the ASAM Roadmap. In 2018, AEROTHAI together with ASEAN Member States finished developing an ASEAN ATM Master Plan as part of the key activity under the ASEAN Transport Strategic Plan (ATSP) 2016-2025. In 2019-2020, AEROTHAI will take proactive actions to support other important activities under ASEAN ATM Master Plan by attending meetings of ASEAN Air Transport Technical Cooperation Sub-Working Group (ATTC) and participating in ASEAN collaboration activities as well as every ATWG meeting. AEROTHAI will also send representatives to observe meetings of high level ASEAN as appropriate and continue to implement and/or support work of the Civil Aviation Authority of Thailand under the ASEAN Air Traffic Management Plan.

10. Construction of a New Air Traffic Control Tower at Mae Sot Airport

(Implementing Year 2018-2020 with investment budget of Baht 66.32 million)

This is a replacing of the current Air traffic Control Tower which has been transferred from the Department of Airports since 1998 to support the installation of equipment systems related to Air traffic Control Services and use as an operational area for Air traffic Management and Air Traffic Engineering to conforming to the policy that the government and the Ministry of Transport have set for the development of regional airports. In the Northern part of Thailand, the Mae Sot Airport in Tak will be developed to accommodate the increasing flights in the future and linking with other countries in the region. In 2018, AEROTHAI has signed the contract and the contractor is implementing the contract which is expected to be completed in 2020.

➤ **Important Investment Project for the Next 3 Years**

(1) Construction of a new office building (AEROTHAI Complex) at Headquarters, Tung Mahamek

(Implementing Year 2014-2023 with investment budget of Baht 1,097.41 million)

Due to the problem of limited working space within the headquarters, Tung Mahamek as well as the Company's future policy to increase its potential and the country's competitive capability both personnel and innovation creation, the Company has planned to establish an ATM Professional Centre. This Centre will include the place/systems/equipment for the development of aviation personnel and creation of research work to meet international standards. This will solve the Company's problems and develop necessary and major working systems for the future. A new office building at Headquarters is needed to provide additional working space for the present and future growth. When the new Air Traffic Management Centre (ATMC) is in operation, working space has to be suitably allocated and area zoning arrangement has to be set according to international security standards and the Company's policy. In 2018, AEROTHAI reviewed the requirements for the building based on the current environmental and situational needs for acquiring a consultancy service to design and produce a construction plan of the AEROTHAI Complex building. It is expected that the design service consultant will be hired in 2019.

(2) Acquisition of Doppler Very High Frequency Omni-directional Range/Distance Measuring Equipment (DVOR/DME) at Lampang, Narathiwat, Phetchabun, Roi Et, Nakhon Si Thammarat, and Surat Thani Airports

(Implementing Year 2017-2018 with investment budget of Baht 147.47 million)

DVOR/DME systems that have exceeded 15 years of usage are showing signs of degraded performance and requiring additional emergency corrective maintenance need replacement. AEROTHAI therefore needs to acquire new DVOR/DME system at Lampang, Narathiwat, Phetchabun, Roi Et, Nakhon Si Thammarat, and Surat Thani Airports in order to replace the existing aged systems. In 2018, the procurement process began but there was no candidate who met the technical criteria. AEROTHAI has been working on revising the scope of work for procurement. The project is expected to be completed by 2020.

(3) Construction of an Air Traffic Control Tower, the DVOR/DME air navigation station and staff accommodation building at Betong Airport

(Implementing Year 2018-2021 with investment budget of Baht 130.26 million)

As the Cabinet approved the project to construct Betong Airport in Yala (under the Department of Airports), AEROTHAI is required to construct an Air Traffic Control Tower, the DVOR/DME air navigation station and staff accommodation building at Betong Airport to accommodate the operation of Betong Airport. In 2018, AEROTHAI has coordinated with the Department of Airports to consider the construction site. In addition, AEROTHAI is in the process

of exploring the additional area as an alternative area for the construction of the DVOR/DME air navigation station. Procurement process will be carried out in 2019.

➤ **Organizational Engineering Development in 2018**

1. Secondary Radar System (SSR) Upgrade at Suvarnabhumi Airport

The Secondary Surveillance Radar (SSR) was installed at Suvarnabhumi Airport. The system was installed under the SATCONS project (Suvarnabhumi Air Traffic Control System) since 2006 until now it is a period of more than 12 years and spare parts are not sufficient for maintenance. The Company has implemented the Secondary Radar System (SSR) Improvement Project at Suvarnabhumi Airport to correct system/equipment failure. The Project was completed in September 2018.

2. Improving the efficiency of the Doppler VHF Omni-directional Radio Range/Distance Measuring Equipment (DVOR/DME) Navigation Aids at Mae Sot Airport, Krabi Airport, and Korat Navigation Aids Station, Nakhon Ratchasima

AEROTHAI has been using the same DVOR/DME navigation aids at Mae Sot Airport, Krabi Airport, and Korat Navigation Aids Station, Nakhon Ratchasima for almost 20 years. Spare parts are not sufficient for maintenance as the manufacturers have discontinued their line of production. The Company has to procure and install new DVOR/DME systems to replace the existing systems at Mae Sot Airport, Krabi Airport, and Korat Navigation Aids Station, Nakhon Ratchasima. The Project was completed in September 2018.

3. The project enabled ATN/AMHS (ATS Message Handling System)

AEROTHAI has conducted tests and operated international ATS Message Handling System (AMHS) according to ICAO integrated ATN/AMHS plan with the goal of utilizing all ATN/AMHS circuits by 2019.

Presently, AEROTHAI operates with direct circuit connections with 10 international aeronautical communication centres as follows:

1. Circuit Bangkok/Hong Kong
2. Circuit Bangkok/Mumbai
3. Circuit Bangkok/Singapore
4. Circuit Bangkok/Phnom Penh
5. Circuit Bangkok/Vientiane
6. Circuit Bangkok/Yangon
7. Circuit Bangkok/Dhaka
8. Circuit Bangkok/Bhutan
9. Circuit Bangkok/SITA
10. Circuit Bangkok/Beijing

The circuits, that are under coordination and tests, are as follows:

1. Circuit Bangkok/Rome
2. Circuit Bangkok/Kuala Lumpur
3. Circuit Bangkok/Ho Chi Minh

4. C-ATIS System Improvement Project

The Company has appointed a technical working group to develop and improve the weather information transmission system so that the information can be transmitted from the automatic meteorological flight support to the METNET of the Department of Meteorology, then automatically forward the data to AEOTHAI's flight information data system. The working group works in cooperation with the Technical Working Group of the Department of the Meteorology.

The working group has encountered obstacles on the process of transmitting news at the airport. Air Traffic Controllers have to add ATIS information Runway in use information into METAR & SPECI news.

In order to reduce the workload of Air Traffic Controllers at the airport and increase the capacity of C-ATIS equipment, the Company has connected weather information from the flight information system to C-ATIS system. In 2018, AEROTHAI has connected weather information from the flight information system to C-ATIS system at 26 airports nationwide.

5. Procurement and Installation of Equipment which monitors and sends alerts for 105 radio stations

The Company has procured and installed equipment which is used for monitoring and sending alerts to 105 radio stations to improve the efficiency of air communication service management over the area in Thailand. This provides environmental information for each station including the reduction in system downtime as the monitoring and controlling system can be operated in real time from anywhere and at any time by using a Client Web Browser and Mobile Client Web Browser, everywhere and at all times.

6. Improvement of Work Systems to Support the Air Navigation Aid Services

The Company has improved the work systems and manuals for the air navigation aid services so that the performance of the aeronautical communication system, air navigation aid system and surveillance systems can be carried out efficiently according to the capabilities, standards and practices set by the Civil Aviation Authority of Thailand.

In addition, the Company has collaborated with the Office of the National Broadcasting and Telecommunications Commission to allocate and apply for licences to use frequencies and establish stations for the provision of air traffic control services.

7. Inspection/Improving Geographic Aeronautical Information

According to the ICAO World Geodetic System – 1984 (WGS-84), aeronautical information is essential to support the analysis, design and installation of aeronautical communication system, air navigation aid system and surveillance system. It is the necessary and essential default information for making flight plan, etc. The Company has collaborated with the Royal Thai Survey Department to conduct ground and aerial surveys both vertically and horizontally of the sites of air navigation aid system, repair aviation mark and air navigation aid system site control points. It also expand the geographic coordinates network from the national control points to airports. In 2018, the implementation has been completed at 10 airports in the South of Thailand, namely 1) Chumphon Airport, 2) Ranong Airport, 3) Nakhon Si Thammarat Airport, 4) Surat Thani International Airport, 5) Samui Airport, 6) Phuket International Airport, 7) Krabi Airport, 8) Trang Airport, 9) Hat Yai International Airport and 10) Narathiwat Airport. In 2019 and 2020, the Company plans to implement the work to cover all airports in the north and northeast of Thailand, respectively.

8. Improvement of Geographic Aeronautical Information System

There are needs to use geographic information (spatial data) which is of quality, accurate and up-to-date. The Company has collaborated with the Geo-Informatics and Space Technology Development Agency (Public Organization) to use information from satellites and geographic information for the development of Geographic Aeronautical Information System. The information management system will provide aeronautical information for 37 airports, namely 1) Mae Fah Luang International Airport, Chiang Rai, 2) Mae Hong Son Airport, 3) Chiang Mai International Airport, 4) Nan Airport, 5) Lampang Airport, 6) Phrae Airport, 7) Sukhothai Airport, 8) Mae Sot Airport, 9) Tak Airport, 10) Phitsanulok Airport, 11) Loei Airport, 12) Udon Thai Airport, 13) Nakhon Phanom Airport, 14) Sakon Nakhon Airport, 15) Khon Kaen Airport, 16) Phetchabun Airport, 17) Roi Et Airport, 18) Buri Ram Airport, 19) Ubon Ratchathani Airport, 20) Surin Pakdi Airport, 21) Nakhon Ratchasima Airport, 22) Don Mueang International Airport, 23) Suvarnabhumi Airport, 24) U-Tapao Airport, 25) Trat Airport, 26) Hua Hin Airport, 27) Chumphon Airport, 28) Ranong Airport, 29) Surat Thani Airport, 30) Samui Airport, 31) Nakhon Si Thammarat Airport, 32) Phuket International Airport, 33) Krabi Airport, 34) Trang Airport, 35) Hat Yai International Airport, 36) Pattani Airport, 37) Narathiwat Airport.

9. Improvement of Efficiency Analysis System for the Air Navigation Service during flights

The Company has conducted study to draft a plan to improve the Company's potential by comparing the capabilities to set guidelines leading to organization excellence. The aviation efficiency is a part of the implementations according to the goal of AEROTHAI Service Mark. At present, the Company does not have tools to support the measurement of aviation efficiency under various indicators. It is necessary that the Company develops the system to collect necessary information and analyses statistics data to provide support to the evaluation according to the indicators on aviation efficiency both qualitative and quantitative. The information can be used to compare with other aviation operators on international level. The result of the evaluation will be beneficial to the drafting of short-term and long-term efficiency development plan.

➤ Information Technology Development

Development of information technology organization

Due to the awareness of global trends into the digital economy and society, the Company has focused on digital transformation in accordance with Thailand 4.0 as follows:

1. Development of the potential of digital structures and basic elements for efficiency, stability, security and modernization:

- 1.1 Modification of equipment for Web Conference to help linking meetings between headquarters and regional units including Don Mueang and Suvarnabhumi.
- 1.2 Development/improvement of computer and peripherals throughout the organization to improve standards and follow information security guidelines.

2. Management of information and digital technology for innovation and research according to Thailand Strategy 4.0 and Digital Development Plan:

2.1 Developing of information systems to support operations and services with quality digital technology as follows:

- Policy and Strategy
 - Development of Project Management System (Phase 4)
 - Improvement of KPI Report System
 - Development of KPI of SEPA System
- Air Traffic Management
 - Development of ATC E-Log System (Phase 3)
 - Improvement of E-Roster System
- Development of Instrument Flight Procedure Design Management System

- Air Traffic Engineering Support
 - Development of Engineering Management System
 - Development of for Database of Engineering Design and Installation System (Phase 1)
 - Human Resource Support
 - Development of Transport-Sub System (Suvarnabhumi)
 - Development of Bus-Route System (Tung Mahamek)
 - Development of a Room Management System (Ngamduplee Building)
 - Communications and General Administration Support
 - Development of ENEWS system (Mobile Application)
 - Business Development
 - Development of Project Proposal and Job Sheet System (Phase 2)
 - Development of ISO9001 System (Phase2)
 - Financial Support System
 - Development of OT-Report System
 - Development of Provident Fund System
 - Development of Airline Information Services System
 - Provincial and Facilities Administration Support
 - Development of for Facilities Management System
 - Measurement of ATC Productivity
 - Development of ATC Productivity System
 - Safety Assessment
 - Development of a LHD-Report System
 - Development of Standard Frequency Measurement System
 - Application Development/Improvement
 - Development of Process Improvement SDLC (Phase 2)
 - Development of Mobile Notification System (Phase 2)
 - Development of Data Dictionary System
 - Development of Employee self service
- 2.2 Developing Information and Knowledge for Organization Excellence
- Developing information management to support the executives' decisions.

2.3 Encouraging and developing the organization and staff to know the use of digital technology

- Providing a training course for certified digital literacy skills.
- Providing knowledge and awareness about the law of Computer Crime and

Privacy Protection

■ Important Role in the Global, Regional Forum and Others

Roles of Aeronautical Radio of Thailand (AEROTHAI) Among International Forum - Regional and Other Annual Events in 2018.

1. CANSO Asia Pacific Conference, CANSO Global ATM Summit & The 22nd Annual General Meeting (AGM) and Related Meetings
 2. The Twenty-Sixth Aviation Consultative Committee (Malaysia – Thailand) Meeting (ACC/26)
 3. Distributed Multi-Nodal CDM/ATFM Operational Project Meeting
 4. Collaborative Miles-in-Trail Conversion Program (CMCP) Meeting and the 1st ASEAN ATFM Implementation Support Team Meeting
 5. The 1st Mekong Air Traffic Management Executive Meeting (MK-ATMEM/1) and the 7th Mekong Air Traffic Management Coordination Group Meeting (MK-ATMCG/7)
 6. The Consultation Cooperation Meeting among the 3 CEOs of the Aviation Organizations of Thailand - AEROTHAI, Thai Airways International Public Company Limited and Airports of Thailand Public Company Limited
 7. The Airspace Users – ANSP Meeting
 8. The Signing of Memorandum of Understandings (MoUs)
- 1. CANSO Asia Pacific Conference, CANSO Global ATM Summit & The 22nd Annual General Meeting (AGM) and Related Meeting**

On behalf of Thailand, AEROTHAI was honored to host the CANSO Asia Pacific Conference, CANSO Global ATM Summit & the 22nd Annual General Meeting (AGM) and Related Meetings Including Cultural Tours “The Thai way of life” (Traditional Thai cooking with a visit to the organic farm and village workshops), Welcome Reception and Farewell Dinner arranged for participants and their spouses, during 7-14 June 2018 at the Athenee Hotel, Bangkok.

The CANSO Asia Pacific Conference aims to provide their members in the Asia-Pacific region with the opportunity to meet and exchange knowledge on new technologies and practices regarding Air Navigation Services. The participants also take this moment to discuss issues, challenges and opportunities among regional and international cooperation. The main topic of this year's conference is *"Charting the Course of ATM in the Asia Pacific"*. The

conference presented and discussed the strategic role that the stakeholders of aviation will have on the future of air traffic within the Asia Pacific region including the challenges and success factors of Air Navigation Service Agencies in the Asia-Pacific region in the cooperation regarding Infrastructure Development. It also includes the ability to handle various types of air traffic, both in-house management and in cooperation with neighboring countries and the Aviation Industry to enhance safety, efficiency and ability to handle air traffic, in order to accommodate the increasing number of passengers and flight numbers due to the current economic growth.

The CANSO Asia Pacific Conference, CANSO Global ATM Summit & the 22nd Annual General Meeting (AGM) and Related Meeting accommodated more than 200 attendees from 75 aviation organizations. The main topic of the conference was *"Digitisation and Big Data is Everywhere ... but Where Exactly in ATM?"*. During the meeting, two major issues have been highlighted in recent years; "Digitalization and Big Data" which are among the important issues for air traffic operators to consider. The number of data that increasing accumulated everyday leads the Air Navigation Service Providers the need to take this information to make better decisions to achieve an effective service.

Progress/Achievements

Hosted this conference, Thailand has been recognized and entrusted among the aviation industry that Thailand Aviation has met the international standards set forth in the field of Air Traffic Safety Services. It also demonstrates Thailand's involvement in the International Aviation Community. Ministry of Transport (MOT) has played an important role in promoting and developing the capabilities of Air Transportation Services in Thailand. It plans to connect three airports (Don Mueang - Suvarnabhumi - U-Tapao) with high-speed railways, as one of the major infrastructure Transport and Logistics roadmaps under the current government's policy to develop the Eastern Economic Corridor (EEC) covering the area among 3 provinces in Eastern part of Thailand, including other related provinces. EEC has the potential to develop with the availability of transportation, infrastructure, entrepreneurs' needs, resources and links to other economic centres which will create greater confidence of international communities in Thailand. This policy will also contribute to investment, economics, society and tourism of Thailand.



CANSO Asia Pacific Conference



CANSO Asia Pacific Conference



CANSO Global ATM Summit and the 22nd Annual General Meeting

2. The Twenty-Sixth Aviation Consultative Committee (Malaysia – Thailand) Meeting (ACC/26)

AEROTHAI hosted the 26th ACC Meeting during 13-15 December 2017 at the Le Meridien Chiang Rai Resort, Chiang Rai Province. The meeting was jointly held by AEROTHAI and the Civil Aviation Authority of Malaysia. ACC Meeting was established as a standing committee which to be hosted twice a year or on special occasions. This floor was served to ensure mutual understanding and cooperation on Air Traffic Management (ATM) between the two neighboring countries. This meeting paves the way for the Seamless ATM collaboration between Malaysia and Thailand. The meeting also discussed the continuation of the activities of the previous meeting which based on mutual benefits of the two agencies according to the agreement of both parties.

Progress/Achievements

This meeting derived the exclusive exchanges of ideas in the operational level, preparation and the utilization of flight routes to create Uni-Directional, the arrangement on Operational Procedure, progress plan of ATS Inter-Facility Data Communication (AIDC), drafting of Air Traffic Service Coordination Procedure (ATSCP), progress report on radar data exchange and revision of various agreements that are beneficial to air traffic operations and increase air traffic management capabilities.



Aviation Consultative Committee (ACC)

3. Distributed Multi-Nodal CDM/ATFM Operational Project Meeting

AEROTHAI, together with Civil Aviation Authority of Singapore (CAAS), Civil Aviation Department of Hong Kong (HK CAD) and Civil Aviation Administration of China (CAAC) have jointly agreed to be a rotating host for the Distributed Multi-Nodal ATFM Operational Project Meeting. AEROTHAI hosted the meeting from 20-23 August 2018 at the Novotel Bangkok Ploenchit Sukhumvit, Bangkok

The meeting was held to discuss and develop cooperation on the preparation and development of capacity for further development in Cross-Border ATFM Operation in Distributed Multi-Nodal CDM/ATFM Network. At present, all members are well-cooperated in developing the Platform and trying to uplift the level of participation/involvement. The expected target for all members participated in this forum is to reach Level-3 in order to receive and transmit Calculated Take-Off Time (CTOT) effectively.

Progress/Achievements

The meeting was a great successful event and reached their expected objectives of the conference to develop further Cross-Border ATFM Operational platform and guidance. During the meeting, the Technical Sub-Group designed Operational Use Case and Scenario for connecting systems and summarize ATFM measures in various scenarios. Thailand, Singapore, People's Republic of China, and Hong Kong tried their best efforts for further development and active involvement of members in Level-2 and Level-3 members as well as mutually development of the ATFM Post-Operations Analysis Framework to be presented in the international arena.



Distributed Multi-Nodal CDM/ATFM Operational Project Meeting

4. Collaborative Miles-in-Trail Conversion Program (CMCP) Meeting and the 1st ASEAN ATFM Implementation Support Team Meeting

AEROTHAI and Civil Aviation Administration of China – Air Traffic Management Bureau (CAAC ATMB) jointly implemented this concurrent project called “Collaborative Miles-in-Trail Conversion Program (CMCP)”. The meeting was organized for the attended participants, during the Distributed Multi-Nodal Conference during 20-23 August 2018 at the Novotel Bangkok Ploenchit Sukhumvit.

The meeting was held to solve the occurrence of delays incurred by Flow Restriction of the Miles-in-Trail or Minutes-in-Trail. The participants noted the Development Plan of Detailed Description of the Concept of Operations, using the Ground Delay Program through the CTOT measures for flights to and from Thailand and People's Republic of China on Routes A1, A202 and also planned activities for the next phase. It also identifies relevant stakeholders, NOTAM formatting, and developing Operating Procedure, as well as defined trial process for Demonstration Flight to be consistent and well in line with the existing Distributed Multi-Nodal Project Platform.

Progress/ Achievements

The meeting was successful and achieved its objectives. It solved the major delay between Thailand and People's Republic of China, especially in Sanya (China Middle South Region) on Routes A1, A202. Pre-Tactical ATFM is implemented instead of using the Miles-in-Trail or Minutes-in-Trail flow restriction. Operational demonstration is planned. Vietnam Air Traffic Management (VATM) is encouraged to host the meeting. The meeting supports the enhancement of capacity to handle flights movements and air traffic management.

The 1st ASEAN ATFM Implementation Support Team Meeting

AEROTHAI hosted the 1st ASEAN ATFM Implementation Support Team Meeting on 24 August 2018 at the Novotel Bangkok Ploenchit Sukhumvit. The meeting was organized to support the development of Cross-Border ATFM in ASEAN member countries in accordance with the ASEAN ATM Master Plan and the ICAO APAC Seamless ATM Plan.

Progress/Achievements

The meeting derived a remarkable progress has been made by all participants in supporting the development of the Cross-Border ATFM of ASEAN member countries, and in accordance with the ICAO standards and also aligned with the Platform for Distributed Multi-Nodal Project.



ASEAN ATFM Implementation Support Team Meeting /1

5. The 1st Mekong Air Traffic Management Executive Meeting (MK-ATMEM/1) and the 7th Mekong Air Traffic Management Coordination Group Meeting (MK-ATMCG/7)

AEROTHAI hosted the Mekong Air Traffic Management Meeting (MK-ATMEM/1) on 18 September 2018 and the 7th Mekong Air Traffic Management Coordination Group Meeting (MK-ATMCG/7) between 18-21 September 2018 at the Le meridian Hotel, Chiang Mai.

The MK-ATMEM/1 meeting aimed to upgrade path for the MK-ATMCG meeting to become a strategic framework discussion concerning the improvement of the efficiency of Air Traffic Services among Mekong Subregion. This meeting concerned an outstanding Strategic Partner opportunity to create a floor for top executives to create a framework for coordinating air traffic in the region, building capacity and connecting seamless airspace, as well as connecting between the Mekong Subregion and airspace of the People's Republic of China and India. It also supported the implemented operation to be in line with the ASEAN ATM Master Plan, under the Air Traffic Management Harmonization Initiatives.

The MK-ATMCG/7 meeting was held to discuss and exchange the various ideas of air traffic management, constructing a new flight route, finding mutual agreements to restructure air traffic routes to facilitate the flow of airspace in the East Asia and Southeast Asia airspaces to ensure good coordination between the relevant agencies. This will result in continuity in the operation of air traffic management and further development of the future airspace management.

Progress/ Achievements

The MK-ATMEM/1 was successfully convened to derive fruitful results for all objectives of the conference, with an outcome to support the policy of joint efforts, in the fields of

ATFM, ASM, Routes Review, information and data sharing, and human resources development. The MK-ATMCG/7 meeting exchanged best practices and obstacles, such as CDM/ATFM, PBNs in the En-Route area, including other concerns about path to the future progress and development of ATMs in the airspace of East Asia - Southeast Asia. The meeting also discussed a unique direction towards the operation of ASEAN Strategic Planning Group to further discuss the continuation of development of the ASEAN Master Plan.



Mekong Air Traffic Management Executive Meeting/1 (MK-ATMEM/1)



Mekong Air Traffic Management Coordination Group Meeting/7 (MK-ATMCG/7)

6. The Consultation Cooperation Meeting among the 3 CEOs of the Aviation Organizations of Thailand - AEROTHAI, Thai Airways International Public Company Limited and Airports of Thailand Public Company Limited

AEROTHAI, Thai Airways International Public Company Limited (THAI) and Airports of Thailand Public Company Limited (AOT) alternately host the meeting quarterly. The participants of the meeting include the top Management and relevant Senior Executives of all 3 organizations. The purpose of the meeting is to discuss the interoperability of the national aviation agencies to consider the integrated Aviation Work plans through discussions on strategic cooperation and operational level.



AEROTHAI hosted the 1/2018 meeting of 3 CEOs of Thai aviation organizations at its Head Office, H.E. Mr. Pairin Chuchotethavorn, Deputy Minister of Transport, chaired the meeting with Executives Management of AEROTHAI, Thai Airways International Public Company Limited (THAI) and Airports of Thailand Public Company Limited (AOT)

7. Airspace Users – ANSP Meeting

Airspace Users Meeting - ANSP Meeting is held twice a year during March and September of every year. The meeting aims to provide Users of Air Navigation Services the opportunity to meet the Air Traffic Control Providers to share and discuss the Joint Operation Work. This floor gives an opportunity for AEROTHAI to disseminate important projects and information undertaken during year, including the development of various Air Traffic Services that are planned to be announced and implemented in the next year. There was an interesting session on the Report of the Results of the Annual Customers' Satisfaction Survey. In addition, it is a channel for reviewing the customer satisfaction survey results and for airspace users and air traffic controllers to develop relationships and express their opinions and recommendations which will be recorded as action items for further improvements of AEROTHAI's services to the highest satisfaction. It also creates another chance to communicate important information to its users to acknowledge and to build relationships among the individual level and the organizational level as well as between AEROTHAI and the users.



Airspace Users – ANSP Meeting

8. The Signing of Memorandum of Understandings (MoUs)

(1) Signing Memorandum of Agreement between King Mongkut's Institute of Technology Ladkrabang and AEROTHAI on Collaboration with Research Project to Study the Impact of Ionosphere Atmosphere on GNSS technology for air navigation aids system.

To define the Scope of Cooperation and Understanding in coordinating relevant researches on the Impact of Ionosphere on GNSS Technology for air navigation aids system, including Studies, Researches and Exchange of Knowledge on Advanced Technology.



Associate Professor Dr. Komsan Maleesee, Dean of Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang (KMITL) and Mr. Somnuk Rongtong, AEROTHAI Executive Vice President (then) signed the Memorandum of Agreement on 7 March 2018 at the Faculty of Engineering, King Mongkut's Institute of Technology Ladkrabang.

(2) Signing Memorandum of Understanding on Air Navigation Services Improvement between AEROTHAI and the École Nationale de l'Aviation Civile, the National Civil Aviation University of the French Republic.

To collaborate on research, Personnel Development, Training and Consultancy related to Air Navigation Services.



Mr. Olivier Chansou, President of École Nationale de l'Aviation Civile (ENAC) and Mrs. Sarinee Angsusingha, President of AEROTHAI (then), signed the Memorandum of Understanding on 8 March 2018, at ENAC Headquarters in Toulouse, France.

(3) Signing Memorandum of Agreement between the Royal Thai Air Force and AEROTHAI for the year 2017

This Memorandum of Agreement creates a path for the Royal Thai Air Force (RTAF) and AEROTHAI to further work together in both Operational Methodology of Aviation Practices, Technology and Human Resource Development. Both organizations aim at maximizing efficiency and safety, as well as the protection of the sovereignty of Thailand. RTAF and AEROTHAI also help support the development of commercial air navigation safety, in accordance with international standards. The Memorandum of Agreement between both organization is reviewed and signed once a year, in order to be consistent with current practices.



Air Force Commander-in-Chief Air Chief Marshal Jom Rungsawang (then) and Mrs. Sarinee Angsusingha, AEROTHAI President (then) signed the revised Memorandum of Agreement on 20 Marchs 2018 at the Royal Thai Air Force Headquarters.

(4) Signing Letter of Agreement (LOA) on Aeronautical Meteorology between Thai Meteorological Department and AEROTHAI in 2018.

To provide Aeronautical Meteorology Information Services in Thailand between AEROTHAI and Thai Meteorological Department (TMD). The main objectives of this LOA aim at safe, fast information services and to have a consistent understanding of roles and responsibilities between the two organizations, in accordance with the requirements of the International Civil Aviation Organization (ICAO) and the Regulation of Civil Aviation Authority of Thailand on the Implementation of Joint Operating Agreements between Aeronautical Meteorological Service Departments and Air Navigation Service Provider 2016.



Mr. Wanchai Sakudomchai, Director-General of Thai Meteorological Department (TMD) (then) and Mr. Somnuk Rongtong, President of AEROTHAI signed the Letter of Agreement on Aeronautical Meteorology on 27 September 2018, at the Oriental Residence Bangkok, Wireless Road, Bangkok.

Company Operating Performance

■ Air Navigation Services

Air Traffic Service within Bangkok FIR

Type of flight	Traffic Movement (Fiscal Year)		Change	
	2017	2018	Increase (+) Decrease (-)	Increase (+) % Decrease (-) %
International Flights	435,085	486,077	50,992	12
Domestic Flights	415,662	434,947	19,285	5
Overfly Flights	99,914	106,665	6,751	7
Overall Flights	950,661	1,027,689	77,028	8

Traffic volume in Bangkok FIR in 2018 totalled 1,027,689 flights, an increase of 8% from the previous year. An increase of 77,028 flights or an average of 211 flights a day.

Airport Movements (Top Four Airports)

Airport Movement	Suvarnabhumi	Don Mueang	Phuket	Chiang Mai
Flight Type				
International	272,857	96,617	61,358	20,119
Domestic	91,304	189,439	56,511	59,430
Type of Operation				
S : Schedule	358,671	259,993	110,825	73,956
N : Non-Schedule	2,989	2,605	4,549	1,272
G : General	2,450	7,420	1,158	356
M : Military	18	15,500	1,223	2,574
X : Others	33	538	114	1,391
Flight Rule				
IFR	364,095	274,231	116,991	75,950
VFR (included Y,Z)	66	11,825	878	3,599
Overall Flights	364,161	286,056	117,869	79,549
Average per day	998	784	323	218
% Changed	5%	6%	11%	5%

■ Air Traffic Management

1. Route Structure Enhancement for L507 and Y6

The volume of air traffic continues to increase for the past few years until it exceeds the capacity of the routes in addition to the nearby restricted area of the Royal Thai Air Force (RTAF) with some part overlapping the main routes, i.e. Y6, Y7, A464, W9, W21 with areas VTD33, VTD34 and VTD56. This has affected the air traffic control provision on the said routes which has to comply with conditions and limitation to keep away from the military exercising areas. The Company has negotiated collaboration with the RTAF by proposing the route structure enhancement/reduction of altitudes for military exercises which are related and overlapping since 2015. Such proposal have been agreed to by the joint committee meeting.

Following the success of the negotiation to restructure the routes L507 and Y6, there has been more flexible use of airspace which reduces the workload for air traffic controllers who have to cooperate with the military for more flight safety. The result is that flight operation on Y6 is more flexible.

2. Joint Efficient Use of Airspace between the Military and Civil Sectors

As a result of the successful collaboration with the military for restructuring of routes L507 and Y6, the Company and the military can both increase the airspace used. Now both the military and civilian can manage the airspace more efficiently and safely.

■ Air Traffic Flow Management Service (ATFM Service)

Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU) provides Air Traffic Flow Management (ATFM) service for domestic and international flights (Cross-Border ATFM) operating into constraint/congested airports and airspace in Thailand and the Distributed Multi-Nodal ATFM Network (Southeast Asia, Southern China, Hong Kong and Macau).

In addition, Bangkok ATFMU provides ATFM service on behalf of Air Navigation Service Providers (ANSPs) involved for all flights planning to enter the Afghanistan airspace westbound during the busy night time period from South/Southeast Asia to Europe or from South Asia to North America using the Bay of Bengal Cooperative ATFM System (BOBCAT).

ATFM service is provided using systems developed internally by AEROTHAI, with operations reported to ICAO Asia-Pacific ATFM Steering Group. The Company has been playing a joint leadership role in the Distributed Multi-Nodal ATFM Network project with People's Republic of China, Hong Kong, Singapore, Thailand, Australia and supported by other ASEAN Member States in developing ATFM service addressing international air traffic volume, also known as Cross-Border ATFM service. AEROTHAI joint leadership in the project is consistent with air traffic movement in Thailand, which consists of high proportion of international traffic,

while some international airports such as Bangkok Suvarnabhumi Airport services majority international traffic volume of approximately 80 percent.

Distributed Multi-Nodal ATFM Network Project

The Distributed Multi-Nodal ATFM Network project evolved into Operational Trial in 2015-2016, with Phase 1 concentrating on addressing demand-capacity imbalance at an arrival airport due to a situation which adverse circumstance such as weather phenomena, planned military activities or runway maintenance reduces capacity below planned air traffic. In 2017 the project has moved towards Phase 2 focusing on addressing similar imbalance issues occurring in the airspace sectors. The project is also working towards cross-border ATFM information linkage under System-Wide Information Management (SWIM) environment as well.

In 2018, AEROTHAI officially began providing ATFM service for constrained/congested airports, supporting full spectrum of planned and contingency events. In addition, AEROTHAI continued operational trial of ATFM service supporting constrained airspace due to joint military exercises and started operational trial of ATFM service supporting congested airspace in Bangkok FIR.

Application of Cross-Border ATFM Process in Thailand

During the fiscal year 2018, AEROTHAI applied Cross-Border ATFM concept and procedure to address demand-capacity imbalance situations in Thailand as follows:

- Royal Cremation Ceremony of His Majesty King Bhumibol Adulyadej (October 2017)
- Rehearsals and RTAF flight show on National Children's Day (January 2018)
- Terminal Fire at Khon Kaen Airport (January 2018)
- Rehearsals and military flight show on Royal Thai Armed Forces' Day (January 2018)
- Joint Military Exercises, Cobra Gold (February 2018) and Cope Tiger (March 2018)
- Runway Maintenance at Phuket Airport (January - February 2018) and Krabi Airport (March 2018)
- Initial Approach Chart (IAP) Flight Check at Phuket Airport (March 2018)
- Instrument Landing System (ILS) Flight Check at Don Mueang Airport (June 2018, August 2018)
- Congestion in Bangkok Area Control Centre (Bangkok ACC) airspace near Bangkok (June 2018 – present)
- Royal Thai Air Force Aircraft Decommissioning Ceremony at Don Mueang Airport (August 2018)
- Royal Thai Air Force Chief of Staff Handover Ceremony (September 2018)

In addition, AEROTHAI has been providing ATFM service supporting demand-capacity imbalance in neighboring countries within Distributed Multi-Nodal ATFM Network and supporting air traffic flow restriction from other countries (Flight Information Region/FIR Boundary) as required in situations including:

- Adverse weather conditions during peak hour traffic hours at Singapore Changi Airport (November 2017, December 2017, April 2018, May 2018)
- Rehearsals and flight show during Singapore Air Show 2018 including aircraft accident at Singapore Changi Airport during the event (Feb 2018)
- ASEAN Summit in Singapore (April 2018)
- Phnom Penh Airport Runway Maintenance (May – September 2018)
- Joint Military Exercise Bersama Shield 2018 in Singapore (May 2018)
- Rehearsals and flight show for Singapore National Day 2018 (June – August 2018)
- Typhoon Ewinar impact on flight operations at Hong Kong Airport (June 2018)
- Air traffic congestion in China, South Korea and Japan for flights on ATS Route A1/A202 (December 2017 – September 2018)
- Air traffic congestion in western China resulting in air traffic flow restriction at Lao PDR – China FIR Boundary (June – September 2018)
- Incheon Airport Runway Maintenance (September – December 2018)

ATFM service provided help significantly reducing airborne holdings, greatly enhanced safety and efficiency of air traffic operations and improved operations predictability from all stakeholders' perspective.

Bay of Bengal Cooperative Air Traffic Flow Management System (BOBCAT)

The Bay of Bengal Cooperative Air Traffic Flow Management System (BOBCAT) was developed to streamline Air Traffic Flow Management operations for flights intending to transit the Afghanistan airspace westbound during the busy night time period. This is due to Afghanistan being key gateway for flights from South and Southeast Asia operating to Europe and flights from South Asia operating to North America.

AEROTHAI manages operations of the BOBCAT system through the Bangkok Air Traffic Flow Management Unit (Bangkok ATFMU) since 2007.

Based on increasing traffic and data supplied by airlines through the International Air Transport Association (IATA), it is estimated that since operational implementation of the ATFM procedure using the BOBCAT system to the end of fiscal year 2018, the airlines would have saved about 140 million kilograms of aviation fuel, which would translate into reduction of greenhouse gases in contribution to the global environment of about 580 million kilograms.

This, in turns, assisted in cumulative airline cost savings of approximately 140 million US Dollar or Baht 4,600 million.

In addition, it is estimated that during fiscal year 2019, the BOBCAT ATFM operations have contributed to approximately 12 million kilograms of fuel savings, equivalent of approximately 50 million kilograms of Carbon Dioxide emissions and approximately 12 million US Dollar of airline cost savings.

Throughout fiscal year 2018, air traffic westbound through Afghanistan airspace during BOBCAT operation hours increased by 9.71 percent when compared to fiscal year 2017. Meanwhile, Afghanistan Civil Aviation Authority (ACAA) continued its effort to improve airspace capacity through development of ATS Surveillance Service in coordination with neighboring countries, supported by ICAO Asia-Pacific Regional Office and Bangkok ATFMU.

Design to Flight Operations and Airspace Development

In 2018, **Airspace Development for Terminal Control Area** has been complied with the designed and completed instrument flight procedures of 7 airports to increase the capacity of air navigation services. The airports included are 1. Don Mueang Airport 2. Suvarnabhumi Airport 3. U-Tapao Airport 4. Takhli Airport 5. Nakhon Sawan Airport 6. Chumphon Airport 7. Buri Ram Airport.

Airspace Development for En-routes to increase the capacity of connecting flights between airports to be more efficient. In 2018 the Company has carried out the following:

- Restructuring international route L507 (Bangkok-India) as well as revising information on exercising area VTD33, announcement issued in the AIP-Thailand on 30 August 2018 with effective date on 11 October 2018.
- Revising information on international routes R334 and R575 (Bangkok-Cambodia), announcement issued in the AIP-Thailand on 25 October 2018 with effective date on 6 December 2018.
- Revising information on domestic routes W8, W9, W10, W19 and Y7, announcement issued in the AIP-Thailand on 25 October 2018 with effective date on 6 December 2018.
- Establishing 7 new routes by using RNAV 5 Performance Based Navigation, i.e. international routes L524 and L877 and domestic routes Y13, Y14, Y15, Y16 and Y17.

■ Aeronautical Communication Services

1. AEROTHAI provides aeronautical fixed services with automatic message switching capability for the exchange of messages among domestic and international aeronautical communication centres. The service is available 24 hours a day 7 days a week.

Bangkok Aeronautical Communication Centre is the main Aeronautical Communication Centre in Asia/Pacific Region for receiving, transmitting, and distributing aeronautical messages to all parties involved in Aeronautical Fixed Telecommunication Network (AFTN) and/or Aeronautical Telecommunication Network (ATN) followed ICAO Annex 10 Volume II

2. The international circuits are directly connected through submarine cables, satellite and internet (through VPN service). Presently, AEROTHAI operates with direct circuit connections with 12 international aeronautical communication centres as follows:

Item	Circuit	Network	Signaling speed
1	Bangkok/Singapore	Submarine cable	64 Kbps
2	Bangkok/Hong Kong	Submarine cable	64 Kbps
3	Bangkok/Mumbai	Submarine cable	64 Kbps
4	Bangkok/Rome	Submarine cable	64 Kbps
5	Bangkok/Beijing	Submarine cable	2 Mbps
6	Bangkok/Kuala Lumpur	Satellite	32 Kbps
7	Bangkok/Phnom Penh	Satellite	64 Kbps
8	Bangkok/Yangon	Satellite	64 Kbps
9	Bangkok/Ho Chi Minh	Satellite	19.2 Kbps
10	Bangkok/Dhaka	Satellite	32 Kbps
11	Bangkok/Vientiane	Satellite	32 Kbps
12	Bangkok/Bhutan	Internet VPN	-

3. In 2018, 246,710,272 AFTN/ATN messages were handled by Bangkok Aeronautical Communication Centre. A total increase of 1,840,459 messages or 0.75 % in comparison to the last fiscal year.

■ Aeronautical Information Services (AIS)

AEROTHAI is responsible for the flow of information necessary for safety, regularity and the efficiency of international air navigation to entities involved in that information. This responsibility includes providing Notices to Airmen (NOTAM) and En-route Charts as well as other related aeronautical information to aircraft flying on domestic and international routes.

1. Notice to Airmen (NOTAM)

1.1 NOTAMs are issued by AEROTHAI as the International NOTAM Office and are distributed through AFTN and/or ATN network according to ICAO Annex 15.

NOTAM database provides NOTAM information through automatic request and reply service.

1.2 During the fiscal year 2018, AEROTHAI processed a total of 21,082 NOTAMs which is a decrease of 3,378 NOTAMs or 13.81 % in comparison to the last Fiscal Year.

2. Flight Plan and Air Traffic Service Messages

2.1 AEROTHAI main responsibility includes the management of flight plan and air traffic service messages according to ICAO Document 4444

2.2 During the fiscal year 2018, AEROTHAI processed a total of 7,944,425 messages which is an increase of 399,359 messages or 5.0 % in comparison to the last fiscal year.

3. Operational Meteorological (OPMET) Data Services

AEROTHAI is a designated Operational Meteorological Bulletin Exchange (ROBEX) Centre as well as Regional OPMETs Databank (RODB) according to ICAO Annex 3 and ROBEX Handbook.

■ Business Related Service

Business Related Service Performance in the fiscal year 2018

Business Unit was assigned by AEROTHAI to perform commercial business activities related to AEROTHAI's mission of providing air navigation service. Objectives of Business Unit are to promote and support AEROTHAI's core mission to be strategic arms of AEROTHAI as national air traffic service provider and extend cooperation with aviation organizations in neighboring countries and in this region in order to expand air traffic management capabilities. In Addition, Business Unit generates additional revenue from utilizing AEROTHAI existing resources to compensate cost associated from external crisis as well as manage resources more effectively in order to reach our objectives in terms of revenues and customer satisfaction.

In fiscal year 2018, AEROTHAI provided services in many projects in the fields of production, provision, installation, maintenance, survey, inspection, calibration, training for domestic and oversea organizations as follows:

1. Production, Provision and Corrective Maintenance Service

Thirteen significant projects performed by AEROTHAI, are as follows:

- Maintenance of Conical Monopole Antenna system at Yotaka radio station and Boardband Dipole Antenna system at Mekhong Riverine Unit Headquarters (MRU)
- Provision and Installation of Doppler Very High Frequency Omni Directional Range/Distance Measuring Equipment (DVOR/DME) for the Department of Royal Rainmaking and Agricultural Aviation at Nakhon Sawan Airport
- Provision, Installation and Improvement of Coastal radio system for Royal Thai Navy
- Maintenance of Automatic Message Switching System (AMSS) for the Royal Thai Air Force
- Provision of the Receiver Autonomous Integrity Monitoring (RAIM) Prediction Service for Vietnam Air Traffic Management, Vietnam
- Provision of the Receiver Autonomous Integrity Monitoring (RAIM) Prediction Service for Partner Associates International Co. Ltd. (PAI), Myanmar
- Provision of AEROTHAI C-ATIS Interface Card with software for CNS Communication Engineering Pte. Ltd., Singapore
- Provision of Spare Parts for ATIS for Pacific Commercial Co. Ltd., Nepal
- Maintenance of Radio Communication System for PTT Public Co. Ltd. and walk-in customers
- Maintenance of Radio Communication System located along the Nakhon Sawan natural gas pipeline for PTT Public Co. Ltd.
- Improvement of radio network monitoring system for PTT Public Co. Ltd.
- Improvement of utilizing of trunked radio frequency for the Royal Thai Police
- Installation of repeater digital mobile radio for China Petroleum Pipeline Bureau
- Sale of radio head set to CEC International Ltd.

2. Flight Inspection Service

AEROTHAI provides flight inspection and validation service for various Navigation Aids: Differential Navigation Aids, Doppler Very High Frequency Omni Directional Range/Distance Measuring Equipment (DVOR/ DME), Non Directional Beacon (NDB), Performance Based Navigation (PBN), Precision Approach Patch Indicator System (PAPI), Approach Light System (ALS) and Radio Navigation. Seven projects inspected and validated by AEROTHAI are as follows:

- Flight inspection for PAPI at 9 airports: 6 airports of Airports of Thailand Public Co. Ltd. (Chiang Rai, Chiang Mai, Don Mueang, Phuket, Suvarnabhumi and

Hat Yai) and 3 airports of Bangkok Airways Public Co. Ltd. (Trat, Samui and Sukhothai)

- Flight Inspection for ILS/DME/MM (Commissioning Check) at Takhi Royal Thai Air Force Base 4, Lop Buri for Unitech Associates Co. Ltd.
- Flight Inspection for DVOR/DME and NDB at Kamphaengsaen flying training school, Nakhon Pathom for Unitech Associates Co. Ltd.
- Flight Inspection and Validation at Different Airports in Cambodia for Cambodia Air Traffic Services Co. Ltd.
- Flight Validation for PBN for Lan Xang Minerals Limited, Lao PDR
- Flight Validation of PBN at Savannakhet for Department of Civil Aviation, Lao PDR
- Flight Inspection of ILS/DVOR/DME for CIT Lao Co. Ltd., Lao PDR
- Flight Inspection of ILS (Glide Slope) for CIT Lao Co. Ltd., Lao PDR
- Flight Validation of PBN and provision of related services for Lao Air Traffic Management (LATM), Lao PDR
- Flight Validation of PBN for Partner Associates International Co. Ltd., Myanmar
- Flight Inspection of Navigation Aids system for Civil Aviation Authority of Nepal (CAAN), Nepal

3. Readiness Assessment for Implementation of Reduced Vertical Separation Minimum (RVSM) of ATC for Operation Service

AEROTHAI provided the service to 91 aircraft of 83 airlines and freight forwarders in 11 countries, which are Afghanistan, Cambodia, China, India, Indonesia, Mongolia, Myanmar, Pakistan, Tajikistan, the Philippines and Thailand. The airlines are M/S Pinnacle Air Pvt. Ltd., Mjets Limited, Alphaland Aviation, Inc., Phoenix Aviation (Pvt) Ltd., PT Cardig Air, etc.

4. Test Equipment Calibration and Maintenance Service

AEROTHAI provided the service to 104 equipment for other 10 organizations such as Thai Aviation Services Ltd., Brilliant Performance Co. Ltd., CSPM (Thailand) Co. Ltd., RF Application Co. Ltd., Cellcomm Marine Services Co. Ltd., and N.C.C. Management and Development Co. Ltd which is a part of Test Equipment Calibration Memorandum of Understanding between Office of the National Broadcasting and Telecommunications Commissions and AEROTHAI. Moreover, AEROTHAI also provided the service to Cambodia Air Traffic Service Co. Ltd.

5. Rental of Communication Equipment Service for Airlines and Energy Sectors.

AEROTHAI provides rental of equipment for in-house use and to airlines, aviation related business operators, PTT Public Co. Ltd. and its subsidiaries. In 2018, AEROTHAI provided the services to support the Company's core business at the amount of 1,506 sets. Total number of rental equipment amounted to 10,221 sets, a decrease of 804 sets or 7.29% compared with those of the previous fiscal year. Moreover, the number of rental Digital Trunked Radio System (DTRS) amounted to 2,502 sets, an increase of 1,870 sets or 74.74% compared with the previous fiscal year.

6. Satellite Communication Services

AEROTHAI provided satellite communication services in order to support air traffic communication via voice and data to aviation organizations in 5 countries namely; Bangladesh, Cambodia, Lao PDR, Malaysia and Vietnam.

7. Airlines Operational Communication Services (AOC)

AEROTHAI has installed 25 additional remote ground stations (RGS) in 7 countries as follows:

- Thailand 11 stations:
 - ACARS 4 stations
 - VDLM2 7 stations
- Republic of Korea 3 stations
 - ACARS 1 station
 - Frequency Terminal 1 station
 - Autotune 1 station
- Taiwan 4 stations
 - VDLM2 3 stations
 - Autotune 1 station
- Union of Myanmar 1 station
 - ACARS 1 station
- Singapore 2 station
 - ACARS 1 station
 - VDLM2 1 station
- Indonesia 1 station
 - ACARS 1 station
- Australia 3 stations
 - ACARS 1 station
 - VDLM2 2 stations

There are 183 remote ground station which can be divided into 145 ACARS stations in 15 countries and 38 VDLM2 stations in 6 countries to provide Airlines Operational Communication Services covering 15 countries, namely Thailand, Cambodia, South Korea, Taiwan, New Zealand, Brunei, Union of Myanmar, the Philippines, Mongolia, Malaysia, Vietnam, Singapore, Australia, Indonesia and India.

AEROTHAI provided AOC service to 179 airlines. Number of aircraft amounted to 8,014 aircraft. Total number of aviation data was 174.016 million Kb., which was an increase of 23.60 million Kb., or 15.69% from those of the last fiscal year.

8. Training, Work Shop Meeting and Consultancy Service

AEROTHAI provided 2 training courses to civil aviation authority and other as follows:

- Conducting “FDMC Familiarization and training” courses to Civil Aviation Authority of Mongolia (CAAM)
- Conducting “Aviation Administration and Financial Management” course to Civil Aviation Authority of Nepal

9. Air Situation Display/ Ground Situation Display Service

AEROTHAI provided Air Situation Display/Ground Situation Display service for in-house use in order to strengthen the core business as strategic arms to Aeronautical Information and Flight Data Management Centre and for other use pursuant to business objectives to other organizations, e.g. Bangkok Airways, Airports of Thailand PLC., Bangkok Aviation Centre, and International Aviation College, Nakhon Phanom University as well as providing flight information for aircraft noise measurement system at Suvarnabhumi Airport.

Moreover, AEROTHAI has offered assistance to develop the aviation system and human resource for domestic organizations and others in neighboring countries. Supporting the aviation organizations in neighboring countries will increase the efficiency of ATS within the region, be prepared for increasing traffic according to the economic growth, and encourage Thailand to be the aviation hub in the region. This has followed the AEROTHAI strategy that is not only to create the collaborative air traffic management but also to connect the air routes throughout the Asia region. AEROTHAI provided 3 projects to civil aviation authority as follows:

1. Development and exchange knowledge and experiences of the Management of ASBUs and Seamless Sky with international customers in Cambodia, Lao PDR, Malaysia and Myanmar.
2. Maintenance of DVOR/DME at Luang Prabang International Airport for Laos Air Traffic Management (LATM).
3. Provision of the Receiver Autonomous Integrity Monitoring (RAIM) Prediction Service for Vietnam Air Traffic Management, Vietnam and Partner Associates International Co.,Ltd. (PAI), Myanmar.

AEROTHAI has conducted researches to develop new products, services, systems and technologies in order to support core business with the objective of enhancing personnel's potential, reducing expenditures on importing equipment and expand the business opportunity. In 2018, 2 products have been developed as follows:

1. Signal Light Gun which is an important communication equipment designed by AEROTHAI, for aerodrome air traffic controller to transmit specific light signals to pilot when there is communication failure. It has been initially operated at Don Mueang International Airport. The result of this research and development is to increase the intensity of light. This equipment is designed following the specifications and standards set by the International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA).
2. ARB01 Airport Rotating Beacon which is the equipment to facilitate the air traffic service in order to inform the location of the airport or air traffic control tower to pilot in the night time or low visibility. This beacon, initially operated at Nakhon Ratchasima air traffic control centre. It has been developed for energy saving and providing the high intensity of light. This equipment is designed following the specifications and standards set by the International Civil Aviation Organization (ICAO) and Federal Aviation Administration (FAA).

■ Human Resource Management

➤ Human Resource Management and Quality of Work Life

As the air traffic forecast indicates that the worldwide aviation industry will continue to grow, especially in the Asia Pacific region, AEROTHAI is currently undergoing significant technology transformations as well as air traffic and engineering standard improvements. The Company aims at higher safety level and increase efficiency in its airspace management and air traffic flow management.

Regarding the human resource management (HRM), AEROTHAI designs all efforts mainly to strive toward the Company's goals. At present, AEROTHAI focuses on these four major HRM areas: Leadership Development, Succession Planning, Competency-based Management and Employee Engagement Enhancement. In 2018, AEROTHAI reviewed the long-term manpower planning in order to proactively recruit new personnel for both operation and engineering fields that are expected to have high demand in manpower in the near future. AEROTHAI also revised the Competency Management System that included Core Competencies for all position levels, Functional Competencies for all departments, as well as Leadership Competencies for all management. In addition, this is the second year that AEROTHAI continues to carry out the 'Building AEROTHAI Leadership Pipeline' project, which additional 38 senior directors and directors participated in a comprehensive leadership assessment program. Participants have gone through globally-accepted psychometric

assessments, 360-degree assessments, assessment center and one-on-one feedback sessions with certified assessors. As a result, AEROTHAI has more reliable and accurate information on each management's strengths and weaknesses, which in turn can be used to create individual development plans (IDPs) and provide useful insights for AEROTHAI succession plan. Moreover, AEROTHAI strives to improve the working environment to motivate its employees to work more efficiently and have better employee engagement with the Company which will lead to AEROTHAI's sustainable growth in the future.

For staff's quality of life, AEROTHAI consistently organizes many activities that aim to help staff achieve work-life balance and promote good health, both physically and mentally. For example, the Developing Quality of Life (DQL) program aims to educate the staff on how to take care of their health on a daily basis in order to prevent them from getting sick. Every year, the Company collects statistics of common sicknesses most staff have problems with, based on medical bills they frequently submit for reimbursement. AEROTHAI analyzes the company-wide health statistics along with staff's annual health examination results, in order to design appropriate health-promoting activities and use as inputs in redesigning the welfare system. Additionally, AEROTHAI renovates resting areas and provides relaxing massage services for the air traffic controllers, aiming to reduce their stress and fatigue levels. Moreover, the Company provides various choices of health-promoting activities, in terms of time, venues, and instructors, to better serve different needs of our staff.

To promote morality and well-being of society and environment, AEROTHAI continues to run "The AEROTHAI Mini Volleyball" for The Royal Cup from Her Royal Highness Princess Maha Chakri Sirindhorn that supports talented youth around the country to play volleyball. This year marks its 19th anniversary and is still proven a great success: many participants have grown to become national volleyball players, generating fame and positive reputation for AEROTHAI and Thailand. Additionally, this year AEROTHAI initiates many activities that demonstrate corporate social responsibilities (CSR), such as volunteering work and donations.

AEROTHAI highly emphasizes the importance of its personnel, because the Company recognizes that the overall performance is mainly driven by staff's dedication and willingness to work hard. AEROTHAI attempts to increase two-way communication channels across all levels. This year, there is a 'Meeting the President' activity held regularly, where two representatives from each department get to meet the President to hear the progress of the Company's operations and ask questions if there are any.

➤ **Human Resource Development and Learning Promotion**

AEROTHAI puts emphasis on personnel and leaders development along with the creation of a learning atmosphere under the concept of AEROTHAI HR Model, which divided into three parts as follows:

Training and Development

Training and Development manages by using Competency-based Training Methodology in accordance with ICAO and Human Resources Training Development guidelines and International Human Resources Development trends. AEROTHAI's competency can be divided into 3 groups: Core Competency, Functional Competency and Leadership Competency. AEROTHAI's Competency Dictionaries are now completed and in process of competency assessment. Subsequently, Individual Development Plan (IDP) will be developed in accordance with 70-20-10 Learning and Development Model. In addition, AEROTHAI provides staff scholarships to study in prestigious institutions, both in Thailand and abroad from Bachelor Degrees up to Doctoral Degrees in Air Traffic Management (ATM), Communications Navigation & Surveillance (CNS) Technologies, and Information Management (IM).

Knowledge Management

AEROTHAI has continuously implemented Knowledge Management. In 2018, AEROTHAI has collected and stored additional important knowledge in Air Traffic Management (ATM), Aeronautical Information Service (AIS), Communications Navigation and Surveillance (CNS), by encouraging all departments to develop Knowledge Landscape and Knowledge Map along with applying their knowledge to improve their performance or create innovation. Moreover, Knowledge Management Assessment has been conducted to holistically identify KM System Maturity.

Innovation Promotion

AEROTHAI has continuously puts emphasis on internal innovation promotion. In this year, the goal has been revised by using concept of "User Challenge", which adopted ICAO Based Performance Guidance (11 KPAs) as scope of Innovation creation. As a result, AEROTHAI won SOE award: Innovation Award (honorable organizational level), held by the Ministry of Finance.

➤ Development of Engineering Human Resources

1. Development of engineering human resource under the Thailand Modernization of CNS/ATM Systems Project with the following training courses:
 - TCMS Dataset Validation and Fine Tuning Workshop for air traffic controllers and engineers who have to use TopSky's Dataset by inviting experts from Thales to be the instructor.
 - TOP Sky Maintenance Internal Training Part 2 for engineers who have to maintain the Air Traffic Management System-

- IP Cloud Network Part 1 and Part 2 for engineers who have to maintain communication network system
- 2. Development of engineering personnel to be instructor and develop training courses by inviting experts from Entry Point North, Sweden to be the instructor for ATSEP Basic Training course.
- 3. Development of engineering personnel to be on the job training instructor by sending personnel to attend ATSEP OJTI courses at Entry Point North, Sweden.

➤ **Development of Operational Human Resources**

Air Navigation Services

The Company emphasizes and plans the development of operational personnel according to their responsibility in each position to accommodate the rapid growth of aviation industry in accordance with ICAO standards. This is to make preparation for the editing of the Civil Aviation of Thailand. The Company continues to arrange training courses from institutions certified by TRAINAIR PLUS or sending personnel to attend training courses both domestically or overseas such as Entry Point North which has been certified by the Civil Aviation Authority of Thailand. Experts from these institutions came to share the techniques and the use of up-to-date tools. Overseas observation trips also organized for the personnel to increase their skills for on the job training instructors both quantitatively and qualitatively which will result in efficient development of operational human resources according to international standards.

Improvement of Air Traffic Controllers' English Proficiency

The Company gives priority to the improvement of air traffic controllers' English proficiency to meet the English standards set by ICAO. The Company continues to carry out the ATC & Pilot English Proficiency Project with the main objective of improving the English proficiency as set by ICAO for air traffic controllers and pilots. They are supported to improve their skills in their work and be prepared to take English tests with the institutions certified by the Civil Aviation Authority of Thailand. The implementation can be divided into 2 projects as follows:

1. Training/Improving English Proficiency for Operational Level 4 or Higher "Maintain Level 4" with 4 main activities:
 - 1.1 Aviation English Workshop for Level 4 – Higher 39 groups
 - 1.2 English Practice Zone (EPZ) Session for the central (Tung Mahamek and Suvarnabhumi) 208 groups
 - 1.3 General English Classes for ATC 22 groups
 - 1.4 Self learning programme 100 hours
2. Development of personnel to be English improvement facilitators by organizing annual ATC & Pilot English Facilitator Workshop on a continuous basis since 2005.

As a result of continuous implementation of the development project, currently the number of air traffic controllers of 852 who took part in the English tests can pass the ICAO English Proficiency Standards tests at 99.06%. Even there are some air traffic controllers who could not pass the tests, this has not impact on the present manpower.

Development of Personnel under the Thailand Modernization CNS/ATM Systems Project

Development of air traffic control personnel is carried out to prepare the air traffic controllers and related personnel for the new system and technology under the Thailand Modernization CNS/ATM Systems Project. The personnel need to know the operation of the systems, equipment and new communication systems installed at the Air Traffic Management Centres both in the central and provincial units. The development includes training system and contingency system.

In 2018, the Company planned to arrange Refresher TMCS for Topsky ATC and Topsky Tower at all provincial air traffic control centres to prepare the operational personnel to be confident to work with the systems. They are also trained in TMCS Refresher Working Method to efficiently familiarize with the work. Shadowing Phase has started at the end of August 2018 starting at Chiang Mai Air Traffic Control Centre to be the first Centre that conducted official trial of the system. Shadowing Phase process will continue to take place for all Centres from the end of 2018 to 2019.

Personnel Development under the USAP Project

The Company has to comply with ICAO standards and the Civil Aviation Authority of Thailand as its regulator. In 2017, Thailand entered the Universal Security Audit Programme –Continuous Monitoring Approach (USAP-CMM). The Company is one of the organizations involved with the aviation industry which must have preventive measures for unlawful acts, e.g. hijack aircraft, bomb threat, etc. The Company gives priority to the security management to be up to international standards. After the audit, ICAO has praised the Company with no findings for improvement or any recommendations. In 2018, the Company arranged training courses for personnel on the continuous basis as follows:

1. Security Awareness Course for 96 management, 1,676 personnel at Tung Mahamek (65 newly recruited attended the course during their orientation on 3 October 2018) and 599 personnel at Suvarnabhumi and Don Mueang, making the total of 2,392 persons.

2. Specialized Training Courses for air traffic controllers:

<u>Centres</u>	<u>Number of Personnel</u>
- Bangkok Area Air Traffic Control Centre	247
- Bangkok Terminal Air Traffic Control Centre	285
- Provincial Approach Air Traffic Control Centre	53
- Phuket Air Traffic Control Centre	78
- Hat Yai Air Traffic Control Centre	45
- Surat Thani Air Traffic Control Centre	42
- Hua Hin Air Traffic Control Centre	29
- Chiang Mai Air Traffic Control Centre	58
- Phitsanulok Air Traffic Control Centre	39
- Udon Thani Air Traffic Control Centre	29
- Ubon Ratchathani Air Traffic Control Centre	<u>25</u>
Total	<u>930</u>

■ Performance on Investment Expenditure

Since 2018 the Government has a policy for the state enterprises to set the target for investment expenditure at more than 95% of the approved budget. In 2018, AEROTHAI's accumulated investment expenditure is Baht 1,060.54 million which is 75.75% compared to the approved budget of Baht 1,400.000 million, which is Baht 339.46 million less than the approved budget. However, after adjusting the conditions as set by the Ministry of Finances guidelines (for example: the target can be adjusted if the actual expenditure is lower than the approved budget), AEROTHAI's investment expenditure is 83.89% of the approved budget due to the termination of contract and the procurement is not in accordance with the plan.

■ Performance Appraisal

AEROTHAI performance appraisal was done through performance agreement of state enterprise's operation with the Ministry of Finance with State Enterprise Policy Office (SEPO) as regulatory body. The Government recognizes the importance of creating added value to enable State Enterprises to become more efficient, thereby increasing the competitiveness edge of the enterprise and the creation of added value to the property of the State. The State Enterprise Performance Appraisal (SEPA) is a tool which consists of 2 parts: (1) the assessment and evaluation of Systems and Processes for the 6- categories of corporate management (Leadership, Organizational Strategic Planning, Customer and Market Focus, Measurement/Analysis/Management of Knowledge, Personnel Focus, and Operations Focus) and (2) the organization's performance results of its operations. AEROTHAI yielded an overall performance appraisal of 4.1652 in the fiscal year 2017.

SEPA's Performance Appraisal	Fiscal Year 2017	
	Process/System	Result
Weight	50	50
Weighted Result	352.50/2.1500	2.0152
Total	4.1652	

▪ Company Rating

In the fiscal year 2018, the Company's rating was evaluated by the TRIS Rating Company Limited, which affirms the company rating of Aeronautical Radio of Thailand Ltd. (AEROTHAI) at "AAA" and the "Stable" outlook. It is 4 consecutive years that the Company received this rating. The rating reflects the monopolistic status of AEROTHAI as the sole air navigation service provider in the country, as well as its good safety record, strong financial standing, and experienced management team. TRIS Rating views that the Company's credit profile is enhanced by its unique and important role to the government and the potential to have extraordinary support from the government in a stress scenario.

The "stable" reflects TRIS Rating's expectation of AEROTHAI's continued monopolistic status as the sole air navigation service provider in the country in the foreseeable future and its ability to maintain good operating records. In addition, TRIS Rating expects the Company to sustain a strong liquidity position. A rating downgrade scenario may occur, although it is highly unlikely, if AEROTHAI's linkage with the government weakens to the degree that it changes TRIS Rating's view on the prospect of extraordinary support from the government to AEROTHAI.

■ Awards Received during the Year

The Company was granted with the Thailand Labour Management Excellence Award 2018 for workplaces as follows:

Type of Award	Workplace which receive Award	Receive award for Consecutive years
Thailand Labour Management Excellence Award, National level Platinum (Maintain for 10 consecutive years or longer)	1. AEROTHAI Headquarters (Tung Mahamek)	13
	2. Phitsanulok Air Traffic Control Centre	13
	3. Hat Yai Air Traffic Control Centre	12
	4. Surat Thani Air Traffic Control Centre	12
	5. Chiang Mai Air traffic Control Centre	11
	6. Nakhon Ratchasima Air Traffic Service Engineering and Operating Centre	11
	7. Ubon Ratchathani Air Traffic Control Centre	11
	8. Office at Suvarnabhumi Airport	10
Thailand Labour Management Excellence Award, National level Diamond (Maintain for 1–4 consecutive years)	1. Udon Thani Air Traffic Control Centre	3
	2. Phuket Air Traffic Control Centre	2
Thailand Labour Management Excellence Award, Provincial level	1. Hua Hin Air Traffic Control Centre	2

■ Highlighted Activities

Global and Regional Cooperation

1. Cross-border Air traffic Flow Management (Cross-border ATFM)

- AEROTHAI has actively supported International Civil Aviation Organization (ICAO) Air Traffic Management Operations Panel (ATMOPSP) which is the global body responsible for developing the global ATFM standards and related guidance materials. At the regional level, aiming at continuously pushing forward ATFM implementation in the Asia/Pacific region, under the umbrella of ICAO Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG), AEROTHAI keeps contributing to ATFM Steering Group (ATFM SG), especially in developing and maintaining Asia/Pacific Framework for Collaborative ATFM. Additionally, AEROTHAI plays an important role in Asia/Pacific ATFM Information Requirement Small Working Group (ATFM-IR SWG) tasked to develop both operational and technical specifications with the objective to realize

the harmonization of ATFM services and support systems across the ATFM implementation groups in the Asia/Pacific region.

- AEROTHAI plays the leading role in the Distributed Multi-Nodal ATFM Network project which involves Air Navigation Service Providers (ANSPs) of another 10 countries, i.e. Singapore, China, Hong Kong, Australia, Cambodia, Malaysia, Myanmar, Indonesia, Vietnam, the Philippines, Lao PDR, in Asia/Pacific region as well as airlines and international organizations. This project is one of the collaborative ATFM projects participated by the highest number of aviation stakeholders in the region. In 2018, AEROTHAI together with participating ANSPs made quite a number of achievements, including the operational service provision in various events affecting airport capacity and airspace capacity. Furthermore, with the need for a single-point of information access enabling by the effective information sharing platform among stakeholders, Technical Sub-Group of the project has been established and taken to develop an Interface Control Document (ICD) that will define the ATFM system-to-system information linkage, while keeping in view the requirements from airspace users and future development toward system-Wide Information Management (SWIM) framework. In 2018, the common format of ATFM Daily Plan (ADP) detailing the affected airport/airspace capacity and the ATFM measure applied to manage the traffic flow in that constrained area was agreed in consensus and will be developed accordingly to not only harmonize the information provision but also ease the difficulty for airspace users in understanding the information provided in different formats among ATFM units.

2. System-Wide Information Management (SWIM)

- Under the cooperation framework between ASEAN and USA, in 2018 AEROTHAI has continuously and actively prepared for the SWIM in ASEAN Demonstration which AEROTHAI reached the agreement in 2017 with the Civil Aviation Authority of Singapore (CAAS) to hold a showcase of the operational benefits enabled by SWIM. Moreover, SWIM is an integrated part of ICAO's Global Air Navigation Plan, particularly the Aviation System Block Upgrades (ASBUs). It is considered as an important building block of Seamless ASEAN sky and this demonstration is also aimed at providing an opportunity for ASEAN Member States (AMSs) and States/Administrations in Asia/Pacific region to obtain a first-hand experience on SWIM implementation. It has been agreed that this SWIM in ASEAN Demonstration will be held around June 2019. Besides, until now, 15 Organizations from 14 Asia/Pacific States, including AEROTHAI in the name of Thailand, have formally declared their participations in the demonstration. They are, except AEROTHAI and CAAS who are the co-leaders of this demonstration, USA, Malaysia,

Australia, Hong Kong, Japan, Cambodia, Vietnam, Lao PDR, Indonesia, Myanmar, the Philippines, Brunei and New Zealand.

- AEROTHAI is the active member of ICAO Asia/Pacific SWIM Task Force to develop SWIM implementation plan and related requirements for the Asia/Pacific region. In 2018 AEROTHAI has been assigned by the Task Force to take a leading role in various activities such as to draft the regional SWIM roadmap, to support other Working Groups or Task Forces under APANPIRG in examining and developing information exchange models' extension required for the operational use in Asia/Pacific, to draft the SWIM Governance approach to be applied as well as to design the SWIM Architecture to be deployed in Asia/Pacific.
- In 2018, the operational Scenario Template, that AEROTHAI designed for identifying the operational requirements for information exchange based on SWIM concept which in turn is used to derive the technical specifications, was adopted at ATMOPSP for the use at global level. The operational requirements specified using this template will be submitted to ICAO ATM requirements and Performance Panel (ATMRPP) to support the development of concept and standard regarding Flight and Flow for Collaborative Environment (FF-ICE) and SWIM.

3. New Edition of ICAO Global Air Navigation Plan

In 2018, AEROTHAI has been a part of the ICAO's ASBU Panel Project Team responsible for drafting the new edition, the sixth edition, of ICAO's Global Air Navigation Plan (GANP) which will be submitted to the 13th ICAO Air Navigation Conference (AN-Conf/13) in October 2018 and proposed for adoption at the 40th Session of the ICAO Assembly in 2019, respectively. Additionally, AEROTHAI is taking a leading role in drafting the new version of runway sequencing thread of ASBUs.

4. Development of Air Navigation Services (ANS) Provision Standards according to International Standards and the National Regulations

The Civil Aviation Authority of Thailand (CAAT) has revised the structure of aviation laws to increase efficiency leading to safe services in line with international standards. The CAAT is drafting the regulations concerning the application and issuance of licence to provide air navigation services. It is expected that the regulations will be announced by the end of 2018.

The Company with the main function as Air Navigation Services Provider (ANSP) has to develop the standards of air navigation service provision to be in line with the relevant laws/regulations. At the same time, the Company has to apply for the licence to provide air navigation services within the set time frame (within 12 months) from the date the CAAT

announces the regulations on application and issuance of licence for the provision of air navigation services. The Company has appointed a Committee to develop measures for provision of air navigation services to set standards for provision of air navigation services to cover Air Traffic Services (ATS), Communication/Navigation/Surveillance (CNS), Aeronautical Information Service (AIS), Aeronautical Chart and Instrument Flight Procedures Design (IFPD). At present, the Company is preparing to apply for licence by studying standards systems from Europe while CAAT is setting the specifications. The Company is evaluating ways, identify actions to be taken as well as planning the implementation as a whole. It has arranged to have working systems and suitable qualifications including preparation of documents to submit with the application as required by the CAAT (General Document Requirement and Specific Document Requirement). It is expected that the Company will be able to submit the application for licence to provide air navigation services within the time set by CAAT.

Organization Management

■ Risk Management and Internal Control

AEROTHAI has implemented its Corporate Risk Management (CRM) and Internal Control according to the Risk Management and Internal Control Guidelines and Procedures, 2012 as outlined by the State Enterprise Policy Office (SEPO) and the Standards and Guidelines for Internal Control of Government's Agencies, 2018 set by the Ministry of Finance. The guidelines and procedures are based on the concept developed by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In the fiscal year 2018, AEROTHAI has carried out risk management undertakings according to its Risk Management and Internal Control Master Plan in the following areas:

Strategic Risk: AEROTHAI's managed strategic risk by using the target of investment expenditure set out by the Government's policy and the accomplishment of projects. The result shows low risk for investment expenditure while for the accomplishment of projects, it has to be followed up and accelerated to accomplish the expected plan.

Operational Risk: Safe and efficient air navigation services and becoming high performance organization are the focus of Operational Risk. Overall evaluation indicates that 3 out of 4 risks need to be further managed; those are 1) Bangkok Approach Control Centre (BACC) air traffic controllers' fatigue by long working hours, 2) intrusion of unmanned rockets and sky lanterns in flight operation area create safety concerns for aircraft, and 3) airspace is not sufficient for high volume air traffic in BACC. The risk management measures need to be monitored and reviewed. Additional measures of short, medium, and long-terms may need to be issued for ongoing improvement operation in the fiscal year 2018.

Financial Risk: AEROTHAI always carefully monitors risks arising from external factors that affect air traffic volume and AEROTHAI's income. In the fiscal year 2018, increasing air traffic volume resulted in higher income, higher liquidity, in addition, reduced financial risk.

Compliance Risk: AEROTHAI acts on the good governance concept and related legislations/laws, notably in the following risk areas:

- Risk area 1: Corporate Governance (CG) – reviewing performance audit results, complaints, findings related to CG concept
- Risk area 2: General legislations/laws - reviewing litigation and the accused fine
- Risk area 3: Aviation laws - reviewing performance audit results, complaints, findings related to aviation laws

In the fiscal year 2018, AEROTHAI's compliance risk is low and in an acceptable level as mentioned above.

■ **Business Continuity Management (BCM)**

AEROTHAI has implemented the Business Continuity Management (BCM) under the Business Continuity Management (BCM) program, (ISO 22301: 2012). The two-year implementation period (fiscal year 2018-2019) aims to cover 12 areas including the three central ATC Centres (Tung Mahamek, Don Mueang, Suvarnabhumi) and 9 provincial ATC Centres within the fiscal year 2019.

Additionally, the Business Continuity Management (BCM) also includes evaluating event risks that might impact AEROTHAI's operations. All ATC centres of AEROTHAI will simulate test scenarios and check operational readiness in the case where unexpected situations occur.

Corporate Good Governance Information

■ Operational Report of the Corporate Governance and Corporate Social Responsibility Policy

Corporate Governance and Corporate Social Responsibility Policy

In the fiscal year 2018, AEROTHAI has revised its Corporate Governance and Corporate Social Responsibility Policy and Corporate Governance and Corporate Social Responsibility Master Plan 2017-2021. The said policy and master plan are current and up to date as follows:

Corporate Governance and Corporate Social Responsibility Policy

“Aeronautical Radio of Thailand Ltd. strictly adheres to administration under good corporate governance which provides safety service with quality of international standard and responds to stakeholders' satisfaction with fairness, transparency and responsibility to society and environment”

Implementation of Corporate Governance and Corporate Social Responsibility Master Plan 2017-2021 in fiscal year 2018.

In the fiscal year 2018, AEROTHAI has implemented Corporate Governance and Corporate Social Responsibility Master Plan, 2017-2021. The plan is comprised of a corporate governance plan (CG), corporate social responsibility plan (CSR) as well as the communication and promotion of both CG & CSR. AEROTHAI has achieved practical results of the Company's performance according to the targets and indicators of all plans, especially in 2018, the result of evidence-based integrity and transparency assessment index (EBIT) was rated a full score in integrity and transparency evaluation for Government Agencies and State Enterprises according to the Office of National Anti-Corruption Commission's standard. In the fiscal year 2018 AEROTHAI developed AEROTHAI Way for Anti-Corruption plan following Thailand's National Anti-Corruption (Phase III) 2017-2021 which consisted of creation and establishment of awareness against Code of Ethics with the main focus on Constitution of Thailand, 2017 by changing the mind-set of the employees, opening AEROTHAI's Anti-Corruption Operation Centre, announcement of prevention of giving or receiving bribes, announcement of good faith commitment intent in administration in Thai and English languages, conflict of interest risk analysis for Conflict of Interest preventive management in AEROTHAI, including Anti-Corruption Network of the Ministry of Transport's Anti-Corruption Operation Centre, the Office of the National Anti-Corruption Commission (NACC), THAI's Collective Action Coalition (Thai CAC). These plans will be used to draft the Corporate Governance Master Plan, 2019-2023.

BOARD OF DIRECTORS

The Cabinet resolution on 18 October 1994 set the structure of the Board of Directors of the Company to have 11 directors comprising of 9 persons from the A shareholder (the government) and 2 persons from B shareholders (airlines). The A shareholder's representatives are divided into 8 persons from the Ministry of Transport and 1 person from the Ministry of Finance while the B shareholders' representatives must be nominated by member airlines.

Article 33 of the Company's Articles of Association stipulates that the Company's Board of Directors consists of not less than three Directors and Article 39 stipulates the nomination of Directors by both A and B shareholders as follows:

- (1) The Thai Government shall be entitled to nominate Directors of the Company and the Thai Government's nominees shall be appointed Directors. One of these Directors, as nominated by the Thai Government, shall be the Chairman of the Board of Directors of the Company.
- (2) The holders of B shares shall be entitled to nominate two Directors and these nominees shall be appointed Directors.

At the ordinary general meeting in every subsequent year, one third of the Directors must retire from office. A retiring Director is eligible for re-election. A Director can be appointed only by a general meeting. If a vacancy occurs in the Board of Directors otherwise than by rotation it may be filled by the remaining Directors, but any person so appointed shall retain his office during such time only as the vacating Director was entitled to retain the same.

THE BOARD OF DIRECTORS IN THE FISCAL YEAR 2018

In the fiscal year 2018, the Board of Directors consisted of the following 8 Directors:

1. Air Chief Marshal Siwakiat Jayema

Chairman

(Appointed as the Director and Vice Chairman on 30 April 2017 and appointed as Chairman on 24 January 2018)

Age: 61

Position: Retired Officer, Ministry of Defence

Education:

- Armed Forces Academies Preparatory School (Class of 16)
- Royal Thai Air Force Academy School (Class of 23)
- Air Force Staff School (Class of 35)

- Joint War College (Class of 38)
- Master of Business Administration, Kasetsart University

Work Experiences:

- Deputy Permanent Secretary for Defence
- Assistant Air Command of Staff
- Deputy Chief of the Air Staff
- Assistant Chief of the Air Staff

Training:

- Diploma, National Defence College, The National Defence Course (Class of 51)
- Diploma, National Defence College, The Joint State - Private Sector Course (Class of 21)
- Director Certification Program (DCP Class of 227), Thai Institute of Directors Association
- Executive Course Class of 24 of Capital Market Academy
- Advanced Certificate Course in Politics and Governance in Democratic Systems for Executives (Class of 21), King Prajadhipok's Institute
- Role of the Chairman Program (RCP Class of 41), Thai Institute of Directors Association
- Corporate Governance in Digital Era Course, Fiscal Policy Research Institute Foundation
- Corporate Governance for Directors and Senior Executives of Regulator of State Enterprises and Public Organizations, Class of 19, King Prajadhipok's Institute

Fields of Competence:

- Organization Management
- Transportation and Air Transport
- Security

2. Police General Dechnarong Sutticharnbancha

Vice Chairman

(Appointed as the Director on 23 January 2017 and appointed as Vice Chairman on 25 April 2018)

Age: 60

Position: Deputy Commissioner General

Education:

- Bachelor of Public Administration, Royal Police Cadet Academy
- Master of Business Administration, National Institute of Development Administration
- National Defence College, Class of 55

Work Experiences:

- Advisor to Royal Thai Police (RTP 10)
- Assistant Commissioner General
- Acting Commissioner of Provincial Police Region 4

Training:

- Diploma, National Defence College, The National Defence Course (Class of 55)

Fields of Competence:

- Organization Management
- Telecommunications and Technology
- Security
- Laws

3. Mr. Puttipong Prasarttong-Osoth**Director**

(Appointed on 17 March 2015 and retired on 23 January 2018 and reappointed on 17 April 2018)

Age: 53

Position: President, Bangkok Airways Public Company Limited

Education:

- Bachelor of Commerce and Accountancy, Chulalongkorn University

Work Experiences:

- Senior Vice President Operations, Bangkok Airways Company Limited
- Vice President Operations, Bangkok Airways Company Limited

Training:

- SASIN Senior Executive Program, SASIN Graduate Institute of Business Administration, Chulalongkorn University
- Diploma, National Defence College, The Joint State - Private Sector Course (Class of 24)
- The Program for Senior Executives on Justice Administration (Batch 13), Judicial Training Institute
- Certificate of Commercial Pilot Licence

Fields of Competence:

- Organization Management
- Transportation and Air Transport

Other Positions:

- Chairman of Bangkok Air Catering Company Limited

- Chairman of Bangkok Air Catering Samui Company Limited
- Chairman of Bangkok Air Catering Phuket Company Limited
- Chairman of Bangkok Air Catering Chiang Mai Company Limited
- Chairman of BAC Gourmet House Company Limited
- Chairman of Gourmet Primo Company Limited
- Chairman of Worldwide Flight Services Bangkok Air Ground Handling Company Limited
- Chairman of Bangkok Airways Ground Services Company Limited
- Director of WFS-PG Cargo Company Limited
- Director of The Sahakol Estate Company Limited
- Director of Bangkok Media and Broadcasting Company Limited
- Director of Fuel Pipeline Transportation Limited
- Director of Bangkok Airways Holding Company Limited
- Director of More Than Free Company Limited
- Director of Bangkok Aviation Fuel Services Public Company Limited
- Pilot of Airbus 319/320 fleet, Bangkok Airways Public Company Limited
- Advisor, Bangkok Christian College Alumni Association
- Honorary Advisor, Nakorn Ratchasima's Municipality

4. Squadron Leader Pongtorn Thepkanjana

Director

(Appointed on 18 December 2017
and retired on 23 January 2018
and reappointed on 17 April 2018)

Age: 60

Position: Executive Vice President Operations, Thai Airways International
Public Company Limited

Education:

- Aeronautical Engineering, Royal Thai Air Force Academy

Work Experiences:

- Vice President Flight Operations Department, Thai Airways International Public Company Limited
- Vice President Aviation Resources Development, Thai Airways International Public Company Limited
- Mission Commander, Thai Airways International Public Company Limited
- Director of Flight Test & Development Department, Thai Airways International Public Company Limited

Training:

- Director Certification Program (DCP), Thai Institute of Directors Association

- Corporate Governance for Directors and Senior Executives of Regulator of State Enterprises and Public Organizations of Public Director Institute, Class of 19, King Prajadhipok's Institute

Fields of Competence:

- Organization Management
- Transportation and Air Transport
- Telecommunication and communication
- Laws
- Engineering

Other Positions:

- Director of Bangkok Aviation Fuel Services Public Company Limited
- Director of Thai Flight Training Company Limited

5. Mrs. Phongsaward Guyaroonsuith

Director

(Appointed on 31 October 2016)

Age: 51

Position: Deputy Secretary-General of the Council of State
Office of the Council of State

Education:

- Bachelor of Laws, Thammasat University

Work Experiences:

- Permanent Law Councillor
- Director, Bureau of Administrative Law

Training:

- Draft Laws and Legal Opinions Course, Office of the Council of State
- Middle Management Course with Preparation for ASEAN Community, Office of The Civil Service Commission
- Executive Development Program (EDP 1), Office of the Civil Service Commission
- AEC Economic Development Zone, Office of the Civil Service Commission
- Life Quality Development, Office of the Civil Service Commission
- Executive Course (Class of 5), Office of the Civil Service Commission
- Ministry Spokesman course, Office of the Prime Minister

Fields of Competence:

- Laws

Other Positions:

- Director of Expressway Authority of Thailand

- Name listed in the Directors' Pool of State Owned Enterprise in Politics and Governance (Governance), Laws (Public Law) and Security (Administrative of State Affairs)

6. Police Major General Surachate Hakparn

Director

(Appointed on 31 October 2016, retired and reappointed on 23 January 2017)

Age: 48

Position: Deputy Commissioner Tourist Police

Education:

- Bachelor of Public Administration, Royal Police Cadet Academy
- Master of Social Science Criminology and Justice Administration, Mahidol University
- Doctor of Public Administration, Eastern Asia University

Work Experiences:

- Commander, Patrol and Special Operation Division
- Tourist Police Commander
- Commander of the Office of the Commissioner of Police (Coordinating Policies with the Prime Minister)
- Deputy Commander, Patrol and Special Operation Division
- Superintendent of Hat Yai Police Station

Training:

- High-Level Justice Administration (TCG) Class of 20, Judicial Training Institute of Thailand
- Ravens Challenge ASEAN 2017 Workshop 4, Royal Thai Police

Fields of Competence:

- Organization Management
- Security
- Laws

Other Positions:

- Director of Expressway Authority of Thailand
- Director, KTB General Service and Security

7. Colonel Peerawat Promkladpanao

Director

(Appointed on 15 August 2014, retired and reappointed on 23 January 2017)

Age: 48

Position: Staff Officer, Royal Thai Armed Forces Headquarters

Education:

- Bachelor of Electrical Communication Engineering, Chulachomklao Royal Military Academy
- Master of Public Administration (MPA), Burapha University

Work Experiences:

- Officer attached to Directorate of Joint Affairs, Royal Thai Armed Forces Headquarters, assisting the work of the Office of the National Broadcasting and Telecommunications Commission (NBTC), under the Vice Chairman, NBTC and Chairman, National Telecommunications Commission (NTC)
- Assistant Director of Civil Affair Department, Directorate of Joint Affairs, Royal Thai Armed Forces Headquarters
- Chief of Civil Affair Department, Directorate of Joint Affairs, Royal Thai Armed Forces Headquarters
- Staff Officer of Deputy Supreme Commander Office, Royal Thai Armed Forces Headquarters
- Staff Officer of Signal Department, Budget Division, Royal Thai Army
- Executive Officer of Signal Battalion, 2nd Cavalry Regiment Royal Guard
- Operation and Intelligence Division Officer, 12th Signal Battalion Royal Guard, 2nd Cavalry Regiment Royal Guard
- Service Company Executive Officer, 12th Signal Battalion Royal Guard, 2nd Cavalry Regiment Royal Guard
- Service Company Commander, 12th Signal Battalion Royal Guard, 2nd Cavalry Regiment Royal Guard
- Artificer Staff Officer, 12th Signal Battalion Royal Guard, 2nd Cavalry Regiment Royal Guard
- Commander of Fiber Optic Set Up Team from Prachin Buri railway station to Aranyaprathet railway station
- Assistant Secretary of the Chairman of CAT Telecom Public Company Limited
- Corporate Governance Committee of CAT Telecom Public Company Limited
- Public Relations Committee of CAT Telecom Public Company Limited
- Corporate Governance Committee of TrueMove, Total Access Communication Public Company Limited and Digital Phone according to legal Problems of CAT Telecom Public Company Limited under "Act on Private Participation in State Undertaking B.E.2535 (Section 22)"
- Public Affairs Expert of TOT Public Company Limited
- Working Group of National Council for Peace and Order

Training:

- New Infantry Officer Orientation Course : Signal
- Electronic System Engineering Course : Signal (Class of 8)
- Infantry Officer Basic Course : Signal (Class of 42)
- Infantry Officer Advance Course : Signal (Class of 37)
- Infantry Chief of Staff Course (Class of 84)
- Comptroller of the Army Course (Class of 26)
- Public Director Certification Program (PDI Class of 13), King Prajadhipok's Institute
- Director Certification Program (DCP Class of 201), Thai Institute of Directors
- Boards that Make a Difference (BMD Class of 1), Thai Institute of Directors
- Board Matters & Trends (BMT Class of 1), Thai Institute of Directors
- Advanced Audit Committee Program (ACCP Class of 26), Thai Institute of Directors
- Driving Company Success with IT Governance (ITG Class of 5), Thai Institute of Directors
- Board Nomination & Compensation Program (BNCP Class of 2), Thai Institute of Directors
- Role of the Chairman Program (RCP Class of 43), Thai Institute of Directors
- Private Pilot Ground Training Course (PPL Class of 56), Thai General Aviation Technology Company Limited

Fields of Competence:

- Organization Administration
- Engineering
- Telecommunication and communication
- Security
- Name listed in the Directors' Pool of State Owned Enterprise in Management and Business Administration (Organization Management)

8. Mr. Somnuk Rongthong**Director**

(Appointed on 26 September 2018)

Age: 57**Position:** President, Aeronautical Radio of Thailand Limited**Education:**

- Bachelor of Electrical Engineering, Kasetsart University

Work Experiences:

- Executive Vice President, Aeronautical Radio of Thailand Limited
- Vice President (Air Traffic Services Engineering), Aeronautical Radio of Thailand Limited

- Executive Vice President (Engineering), Aeronautical Radio of Thailand Limited

Training:

- Diploma, National Defence College, The Joint State - Private Sector Course (Class of 26)
- Air War College (Class of 36)
- Advanced Management Program, Wharton School, University of Pennsylvania, USA

Fields of Competence:

- Organization Management
- Engineering
- Information Technology

DIRECTOR RETIRING DURING THE FISCAL YEAR 2018

1. General Kanit Sapitaks

Chairman

(Appointed as the Director on 15 August 2014 and retired on 19 December 2017)

Age: 65

Position: Retired Officer

Education:

- Bachelor of Science, Chulachomklao Royal Military Academy
- Commander and General Staff College (Class of 63)
- National Defense College (Class of 49)

Work Experience:

- Commanding Officer, 2nd Infantry Division, Queen's Guard
- Commanding General, 1st Army Area
- Special Advisor to the Royal Thai Army
- Chairman of the Advisory Committee, Ministry of Defense
- Judge of Military Supreme Court
- Special Royal Guard
- Member of the National Legislative Assembly (2006)

Fields of Competence:

- Organization Management
- Security
- Laws

Other Positions:

- Director of BCPG Public Company Limited

- Member of the National Legislative Assembly (2014)
- Executive Director of the Royal Turf Club of Thailand
- Member of the Committee, Five Provinces Forest Foundation

2. Mr. Krichthep Simlee

Director

(Appointed on 30 January 2017 and retired on 10 October 2017)

Age: 58

Position: Deputy Permanent Secretary of Transport

Education:

- Bachelor's Degree Civil Engineering, Chiang Mai University
- Master of Arts Political Leadership, Business, Politics, Rangsit University

Training:

- National Defence College (Class of 53)
- High-ranging Officials Course of Institute of Damrong Rachanupap, Ministry of Interior (Class of 54)
- Public Administration and Public Law Course of King Prajadhipok's Institute (Class of 9)

Work Experience:

- Inspector General, Ministry of Transport
- Deputy Director General of the Department of Rural Roads

Fields of Competence:

- Organization Management
- Transportation and Air Transport
- Civil Engineering

Other Positions:

- Director of Port Authority of Thailand
- Director of Tourism Authority of Thailand
- Warehouse Supervision Committee at Suvarnabhumi Airport
- Aircraft Fuel Services Project Supervisory Board at Suvarnabhumi Airport (Excluded Hydrant)
- Aircraft Fuel Pipeline Project Supervision Committee of Hydrant at Suvarnabhumi Airport
- The Second Stage Expressway Supervision Commission

3. Mrs. Sarinee Angsusingha**Director**

(Appointed on 15 August 2014,
retired and reappointed on
27 January 2016 and retired
on 5 June 2018)

Age: 59

Position: Retired President

Education:

- Bachelor of Arts, Kasertsat University
- Master of Business Administration, Kasertsat University

Work Experience:

- Executive Vice President, Aeronautical Radio of Thailand Limited
- Expert, Executive Vice President Level, Aeronautical Radio Of Thailand Limited

Training:

- National Defence College (Class of 55)
- Air War College (Class of 34)
- Leadership Succession Program (LSP)
- Training Courses on Administrative Justice for Executives (Class of 6)
- Training Course an Anti-Corruption Strategic Management for Senior Executives (Class of 7), Office of the National Anti-Corruption Commission
- Ethical Leadership Program (ELP Class of 1), Thai Institute of Directors Association
- Director Certification Program (DCP Class of 219), Thai Institute of Directors Association

Fields of Competence:

- Organization Management
- Transportation and Air Transport
- Telecommunication and Technology

Other Positions:

- Member of the State Enterprise Labour Relations Committee
- Name listed in the Directors' Pool of State Owned Enterprise Management and Business Administration (Public Relations), Energy (Energy Fuels), Social (Corporate Governance)

4. Mr. Sanit Phromwong**Director**

(Appointed on 25 April 2018
and retired on 22 September 2018)

Age: 59

Position: Retired Officer

Education:

- Bachelor of Engineering, Khon Kaen University
- Master of Public Administration, National Institute of Development Administration

Work Experience:

- Inspector General, Ministry of Transport
- Deputy Director General of the Department of Highways

Training:

- National Defence College (Class of 54)
- Governance under the National Reform and National Strategy for Unity
- Diploma, National Defence College, The State, Private Sector and Political Sector Course (Class of 5)
- Senior Executive Development Program the Office of the Civil Service Commission "Leaders with Vision and Integrity" (Class of 72)
- Advanced Certificate Course in Public Management and Public Law (Class of 10)

Fields of Competence:

- Organization Management
- Telecommunication and Technology
- Transportation and Air Transport -
- Laws
- Engineering

Other Positions:

- Name listed in the Directors' Pool of State Owned Enterprise Management and Business Administration (Organization Management), Strategy and Development Plan (Strategic Planning), Transportation (Land Transport)

5. Mr. Suwit Rojanavanich**Director**

(Appointed on 29 November 2017, retired and reappointed on 24 January 2018 and retired on 30 September 2018)

Age: 60

Position: Director General, Fiscal Policy Office

Education:

- Bachelor of Accounting, Chulalongkorn University
- Master of Business Administration, North Texas University

Work Experiences:

- Inspector General, Ministry of Finance
- Advisor on Bond Market the Public Debt Management Office, Ministry of Finance

- Deputy Director General the Public Debt Management Office, Ministry of Finance

Training:

- Diploma, National Defence College, The Joint State - Private Sector Course (Class of 53)
- Director Certification Program (DCP Class of 163), Thai Institute of Directors Association
- Senior Executive Development Program, the Office of the Civil Service Commission (OCSC Class of 43)
- Top Executive Program in Commerce and Trade (TEPCoT Class of 5)
- Knowledge Co-Creation Program in Executive Program in Public Finance Management/Government Debt Management, Japan International Cooperation Agency (JICA)
- Corporate Governance for Directors and Senior Executives of Regulator of State Enterprises and Public Organizations, Class of 19, King Prajadhipok's Institute

Fields of Competence:

- Organization Management
- Transportation and Air Transport
- Telecommunication and Technology
- Laws

Other Positions:

- Director of Bank of Thailand
- Member of Capital Market Supervisory Board
- Director of Government Pension Fund
- Directors of National Savings Fund

ROLES AND RESPONSIBILITY OF BOARD OF DIRECTORS

The Board of Directors establishes the policies and oversee the Company's operations. They also play an important part setting up the strategic plan for organization development in accordance with State Enterprise's practices and the Company's vision stating that "To be Air Navigation Service Provider with International Standards of Excellence". The Board of Directors appoint the knowledgeable and experienced directors to Sub-Committees for screening any necessary matters as follows:

1. The Executive Committee
2. The Audit Committee
3. The Risk Management Committee
4. The Remuneration Committee
5. The Corporate Governance and Corporate Social Responsibility Committee

6. The Legal Committee

The Three Independent Directors were also announced.

The Company schedules the Board of Directors' meetings in advance throughout the year and meetings are held each month to oversee and monitor the Company's operations. Meetings and some extra meetings will be called for if necessary as shown in the Annual Report. The meeting invitation letter and agenda in the form of document are provided to the Board of Directors 3-5 days prior to the meeting.

The minutes of the meetings are recorded in writing and kept available for Directors and relevant persons to inspect. In addition, the minutes of the Executive Committee's Meetings and Board of Directors' Meetings are distributed to A Shareholders (the Ministry of Finance and the Ministry of Transport) and B Shareholders (Member Airlines) for acknowledgement and also available on the website for shareholders.

The Evaluation of Board of Directors

To be in line with the Good Corporate Governance practice, the Board of Directors self-evaluates in order to monitor themselves to better perform their duties. This evaluation also assists them in setting the Company's direction and supervising the management properly. The evaluation is conducted every six months and based on two categories: Self Assessment and Board Evaluation.

Category of evaluation	First Evaluation (October 2017 – March 2018)		Second Evaluation (April – September 2018)	
	Point	Level	Point	Level
Self Assessment	109.7	Excellent	110.5	Excellent
Board Evaluation	117.7	Excellent	119	Excellent

The Self Assessment consists of six topics: core competency, independence, preparedness, practices as a director, committed activities and development of organization. The Self Assessment's result was shown excellent.

The Board Evaluation consists of four topics: Board of Directors and their meetings, communications, work procedures and the relationship with executive management. The Board Evaluation's result was shown excellent.

The Board of Directors' knowledge and skill development

The Company realized the importance of the Board of Directors' competency development, which contributed to the Company highest efficiency and productivity as well as being in line with the Good Corporate Governance practices. In the fiscal year 2018, the Board of Directors participated in training and seminars on courses related to role and function organized by the Thai Institute of Directors Association. In addition, The Boards of Directors has continuously participated in the Company's activities, for example, CSR, site visits to the Air Traffic Control Centres for better understanding of the Company's functions. They also travelled abroad to visit aviation related organizations which will be beneficial to the development of air navigation services provision to accommodate the new technology and increase of flights in the future.

The Orientation for the new Directors

The Company arranged the orientation for the new Directors with a provision of essential and responsibility-related information in the form of documents, presentations and facility visits. The documents given to the new Directors were as follows:

1. The Board of Directors and Sub-Committee appointment letter.
2. The Company's information consisting of the booklet of the Company's memorandum of association, general information (Company background and status, shareholders, policies, vision, values, responsibilities in air navigation services and business units), organization chart, personnel, air transport situation and the Company's performance and financial statements, Corporate Plan, significant projects..
3. Board of Directors' handbook consisting of the names of the Board of Directors and its composition, their authorization and duties, terms, Board meeting and its allowances, Sub-Committee and their authorization and duties, information of independent directors, the evaluation, the application to be member airlines, agreement between the Ministry of Transport and the Company, the asset account submission under the Organic Act on Anti-Corruption B.E. 2542 and relevant laws, regulations and the Act including a booklet of information system application for the Board of Directors.

Connected Transactions of the Board of Directors with the Company

In the fiscal year 2018, the Company reported that the Board of Directors had no connected transactions. In addition, they did not hold any shares or held not more than 10 percent of all voting shares of the Company.

AUTHORIZED DIRECTORS

In the fiscal year 2018, Authorized Director of the Company, included 5 Authorized Directors, two out of the following four Authorized Directors could co-sign and affix the Company seal to bind the Company. There are changes during the year:

– 1 October 2017 – 23 January 2018 as follows:

- | | |
|------------------------------|---------------------------|
| 1. General Kanit | Sapitaks ^{1/} |
| 2. Mr. Prasit | Suebchana ^{2/} |
| 3. Mr. Puttipong | Prasarttong-Osoth |
| 4. Flight Lieutenant Werasak | Wiroonpetch ^{3/} |
| 5. Mrs. Sarinee | Angsusingha |

Remarks: 1/ Retired on 19 December 2017

2/ and 3/ Retired on 1 October 2017

– 24 January 2018 – 30 September 2018 as follows:

- | | |
|-------------------------------|----------------------------|
| 1. Air Chief Marshal Siwakiat | Jayema |
| 2. Mr. Suwit | Rojanavanich ^{1/} |
| 3. Mr. Puttipong | Prasarttong-Osoth |
| 4. Squadron Leader Pongtorn | Thepkanjana |
| 5. Mrs. Sarinee | Angsusingha ^{2/} |

Remarks: 1/ Retired on 30 September 2018

2/ Retired on 5 June 2018

The change of authorized Directors has to be approved by the General Meeting. When the authorized Directors retire and there is no resolution from the General Meeting, the Company cannot register the authorized Directors.

THE SECRETARY TO THE BOARD OF DIRECTORS

– 1 October 2017 – 28 August 2018 as follows:

- | | | |
|--------------------------------|--|---------------------|
| 1. Mrs. Sarinee | Angsusingha ^{1/} | Secretary |
| | President | |
| 2. Mr. Sukluer | Chiawarcheep | Assistant Secretary |
| | Expert, Executive Vice President Level | |
| 3. Miss. Waraporn | Songcharoen | Assistant Secretary |
| | Vice President (Office of President) | |
| 4. Mrs. Thaniya Suntharasantic | | Assistant Secretary |
| | Senior Director, General Administration Bureau | |

Remarks: 1/ Retired on 5 June 2018

- 29 August 2018 - 30 September 2018 as follows:

1. Mr. Somnuk Rongthong^{1/} Secretary
President
2. Mr. Sukluer Chiawarcheep Assistant Secretary
Expert, Executive Vice President Level
3. Miss. Waraporn Songcharoen Assistant Secretary
Vice President (Office of President)
4. Mrs. Thaniya Suntharasantic Assistant Secretary
Senior Director, General Administration Bureau

Remarks: 1/ Appointed on 29 August 2018

The Board of Directors' Attendance

In the fiscal year 2018, the Board of Directors held 12 meetings with attendance details as follows:

Name	Number of Attendances
General Kanit Sapitaks ^{1/}	3/3
Air Chief Marshal Siwakiat Jayema ^{2/}	12/12
Police General Dechnarong Sutticharnbancha ^{3/}	10/12
Mr. Suwit Rojanavanich ^{4/}	7/10
Mr. Sanit Phromwong ^{5/}	2/3
Mr. Puttipong Prasarttong-Osoth ^{6/}	12/12
Squadron Leader Pongtorn Thepkanjana ^{7/}	5/8
Mrs. Phongsaward Guyaroonsuith ^{8/}	9/12
Police Major General Surachate Hakparn ^{9/}	4/12
Colonel Peerawat Promkladpanao ^{10/}	12/12
Mrs. Sarinee Angsusingha ^{11/}	9/9
Mr. Somnuk Rongthong ^{12/}	1/1

(The absent attendants were due to other engagement)

Remarks: 1/ Appointed on 15 August 2014 and retired on 19 December 2017

2/ Appointed on 30 April 2017 and appointed as Chairman on
24 January 2018

3/ Appointed on 23 January 2017 and appointed as Vice Chairman
on 25 January 2018

4/ Appointed on 29 November 2017, retired and reappointed
on 24 January 2018 and retired on 30 September 2018

5/ Appointed on 25 April 2018 and retired on 22 September 2018

6/ Appointed on 17 March 2015, retired on 23 January 2018
and reappointed on 17 April 2018

- 7/ Appointed on 18 December 2017, retired on 23 January 2018 and reappointed on 17 April 2018
- 8/ Appointed on 31 October 2016
- 9/ Appointed on 31 October 2016, retired and reappointed on 23 January 2017
- 10/ Appointed on 15 August 2014, retired and reappointed on 23 January 2017
- 11/ Appointed on 15 August 2014, retired and reappointed on 27 January 2016 and retired on 5 June 2018
- 12/ Appointed on 26 September 2018

The Executive Committee

The Executive Committee consists of not less than three members and not more than five members. In the fiscal year 2018, the Executive Committee on the pending changes between years as follows:

- 1 October 2017 – 28 November 2017 consisted of:

- | | | | |
|----|---------------------------|---------------------------|----------------------|
| 1. | Mr. Krichthep | Simlee ^{1/} | Chairman |
| 2. | Mr. Puttipong | Prasarttong-Osoth | Member |
| 3. | Flight Lieutenant Werasak | Wiroonpetch ^{2/} | Member |
| 4. | Mrs. Phongsaward | Guyaroonsuith | Member |
| 5. | Mrs. Sarinee | Angsusingha | Member and Secretary |
| 6. | Miss Waraporn | Songcharoen | Assistant Secretary |
| 7. | Mr. Sukluer | Chiawarcheep | Assistant Secretary |
| 8. | Mrs. Thaniya | Suntharasantic | Assistant Secretary |

Remarks: 1/ Retired on 10 October 2017

2/ Retired on 1 October 2017

- 29 November 2017 – 17 December 2017 consisted of:

- | | | | |
|----|------------------|----------------------------|----------------------|
| 1. | Mr. Suwit | Rojanavanich ^{1/} | Chairman |
| 2. | Mr. Puttipong | Prasarttong-Osoth | Member |
| 3. | Mrs. Phongsaward | Guyaroonsuith | Member |
| 4. | Mrs. Sarinee | Angsusingha | Member and Secretary |
| 5. | Mr. Sukluer | Chiawarcheep | Assistant Secretary |
| 6. | Miss Waraporn | Songcharoen | Assistant Secretary |
| 7. | Mrs. Thaniya | Suntharasantic | Assistant Secretary |

Remarks: 1/ Appointed on 29 November 2017

- 18 December 2017 – 23 January 2018 consisted of:

- | | | | |
|----|--------------------------|---------------------------|----------------------|
| 1. | Mr. Suwit | Rojanavanich | Chairman |
| 2. | Mr. Puttipong | Prasarttong-Osoth | Member |
| 3. | Squadron Leader Pongtorn | Thepkanjana ^{1/} | Member |
| 4. | Mrs. Phongsaward | Guyaroonsuith | Member |
| 5. | Mrs. Sarinee | Angsusingha | Member and Secretary |
| 6. | Mr. Sukluer | Chiawarcheep | Assistant Secretary |
| 7. | Miss Waraporn | Songcharoen | Assistant Secretary |
| 8. | Mrs. Thaniya | Suntharasantic | Assistant Secretary |

Remarks: 1/ Appointed on 18 December 2017, retired on 23 January 2018 and reappointed on 17th April 2018

- 24 January 2018 – 16 April 2018 consisted of:

- | | | | |
|----|--------------------------|---------------------------------|----------------------|
| 1. | Mr. Suwit | Rojanavanich | Chairman |
| 2. | Mrs. Phongsaward | Guyaroonsuith | Member |
| 3. | Mrs. Sarinee | Angsusingha | Member and Secretary |
| 4. | Mr. Puttipong | Prasarttong-Osoth ^{1/} | Expert |
| 5. | Squadron Leader Pongtorn | Thepkanjana ^{2/} | Expert |
| 6. | Mr. Sukluer | Chiawarcheep | Assistant Secretary |
| 7. | Miss Waraporn | Songcharoen | Assistant Secretary |
| 8. | Mrs. Thaniya | Suntharasantic | Assistant Secretary |

Remarks: 1/ and 2/ Appointed as the Expert until the Committee on State Enterprise Policy Committee approves list of Directors.

- 17 April 2018 – 25 September 2018 consisted of:

- | | | | |
|----|--------------------------|---------------------------------|----------------------|
| 1. | Mr. Suwit | Rojanavanich | Chairman |
| 2. | Mr. Puttipong | Prasarttong-Osoth ^{1/} | Member |
| 3. | Squadron Leader Pongtorn | Thepkanjana ^{2/} | Member |
| 4. | Mrs. Phongsaward | Guyaroonsuith | Member |
| 5. | Mrs. Sarinee | Angsusingha ^{3/} | Member and Secretary |
| 6. | Mr. Sukluer | Chiawarcheep | Assistant Secretary |
| 7. | Miss Waraporn | Songcharoen | Assistant Secretary |
| 8. | Mrs. Thaniya | Suntharasantic | Assistant Secretary |

Remarks: 1/ and 2/ State Enterprise Policy Committee approved list of Directors on 17 April 2018

3/ Retired on 5 June 2018

- 26 September 2018 – 30 September 2018 consisted of:

- | | | |
|-----------------------------|-------------------------|----------------------|
| 1. Mr. Suwit | Rojanavanich | Chairman |
| 2. Mr. Puttipong | Prasarttong-Osoth | Member |
| 3. Squadron Leader Pongtorn | Thepkanjana | Member |
| 4. Mrs. Phongsaward | Guyaroonsuith | Member |
| 5. Mr. Somnuk | Rongthong ^{1/} | Member and Secretary |
| 6. Mr. Sukluer | Chiawarcheep | Assistant Secretary |
| 7. Miss Waraporn | Songcharoen | Assistant Secretary |
| 8. Mrs. Thaniya | Suntharasantic | Assistant Secretary |

Remarks: 1/ Appointed on 26 September 2018

Responsibilities

The Executive Committee is appointed according to Article 42 fourth paragraph of the Company's Articles of Association which stipulates that "In order to facilitate and expedite the conduct of the Company and to supervise the management of the Company more closely the Board of Directors shall set up an Executive Committee of not less than three nor more than five persons".

The Executive Committee's Attendance

In the fiscal year 2018, the Executive Committee held 12 meetings with attendance details as follows:

Name		Number of Attendances
Mr. Suwit	Rojanavanich ^{1/}	7/10
Mr. Puttipong	Prasarttong-Osoth ^{2/}	8/12
Squadron Leader Pongtorn	Thepkanjana ^{3/}	9/9
Mrs. Phongsaward	Guyaroonsuith ^{4/}	9/12
Mrs. Sarinee	Angsusingha ^{5/}	8/8

(The absent attendants were due to other engagement.)

- Remarks:** 1/ Appointed on 29 November 2017, retired and reappointed on 24 January 2018 and retired on 30 September 2018
 2/ Appointed on 17 March 2015, retired on 23 January 2018 and reappointed on 17 April 2018
 3/ Appointed on 18 December 2017, retired on 23 January 2018 and reappointed on 17 April 2018
 4/ Appointed on 31 October 2016
 5/ Appointed on 15 August 2014, retired and reappointed on 27 January 2016 and retired on 5 June 2018

The Audit Committee

In the fiscal year 2018, the Audit Committee consisted of:

- | | |
|--|---------------------|
| 1. Police General Dechnarong Sutticharnbancha | Chairman |
| 2. Police Major General Surachate Hakparn | Member |
| 3. Colonel Peerawat Promkladpanao | Member |
| 4. Vice President (Office of Internal Audit) | Secretary |
| 5. Senior Director, Core Business and Information
Technology Audit Bureau | Assistant Secretary |
| 6. Senior Director, Support and
Planning Audit Bureau | Assistant Secretary |

Responsibilities

1. Report on validity of financial statements and management reports.
2. Report on the efficiency, effectiveness and cost control schemes of the Company's operations.
3. Report on conflicts of interest and related matters.
4. Report on compliance with rules, regulations, Cabinet Resolutions and policies set by the State Enterprises Board of Directors.

The Risk Management Committee

In the fiscal year 2018, there are changes in the Risk Management Committee during the year as follows:

- 1 October 2017 – 28 November 2017 consisted of:

- | | |
|--|---------------------|
| 1. Flight Lieutenant Werasak Wiroonpetch ^{1/} | Chairman |
| 2. Mrs. Phongsaward Guyaroonsuith | Member |
| 3. Mrs. Sarinee Angsusingha | Member |
| 4. Vice President (Office of Policy and Strategy) | Secretary |
| 5. Senior Director, Policy and Strategy
Management Bureau | Assistant Secretary |

Remark : Retired on 1 October 2017

- 29 November 2017 – 17 December 2017 consisted of:

- | | |
|--|---------------------|
| 1. Mrs. Phongsaward Guyaroonsuith | Member |
| 2. Mrs. Sarinee Angsusingha | Member |
| 3. Vice President (Office of Policy and Strategy) | Secretary |
| 4. Senior Director, Policy and Strategy
Management Bureau | Assistant Secretary |

- 18 December 2017 – 28 September 2018 consisted of:

- | | |
|--|---------------------|
| 1. Squadron Leader Pongtorn Thepkanjana ^{1/} | Chairman |
| 2. Mrs. Phongsaward Guyaroonsuith | Member |
| 3. Mrs. Sarinee Angsusingha ^{2/} | Member |
| 4. Vice President (Office of Policy and Strategy) | Secretary |
| 5. Senior Director, Policy and Strategy
Management Bureau | Assistant Secretary |

Remark: 1/ State Enterprise Policy Committee approved list of
Directors on 17 April 2018
2/ Retired on 5 June 2018

- 26 September 2018 – 30 September 2018 consisted of:

- | | |
|--|---------------------|
| 1. Squadron Leader Pongtorn Thepkanjana | Chairman |
| 2. Mrs. Phongsaward Guyaroonsuith | Member |
| 3. Mr. Somnuk Rongthong ^{1/} | Member |
| 4. Vice President (Office of Policy and Strategy) | Secretary |
| 5. Senior Director, Policy and Strategy
Management Bureau | Assistant Secretary |

Remark: 1/ Appointed on 26 September 2018

Responsibilities

The Risk Management Committee considers all aspects or situations that might pose a risk to or otherwise affect the Company. The Committee has to evaluate such situations and determine policy to eliminate and/or reduce the risk. The Management and staff then have to follow such policy.

The Remuneration Committee

In the fiscal year 2018, there are changes in the Remuneration Committee during the year as follows:

- 1 October 2017 – 28 November 2017 consisted of:

- | | |
|---|---------------------|
| 1. Mr. Puttipong Prasarttong-Osoth | Chairman |
| 2. Flight Lieutenant Werasak Wiroonpetch ^{1/} | Member |
| 3. Mrs. Phongsaward Guyaroonsuith | Member |
| 4. Colonel Peerawat Promkladpanao | Member |
| 5. Vice President (Human Resource) | Secretary |
| 6. Senior Director, Human Resource and
Quality of Work Life Bureau | Assistant Secretary |

Remark: 1/ Retired on 1 October 2017

- 29 November 2017 – 17 December 2017 consisted of:

- | | |
|---|---------------------|
| 1. Mr. Puttipong Prasarttong-Osoth | Chairman |
| 2. Mrs. Phongsaward Guyaroonsuith | Member |
| 3. Colonel Peerawat Promkladpanao | Member |
| 4. Vice President (Human Resource) | Secretary |
| 5. Senior Director, Human Resource and
Quality of Work Life Bureau | Assistant Secretary |

- 18 December 2017 – 30 September 2018 consisted of:

- | | |
|---|---------------------|
| 1. Mr. Puttipong Prasarttong-Osoth | Chairman |
| 2. Squadron Leader Pongtorn Thepkanjana | Member |
| 3. Mrs. Phongsaward Guyaroonsuith | Member |
| 4. Colonel Peerawat Promkladpanao | Member |
| 5. Vice President (Human Resource) | Secretary |
| 6. Senior Director, Human Resource and
Quality of Work Life Bureau | Assistant Secretary |

Responsibilities

1. To give policy and set criteria for the evaluation of the President's performance.
2. To consider the evaluation of the President's performance.
3. To give the policy and approve the appropriate remuneration and benefit packages for the Management.
4. To submit the result of the evaluation of the President's performance to the Board of Directors for approval.
5. To perform the relevant matters as assigned by the Board of Directors.

The Corporate Governance and Corporate Social Responsibility Committee

In the fiscal year 2018, there are changes in the Corporate Governance and Corporate Social Responsibility Committee during the year as follows:

- 1 October 2017 – 28 November 2017 consisted of:

- | | | |
|-------------------------------|-------------------------|----------|
| 1. General Kanit | Sapitaks | Chairman |
| 2. Mr. Prasit | Suebchana ^{1/} | Member |
| 3. Air Chief Marshal Siwakiat | Jayema | Member |
| 4. Mr. Krichthep | Simlee ^{3/} | Member |

5. Mr. Puttipong	Prasarttong-Osoth	Member
6. Flight Lieutenant Werasak	Wiroonpetch ^{2/}	Member
7. Mrs. Phongsaward	Guyaroonsuith	Member
7. Police General Dechnarong	Sutticharnbancha	Member
8. Police Major General Surachate	Hakparn	Member
9. Colonel Peerawat	Promkladpanao	Member
10. Mrs. Sarinee	Angsusingha	Member
11. Vice President (Office of President)		Secretary
12. Miss. Putawan	Noirod	Assistant Secretary

Remark: 1/ and 2/ Retired on 1 October 2017

3/ Retired on 10 October 2017

- 29 November 2017 – 30 January 2018 consisted of:

1. General Kanit	Sapitaks ^{1/}	Chairman
2. Air Chief Marshal Siwakiat	Jayema	Member
3. Mr. Suwit	Rojanavanich	Member
4. Mr. Puttipong	Prasarttong-Osoth	Member
5. Mrs. Phongsaward	Guyaroonsuith	Member
6. Police General Dechnarong	Sutticharnbancha	Member
7. Police Major General Surachate	Hakparn	Member
8. Colonel Peerawat	Promkladpanao	Member
9. Mrs. Sarinee	Angsusingha	Member
10. Vice President (Office of President)		Secretary
11. Mr. Marnoch	Sawatdee	Assistant Secretary

Remarks: 1/ Retired on 19 December 2017

- 31 January 2018 – 24 April 2018 consisted of:

1. Air Chief Marshal Siwakiat	Jayema	Chairman
2. Mr. Suwit	Rojanavanich	Member
3. Mrs. Phongsaward	Guyaroonsuith	Member
4. Police General Dechnarong	Sutticharnbancha	Member
5. Police Major General Surachate	Hakparn	Member
6. Colonel Peerawat	Promkladpanao	Member
7. Mrs. Sarinee	Angsusingha	Member
8. Mr. Puttipong	Prasarttong-Osoth ^{1/}	Expert
9. Squadron Leader Pongtorn	Thepkanjana ^{2/}	Expert
10. Vice President (Office of President)		Secretary
11. Mr. Marnoch	Sawatdee	Assistant Secretary

Remarks: 1/ and 2/ Appointed as the Expert just until the Committee on State Enterprise Policy Committee approves list of Directors.

- 25 April 2018 – 25 September 2018 consisted of:

1. Air Chief Marshal Siwakiat	Jayema	Chairman
2. Police General Dechnarong	Sutticharnbancha	Member
3. Mr. Suwit	Rojanavanich	Member
4. Mr. Sanit	Phromwong ^{1/}	Member
5. Mr. Puttipong	Prasarttong-Osoth ^{2/}	Member
6. Squadron Leader Pongtorn	Thepkanjana ^{3/}	Member
7. Mrs. Phongsaward	Guyaroonsuith	Member
8. Police Major General Surachate	Hakparn	Member
9. Colonel Peerawat	Promkladpanao	Member
10. Mrs. Sarinee	Angsusingha ^{4/}	Member
11. Vice President (Office of President)		Secretary
12. Mr. Marnoch	Sawatdee	Assistant Secretary

Remarks: 1/ Appointed on 25 April 2018 and retired on 22 September 2018

2/ and 3/ State Enterprise Policy Committee approved list of Directors on 17 April 2018

4/ Retired on 5 June 2018

- 26 September 2018 – 30 September 2018 consisted of:

1. Air Chief Marshal Siwakiat	Jayema	Chairman
2. Police General Dechnarong	Sutticharnbancha	Member
3. Mr. Suwit	Rojanavanich	Member
4. Mr. Puttipong	Prasarttong-Osoth	Member
5. Squadron Leader Pongtorn	Thepkanjana	Member
6. Mrs. Phongsaward	Guyaroonsuith	Member
7. Police Major General Surachate	Hakparn	Member
8. Colonel Peerawat	Promkladpanao	Member
9. Mr. Somnuk	Rongthong ^{1/}	Member
10. Vice President (Office of President)		Secretary
11. Mr. Marnoch	Sawatdee	Assistant Secretary

Remarks: 1/ Appointed on 26 September 2018

Responsibilities

To set the Corporate Governance and Corporate Social Responsibility policy and practices, pre-consider and give the suggestion, report on compliance with the Corporate Governance and Corporate Social Responsibility Plan including monitoring and evaluating the Corporate Governance and Corporate Social Responsibility practices.

The Legal Committee

In the fiscal year 2018, there are changes in the Legal Committee during the year as follows:

- 1 October 2017 – 25 September 2018 consisted of:

1. Mrs. Phongsaward	Guyaroonsuith	Chairman
2. Miss Chunhachit	Sungmai	Member
3. Miss Nathsinee	Yuttidhamdamrong	Member
4. Mrs. Sarinee	Angsusingha ^{1/}	Member
5. Dr. Abhijai	Chandrasen	Legal Advisor
6. Vice President (Office of President)		Secretary
7. Senior Director, General Administration Bureau		Assistant Secretary

Remarks: 1/ Retired on 5 June 2018

- 26 September 2018 – 30 September 2018 consisted of:

1. Mrs. Phongsaward	Guyaroonsuith	Chairman
2. Miss Chunhachit	Sungmai	Member
3. Miss Nathsinee	Yuttidhamdamrong	Member
4. Mr. Somnuk	Rongthong ^{1/}	Member
5. Dr. Abhijai	Chandrasen	Legal Advisor
6. Vice President (Office of President)		Secretary
7. Senior Director, General Administration Bureau		Assistant Secretary

Remarks: 1/ Appointed on 26 September 2018

Responsibilities

To consider and give suggestions regarding Laws, regulations and contracts as assigned by the Company or the Board of Directors.

The Dependent Committee

In the fiscal year 2018, there are changes in the Dependent Committee during the year as follows:

- 1 October 2017 – 17 December 2017 consisted of:

1. General Kanit	Sapitaks
------------------	----------

2. Air Chief Marshal Siwakiat	Jayema
3. Mrs. Phongsaward	Guyaroonsuith
4. Police General Dechnarong	Sutticharnbancha
5. Police Major General Surachate	Hakparn
6. Colonel Peerawat	Promkladpanao

- 18 December 2017 – 30 January 2018 consisted of:

1. Air Chief Marshal Siwakiat	Jayema
2. Mrs. Phongsaward	Guyaroonsuith
3. Police General Dechnarong	Sutticharnbancha
4. Police Major General Surachate	Hakparn
5. Colonel Peerawat	Promkladpanao

- 31 January 2018 – 30 September 2018 consisted of:

1. Police General Dechnarong	Sutticharnbancha
2. Police Major General Surachate	Hakparn
3. Colonel Peerawat	Promkladpanao

The Independent Directors have performed their duty in line with a principle of “Independence” which is defined as “a key to fostering the Directors’ responsibilities. A certain number of the Independent Directors should be comprised of the Board of Directors and they can make suggestions or reports with consideration of their duties and responsibilities independently and justly without direct or indirect benefits or advantages in that case and without considering any benefits relating to properties or positions. In addition, the Independent Directors can promote any changes or stop any action if necessary and important. The Independent Directors will be able to make decision independently.”

The Independent Directors will have to declare their independence when appointed and annually. In fiscal year 2018, the Independent Directors held 2 Meetings with all members attended.

Remuneration Rate for the Board of Directors and Committees

The Company is a state enterprise that has to abide by the Cabinet's resolution regarding remuneration of the Board of Directors, which includes a fixed amount of remuneration, meeting remuneration, etc. as set by the Ministry of Finance.

Remuneration Rate for the Board of Directors and Committee Divided into Groups in the fiscal year 2018

No.	Committee	Total (Baht)
1.	The Board of Directors	977,750.00
2.	The Executive Committee	529,000.00
3.	The Audit Committee	390,000.00
4.	The Risk Management Committee	97,500.00
5.	The Remuneration Committee	55,000.00
6.	The Corporate Governance and Corporate Social Responsibility	649,000.00
7.	The Legal Committee	187,000.00
Total		2,885,250.00

^{1/}Remuneration Rate for the Board of Directors and Committee Divided individually the fiscal year 2018

No.	Committee	Total (Baht)
1	Air Chief Marshal Siwakiat Jayema	491,330.00
2	Police General Dechnarong Sutticharnbancha	475,000.00
3	Mr. Suwit Rojanavanich	333,166.67
4	Mr. Sanit Phromwong	109,333.33
5	Mr. Puttipong Prasarttong-Osoth	390,086.67
6	Squadron Leader Pongtorn Thepkanjana	251,602.66
7	Mrs. Phongsaward Guyaroonsuith	442,500.00
8	Police Major General Surachate Hakparn	320,000.00
9	Colonel Peerawat Promkladpanao	520,000.00
10	Mrs. Sarinee Angsusingha ^{2/}	321,333.33
11	Mr. Somnuk Rongthong	21,666.67
12	General Kanit Sapitaks	135,000.00
13	Mr. Krichthep Simlee	2,903.33
Total		4,137,922.66

Remarks

^{1/}Remuneration consists of a fixed amount of remuneration and meeting remuneration

^{2/}Retired on 5 June 2018

The Labour Relations Committee

In the fiscal year 2018, (October 2017 - September 2018), there are 12 meetings with attendance details as follows:

		Number of Meeting
1. Mrs. Sarinee Angsusingha	Chairman	7
2. Squadron Leader Pongtorn Thepkanjana	Chairman	4
3. Mrs. Onurai Komain	Member (Employer)	8
4. Mr. Sukluer Chiawarcheep	"	12
5. Mrs. Sirikes Niemloy	"	11
6. Mr. Channarong Chuacharoen	"	9
7. Mr. Chamnan Ruechai	"	12
8. Miss Waraporn Songcharoen	"	12
9. Mrs. Chidkamol Soonthornsit	"	12
10. Mr. Chana Tadtasai	"	11
11. Mrs. Kleawthong Lapthananon	Member and Secretary	12
12. Mr. Parinya Thienthong	Member (Employee)	12
13. Mr. Sukit Klinhom	"	10
14. Mr. Matee Khamhaeng	"	12
15. Mr. Nirut Puttstit	"	10
16. Mrs. Kasamaporn Sawatdichai	"	9
17. Mr. Kant Teekanuntaporn	"	10
18. Mr. Sangsith Prasomthong	"	11
19. Mr. Sudkhate Wiengsri	"	10
20. Mr. Sapol Singhadara	"	9

Remarks: No. 1 Completed term of employment in June 2018

No. 2 Appointed in June 2018

Remuneration Rate for the Executive Management in the Fiscal Years 2016-2018

Fiscal Year	Number	Salary and Other Income (million baht)
2016	4	30.22
2017	5	31.68
2018	5	37.25

Remarks: Other income was Position Allowance, Licence Fees, Vehicle Allowance and Annual Special Rewards

Conflict of Interests Policy

In the fiscal year 2018, AEROTHAI has implemented Guidelines on Appropriate Internal Control Measures for Juristic Persons to Prevent Bribery of State Officials, Foreign Public Officials and Agents of Public International Organizations of NACC's announcement. By definition Ways to Prevent Bribery by the Management and Staff who have a duty to comply with the National Anti-Corruption Law, giving or receiving bribes, risk analysis was rated a very low risk in conflict of interests leading to Appropriate Internal Control in five Guidelines such as conflict of interests annual report, conflict of interests seminars, promotion of conduct to be followed according to the Code of Ethics, conflict of interests complaint management and disclosure of Management and Staff's wrongdoing on AEROTHAI's Website.

The Various Operations of the Organization

THE AUDIT COMMITTEE'S PERFORMANCE REPORT OF AERONAUTICAL RADIO OF THAILAND LTD. FOR THE FISCAL YEAR 2018

In the fiscal year 2018 the Audit Committee of Aeronautical Radio of Thailand Ltd. were as follows:

The Audit Committee is consisted of


- | | | |
|-----------------------------------|------------------|----------|
| 1. Police General Dechnarong | Sutticharnbancha | Chairman |
| 2. Police Major General Surachate | Hakparn | Member |
| 3. Colonel Peerawat | Promkladpanao | Member |

The Audit Committee performed their duties as assigned by the Board of Directors, the Audit Committee Charter and the Audit Committee of State Enterprise under the Ministry of Finance Practice Handbook. In the fiscal year 2018, the Audit Committee held eight meetings which were attended by the senior management, Chief Audit Executive, and the management of Office of Internal Audit. The Audit Committee also held one special meeting with the officers from the Office of the Auditor General to confer about the independence in performing their duties and comments. Major matters could be summarized as follows:

11. To verify the financial report for its accountability, make reports of the implementation projects with respect to efficiency, effectiveness and economics measures, report on conflicts of interest and report on activities in accordance with related rules, regulations, Cabinet Resolutions, and policies set by the Board of Directors.
12. To review the efficiency and the effectiveness of the Company's Internal Controls, Risk Management and Good Corporate Governance by receiving internal audit reports and the Internal audit group's practice report regularly. Moreover, the Committee has followed up the results of the control self assessment in accordance with Internal Control Standard 2001.
13. To review the Independence of Internal Auditor group and the audit practices to ensure compliance with regulations and best practice determined by the Ministry of Finance. To monitor for the measures taken to follow the recommendations after each audit to ensure that the corporate has appropriate internal control and to prevent or reduce any risk that might occur.

14. To review the Audit Committee Charter, key performance index with a result of 3.80 out of 4.00 points and determine the planned agenda. The Committee also conducted self assessment and the Audit Committee's performance with a result of 3.99 out of 4.00 points.
15. To supervise internal audit practices by approving the internal audit charter, Practice Handbook, key performance index, the five years strategic internal audit implementation plan and the annual internal audit implementation plan for the fiscal year 2019. To agree to the budget for the fiscal year 2019. To appraise the Chief Audit Executive, Experts, Senior Director Level, Experts, Director Level and Internal Audit officers for their performance in the fiscal year 2018. To review the office of Internal Audit's training plan and resources for the fiscal year 2019. To follow up the progress of the internal audit implementation plan and review internal audit group annual report for the fiscal year 2018.
16. In 2018, the quarterly review and annual financial statements audit fees of the Company were totally Baht 1,820,000.

After performing their duties and responsibilities delegated by the Board of Directors, the Audit Committee certified that the financial report truly and fairly reflected the Company's financial status and operating results in accordance with generally accepted accounting standards. In conclusion, the Company has been operated in accordance with appropriate internal control measurement, rules, regulations, Cabinet resolutions and policies set by the Board of Directors. The Company has adequate risk management control. The Internal audit practice complies with the principle and best practice under the Ministry of Finance. There were no issues relating to conflict of interests. The written reports of the Audit Committee were submitted to the Board of Directors on a regular basis. The Audit Committee's suggestions and guidelines were considered by the Company to improve operations and enhance effectiveness.

Police General 
(Dechnarong Sutticharnbancha)
Chairman of the Audit Committee

Internal Audit

In 2018, the internal auditors perform their duties in compliance with independence, impartiality, ethics and expertise in line with the Standards for Professional Internal Audit Practice which are clearly stated by the Office of Internal Audit Charter. The Office of Internal Audit focuses on internal auditors' competencies development including knowledge and expertise. Also the Office promotes and supports internal auditors to receive professional certification from both domestic and international internal auditor association.

◆ Internal Audit Plan

The 5 year Internal Audit Strategic Plan (fiscal years 2018 – 2022) and the Internal Audit Plan for the fiscal year 2018 have been developed in accordance with the mission of the Aeronautical Radio of Thailand's Corporate Plan. The risk assessment principles were applied as a tool to prioritize and select activities for internal auditing based on criteria for significant risks as well as the policies and expectations of the Office of the Auditor General of Thailand, the Company's Audit Committee, the President, senior executives and stakeholders so that the auditors' practices would conform to Company's operational policies, goals and objectives.

◆ Internal Audit Execution

The internal audit operations focus on assurance and consulting by covering the reliability of the organization's financial statements, the compliance to the laws, regulations, policies, related instructions, and the working systems that influence general operation. The Office is working to report proper asset monitoring and utilizing effectively. The internal audit plan is made in details by collecting basic information to consider risk factors, internal control or other significant abnormalities and apply them to set objectives, internal audit execution framework and the audit program for every auditing activities. The audit reporting and suggestions/solutions are passed to the audited units and executives to further improve their operational practices.

In 2018, the Office of Internal Audit completed its audit program as well as the audit work, covering risk factors and corruption indication assigned by the executives.

◆ Development of Auditors' Competencies

The Office of Internal Audit promotes knowledge, skills and professional competency for internal auditors to improve their ability to perform duties in accordance with internal audit professional code of ethics. The Office encourages the development and continuous conduct of both internal and external training for internal auditors to be well equipped with knowledge, competency and expertise in internal auditing, as well as other skills needed by the Company. Moreover, the Office also promotes and supports internal auditors to become certified as professional internal auditors or attain other related professional certification such as CIA, CISA, CISM, CPA, CPIA, and CPIAT. In 2018, additional 7 internal auditors received CPIAT from the

Institute of Internal Audit of Thailand. Currently, 17 internal auditors (62%) are certified auditors, which exceeds the set the Key Performance Indicators (KPIs).

Financial Report

1. Report of the Board of Directors' responsibility to the financial statements

The Company's Financial Report was arranged under the approval of the Company's Board of Directors to reflect the Company's financial status together with annual operating performance in accordance with generally accepted accounting standards.

The Company's Board of Directors was well aware of the responsibility to prepare and arrange the Financial Report that presented the Company's annual financial status and operating performance in compliance with generally accepted accounting standards as well as their responsibility to financial information which was presented in the 2018 Annual Report. Thus, appropriate accounting principles have been applied on a consistent basis with due consideration of optimal estimation in preparing the Company's financial statements. All important information was sufficiently disclosed in the notes on the Company's Financial Statements for the benefits of the Company's shareholders and stakeholders.

In addition, The Company's Board of Directors has deployed and maintained effective systems of risk management and internal controls which provided reasonable assurance that the Company's accounting records were accurate, complete and sufficient to protect the assets of the Company as well as prevent fraud or other material irregular activities.

The Company's Board of Directors monitored the preparation of financial reports by appointing the Audit Committee to oversee the quality of the Company's financial reports and internal control systems. The Audit Committee's opinion regarding such matters was disclosed in this Annual Report under the Audit Committee's Report.

In the Board of Directors' opinion, the Company's internal control systems were satisfactory and could assure the reliability of the Company's financial statements in compliance with generally accepted accounting standards, legal requirements and other associated regulations.

2. Summary of Financial Report

	2018	2017	2016
Operating Performance (Baht : Million) ^{1/}			
Total Income	13,115.85	12,194.11	11,638.93
Total Expenditure	10,757.41	10,193.64	9,276.06
Overcollection to be refunded to Member Airlines	2,358.44	2,000.47	2,362.87
Note: 1/ Separate Financial Statements of the Company			
Financial Status (Baht : Million) ^{2/}			
Total Assets	15,877.71	14,428.62	13,385.61
Total Liabilities	14,877.73	13,463.86	12,465.33
Total Shareholders' Equity	999.98	964.76	920.28
Financial Ratio			
Debt-to-Equity Ratio (times)	14.88	13.96	13.55
Debt-to-Equity Ratio (times) (Not including accumulated Overcollection)	5.54	6.31	7.19
Fixed Charge Coverage Ratio (times)	2.11	1.64	1.44
Note: 2/ Financial statements of the Company and Staff Welfare Fund			

3. The Company's Operation Analysis - Separate Financial Statements of the Company

The Company's total income in the fiscal year 2018 was over total expenditure with overcollection to be refunded to Member Airlines at the amount of Baht 2,358.44 Million.

Unit: Million Baht

Items	2018	2017	Increase (Decrease)	
			Amount	%
Income				
Air Navigation Services	12,244.85	11,433.60	811.25	7
Other Related Services	730.26	688.79	41.47	6
Other Income	140.74	71.72	69.02	96
Total Income	13,115.85	12,194.11	921.74	8
Expenditure				
Operating Expenditure	10,743.70	10,155.21	588.49	6
Finance Costs	13.71	38.43	(24.72)	(64)
Total Expenditure	10,757.41	10,193.64	563.77	6
Overcollection to Member Airlines	2,358.44	2,000.47	357.97	18

3.1 Income Analysis

The Company's total income in the fiscal year 2018 was Baht 13,115.85 million. This was derived mainly from income from air navigation services of Baht 12,244.85 million or 93% of total income along with income from other related services including rental and maintenance of equipment, aeronautical telecommunications services (AOC), and work orders accounting for 6% of total income or Baht 730.26 million. In addition, income from other services was Baht 140.74 million or 1%.

Actual income from air navigation services was Baht 12,244.85 million with an increase of Baht 811.25 million or 7% from the previous year. This was a result of air traffic growth by 6.6% as airlines increased the flights. Mainly, international flights and overflying flights have increased continuously.

Income of Baht 730.26 million from other related services increased by 6% or Baht 41.47 million from the previous year mainly due to increased income from rental and maintenance of equipment and Airline Operational Control services (AOC). The other income of Baht 140.74 million increased by 96% or Baht 69.02 million from the previous year which derived from delayed penalty in delivery of work orders and interest received from deposit accounts.

3.2 Expenditure Analysis

The Company's total expenditure in the fiscal year 2018 was Baht 10,757.41 million, of which Baht 7,630.23 million was accounted for employee benefits, Baht 3,113.47 million was other operating expenditure, and the remaining Baht 13.71 million was the finance cost.

This year, the Company could save the operating expenditure of Baht 269.56 million with the cost control measures, which do not affect the core business and safety standards.

4. Analysis of Financial Status – Financial statements of the Company and Staff Welfare Fund

4.1 Assets Analysis

The Company and Staff Welfare Fund's total assets as at 30 September 2018 were Baht 15,877.71 million, comprised of 49% current assets and 51% non-current assets, with the following details:

Unit: Million Baht

Items	2018	2017	Increase (Decrease)	
			Amount	%
Current Assets	7,777.07	6,311.00	1,466.07	23
Non-current Assets				
- Long-Term Investments	56.10	10.10	46.00	455
- Long-Term Loans to Staff	4.10	2.92	1.18	40
- Buildings and Equipment -Net	6,971.00	5,080.69	1,890.31	37
- Intangible Assets	80.60	56.66	23.94	42
- Assets under Construction	988.84	2,967.25	(1,978.41)	(67)
Total	15,877.71	14,428.62	1,449.09	10

In 2018, total assets increased by 10% or Baht 1,449.09 million from the previous year due to an increase in current assets by 23% or Baht 1,466.07 million, mainly derived from an increase in temporary investment and receivables from Air Navigation Service. Moreover, non-current assets decreased at the amount of Baht 16.98 million due to the decrease in assets under construction since the various investment in equipment projects were completed.

4.2 Liabilities Analysis

The Company and Staff Welfare Fund's total liabilities as at 30 September 2018 were Baht 14,877.73 million, comprised of 80% current liabilities and 20% non-current liabilities with the following details:

Unit: Million Baht

Items	2018	2017	Increase (Decrease)	
			Amount	%
Current Liabilities	11,756.24	9,600.29	2,155.95	22
Current Portion of Long-Term Liabilities	126.94	543.03	(416.09)	(77)
Non-current Liabilities				
- Children's Educational Support	0.11	0.11	-	-
- Long-Term Loans	444.07	816.27	(372.20)	(46)
- Employee Benefits Obligations	2,550.37	2,504.16	46.21	2
Total	14,877.73	13,463.86	1,413.87	11

In 2018, total liabilities increased by 11% or Baht 1,413.87 million from the previous year. The current liabilities were mainly the accumulated overcollection at Baht 9,338.20 million. The Company had been invested in Air navigation Service systems and others related systems from 2014 – 2018 at the total amount of Baht 5,440.14 million and made a prepayment of loans between 2017 – 2018 at the total amount of Baht 1,452.81 million.

The non-current liabilities were mainly Employee Benefit Obligations and long-term loans from the Government Savings Bank which were used for investment in various projects. The payments of principal and interest are scheduled every 6 months.

4.3 Shareholders' Equity Analysis

The Company and Staff Welfare Fund's shareholders' equity as at 30 September 2018 was Baht 999.98 million with the following details:

Unit: Million Baht

Items	2018	2017	Increase (Decrease)	
			Amount	%
Registered Ordinary Share Capital	660.00	660.00	-	-
Staff Welfare Fund	339.98	304.76	35.22	12
Total	999.98	964.76	35.22	4

The capital structure as at 30 September 2018 comprised of total liabilities of Baht 14,877.73 million or 94% and shareholders' equity of Baht 999.98 million or 6%.

5. Cash Flow Analysis – Financial statements of the Company and Staff Welfare Fund

In fiscal year 2018, the Company and Staff Welfare Fund's ending balance of cash and cash equivalents as at 30 September 2018 was Baht 2,892.46 million, which decreased from the beginning balance by Baht 212.89 million. Net cash provided by operating activities was mainly from overcollection and depreciation of the investment in fixed assets. Net cash used in investment activities was mainly used for project investments to support and enhance the capabilities of air navigation services. Additionally, net cash used in financing activities was mostly for repayment of long-term loans.

Unit: Million Baht

Items	2018	2017	Increase (Decrease)
Cash Flow from Operating Activities	3,183.27	3,360.96	(177.69)
Cash Flow from Investing Activities	(2,587.88)	(1,324.07)	(1,263.81)
Cash Flow from Financing Activities	(808.61)	(1,593.48)	784.87
Gain (Loss) on Exchange Rate	0.33	0.87	(0.54)
Cash and Cash Equivalents -At the end of the period	2,892.46	3,105.35	(212.89)

6. Financial Ratio Analysis – Financial statements of the Company and Staff Welfare Fund

In fiscal year 2018, the Company and Staff Welfare Fund's debt-to-equity ratio increased from the previous year due to the increase in accumulated overcollection. Additionally, the Debt Service Coverage Ratio (an ability to pay principal and interests) derived from net cash flows from operating activities which was mainly from the overcollection and higher depreciation of the completed projects.

Items	2018	2017	Increase (Decrease)
Debt-to-Equity Ratio (times)	14.88	13.96	0.92
Debt-to-Equity Ratio (times) (Not including accumulated overcollection)	5.54	6.31	(0.77)
Debt Service Coverage Ratio (times)	2.11	1.64	0.47

The Company operates on a cost-recovery basis (or as a non-profit organization). Practically, in the case of income-over-expenditure, the overcollection will be refunded to Member Airlines. On the other hand, the Company will collect any under-recovery from Member Airlines if there is income-under-expenditure. The Company's funds for various investments are financed by overcollection that the Company retains according to the resolution of the Ordinary General Meeting and long-term loans from financial institutions. The ability to repayment loans depends mainly on depreciation which is already included in Air Navigation Services Charges (ANS Charges) to be collected from Airlines.

Financial Trend

1. Financial Trend in 2019

According to the Company's 2019 Financial Plan (Years 2019 - 2023) which was approved by the Company's Board of Directors at the 6/2018 (614) Meeting on 27 June 2018, the total income is expected to be Baht 13,836.53 million consisting of ANS Charges at Baht 13,069.91 million. The Company forecasted the increase of overall air traffic volume at 6.5% from 2018. For income from ANS Charges, the unit rate of ANS charges for En Route is Baht 3,500 per unit and Terminal is Baht 500 per unit. The expected other related services income and other income is Baht 766.62 million. The approved operating expenditure is Baht 13,092.74 million. Thus, the expected income-over-expenditure is at Baht 743.79 million.

The Capital Expenditure Budget in 2019 is approved by the Cabinet on 25 September 2018 at the ceiling of Baht 1,405 million which is consistent to the Company's Corporate Plan for the years 2019 – 2023 and sources of investment derives only from income-over-expenditure or overcollection from 2018 with no loans required in fiscal year 2019.

In accordance with financial trend in 2019 which shows that the Company has an income-over-expenditure and moderately high liquidity, the Company has managed to use remaining working capital as a source of investment instead of loan from external financing as well as make a prepayment of loan. This helps reducing the cost of finance and long term loans obligation. As a results, the Company has strong financial position, better financial ratios and decrease in debt-to-equity ratio.

2. Financial Trend in 5-year period (2019 - 2023)

5-year Income and Expenditure Plan (2019 - 2023) From 5-year financial projection according to the 2019 Financial Plan (2019 - 2023), the Company expected that total income will increase at an average rate of 7% per annum. The Company will maintain the current unit rate of ANS Charges until 2021 which achieve goal and objectives of the Company. The operating expenditure is expected to increase at an average rate of 9% per annum and the Company will have income-over-expenditure throughout the next 5 years.

5-year investment plan and Financial sourcing According to 5-year investment plan (2019 - 2023) which is consistent to the Company's Corporate Plan for 2019 - 2023, the Company's investment budget ceiling is expected at approximately Baht 12,500 million. The investment is mainly used in safety and its related services including procurement of systems and equipment to maintain stability and efficiency of Air Navigation Services by replacing deteriorated equipment as well as additional investing in Thailand Modernization Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) Systems Project to be complete and competitive capacity which in line with the development of National Air Transportation. Moreover, the investment will be used in other technology to develop air navigation services to be consistent with ICAO's Aviation system Block Upgrade: ASBUs, the sources of investment will derive from overcollection and other remaining working capital as well as loan from external financing.

AUDITOR'S REPORT

To the Shareholders of Aeronautical Radio of Thailand Limited

Opinion

The Office of the Auditor General of Thailand has audited the accompanying consolidated financial statements of Aeronautical Radio of Thailand Limited and Staff Welfare Fund (the Group) and separate financial statements of Aeronautical Radio of Thailand Limited (the Company), which comprise of the consolidated and separate statements of financial position, as at 30 September 2018, and the consolidated and separate statements of income and expenditure and statements of cash flows for the years then ended, and notes to the consolidated and separate financial statements, as well as a summary of significant accounting policies.

In the Office of the Auditor General of Thailand's opinion, the above mentioned consolidated and separate financial statements present fairly, in all material respects, the consolidated financial position of the Group and separate financial position of the Company, respectively, as at September 30, 2018, and their consolidated and separate financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRSs).

Basis for Opinion

The Office of the Auditor General of Thailand conducted the audit in accordance with Thai Standards on Auditing (TSAs). The Office of the Auditor General of Thailand's responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated and separate financial statements section of the Office of the Auditor General of Thailand's report. The Office of the Auditor General of Thailand is independent of the Group and the Company in accordance with the State Audit Standards issued by the State Audit Commission and the Code of Ethics for Professional Accountants issued by the Federation of Accounting Professions that are relevant to the Office of the Auditor General of Thailand's audit of the consolidated and separate financial statements, and has fulfilled other ethical responsibilities in accordance with these requirements. The Office of the Auditor General of Thailand believes that the audit evidence obtained is sufficient and appropriate to provide a basis for the Office of the Auditor General of Thailand's opinion.

Other Information

The Management is responsible for the other information which are information included in the annual report excepting the consolidated and separate financial statements and auditor's report thereon. Management agrees that the annual report is made available to the Office of the Auditor General of Thailand after the date of this auditor's report.

The Office of the Auditor General of Thailand's opinion on the consolidated and separate financial statements does not cover the other information and the Office of the Auditor General of Thailand will not express any form of assurance conclusion thereon.

In connection with the audit of the consolidated and separate financial statements, the Office of the Auditor General of Thailand's responsibility is to read and consider whether the other information is materially inconsistent with the consolidated and separate financial statements or the Office of the Auditor General of Thailand's knowledge obtained in the audit, or otherwise appears to be materially misstated.

When the Office of the Auditor General of Thailand reads the annual report, if the Office of the Auditor General of Thailand concludes that there is a material misstatement, the Office of the Auditor General of Thailand is required to communicate the matter to those charged with governance.

Responsibilities of Management and Those Charged with Governance for the Consolidated and Separate Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRSs, and for such internal control as management determines necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated and separate financial statements, the management is responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing matters relate to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's and the Company's financial reporting process.

Auditor's Responsibilities for the Audit of the Consolidated and Separate Financial Statements

The Office of the Auditor General of Thailand's objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes the Office of the Auditor General of Thailand's opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with TSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.

As part of an audit in accordance with TSAs, the Office of the Auditor General of Thailand exercises professional judgment and maintain professional skepticism throughout the audit. The Office of Auditor General of Thailand also:

- Identifies and assesses the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence that is sufficient and appropriate to provide a basis for the Office of the Auditor General of Thailand's opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's and the Company's internal control.
- Evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the management.
- Concludes on the appropriateness of the management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's and the Company's ability to continue as a going concern. If the Office of the Auditor General of Thailand concludes that a material uncertainty exists, the Office of the Auditor General of Thailand is required to draw attention in the Office of the Auditor General of Thailand auditor's report to the related disclosures in the consolidated and separate financial statements or, if such disclosures are inadequate, to modify the Office of the Auditor General of Thailand's opinion. The Office of the Auditor General of Thailand's conclusions are based on the audit evidence obtained up to the date of the Office of the Auditor General of Thailand auditor's report. However, future events or conditions may cause the Group and the Company to cease to continue as a going concern.

- Evaluates the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtains sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. The Office of the Auditor General of Thailand is responsible for the direction, supervision and performance of the group audit. The Office of the Auditor General of Thailand remains solely responsible for the Office of the Auditor General of Thailand's audit opinion.

The Office of the Auditor General of Thailand communicates with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that the Office of the Auditor General of Thailand identifies during the Office of the Auditor General of Thailand's audit.

Signed

(Miss Bunloon Sirisingsungchai)

Director of Financial and Procurement

Audit Office No.11

Signed

(Mrs. Sulaiwon Phianphoemphat)

Division Director

Office of the Auditor General of Thailand
30 November 2018

AERONAUTICAL RADIO OF THAILAND LTD. AND STAFF WELFARE FUND

Notes to Financial Statements

For the year ended 30 September 2018

1. The Objective of the Establishment of the Company

The Company's objective is to provide air traffic control, aeronautical communications and related services to meet the requirements of air transport operators and the International Civil Aviation Organization's (ICAO) standards and recommended practices with safety, consistency and efficiency that is the Government's obligation to ICAO as one of the Contracting States. The Company provides services to air transport operators on a cost recovery basis. The Company recovers expenses by collecting air navigation service charges fairly from users.

2. Principles for Presentation of Financial Statements

The consolidated and separate financial statements of Aeronautical Radio of Thailand Ltd. have been prepared in accordance with generally accepted accounting principles of the Accounts Act, 2000 and Accounting Professional Act, 2004 as well as accounting interpretation and guidelines that have been approved by the Federation of Accounting Professions. Also, the Company's financial statements have been prepared in accordance with the announcement by Department of Business Development regarding the brief items necessary in 2011 financial statements, dated 28 September 2011 by including the accounting transaction of Staff Welfare Fund.

3. The Thai Accounting Standards (TAS), Thai Financial Reporting Standards (TFRS), Thai Standard Interpretations Committee (TSIC) and Thai Financial Reporting Interpretations Committee (TFRIC) which will be effective in the forthcoming periods, are as follows:

- Effective for accounting periods on or after 1 January 2018:

TAS 1	(revised 2017): Presentation of Financial Statements
TAS 2	(revised 2017): Inventories
TAS 7	(revised 2017): Statement of Cash Flows
TAS 8	(revised 2017): Accounting Policies, Changes in Accounting Estimates and Errors
TAS 10	(revised 2017): Events after the Reporting Period
TAS 11	(revised 2017): Construction Contracts
TAS 12	(revised 2017): Income taxes
TAS 16	(revised 2017): Property, Plant and Equipment
TAS 17	(revised 2017): Leases
TAS 18	(revised 2017): Revenue
TAS 19	(revised 2017): Employee Benefits
TAS 20	(revised 2017): Accounting for Government Grants and Disclosure of Government Assistance

- TAS 21 (revised 2017): The Effects of Changes in Foreign Exchange Rates
- TAS 23 (revised 2017): Borrowing Costs
- TAS 24 (revised 2017): Related Party Disclosures
- TAS 26 (revised 2017): Accounting and Reporting by Retirement Benefit Plans
- TAS 27 (revised 2017): Separate Financial Statements
- TAS 28 (revised 2017): Investments in Associates and Joint Ventures
- TAS 29 (revised 2017): Financial Reporting in Hyperinflationary Economies
- TAS 33 (revised 2017): Earnings per Share
- TAS 34 (revised 2017): Interim Financial Reporting
- TAS 36 (revised 2017): Impairment of Assets
- TAS 37 (revised 2017): Provisions, Contingent Liabilities and Contingent Assets
- TAS 38 (revised 2017): Intangible Assets
- TAS 40 (revised 2017): Investment Property
- TAS 41 (revised 2017): Agriculture
- TFRS 2 (revised 2017): Share-based Payment
- TFRS 3 (revised 2017): Business Combinations
- TFRS 4 (revised 2017): Insurance Contracts
- TFRS 5 (revised 2017): Non-current Assets Held for Sale and Discontinued Operations
- TFRS 6 (revised 2017): Exploration for and Evaluation of Mineral Resources
- TFRS 8 (revised 2017): Operating Segments
- TFRS 10 (revised 2017): Consolidated Financial Statements
- TFRS 11 (revised 2017): Joint Arrangements
- TFRS 12 (revised 2017): Disclosure of Interests in Other Entities
- TFRS 13 (revised 2017): Fair Value Measurement
- TSIC 10 (revised 2017): Government Assistance – No Specific Relation to Operating Activities
- TSIC 15 (revised 2017): Operating Leases – Incentives
- TSIC 25 (revised 2017): Income Taxes – Changes in the Tax Status of an Entity or its Shareholders
- TSIC 27 (revised 2017): Evaluating the Substance of Transactions Involving the Legal Form of a Lease
- TSIC 29 (revised 2017): Service Concession Arrangements: Disclosures
- TSIC 31 (revised 2017): Revenue – Barter Transactions Involving Advertising Services
- TSIC 32 (revised 2017): Intangible Assets -Web Site Costs
- TFRIC 1 (revised 2017): Changes in Existing Decommissioning, Restoration and Similar Liabilities
- TFRIC 4 (revised 2017): Determining whether an Arrangement contains a Lease

TFRIC 5 (revised 2017): Rights to Interests arising from Decommissioning, Restoration and Environmental Rehabilitation Funds

TFRIC 7 (revised 2017): Applying the Restatement Approach under TAS 29 (revised 2017) Financial Reporting in Hyperinflationary Economies

TFRIC 10 (revised 2017): Interim Financial Reporting and Impairment

TFRIC 12 (revised 2017): Service Concession Arrangements

TFRIC 13 (revised 2017): Customer Loyalty Programmes

TFRIC 14 (revised 2017): Minimum Funding Requirements and their Interaction

TAS 19 (revised 2017) - The Limit on a Defined Benefit Asset

TFRIC 15 (revised 2017): Agreements for the Construction of Real Estate

TFRIC 17 (revised 2017): Distributions of Non-cash Assets to Owners

TFRIC 18 (revised 2017): Transfers of Assets from Customers

TFRIC 20 (revised 2017): Stripping Costs in the Production Phase of a Surface Mine

TFRIC 21 (revised 2017): Levies

- Effective for accounting periods on or after 1 January 2019:

TAS 1 (revised 2018): Presentation of Financial Statements

TAS 2 (revised 2018): Inventories

TAS 7 (revised 2018): Statement of Cash Flows

TAS 8 (revised 2018): Accounting Policies, Changes in Accounting Estimates and Errors

TAS 10 (revised 2018): Events after the Reporting Period

TAS 12 (revised 2018): Income taxes

TAS 16 (revised 2018): Property, Plant and Equipment

TAS 17 (revised 2018): Leases

TAS 19 (revised 2018): Employee Benefits

TAS 20 (revised 2018): Accounting for Government Grants and Disclosure of Government Assistance

TAS 21 (revised 2018): The Effects of Changes in Foreign Exchange Rates

TAS 23 (revised 2018): Borrowing Costs

TAS 24 (revised 2018): Related Party Disclosures

TAS 26 (revised 2018): Accounting and Reporting by Retirement Benefit Plans

TAS 27 (revised 2018): Separate Financial Statements

TAS 28 (revised 2018): Investments in Associates and Joint Ventures

TAS 29 (revised 2018): Financial Reporting in Hyperinflationary Economics

TAS 33 (revised 2018): Earnings per Share

TAS 34 (revised 2018): Interim Financial Reporting

TAS 36 (revised 2018): Impairment of Assets

TAS 37 (revised 2018): Provisions, Contingent Liabilities and Contingent Assets

- TAS 38 (revised 2018): Intangible Assets
- TAS 40 (revised 2018): Investment Property
- TAS 41 (revised 2018): Agriculture
- TFRS 1 : First-time Adoption of IFRS
- TFRS 2 (revised 2018): Share-based Payment
- TFRS 3 (revised 2018): Business Combinations
- TFRS 5 (revised 2018): Non-current Assets Held for Sale and Discontinued Operations
- TFRS 6 (revised 2018): Exploration for and Evaluation of Mineral Resources
- TFRS 8 (revised 2018): Operating Segments
- TFRS 10 (revised 2018): Consolidated Financial Statements
- TFRS 11 (revised 2018): Joint Arrangements
- TFRS 12 (revised 2018): Disclosure of Interests in Other Entities
- TFRS 13 (revised 2018): Fair Value Measurement
- TFRS 15 (revised 2018): Revenue from contracts with customers
- TSIC 10 (revised 2018): Government Assistance – No Specific Relation to Operating Activities
- TSIC 15 (revised 2018): Operating Leases – Incentives
- TSIC 25 (revised 2018): Income Taxes – Changes in the Tax Status of an Entity or its Shareholders
- TSIC 27 (revised 2018): Evaluating the Substance of Transactions Involving the Legal Form of a Lease
- TSIC 29 (revised 2018): Service Concession Arrangements: Disclosures
- TSIC 32 (revised 2018): Intangible Assets -Web Site Costs
- TFRIC 1 (revised 2018): Changes in Existing Decommissioning, Restoration and Similar Liabilities
- TFRIC 4 (revised 2018): Determining whether an Arrangement contains a Lease
- TFRIC 5 (revised 2018): Rights to Interests arising from Decommissioning, Restoration and Environmental Rehabilitation Funds
- TFRIC 7 (revised 2018): Applying the Restatement Approach under TAS 29 (revised 2018) Financial Reporting in Hyperinflationary Economies
- TFRIC 10 (revised 2018): Interim Financial Reporting and Impairment
- TFRIC 12 (revised 2018): Service Concession Arrangements
- TFRIC 14 (revised 2018): Minimum Funding Requirements and their Interaction
TAS 19 (revised 2018) - The Limit on a Defined Benefit Asset
- TFRIC 17 (revised 2018): Distributions of Non-cash Assets to Owners
- TFRIC 20 (revised 2018): Stripping Costs in the Production Phase of a Surface Mine
- TFRIC 21 (revised 2018): Levies

- Effective for accounting periods on or after 1 January 2020:

TAS 32	: Financial Instruments: Presentation
TFRS 7	: Financial Instruments: Disclosures
TFRS 9	: Financial Instruments
TFRIC 16	: Hedges of a Net Investment in a Foreign Operation
TFRIC 19	: Extinguishing Financial Liabilities with Equity Instruments

The Company's Management has made an assessment of the impact caused by applying these new and revised standards and interpretations which will be effective for accounting periods on or after 1 January 2018, 1 January 2019 and 1 January 2020 and believes that the majority of key accounting principles remain unchanged. Also, there will be no material impact on both the Company's consolidated and separate financial statements.

4. Summary of Significant Accounting Policies

4.1 Incomes and Expenditures Recognition

4.1.1 Income derived from air navigation services is recognized as income in the accounting period that services are provided.

4.1.2 Equipment rental and maintenance incomes and Airline Operational Control (AOC) income are recognized as income over the period at the rate of remuneration specified in the agreement.

4.1.3 Income from work orders is recognized as income when each order is completed and delivered to customers.

4.1.4 Interest received is recognized in proportion of time on the basis of actual rate of return.

4.1.5 Expenditures are recognized on an accrual basis.

4.2 Allowance for Doubtful Accounts

The allowance is recorded equal to the estimated losses that may result in collection of debts. Generally, estimations are based on an experience of debt recovery in the past and from non-governmental organizations or non-state enterprise debtors' current status at the Statement of Financial Position date. The allowance for doubtful accounts is made according to the Regulations for Account and Finance, 2005 by the Ministry of Finance as follows:

Period	Overdue Rate of Provision for Doubtful Accounts (%)
Over 6 months - 1 year	50
Over 1 year	100

4.3 Store Supplies

Store supplies are recorded at cost on the weighted average basis. For overseas purchases, import formality handling charges are recorded as operating expenditure.

4.4 Investments

Investments are recorded at cost as follows:

4.4.1 Temporary investment is the investment that the Company expects to hold to maturity or converts into cash within one year such as not over 12-month fixed deposit account.

4.4.2 Other long-term investment is the investment that the Company expects to hold longer than one year such as over 12-month fixed deposit account.

4.5 Buildings and Equipment

4.5.1 Buildings and equipment are recorded at cost less accumulated depreciation.

Depreciation, the Company has depreciated the assets by using the straight-line method based on the estimated useful life of assets begin from the month the assets were available for use as follows:

Buildings and Construction	7-20	years
Utility Systems	5-20	years
Radar and Equipment	7-15	years
Power Generators	10-20	years
Teleprinters	7	years
Equipment and Tools	7-20	years
Furniture and Office Supplies	5-7	years
Vehicles	5	years
Aircraft	5-25	years
Assets from Donations	5-25	years

Assets acquired or received with a value not exceeding Baht 30,000 are recognized as expenses.

Intangible assets prior to the year 2014 are including in furniture and office supplies.

The developments of computer system which materially enhance the capacity or efficiency as well as the acquisition of assets which provide revenue to the Company for more than one year are recognized as fixed assets.

4.5.2 Aircraft Inspection and Repair as Necessary (IRAN) are recorded at cost and depreciation is calculated using the straight-line method based on the duration of the affected aircraft's useful life: 5–10 years.

4.6 Intangible Assets

The amortization of intangible assets is calculated using the straight-line method of 20% per year over the asset's estimated useful life.

4.7 Interest Paid on Loan

Asset under construction funded by loans: interest paid will be recorded as the cost of the asset under construction. After the work has been completed, the interest paid will be recognized as expenses.

4.8 Unearned Income

Receipt of assets donated which used for operations longer than one accounting period are recorded at cost as unearned income and then gradually transferred to other income throughout the useful life of those assets.

4.9 Accounting Items in Foreign Currency

Assets and Liabilities of foreign currency value are recorded in Baht by initially using the currency exchange rate at the date the transaction occurs. At the end of each accounting period, the asset and liability value will be adjusted to Baht according to the currency exchange rate announced by the Bank of Thailand on that day. Gain or loss from currency exchange rate revaluation will be recognized wholly as an income or expense item in the statements of income and expenditure.

4.10 Overcollection and Under-Recovery to Member Airlines

The Company operates on a non-profit or cost recovery basis. If income exceeds expenditure, the overcollection amount will be recorded as liability and will be refunded to Member Airlines. On the other hand, if expenditure exceeds income, then the under-recovery amount will be recorded as asset and will be charged to Member Airlines. Such rule will be distributed to each Member Airlines according to revenue generated by each of them for that particular period.

4.11 Employee Benefit Obligations

The Company's employee benefits in respect of defined benefit plans and other long-term employee benefits are determined by using the projected unit credit method based on actuarial valuation. The discount rate used is determined by reference to market yields on

government bonds in which all actuarial gains and losses arising in each accounting period will be recognized as income or expense within the accounting period in which they arise.

4.12 Provident Fund

On 1 October 1992, the Company established “the Registered Provident Fund for Staff of Aeronautical Radio of Thailand Ltd.” in accordance with the Provident Fund Act, 1987. The staff members pay accumulated contribution to the fund at the rate of 2 - 15% of their salaries and the Company makes a contribution to the fund at the rate of 8.5 - 15% of staff members’ salaries.

4.13 Cash and Cash Equivalents

Cash and cash equivalents mean cash on hand and at bank for which repayment is due within 3 months.

5. Supplementary Information

5.1 Cash and Cash Equivalents

Unit: Million Baht

	Consolidated Financial Statements		Separate Financial Statements	
	2018	2017	2018	2017
Cash on hand - Domestic	3.90	4.55	1.58	2.25
Cash at Banks - Domestic	2,888.56	3,100.80	2,825.73	3,021.77
Total	2,892.46	3,105.35	2,827.31	3,024.02

5.2 Temporary Investment

Unit: Million Baht

	Consolidated Financial Statements		Separate Financial Statements	
	2018	2017	2018	2017
Fixed Deposit Account-6 months	539.11	1,513.27	538.43	1,512.72
Fixed Deposit Account-12 months	2,658.68	203.77	2,454.92	-
Total	3,197.79	1,717.04	2,993.35	1,512.72

The Company uses Fixed Deposit Account-12 months of Government Housing Bank at the amount of Baht 123 million as collateral to The Revenue Department in order to postpone the penalty and surcharge payment. (Supplementary information 5.26)

5.3 Receivables from Air Navigation Service (ANS) and other receivables

Unit: Million Baht

	Consolidated Financial Statements		Separate Financial Statements	
	2018	2017	2018	2017
Receivables from ANS				
Receivable cheques	14.59	6.97	14.59	6.97
Airlines Debtors	1,558.44	1,385.56	1,558.44	1,385.56
Domestic Debtors	96.79	74.73	96.45	74.44
International Debtors	81.03	15.23	81.03	15.23
Accrued Income	1.64	1.28	1.57	1.28
	1,752.49	1,483.77	1,752.08	1,483.48
Less Allowance for doubtful accounts	(299.40)	(258.07)	(299.40)	(258.07)
Total Receivables from ANS -Net	1,453.09	1,225.70	1,452.68	1,225.41
Other receivables				
Interest Receivable	18.46	12.22	18.24	12.02
Penalty to contractors	25.78	67.89	25.78	67.89
Loans to staff	0.12	0.12	0.12	0.12
Prepaid Expenses	30.87	31.06	30.87	31.06
Advances to staff for expenses	33.56	23.22	9.90	7.04
Total other receivables	108.79	134.51	84.91	118.13
Total	1,561.88	1,360.21	1,537.59	1,343.54

5.4 Store Supplies

Unit: Million Baht

	Separate Financial Statements	
	2018	2017
Spare parts for Radar	64.86	83.24
Spare parts for Aircraft	18.47	21.53
Spare parts for Navigation Aids	11.67	-
Spare parts for Radio Equipment	1.74	1.23
Office supplies	3.36	3.93
Other spare parts	0.70	0.77
Total	100.80	110.70

5.5 Other Current Assets

Unit: Million Baht

	Separate Financial Statements	
	2018	2017
Deposit Payments	4.68	4.51
Work in Process	4.72	1.44
Suspense accounts	2.93	(0.85)
Total	12.33	5.10

5.6 Other long-term investments

Unit: Million Baht

	Consolidated Financial Statements		Separate Financial Statements	
	2018	2017	2018	2017
Vayupak Fund 1	10.00	10.00	10.00	10.00
Fixed Deposit Account-36 months	46.10	0.10	-	-
Total	56.10	10.10	10.00	10.00

5.7 Buildings and Equipment

Unit: Million Baht

	Original Cost			Accumulated Depreciation				Book Value		
	Balance			Balance	Balance			Balance		
	1 Oct 17	Increase	Decrease	30 Sept 18	1 Oct 17	Increase	Decrease	30 Sept 18	30 Sept 18	30 Sept 17
The Company's buildings and equipment										
Buildings and Construction	2,974.56	18.85	24.82	2,968.59	1,839.17	112.84	17.37	1,934.64	1,033.95	1,135.39
Utility Systems	1,429.87	52.30	41.97	1,440.20	826.38	84.21	37.76	872.83	567.37	603.49
Radar and Communication Equipment ^{1/}	6,465.84	2,559.18	242.11	8,782.91	4,718.26	559.83	240.15	5,037.94	3,744.97	1,747.58
Power Generators	397.67	171.60	9.89	559.38	232.58	73.99	9.89	296.68	262.70	165.09
Teleprinters	0.06	-	-	0.06	0.06	-	-	0.06	-	-
Equipment and Tools	1,275.94	73.80	11.75	1,337.99	856.46	94.63	11.67	939.42	398.57	419.48
Furniture and Office Supplies	1,195.06	110.13	164.10	1,141.09	841.09	127.23	163.95	804.37	336.72	353.97
Vehicles	3.96	2.47	-	6.43	2.71	0.43	-	3.14	3.29	1.25
Aircraft	821.94	-	8.72	813.22	170.49	32.29	8.72	194.06	619.16	651.45
Assets from Donations	110.86	4.24	0.94	114.16	108.63	2.64	0.57	110.70	3.46	2.23
Total	14,675.76	2,992.57^{2/}	504.30	17,164.03	9,595.83	1,088.09	490.08	10,193.84	6,970.19	5,079.93
Staff Welfare Fund's equipment										
Musical Instruments and Sports Equipment	3.52	0.22	0.16	3.58	2.76	0.17	0.16	2.77	0.81	0.76
Grand Total	14,679.28	2,992.79	504.46	17,167.61	9,598.59	1,088.26	490.24	10,196.61	6,971.00	5,080.69

Notes: ^{1/}

Radar and Equipment comprise of radar systems, air navigation aids, surveillance systems, automatic message switching systems, and other communication equipment.

^{2/}

The amount is for buildings and equipment, which increased from the transfer of assets under construction at Baht 2,988.33 million and assets from donations at the amount of Baht 4.24 million.

Buildings and construction used for operations are constructed on the Ratchaphatsadu land with ownership resting with the Ministry of Finance.

5.8 Intangible Assets

Unit: Million Baht

	Separate Financial Statements	
	2018	2017
Computer Software as at 1 October 2017	83.44	55.19
<u>Add</u> Additional during the year	48.69 ^{1/}	28.25 ^{1/}
	132.13	83.44
<u>Less</u> Accumulated Amortization	(51.53)	(26.78)
Total Computer Software as at 30 September 2018	80.60	56.66
Amortization – This year	24.75	14.76

^{1/} the transfer of assets under construction

5.9 Assets under Construction

Unit: Million Baht

	Separate Financial Statements	
	2018	2017
Balance brought forward as at 1 October 2017	2,967.25	2,199.30
<u>Add</u> Additional during the year	1,061.25	1,529.10
	4,028.50	3,728.40
<u>Less</u> Transfer to Buildings and Equipment	(2,988.33)	(731.86)
Transfer to Intangible Assets	(48.69)	(28.25)
Transfer to Expenses	(2.64)	(1.04)
Balance carried forward as at 30 September 2018	988.84	2,967.25

5.10 Trade and Other Payables

Unit: Million Baht

	Consolidated Financial Statements		Separate Financial Statements	
	2018	2017	2018	2017
Trade Payable				
Trade Payable -Domestic	1,049.14	948.16	1,049.14	948.16
Trade Payable -Overseas	5.18	4.23	5.18	4.23
Suspense Account for Goods and Services	425.97	385.73	425.97	385.73
Total Trade Payable	1,480.29	1,338.12	1,480.29	1,338.12
Other Payables				
Suspense Account for Pay Cheques	34.26	41.81	22.25	32.13
Suspense Account for Debtors	19.88	156.60	19.88	156.60
Staff Payable	16.02	11.06	16.02	11.06
Deferred Income	51.46	7.64	51.32	7.49
Total Other Payables	121.62	217.11	109.46	207.28
Total	1,601.91	1,555.23	1,589.75	1,545.40

5.11 Current portion of Long-term Loans due in One Year

(Separate Financial Statements)

Unit: Million Baht

	Bank			Total
	Government Savings		Krungsri	
Credit Limit	1,650.00	3,480.00	2,075.43	
Balance brought forward as at 1 Oct 17	126.94	1.00	415.09	543.03
<u>Add</u> Transferred from long-term loans	126.94	-	207.54	334.48
	253.88	1.00	622.63	877.51
<u>Less</u> Payments during the period	(126.94)	(1.00)	(622.63)	(750.57)
Balance carried forward as at 30 Sept 18	126.94	-	-	126.94

5.12 Accrued Expenses

Unit: Million Baht

	Consolidated Financial Statements		Separate Financial Statements	
	2018	2017	2018	2017
Ratchaphatsadu Land and Office Lease	196.71	187.45	196.71	187.45
Utilities	39.29	28.52	39.29	28.52
Others	7.67	9.85	3.56	6.16
Total	243.67	225.82	239.56	222.13

5.13 Accumulated Overcollection

Unit: Million Baht

	Separate Financial Statements	
	2018	2017
Overcollection to Member Airlines - brought forward as at 1 Oct 17	7,379.19	5,849.29
<u>Add</u> Overcollection to Member Airlines during the year	2,358.44	2,000.47
Collection of Under-Recovery from Member Airlines whose membership was terminated		
	9,737.63	7,849.76
<u>Less</u> Rebate Overcollection in 2017 to Member Airlines during the year	(399.43)	(470.57)
Balance carried forward as at 30 Sept 2018	9,338.20	7,379.19

The Company's Shareholders at the 71st Ordinary General Meeting on 23 January 2018 approved that the Company rebate 20% of the fiscal year 2016 overcollection to Member Airlines in order to deduct Air Navigation Service charges within the fiscal year 2018 (April - September 2018). The remaining 80% of overcollection will be carried forward for investment in 2018 and repayment of loans.

In 2018, the Company had Baht 13,115.85 million total income and Baht 10,757.41 million total expenditure resulting in overcollection at Baht 2,358.44 million. When combined overcollection this year with the accumulated overcollection brought forward from 2017 of Baht 7,379.19 million, and the overcollection rebate to Member Airlines of Baht 399.43 million, leaving the accumulated overcollection of Baht 9,338.20 million at the end of the fiscal year 2018.

The Company has invested in air navigation service systems and other systems since 2014 – 2018 at the total amount of Baht 5,440.14 million. Also, the Company had prepaid the long term loan from 2017 – 2018 at the total amount of Baht 1,452.81 million.

In addition, income derived from telecommunication business under telecommunication licence type 2 for the operator with its own network, which is amounted to Baht 59.01 million during 1 October 2017 – 30 September 2018 has already been included in Equipment Rental & Maintenance and AOC income.

5.14 Other Current Liabilities

	Unit: Million Baht			
	Consolidated		Separate	
	Financial Statements		Financial Statements	
	2018	2017	2018	2017
Unearned Income	3.46	2.23	3.46	2.23
Accrued Income Tax and Tax Payable	368.59	324.10	368.36	323.94
Guarantee Money	161.69	99.48	161.58	99.34
Suspense Account for B Shares allocation	0.75	2.51	0.75	2.51
Other Suspense Account	32.85	-	32.85	-
Total	567.34	428.32	567.00	428.02

5.15 Long - Term Loans (Separate Financial Statements)

Unit: Million Baht

Bank	Contract Date	Credit Limit	Duration	Transferred to loans due within 1 year	Payment during the period	Balance as at 30 Sept. 2018	Balance as at 30 Sept. 2017
Government Savings	3 Sept. 07 28 Apr.	1,650.00	15 Y., Grace Period 2 Y.	126.94	- 37.71	444.07	571.01
Krungsri	16	2,075.43	5 Y.	207.54		-	245.25
Total		<u>3,725.43</u>		<u>334.48</u>	<u>37.71</u>	<u>444.07</u>	<u>816.26</u>

As at 30 September 2018, the Company has total credit limit at Baht 1,650.00 million consisting of loans from Government Savings Bank which were used for investment in various projects. The payments of principal and interest are scheduled every 6 months.

5.16 Employee Benefit Obligations

Principal actuarial assumption for calculating provisions are as follows:

	2018	2017
Discount rate (%)	3.23	2.80
Salary increase rates (%)	7.50	6.00

The changes in present value of employee benefit obligations:

Unit: Million Baht

	Separate Financial Statements	
	2018	2017
Employee benefit obligations - Balance brought forward	2,504.16	1,977.05
Current employee benefits	132.87	584.31
Employee benefit paid	(86.66)	(57.20)
Remaining Employee benefit obligations	<u>2,550.37</u>	<u>2,504.16</u>

5.17 Shareholders' Equity

Unit: Million Baht

	Consolidated Financial Statements		
	Share Capital	Welfare Fund	Total
Balance brought forward as at 1 Oct 2017	660.00	304.76	964.76
Income-over- Expenditure during the period	-	35.22	35.22
Balance carried forward as at 30 Sept 2018	660.00	339.98	999.98

Unit: Million Baht

	Separate Financial Statements	
	2018	2017
Registered Ordinary Shares and paid up Share Capital		
Ordinary Shares: 6,600,000 shares; Baht 100 per share		
A-shares (held by the Ministry of Finance)	600.00	600.00
B-shares (held by Member Airlines)	60.00	60.00
Total	660.00	660.00

5.18 Appropriation to the Ministry of Finance

The Cabinet Meeting on 27 October 1998 required the Company to pay the appropriation to the Ministry of Finance in proportion of 10% of income from air navigation services charges starting from the fiscal year 1998.

At the Cabinet Meeting on 13 August 2003, approval was given to the Company to prolong the non-payment of the appropriation to the Ministry of Finance between 2002 and 2005. Later, approval to terminate the payment of the appropriation to the Ministry of Finance effective from the fiscal year 2006 was given by the Cabinet Meeting on 20 September 2005.

5.19 Other income (Separate Financial Statements)

Unit: Million Baht

	Separate Financial Statements	
	2018	2017
Interest received	56.93	42.70
Gains on exchange rate	4.66	-
Dividend received	0.06	0.06
Other income	79.08	28.97
Total	<u>140.73</u>	<u>71.73</u>

5.20 Employee Benefit Expenses

Unit: Million Baht

	Consolidated Financial Statements		Separate Financial Statements	
	2018	2017	2018	2017
Staff Costs	6,713.77	6,277.21	6,713.77	6,277.21
Employee Benefit Expenses	132.87	584.31	132.87	584.31
Contribution to Provident Fund	480.92	447.76	480.92	447.76
Contribution to Staff Welfare Fund	-	-	302.67	283.57
Total	<u>7,327.56</u>	<u>7,309.28</u>	<u>7,630.23</u>	<u>7,592.85</u>

5.21 Other Expenses (Separate Financial Statements)

	Unit: Million Baht	
	Separate Financial Statements	
	2018	2017
Audit Fee	-	1.76
Meeting Expense	41.40	24.41
Consultant and service fees	104.36	14.52
Public Relations Expense	31.31	36.20
Donations	19.48	23.02
Travelling Expense	305.57	240.88
Premium Fees	35.25	38.56
Other Fees	124.34	11.20
Training Expense	178.54	131.85
Store Supplies and Assets Retirement Expense	40.91	33.64
Securities Expense	61.61	47.78
Loss on Fixed Assets Retirement	14.13	2.13
Loss on Foreign Exchange rate	-	1.46
Doubtful Accounts	41.33	30.31
Bad Debts	2.57	19.18
Others	127.78	62.68
Total	1,128.58	719.58

5.22 Staff Welfare Fund Expenses

	Unit: Million Baht	
	Consolidated Financial Statements	
	2018	2017
Staff Welfare Expenses	287.98	260.32
Others	0.53	0.66
Total	288.51	260.98

5.23 Provident Fund

On 1 October 1992, the Company calculated the gratuity fund to be paid to staff as of that date at Baht 342.66 million. The Company transferred Baht 173.60 million to the Provident Fund. The remaining amount of Baht 169.06 million had to be transferred within 10 years and/or the remaining working period of the staff with interest at an average one year fixed deposit rate. The Company completed the transfer of all the remaining deferred gratuity funds to the Provident Fund in the fiscal year 2002.

As at 30 September 2018 there were 3,115 staff members. The Company made a contribution in this period at Baht 483.14 million to the Provident Fund, (which was recorded as staff costs at Baht 480.92 million and cost of production of work order at Baht 2.22 million).

5.24 Remuneration for Committees

In accounting period of 2018, the Company paid remuneration to committees as follows:

	Baht
1. Monthly Remuneration to State Enterprise Committee	1,137,172.66
2. Board of Directors	857,750.00
3. Executive Committee	409,000.00
4. Audit Committee	390,000.00
5. Risk Management Committee	97,500.00
6. Remuneration Committee	55,000.00
7. Legal Committee	163,000.00
8. Corporate Governance and Social Responsibility Committee	649,000.00
9. President Remuneration Subcommittee	24,500.00
10. President Nominating Committee	91,000.00

The remuneration payment was paid to the Company's Board of Directors and the committee representatives from other organizations.

5.25 Transactions between the Company and Staff Welfare fund

In accounting period of 2018, the Company received income and contributed to staff welfare fund at net amount of Baht 302.67 million.

5.26 Contingent Liabilities

The Company provides air navigation services and related services according to the agreement with the Ministry of Transport which falls in an exemption for Value Added Tax (VAT) according to the Royal Decree under the Revenue Code Regarding Value Added Tax

Exemption (No.239), B.E. 2534 (1991) as amended by the Royal Decree Issued under the Revenue Code Regarding Value Added Tax Exemption (No.254), B.E.2535 (1992) section 4.

Then, the Revenue Department examined the Company in overall aspects from fiscal year 2003 – 2011 with no issues or observations about VAT on all of the Company's income. However, in November 2013, the Revenue Department's officer examined the Company's income for fiscal year 2012 and sent an official letter of the examination results later in March 2014 that there is an issue about VAT relating to the Company's income from work orders to non-airlines customers in accounting period 2012.

After continuously monitored and coordinated with the Revenue Department officer about the issue, the Company found that the Company has tax payable relating to VAT from October 2011 to June 2018 at a total amount of Baht 234.77 million which consists of VAT at the amount of Baht 112.11 million with penalty and surcharge at the amount of Baht 122.66 Million.

However, the Company had already made a VAT payment at the amount of Baht 112.11 million to the Revenue Department on 8 August 2018. For penalty and surcharge at the amount of Baht 122.66 million, the Company sent a letter Ref. ART 1228/2561 dated 1 August 2018 to the Ministry of Finance requesting for an extension in submitting the VAT from the due date to get the exemption on penalty and surcharge. Now, The Company has already placed the Fixed Deposit Account-12 months of Government Housing Bank at the amount of Baht 123 million as a collateral to the Revenue Department in order to postpone the penalty and surcharge payment.
