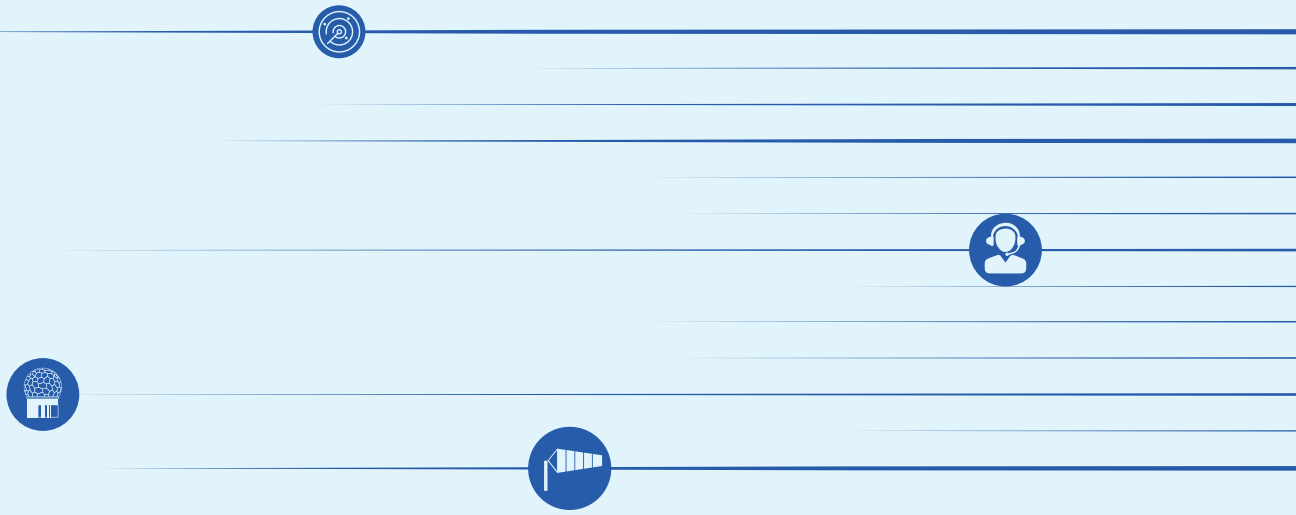
交通部民用航空局

飛航服務總臺 113年年報

AIR NAVIGATION AND WEATHER SERVICES, CAA, MOTC

2024 ANNUAL REPORT

ANWS



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目錄 CONTENTS

1 總臺長的話
A Message from the Director

隨著疫後國際客貨運市場需求逐漸回升，旅運量持續成長，113 年臺北飛航情報區 (下稱本區) 除總管制架次回復至 108 年 (疫情前) 的 8 成外，其餘過境架次、桃園國際機場管制架次及總收入均已來到 108 年的 9 成，在交通部、民航局、軍方、桃園國際機場公司、各航空站及相關民航業者等各方的支持與協助下，各項飛航事務順利推展，我們將繼續秉持專業與熱忱，穩健向前，再創新猷！

為建構優質系統、設備，我們完成飛航管理系統擴充備援系統期中升級轉移及啟用，強化備援韌性；啟用新臺東終端航管雷達、新廣播式自動回報監視系統及桃園國際機場第二套場面搜索雷達，完善本區監視效能及涵蓋範圍；啟用臺中機場滑降臺 / 測距儀及綠島歸航臺，確保設備穩定可靠；啟用馬祖南北竿及金門機場自動氣象觀測系統，提供機場精準氣象資訊；啟用金門 / 蘭嶼 / 澎湖 / 馬祖南北竿等機場之助航燈光，確保航機運作安全。

Demand in the international passenger and cargo markets have gradually recovered after the COVID-19 pandemic, and travel volume has continued to grow. In 2024, the total flight movements in Taipei Flight Information Region (Taipei FIR) recovered to 80% of their levels in 2019 (pre-pandemic). Furthermore, overflight movements, aircraft movements at Taiwan Taoyuan International Airport, and total revenue of Air Navigation and Weather Services (ANWS) have returned to 90%, comparing level in 2019. Thanks to support and assistance from all sectors of society, including Ministry of Transportation and Communications (MOTC), Civil Aviation Administration (CAA), military authorities, Taoyuan International Airport Corporation Ltd., airports authorities and various civil aviation partners, we have successfully completed a range of work related to aviation, and we will continue making progress reaching new heights based on our professional expertise and enthusiasm.

To build high-quality systems and equipment, we have completed transition and launch of the ATMS-Extended Backup ATC System Mid-Life Upgrade Project, and it has enhanced the resilience of backup systems. The new Taitung radar, Automatic Dependent Surveillance-Broadcast (ADS-B), and the second Surface Movement Radar (SMR) at Taiwan Taoyuan International Airport went into service, enhancing the surveillance effectiveness and signal coverage in Taipei FIR. The Glide Path/Distance Measuring Equipment (GP/DME) at Taichung Airport and the Non-Directional Beacon (NDB) at Ludao went into service, ensuring the stability and reliability of equipment. The Automatic Weather Observation Systems (AWOS) at Matsu Nangan and Beigan Airports as well as Kinmen Airport also went into service to provide the airports with more precise weather information. The visual aids for navigation at Kinmen, Lanyu, Penghu, and Matsu Nangan and Beigan Airports were substituted with new ones to ensure the safety of flight operations.

在優化飛航服務部分，我們自行開發符合本區需求之飛航流量管理系統，並建置網頁平臺及手機版，即時分享流管資訊，持續擴大試行計算起飛時間試作範圍至亞太各國如日本、韓國、香港、菲律賓、泰國及新加坡等國家 (或地區) 共 20 多個機場以及本區 4 大國際機場，提升飛航效率；實施標準儀器離 / 到場程序術語作業，符合國際規範；新增本區遙控無人機飛航公告為 U 類飛航公告、提供「民用及軍民合用機場天氣預報」，便利飛航人員即時查詢；推動新一代航空情報服務系統、航空氣象現代化作業系統汰換及更新計畫，並完成本區過境航路服務費成本分析，調整費率增加收入，持續投資飛航服務建設，提升整體服務品質及水準。

而在增進服務量能及韌性方面，我們完成國家關鍵基礎設施部級安全檢視及政府數位韌性巡航健檢，檢視結果均獲正面肯定，確保服務韌性；持續推動本區新一代航管系統、桃園國際機場第二座塔臺以及松山機場塔臺暨整體園區新建工程，同時積極參與相關國際組織舉辦之各項研討交流會議，汲取國際新知，確保與國際接軌。

最後，感謝所有同仁的付出與努力，不僅完成各階段重要工作，更榮獲民航局國有財產考核績優、民航局所屬機關行政績效第 1 名、公文檢核第 2 名及為民服務第 2 名的佳績！每一位同仁都是總臺最重要的資產，以「自我察覺，勇於改變；多元活動，健康身心；勤於溝通，願意合作」與同仁共勉，並持續以用心、貼心、創新精神，朝「飛安確保，服務更好」的方向邁進！

To optimize flight services, we developed an Air Traffic Flow Management (ATFM) system that meets the traffic requirements of Taipei FIR, and have designed and developed an ATFM Portal web platform, as well as a mobile version of the platform to share flow management information with aviation personnel. We have also continued to expand trial operations for Calculated Take-off Time (CTOT) to 20 airports in countries and regions in the Asia Pacific such as Japan, South Korea, Hong Kong, the Philippines, Thailand and Singapore, as well as 4 major international airports in Taiwan, thereby enhancing the efficiency of flight operations. We have also implemented standardized instrument departure/arrival procedure terminology in accordance with international regulations. The NOTAM for drone activities was newly classified as the U series NOTAM, and "Weather Forecasts for Civil and Civil-military Airports" is now provided to facilitate real-time queries by aviation personnel. The New AIS System (N-AIS) and Advanced Operational Aviation Weather System Renewal and Update (AOAWS-RU) have been implemented, and an overflight charge cost analysis report has been completed in order to adjust fees and increase revenues, thereby continuing to invest in flight service infrastructure and improve service quality and standards.

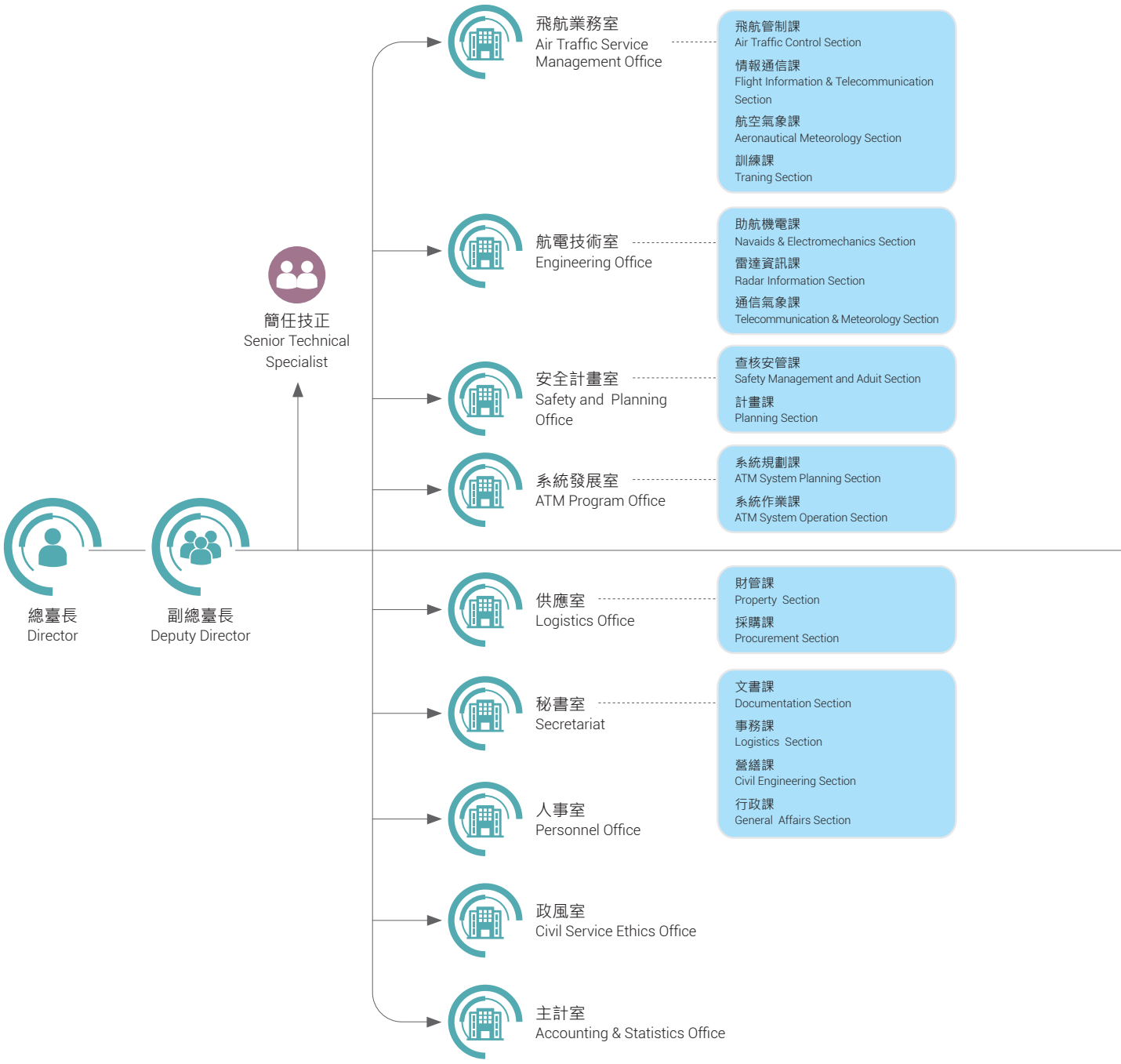
Regarding improving our service capacity and resilience, we have completed the Safety Inspection for Critical Infrastructure and the Government Digital Service Assessment. The results all received praise from the inspection and audit committee members which shows we can ensure the resilience of our services. To make sure the air traffic services in Taipei FIR is in line with international standards, we have also continued to implement the next-generation air traffic management system for Taipei FIR, the second air traffic control tower at Taiwan Taoyuan International Airport, and the Songshan Airport New Air Traffic Control Tower Complex Construction Project, and have actively participated in seminars and events organized by relevant international organizations.

Finally, I would like to thank all colleagues for their dedication and efforts. Not only have you completed all key tasks at every stage, you have also received an Outstanding rating from the CAA State-owned Property Assessment, as well as awarded excellent performance in Evaluation of National Property Control and Performance, first place in Administrative Performance Evaluation of CAA Affiliated Agencies, second place in the Document Performance Evaluation and Public Services Performance Evaluation! Our colleagues are ANWS's greatest asset. We should be self-aware and have the courage to change, pursue diverse activities and have healthy bodies and minds, and actively communicate and be willing to collaborate. We should also be thoughtful, warm, and innovative as we move toward the goals of "ensuring flight safety and providing better services".

飛航服務總臺 總臺長
Director
Air Navigation and Weather Services

黃麗君
Joyce L. C. Huang

2 組織架構 Organization

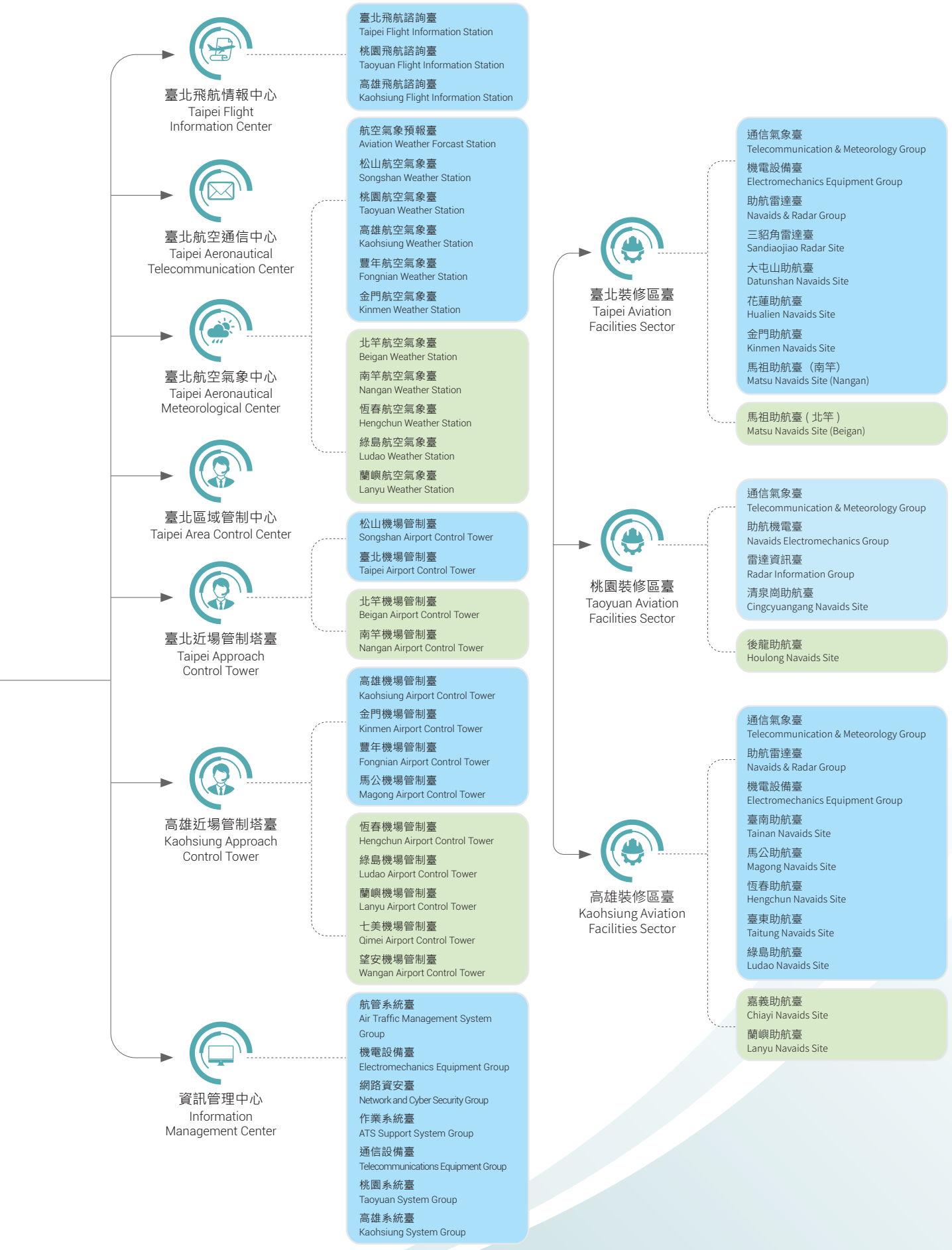


113 年預算員額 1,075 人
2024 Budget Personnel: 1,075 ppl

19 個一級單位
First-class Units:19

59 個二級單位（17 個課、42 個臺）
Second-class Units: 59
(Section: 17, Station/ Tower/ Site/ Group: 42)

16 個任務單位
Task Force Units: 16


臺北飛航情報中心
Taipei Flight Information Center
臺北飛航諮詢臺
Taipei Flight Information Station
桃園飛航諮詢臺
Taoyuan Flight Information Station
高雄飛航諮詢臺
Kaohsiung Flight Information Station
臺北航空通信中心
Taipei Aeronautical Telecommunication Center
臺北航空氣象中心
Taipei Aeronautical Meteorological Center
航空氣象預報臺
Aviation Weather Forcast Station
松山航空氣象臺
Songshan Weather Station
桃園航空氣象臺
Taoyuan Weather Station
高雄航空氣象臺
Kaohsiung Weather Station
豐年航空氣象臺
Fongnian Weather Station
金門航空氣象臺
Kinmen Weather Station
北竿航空氣象臺
Beigan Weather Station
南竿航空氣象臺
Nangan Weather Station
恆春航空氣象臺
Hengchun Weather Station
綠島航空氣象臺
Ludao Weather Station
蘭嶼航空氣象臺
Lanyu Weather Station
臺北區域管制中心
Taipei Area Control Center
臺北近場管制塔臺
Taipei Approach Control Tower
松山機場管制臺
Songshan Airport Control Tower
臺北機場管制臺
Taipei Airport Control Tower
北竿機場管制臺
Beigan Airport Control Tower
南竿機場管制臺
Nangan Airport Control Tower
高雄近場管制塔臺
Kaohsiung Approach Control Tower
高雄機場管制臺
Kaohsiung Airport Control Tower
金門機場管制臺
Kinmen Airport Control Tower
豐年機場管制臺
Fongnian Airport Control Tower
馬公機場管制臺
Magong Airport Control Tower
恆春機場管制臺
Hengchun Airport Control Tower
綠島機場管制臺
Ludao Airport Control Tower
蘭嶼機場管制臺
Lanyu Airport Control Tower
七美機場管制臺
Qimei Airport Control Tower
望安機場管制臺
Wangan Airport Control Tower
資訊管理中心
Information Management Center
航管系統臺
Air Traffic Management System Group
機電設備臺
Electromechanics Equipment Group
網路資安臺
Network and Cyber Security Group
作業系統臺
ATS Support System Group
通信設備臺
Telecommunications Equipment Group
桃園系統臺
Taoyuan System Group
高雄系統臺
Kaohsiung System Group
臺北裝修區臺
Taipei Aviation Facilities Sector
通信氣象臺
Telecommunication & Meteorology Group
機電設備臺
Electromechanics Equipment Group
助航雷達臺
Navaids & Radar Group
三貂角雷達臺
Sandiaojiao Radar Site
大屯山助航臺
Datunshan Navaids Site
花蓮助航臺
Hualien Navaids Site
金門助航臺
Kinmen Navaids Site
馬祖助航臺（南竿）
Matsu Navaids Site (Nangan)
馬祖助航臺 (北竿)
Matsu Navaids Site (Beigan)
桃園裝修區臺
Taoyuan Aviation Facilities Sector
通信氣象臺
Telecommunication & Meteorology Group
助航機電臺
Navaids Electromechanics Group
雷達資訊臺
Radar Information Group
清泉崗助航臺
Cingcyuangang Navaids Site
後龍助航臺
Houlong Navaids Site
高雄裝修區臺
Kaohsiung Aviation Facilities Sector
通信氣象臺
Telecommunication & Meteorology Group
助航雷達臺
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機電設備臺
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臺南助航臺
Tainan Navaids Site
馬公助航臺
Magong Navaids Site
恆春助航臺
Hengchun Navaids Site
臺東助航臺
Taitung Navaids Site
綠島助航臺
Ludao Navaids Site
嘉義助航臺
Chiayi Navaids Site
蘭嶼助航臺
Lanyu Navaids Site

1. **總臺長 Director**
   黃麗君 Huang, Li-Chun
2. **副總臺長 Deputy Director**
   董吉利 Tung, Chi-Li
3. **副總臺長 Deputy Director**
   汪美惠 Wang, Mei-Hui
4. **副總臺長 Deputy Director**
   康智育 Kang, Chih-Yu
5. **簡任技正 Senior Technical Specialist**
   袁星健 Yuan, Hsin-Chien
6. **簡任技正 Senior Technical Specialist**
   張明誠 Chang, Ming-Cheng
7. **飛航業務室主任 Air Traffic Service Management Office Chief**
   李嘉玉 Li, Chia-Yu
8. **安全計畫室主任 Safety and Planning Office Chief**
   謝碧岳 Hsieh, Pi-Yueh
9. **系統發展室主任 ATM Program Office Chief**
   林向得 Lin, Shiang-Der
10. **臺北區域管制中心主任 Taipei Area Control Center Chief**
    來安妮 Lai, An-Nie
11. **臺北近場管制塔臺塔臺長 Taipei Approach Control Tower Chief**
    毛修如 Mao, Hsiu-Ju
12. **高雄近場管制塔臺塔臺長 Kaohsiung Approach Control Tower Chief**
    王淑娟 Wang, Shu-Chuan

13. **臺北飛航情報中心主任 Taipei Flight Information Center Chief**
林慧珠 Lin, Hui-Chu

14. **臺北航空氣象中心主任 Taipei Aeronautical Meteorological Center Chief**
余祖華 Yu, Tsu-Hua

15. **臺北航空通信中心主任 Taipei Aeronautical Telecommunication Center Chief**
郭碧枝 Kuo, Pi-Chih

16. **資訊管理中心主任 Information Management Center Chief**
李淑芬 Li, Shu-Fen

17. **航電技術室主任 Engineering Office Chief**
朱逸文 Chu, Yi-Wen

18. **臺北裝修區臺區臺長 Taipei Aviation Facilities Sector Chief**
鄭世宗 Cheng, Shih-Tsung

19. **桃園裝修區臺區臺長 Taoyuan Aviation Facilities Sector Chief**
詹文欽 Chan, Wen-Chin

20. **高雄裝修區臺區臺長 Kaohsiung Aviation Facilities Sector Chief**
林勇青 Lin, Yung-Ching

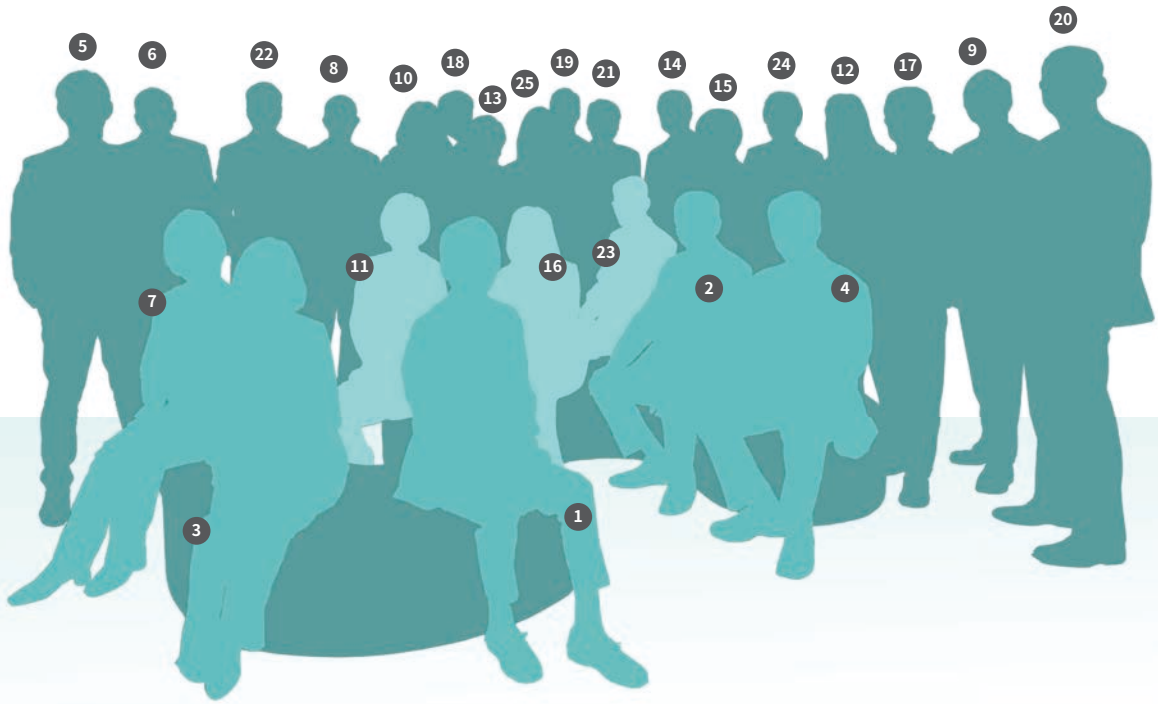
21. **供應室主任 Logistics Office Chief**
邱顯棟 Chiu, Hsien-Tung

22. **秘書室主任 Secretariat Chief**
羅肇欣 Lo, Chao-Hsin

23. **人事室主任 Personnel Office Chief**
謝國雄 Hsieh, Kuo-Hsiung

24. **政風室主任 Civil Service Ethics Office Chief**
張德邦 Chang, Te-Pang

25. **主計室主任 Accounting and Statistics Office Chief**
陳毓娟 Chen, Yu-Chuan



3 施政成果 Major Achievements

一、飛航管制

(一) 完成飛航管理系統擴充備援系統 (Extended Backup ATC System, EBAS) 期中升級轉移及啟用

飛航管理系統 (ATMS) 期中升級於 111 年 7 月順利轉移啟用，升級後系統納入多項新增功能及介面強化，為完備其備援系統 EBAS 之功能，112 年成立工作小組，分 4 階段執行 EBAS 升級，由同仁以系統承商遞交之軟體執行設備安裝架設，升級期間共召開 8 次會議、4 梯次訓練、2 次陣地測試、1 次作業測試與評估，以及 1 次全臺各地作業人員擬真作業，完成 81 項準備工作、研訂 65 項轉移執行程序與 10 份系統檢查表及 1 次轉移演練，於 113 年 4 月 23 日順利完成新舊備援系統轉移啟用，以升級後之 EBAS 做為 ATMS 備援系統，強化備援功能與韌性。

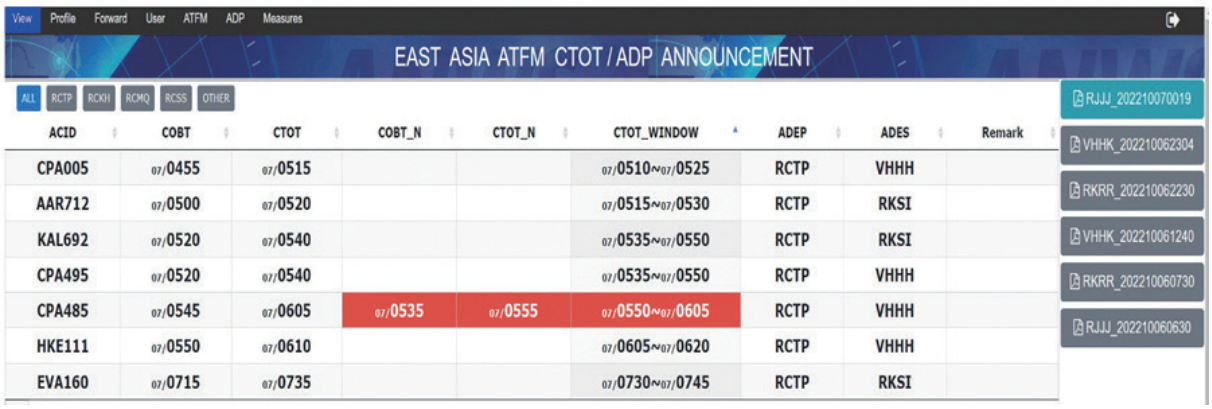
(二) 推動飛航流量管理 (Air Traffic Flow Management, ATFM)

- **賡續擴大試行計算起飛時間 (Calculated Take-off Time, CTOT)**

109 年起由桃園國際機場開始推動試行 CTOT，至 113 年本區試作範圍已納入高雄、松山及臺中等國際機場，國外部分則擴及亞太各國如日、韓、香港、菲律賓、泰國及新加坡等國家地區，包括香港、澳門、成田、關西、新千歲、福岡、名古屋、小松、青森、仙臺、那霸、仁川、金海、馬尼拉尼諾伊·阿基諾、麥克坦－宿霧及克拉克等 20 多個國際機場，為未來亞太區 ATFM 合作奠定良好基礎！

- **自行開發飛航流量管理系統與平臺建置**

自行開發符合本區流量管制需求之飛航流量管理系統，建置航班資料庫，規劃具備航行量調整功能、平衡區域航行量能及分享區域流管資訊，113 年已完成機場端及邊境點相關功能。另設計開發 ATFM Portal 網頁平臺及手機版，即時分享流管資訊予相關單位及人員。



ACID	COBT	CTOT	COBT_N	CTOT_N	CTOT_WINDOW	ADEP	ADES	Remark
CPA005	07/0455	07/0515			07/0510~07/0525	RCTP	VHHH	
AAR712	07/0500	07/0520			07/0515~07/0530	RCTP	RKSI	
KAL692	07/0520	07/0540			07/0535~07/0550	RCTP	RKSI	
CPA495	07/0520	07/0540			07/0535~07/0550	RCTP	VHHH	
CPA485	07/0545	07/0605	07/0535	07/0555	07/0550~07/0605	RCTP	VHHH	
HKE111	07/0550	07/0610			07/0605~07/0620	RCTP	VHHH	
EVA160	07/0715	07/0735			07/0730~07/0745	RCTP	RKSI	

▲ ATFM 入口網站 ATFM Portal

I. Air Traffic Control

1. Completed the Extended Backup ATC System Mid-Life Upgrade (EBAS MLU) operational transition and launch

▲ 完成 EBAS 期中升級作業轉移
Completed the operational transfer of the Extended Backup ATC System Mid-Life Upgrade

The Air Traffic Management System Mid-Life Upgrade (ATMS MLU) Project completed the operational transition in July 2022, integrating new functions and improved interfaces. To enhance the functionality of the EBAS, a work group was formed in 2023 to carry out the EBAS upgrades in 4 stages. Colleagues installed and set up the equipment with software provided by the system contractor. During the upgrade period, a total of 8 meetings, 4 training sessions, 2 field tests, 1 operational test and evaluation and 1 simulated operations session for operational personnel throughout Taiwan were held. A total of 81 preparatory tasks were completed, 65 operational procedures for transfer were established, 10 system checklists were formulated, and 1 transition drill was held. The transition and activation of the new system were completed on April 23, 2024, serving as the ATMS backup system, thereby enhancing the backup functionality and resilience of ATMS.

2. Promotion of Air Traffic Flow Management (ATFM)

- **Continued Expansion of Calculated Take-Off Time (CTOT) Trials**

▲ 赴臺中機場推廣 CTOT
CTOT workshop in Taichung Airport

Trial CTOT operations have been conducted at Taoyuan International Airport since 2020, and in 2024, the trial operations in Taipei FIR have been expanded to Kaohsiung, Taipei Songshan, and Taichung International Airports, and outside of Taiwan trial operations have been expanded to other countries and regions in the Asia Pacific such as Japan, South Korea, Hong Kong, the Philippines, Thailand, and Singapore, encompassing over 20 international airports including Hong Kong, Macao, Narita, Kansai, New Chitose, Fukuoka, Nagoya, Komatsu, Aomori, Sendai, Naha, Incheon, Gimhae, Manila Ninoy Aquino, Mactan-Cebu, and Clark, thereby laying a strong foundation for future ATFM collaboration in the Asia Pacific region!

- **Deployment of self-developed ATFM system and platform**

We have developed our own ATFM system that meets the flow management requirements of Taipei FIR. The system includes flight information databases, has planned and is equipped with air traffic adjustment functionality, helps balance the air traffic in the region, and can be used to share regional flow management information. Relevant functionality was completed on the airport side and border side in 2024. We have also designed and developed an ATFM Portal web platform, as well as a mobile version of the platform, to share flow management information with relevant units and personnel.

(三) 實施標準儀器離 / 到場程序術語「CLIMB/DESCEND VIA SID/STAR」作業

本區為配合國際民航組織（ICAO）實施「CLIMB/DESCEND VIA SID/STAR」作業，經辦理教育訓練、修編飛航管理程序、更新飛航管理系統及桃園塔臺自動化系統、完成重點提示教材供同仁複習簽閱，以及接班簡報宣導同仁作業及系統面差異，確保同仁依新修程序執行作業後，順利自 113 年 9 月 25 日實施，以接軌國際規範，維持飛航服務品質。

(四) 配合國家政策協助評估風力發電申設作業

因應政府大力推動綠能政策致風機申設案與日俱增，審慎評估逾 53 件申設案對通信、導航、監視及航管作業之影響，以兼顧綠能開發與飛航安全。

(五) 協助遙控無人機產業發展提供空域相關服務

因應無人機廣泛運用於救災、軍事及商業等用途，為滿足各空域使用者之需求，確保空域有效運用及航空器間安全隔離，協助辦理 1,838 件無人機空域申請案，計實施 8,448 次。

(六) 精進飛航管制技能及提升團隊合作

- **管制員緊急情況知能 (Emergency SA) 提升專案**

完成「管制員緊急情況知能」課程教材審查，針對艙壓失效、油量問題、引擎問題及 GPS 失效等主題，蒐集國內外案例之相關錄音，並以空中巴士操作手冊為依據，分析可能的航管影響，藉此強化管制員聽力及情境感知能力。

▼ 管制員飛行專業知能訓練
ATC flight expertise training

3. Implemented standardized instrument departure/arrival procedure terminology "CLIMB/DESCEND VIA SID/STAR"

To implement "CLIMB/DESCEND VIA SID/STAR" operations in accordance with the International Civil Aviation Organization (ICAO), the Taipei FIR has carried out training, revised flight management procedures, and produced teaching materials covering the key points for personnel to review. The Taipei FIR has also briefed personnel on the differences in operations and systems to ensure that the personnel will perform operations based on the new, revised procedures. These measures were successfully implemented starting from September 25, 2024, thus bringing the Taipei FIR in line with international standards and ensuring that the quality of flight services is maintained.


臺北飛航情報區飛航指南
AIP TAIPEI FIR

AIC - 1
26 JUN 2024

REPUBLIC OF CHINA
AIC for Taipei FIR

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AIC
02/24

Effective from 26 JUN 2024
Published on 26 JUN 2024

臺北飛航情報區實施國際民航組織標準儀器離到場程序術語「經由SID/STAR 爬高/下降」作業

IMPLEMENTATION OF ICAO STANDARD INSTRUMENT DEPARTURE AND STANDARD INSTRUMENT ARRIVAL PHRASEOLOGIES IN TAIPEI FIR

1 前言

1.1. 交通部民用航空局規劃自2024年9月25日起，依國際民航組織(ICAO) DOC 4444第16版之規定，於臺北飛航情報區實施標準儀器離/到場程序術語「經由SID/STAR 爬高/下降」作業，特此發布本航空公報周知航空公司及翼駕員操作時應採用相關術語。

1 INTRODUCTION

1.1. This circular is to inform airline operators and pilots on the changes to the ATC-pilot phraseologies to be used when operating on standard instrument departure (SID)/standard instrument arrival (STAR) procedure. Effective from SEP 25, 2024, Taipei FIR will implement ICAO standard instrument departure and standard instrument arrival phraseologies (CLIMB/DESCEND VIA

▲ 於 AIC 公布作業說明
Published operation instructions on AIC

4. Assisted in the evaluation of wind power applications and construction in accordance with national policies

ANWS meticulously evaluated over 53 wind farm applications to assess potential impacts on communication, navigation, surveillance, and air traffic control operations. This work supports the development of green energy while safeguarding flight safety, aligning with the government's active promotion of green energy policies.

5. Assisted in drone industry development and provided airspace-related services

Drone is widely used in areas such as disaster relief, military, and commercial purposes. To satisfy various airspace user needs, while ensuring the effective use of airspace and aircraft separation, ANWS assisted in 1,838 drone airspace application cases, for a total of 8,448 operations.

6. Improved air traffic control skills and enhanced teamwork

- **Air Traffic Controller Emergency Situational Awareness(SA) enhancement project**

ANWS completed the review of course materials for Air Traffic Controller Emergency SA, focusing on topics such as cabin pressure failure, fuel problems, engine problems, and GPS failure. The materials also compiled audio recordings of cases from home and abroad, and analyzed the possible impact on air traffic control based on the Airbus operating manual. This strengthened the listening abilities and situational awareness of air traffic controllers.

▶ 管制員緊急情況知能 SA 提升專案
Air Traffic Controller Emergency Situation Awareness(SA) enhancement project

- **精進學術理論與提升團隊技能**

  透過學科、英聽、模擬機術科測驗等三個面向，強化單位全方位作業能力，增進團隊合作氛圍及提升作業士氣，以因應未來運量成長之挑戰。

- **賡續辦理飛航管制員飛行專業知能訓練**

  為增進飛航管制員瞭解航空器駕駛員的操作及緊急情況之處理程序，113 年 5 月及 6 月分 2 梯次辦理，首度納入航空電子及航空氣象人員，共 20 人參加，並於 113 年 8 月 14 日舉辦聯合心得發表，從作業角度分享如何從所學經驗反饋至實務工作中，擴大學習效益。

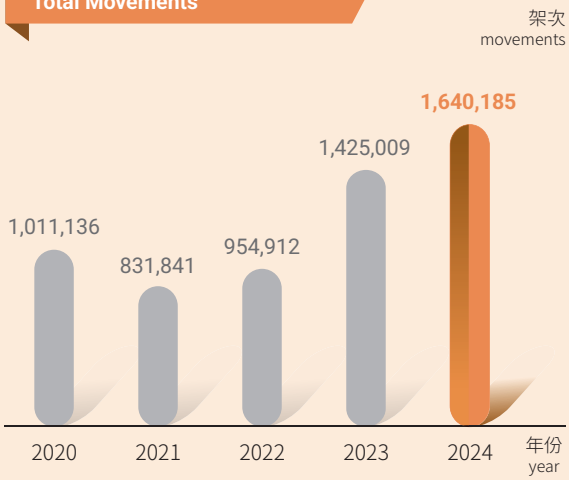
▲ 航管知能競賽 - 模擬機術科測驗
Air traffic control knowledge and skills competition – simulator practical test

(七) 提供緊急應變處置及醫療救護支援

各航管作業單位除提供航機飛航管制服務外，並於航機發生鳥擊、機械故障、乘客身體不適等異常狀況時提供緊急應變處置，確保航機及乘客安全。113 年共計提供 511 次緊急應變處置。

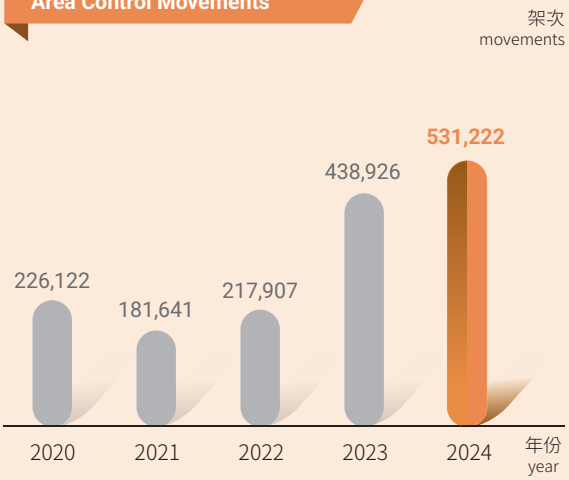
服務實績 Service achievements

總管制架次
Total Movements



113 年總管制架次為 1,640,185 架次，
較 112 年增加約 15.10%。
Total number of controlled movements in 2024 was 1,640,185, a 15.10 % increase compared with 2023.

航路管制架次
Area Control Movements



113 年航路管制架次為 531,222 架次，
較 112 年增加約 21.03%。
The number of area control movements in 2024 was 531,222, a 21.03% increase compared with 2023.

- **Improved academic knowledge and enhanced teamwork abilities**

  ANWS's comprehensive operational capabilities were strengthened through the three facets of theoretical knowledge, English listening, and technical skill tests in simulators, which improved the overall atmosphere of teamwork and raised personnel's morale, which will help them meet the challenges brought by volume growth in the future.

- **Continued to hold Air Traffic Controller flight expertise training program**

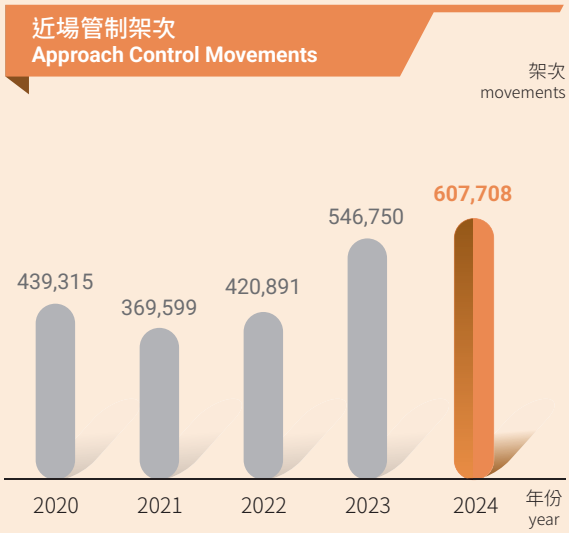
  To improve air traffic controllers' knowledge of pilot operations and emergency procedures, 2 training sessions were held in May and June 2024, integrating aeronautical electronics personnel and aeronautical meteorology personnel for the first time, with a total of 20 people participating. On August 14, 2024, a joint discussion session was held to allow participants to share from an operational point of view how to apply their experiences in their real work, thereby improving the effectiveness of the training.

▲ 管制員飛行專業知能訓練聯合心得分享會議
A joint experience sharing seminar after ATC flight expertise training

7. Provided support for emergency response and medical rescue

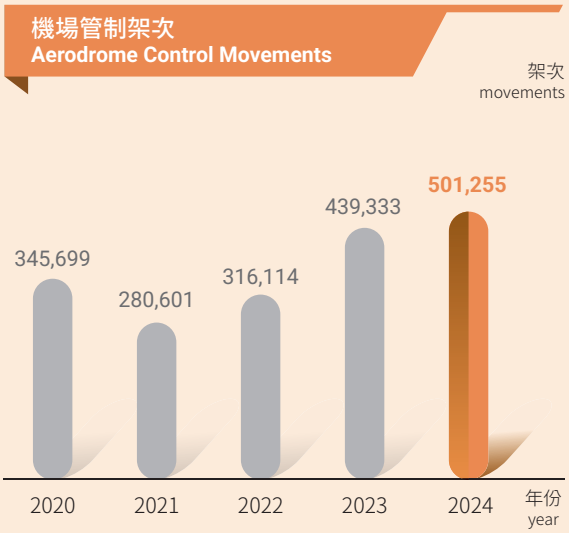
In addition to providing air traffic control services, air traffic control units also offer emergency responses to ensure aircraft and passenger safety. These efforts included assisting pilots when encountering bird strikes, mechanical failures, and medically unwell passengers. In 2024, ANWS provided a total of 511 emergency response measures.

近場管制架次
Approach Control Movements



113 年近場管制架次為 607,708 架次，
較 112 年增加約 11.15%。
The number of approach control movements in 2024 was 607,708, an 11.15% increase compared with 2023.

機場管制架次
Aerodrome Control Movements



113 年機場管制架次為 501,255 架次，
較 112 年增加約 14.09%。
The number of aerodrome control movements in 2024 was 501,255, a 14.09% increase compared with 2023.

二、飛航情報

(一) 推動新一代航空情報服務系統 (New Aeronautical Information Services System, N-AIS) 建置

113 年完成工廠測試、系統安裝架設、人員教育訓練、整合測試及系統驗收，預計 114 年完成轉移啟用，提升本區航空情報服務品質及水準。

▲ 完成 N-AIS 驗收
Completed the acceptance of N-AIS

(二) 新增本區 U 類飛航公告

因應本區無人機飛航公告發布數量倍數成長，經蒐集國際規範與鄰近國家發布類別情形、召會討論、辦理改變管理及修改飛航指南後，本區自 113 年 1 月 1 日起新增遙控無人機飛航公告為 U 類飛航公告，便利飛航人員及無人機活動申請者即時查詢。113 年發布遙控無人機飛航公告總計為 4,880 份，占全年飛航公告數 (9,779 份) 之 49.90%。

AIP TAIPEI FIR

AIC - 1
01 JAN 2024

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AIC for Taipei FIR

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AIC
02/23

Effective from 01 JAN 2024
Published on 31 AUG 2023

臺北飛航情報區新增U類飛航公告

TAIPEI FIR U SERIES NOTAM ADDED

With effect from 1 January 2024, 0000UTC, drone/unmanned aerial vehicle activity information will be promulgated by U series NOTAM in Taipei FIR.
Taipei FIR AIP GEN 3.1.3.5 NOTAM and Pre-flight Information Bulletins (PIB), NOTAM Series amended as below:

Series	Content
A	NOTAM containing the information of concern to international civil aviation and AIP amendment are given selected international and national distribution.
C	NOTAM containing the information of concern to aircraft other than those engaged in international civil aviation are given national distribution only.
U	NOTAM containing the information of concern to drone/unmanned aerial vehicle activities are given selected international and national distribution.

Remark: Valid A and C Series drone/unmanned aerial vehicle NOTAM which promulgated before 1 JAN 2024, 0000UTC, will not be cancelled and reissued by U Series.

▲ 新增本區 U 類飛航公告
Addition of the U series NOTAM for Taipei FIR

II. Flight Information

1. Implementation of the New Aeronautical Information Services System (N-AIS)

Factory testing, system installation, personnel training, integration testing, and system acceptance were completed in 2024. The N-AIS operational transition and activation are expected to be completed in 2025, enhancing the quality and standards of aeronautical information services in Taipei FIR.

2. Addition of the U series NOTAM for Taipei FIR

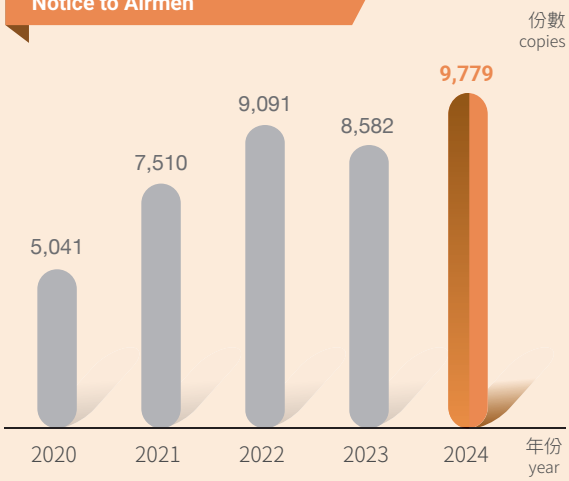
In response to the exponential growth in the number of drone activities NOTAMs in Taipei FIR, after collecting and comparing the international regulations and NOTAM series for drone activities in neighboring countries, conducting change management, and incorporating in aeronautical information publications amendment, Taipei FIR has introduced U series NOTAM for drone activities starting from January 1, 2024. This will facilitate real-time NOTAM queries for aviation personnel and drone activity applicants. In 2024, a total of 4,880 U series NOTAMs were issued, accounting for 49.90% of the total 9,779 NOTAMs issued.

3. NOTAMs and flight safety information distribution mechanism

ANWS sent out 8,173 notices in 2024 to proactively inform airlines of NOTAMS, AIP amendments and supplements, and various international aeronautical information regarding airspace and navigation warnings, military exercises, missile warnings, etc., ensuring flight safety.

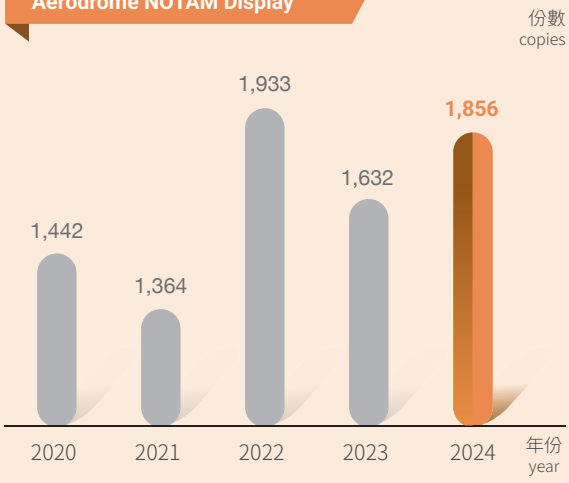
服務實績 Service achievements

發布本區飛航公告 Notice to Airmen



113 年發布本區飛航公告 9,779 份，較 112 年增加約 13.95%。
The number of NOTAMs issued by Taipei FIR in 2024 was 9,779, a 13.95% increase compared with 2023.

標示機場場面飛航公告 Aerodrome NOTAM Display

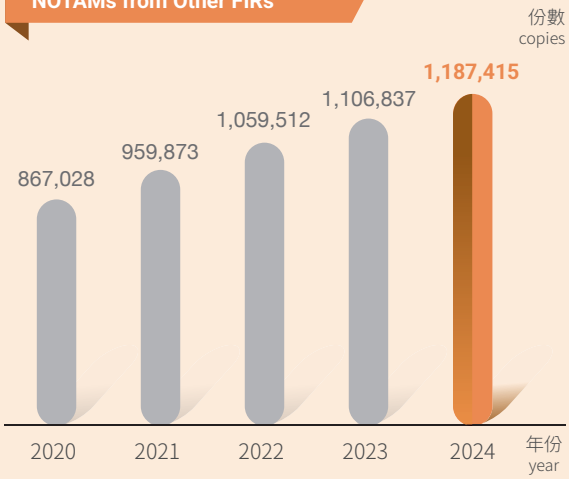


113 年標示機場場面飛航公告 1,856 份，較 112 年增加約 13.73%。
In total 1,856 NOTAMs were marked on aerodrome charts in 2024, a 13.73% increase compared with 2023.

處理飛航計畫 Filed Flight Plans

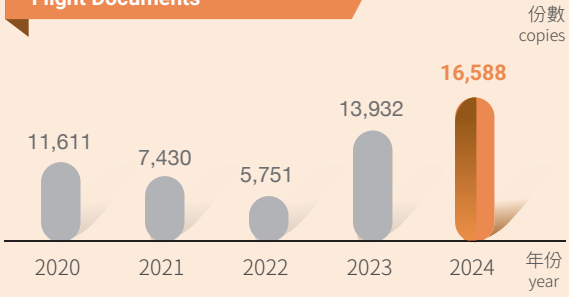
113 年處理飛航計畫 260,491 份，較 112 年增加約 17.24%。
The number of flight plans processed in 2024 was 260,491, a 17.24% increase compared with 2023.

處理他區飛航公告 NOTAMs from Other FIRs



113 年處理他區飛航公告 1,187,415 份，較 112 年增加約 7.28%。
The number of NOTAMs from other FIRs processed in 2024 was 1,187,415, a 7.28% increase compared with 2023.

提供飛航文件 Flight Documents



113 年提供飛航文件 16,588 份，較 112 年增加約 19.06%。
The number of flight documents provided in 2024 was 16,588, a 19.06% increase compared with 2023.

三、航空通信

(一)辦理「飛航訊息處理系統 (Air Traffic Services Messages Handling System, AMHS)」持續運作演練

113 年 9 月 13 日辦理飛航訊息處理系統 (AMHS) 持續運作演練，驗證南部飛航服務園區 AMHS 系統轉報及用戶收發報功能，強化同仁對異地備援演練作業熟悉度，確保航空通信服務不中斷。

▲ 進行 AMHS 系統設定與確認
Performed AMHS system settings and confirmation

(二)辦理本區過境航路服務費成本分析及費率調整

依本區提供航機過境飛航服務所需人工、物料、設備、水電及維護方面等支出進行成本分析，並參考國內消費者物價指數變動及亞太地區國家之過境航路服務費費率，將費率由每架次新臺幣 10,000 元調整為 13,500 元，113 年配合交通部民用航空局辦理 2 次說明會及 1 次記者會，將於 114 年 3 月 1 日起實施新費率。

(三)研擬調整飛航服務費收費基準及計費方式

蒐集國際相關資料，分析總臺飛航服務作業模式，研討飛航服務費徵收方式，並依規費法規定審酌作業費用或成本變動趨勢、消費者物價指數變動情形及其他影響因素，檢討收費基準。

III. Aeronautical Telecommunication

1. Carried out the Air Traffic Services Messages Handling System (AMHS) contingency operation drill

The AMHS contingency operation drills was carried out on September 13, 2024 to verify the system's forwarding and sending/receiving functions operate normally in South ATS Park, as well as strengthen colleagues' familiarity with remote backup operations, thereby ensuring aeronautical communication will remain uninterrupted.

2. Cost analysis and rate adjustment for Taipei FIR overflight charges

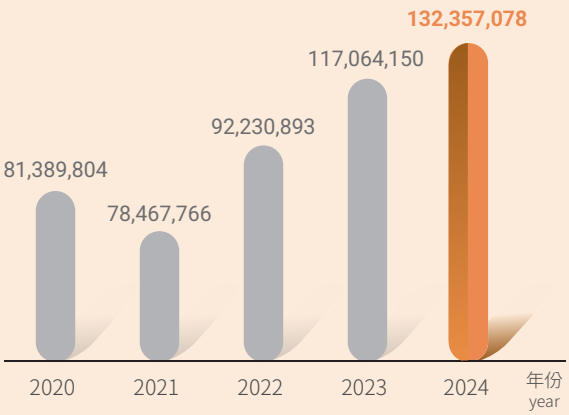
A cost analysis was conducted based on expenditures required for providing overflight services, including labor, materials, equipment, water, electricity, and maintenance, and with reference to changes in the domestic consumer price index and the overflight service rates of other countries in the Asia Pacific region. Based on this analysis, overflight charges for Taipei FIR are adjusted from NT$10,000 to NT$13,500 per flight. 2 briefing sessions and 1 press conference were held by the CAA in 2024, and the new rate went into effect on March 1, 2025.

3. Proposed adjustments to charging standards and billing methods of air traffic services charges

ANWS has compiled relevant information from around the world to analyze the ANWS's flight services operational models and examine how air traffic services charges should be collected. Furthermore, based on the regulations in the Charges and Fees Act, ANWS reviewed its operating expenses and change trends in costs, as well as other influencing factors such as changes in the consumer price index, to review the charging standards.

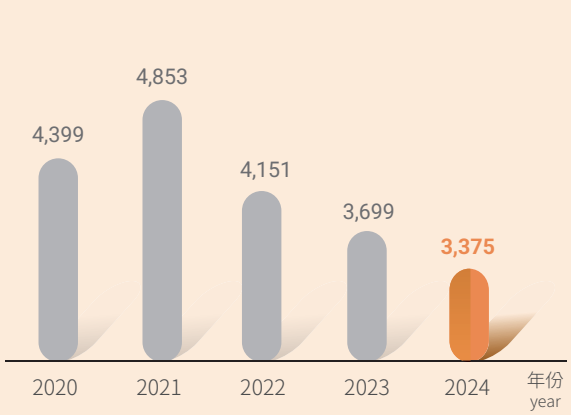
服務實績 Service achievements

航空固定通信報量
Aeronautical Fixed Telecommunication Service messages



113 年航空固定通信報量為 132,357,078 份，較 112 年增加約 13.06%。
The total amount of aeronautical fixed telecommunication service messages handling in 2024 was 132,357,078 copies, a 13.06 % increase compared with 2023.

航空行動通信報量
Aeronautical Mobile Telecommunication Service messages



113 年航空行動通信報量為 3,375 份，較 112 年減少約 8.76%
The total amount of aeronautical mobile telecommunication service messages handling in 2024 was 3,375 copies, an 8.76% decrease compared with 2023.

▼ 航空通信席
Aeronautical telecommunication operation

四、航空氣象

(一) 賡續完成「航空氣象現代化作業系統汰換及更新計畫」(Advanced Operational Aviation Weather System Renewal and Update, AOAWS-RU)

- 發展新一代航空氣象資訊系統，建置包含資料中心、預報系統、颱風及風力預報系統、監控管理系統及新一代航空氣象服務網。
- 透過「航空氣象現代化作業系統發展技術合作協議執行辦法 (IA#19)」與美國國家大氣科學研究中心 (NCAR) 合作，引進美國先進之積冰、亂流、能見度及雲冪高、雲頂高與雷雨等天氣預報演算法。

(二) 辦理「新一代低空風切警報系統建置先期計畫委託專業服務案」

完成期末報告、系統建置計畫書及規格技術文件，並辦理國內外專家諮詢會議、現地會勘，確認各項規劃符合相關規範。

(三) 因應疏運作業需求，強化疏運預報通報作業

自 113 年 5 月 21 日起新增提供每日 2 次「民用及軍民合用機場天氣預報」取代原「連續假期疏運期間預報」，並調整為平日每天上午及晚間 8 時各提供 1 次預報資訊。

(四) 提供航空氣象簡訊服務

為利航機適航及連假疏運作業即時決策參考，提供民航局、機場等相關單位各民航 (含軍民合用) 機場不適航天氣、天氣預報、機場颱風警報單、顯著天氣簡訊及低溫簡訊通報等 6 種航空氣象通報簡訊，113 年發布簡訊次數計 2,701 次。

(五) 提供航空氣象資料服務

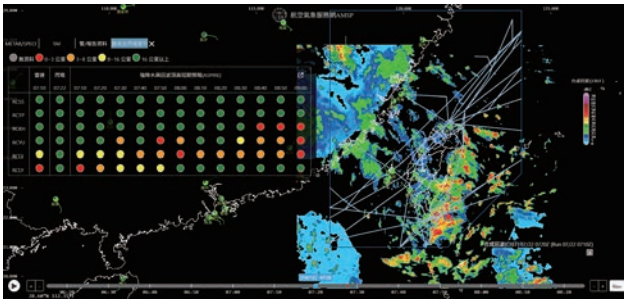
提供各單位相關民航機場航空氣象電話諮詢服務計 5,361 次；提供政府機關及民間機構申辦機場氣象資料計 153 次，做為學術研究、航空公司貨損調查、機場氣象特性瞭解、飛安事件調查、儀航程序規劃及場站施工參考之用。

(六) 編製航空氣候年報

113 年 3 月 1 日完成 112 年航空氣候年報，置於總臺官網 (https://www.anws.gov.tw)/ 業務宣導 / 出版品項下，提供各單位下載使用民用機場之氣候統計資料。

IV. Aeronautical Meteorology

1. Continued to implement the Advanced Operational Aviation Weather System Renewal and Update (AOAWS-RU)



▲ 最新風暴預測產品 (ASPIRE) 結合機場雷雨警示
Advanced Storm Prediction for Improved Regional Effectiveness

- ANWS developed a next-generation aviation meteorological information system, which includes a data center, forecasting system, typhoon operations and wind forecast system, monitoring and management systems, and next-generation Aeronautical Meteorological Service Page (AMSP).
- ANWS cooperated with the National Center for Atmospheric Research (NCAR) of the United States through the Implementing Agreement #19 (IA#19) to introduce advanced weather forecasting algorithms such as icing, turbulence, visibility, cloud ceiling height, cloud top height and thunderstorms.

2. Implemented the Outsourced Professional Services Project for the Next-generation Low Level Wind Shear Alert System

The final report, system implementation plan, and specification technical documents were completed, and the expert consultation meetings and on-site inspections with experts from home and abroad were held, in order to confirm that all aspects of the project comply with relevant specifications.

3. Strengthen forecasting and notification operations during consecutive holidays in response to holiday congestion alleviation

Starting from May 21, 2024, the "Weather Forecasts for Civil and Civil-military Airport" is provided twice a day, replacing the "Consecutive Holiday Congestion Alleviation Forecast" originally provided, with the new forecast information provided every weekday at 8:00 am and 8:00 pm.

4. Providing aeronautical meteorology text messaging services

Aeronautical meteorology text messages for 6 categories (unairworthy weather, weather forecast, airport typhoon warnings, significant weather, low temperature, etc.) were provided to the CAA, civil (including joint military and civil) airports, and other civil aviation organizations. This helps them accurately predict airworthy conditions and plan alternative transportation for immediate decision-making. A total of 2,701 messages were delivered in 2024..

5. Provided aeronautical meteorology data and information services

ANWS handled 5,361 telephone inquiries regarding Aeronautical Meteorology in civil airports, along with 153 airport meteorology data requests from both government and civil organizations. These services were used for a variety of purposes, including academic research, airline investigations of damaged cargo, airport weather analysis, flight safety investigations, instrument flight rules (IFR) procedure designs, airport construction, etc.

6. Publication of the 2023 Aerodrome Climatological Annual Summaries

On March 1, 2024, the 2023 Aerodrome Climatological Annual Summaries was published on ANWS's official website (https://www.anws.gov.tw/Business Dissemination/Publication), where weather information and statistical data for civil airports are available for download.

◀ 新一代低空風切系統專家諮詢會議
New-Gen Low-Level Wind Shear Warning System Expert Consultaion Meeting

服務實績 Service achievements

業務類別 Category	工作項目 Items	工作成果 Results				
		109 年 2020	110 年 2021	111 年 2022	112 年 2023	113 年 2024
機場氣象測報 Airport Weather Observations	民航機場天氣觀測 Civil Airport Weather Observation (包括定時觀測及特別觀測等二項) (including regular Observation and special observation)	104,940	104,718	106,163	109,355	111,655
	局屬民航機場天氣報告 CAA's affiliated Civil Airport Weather Report	108,239	107,810	113,412	118,111	120,219
	民航機場趨勢預報 Civil Airport Trend Forecast	104,847	104,572	106,526	109,116	111,655
	民航機場天氣警報 Civil Airport Weather Warning	160	159	132	166	229
	民航機場低空風切警報 Civil Airport Low Level Wind Shear Warning	764	932	947	924	1,033
	桃園機場氣象雷達觀測 Taiwan Taoyuan International Airport Weather Radar Observation	76,680	71,568	81,282	69,204	75,690
	合計 Sub-total	**395,461**	**390,532**	**411,622**	**408,628**	**422,927**
航路預報 Route Forecasts	各種分析天氣圖表 Various Analytical Weather Charts	40,810	40,741	40,667	40,089	40,016
	高空風溫度預報圖 High Altitude Wind Temperature Forecast Chart	30,699	30,384	30,470	30,392	30,517
	顯著天氣預報圖 Significant Weather Forecast Chart	5,856	5,840	5,840	5,840	5,856
	合計 Sub-total	77,365	76,965	76,977	76,321	76,389

業務類別 Category	工作項目 Items	工作成果 Results				
		109 年 2020	110 年 2021	111 年 2022	112 年 2023	113 年 2024
機場預報 Terminal Aerodrome Forecasts	編發機場預報 Issuing Terminal Aerodrome Forecast (TAF)	16,428	16,365	17,519	17,523	17,568
	機場預報修正 TAF Revision (TAF AMD)	709	800	798	780	905
	合計 Sub-total	**17,137**	**17,165**	**18,317**	**18,303**	**18,473**
天氣守視 Weather Watches	顯著天氣資訊 Significant Weather Information	1,427	1,508	1,678	1,376	1,510
	飛機報告 Aircraft Report	363	472	520	553	563
	本區機場天氣報告 Regional Airport Weather Report	415,316	297,238	304,918	307,768	311,717
	AMHS 氣象電報 AMHS Weather Dispatch	7,905,883	7,892,843	8,227,233	8,720,118	8,867,190
	短時預報 Short-term Forecast	1,464	1,460	1,460	1,460	1,464
	天氣影像圖 Weather Graphics	1,297,682	1,292,105	1,294,379	1,291,689	1,282,542
	民航機場颱風警報 Civil Airport Typhoon Warning	202	206	175	351	352
	合計 Sub-total	**9,622,337**	**9,485,832**	**9,830,363**	**10,323,315**	**10,465,338**
總計 Total		10,112,300	9,970,494	10,337,279	10,826,567	10,983,127

五、航空電子

(一) 通信設備

辦理汰換及新增航管無線電設備，完成松山、南竿、北竿機場及大屯山、三貂角等陣地無線電機共 75 部之採購，確保航空通訊品質穩定可靠。

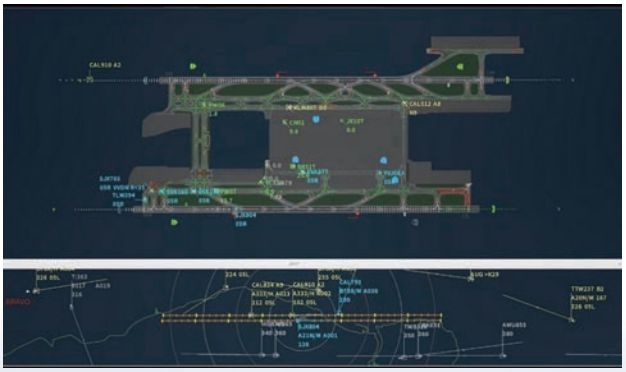
(二) 助導航設備

- 113 年 8 月 8 日汰新啟用臺中機場 18 跑道滑降臺 (GP) 及測距儀 (DME)，提升設備穩定度，確保飛航安全。
- 完成汰新綠島、大屯山及後龍等 3 套歸航臺 (NDB) 設備，其中綠島 NDB 已於 113 年 12 月 13 日啟用，確保飛航安全與服務品質。

(三) 監視設備

- 113 年 2 月 20 日啟用桃園國際機場第二套場面搜索雷達 (SMR)，提升桃園機場場面監視效能、範圍及韌性，完善機場場面安全。
- 113 年 5 月 1 日啟用新臺東終端航管雷達，具備 Mode S 功能，提升雷達詢問效率及航機定位精確度，確保本區東南部空域航機之監控；113 年完成汰新花蓮終端航管雷達，已於 114 年 2 月 20 日上線。
- 113 年 5 月 1 日啟用新廣播式自動回報監視系統（ADS-B），汰換原有 11 站臺並增設綠島、花蓮舞鶴、臺東池上及高雄機場等站臺，以完善花東縱谷與海岸線等區域 ADS-B 監視範圍，強化全區監視效能與韌性，提升飛航安全與飛航服務品質。

▲ 臺中機場 18 跑道滑降臺 (GP)
Taichung Airport's Runway 18 GP



▲ 第二套場面搜索雷達與桃園場面監控設備信號融合
Signal integration of the second SMR and surface monitoring equipment in Taiwan Taoyuan International Airport

V. Aeronautical Electronics

1. Communications equipment

ANWS handled the replacement and installation of new radio equipment for air traffic control at Taipei Songshan, Nangan and Beigan Airports, as well as locations such as Datunshan and Sandiaojiao. A total of 75 sets of radio equipment were procured to ensure the reliability of aeronautical communication quality.

2. Navigation equipment

- On August 8, 2024, the GP/DME replacements of Runway 18 at Taichung Airport have been completed, improving the stability of equipment and ensuring flight safety.
- The NDB equipment at Ludao, Datunshan, and Houlong was replaced. The NDB at Ludao went into service on December 13, 2024, ensuring flight safety and service quality.

3. Surveillance equipment

- On February 20, 2024, the second SMR in Taoyuan International Airport was commissioned to enhance the efficiency, coverage, and resilience of the airport's surface surveillance, ensuring thorough safety.
- On May 1, 2024, the new Taitung radar was implemented. It is equipped with Mode S functionality, increasing its radar interrogation efficiency and flight positioning precision, thereby ensuring the effective monitoring of aircraft in the southeastern airspace of Taipei FIR. The radar replacement in Hualien was completed in 2024, and it went into service on February 20, 2025.
- On May 1, 2024, the new ADS-B system was implemented, replacing 11 receiving stations and adding new receiving stations at Ludao, Hualien Wuhe, Taitung Chihshang and Kaohsiung Airport, thereby enhancing the ADS-B surveillance range in East Longitudinal Valley and coastline areas. This strengthens the surveillance efficiency and resilience of Taipei FIR, and improves flight safety and flight service quality.

▼ 新臺東終端雷達
New Taitung Terminal Radar

(四) 氣象設備

113 年 8 月 1 日啟用北竿機場自動氣象觀測系統 (AWOS)，12 月 30 日啟用金門及南竿 AWOS，並完成臺東、綠島及蘭嶼機場 AWOS 建置，提升設備穩定性及妥善率。

(五) 助航燈光設備

113 年陸續汰新啟用金門機場 06 跑道精確進場滑降指示燈 (PAPI)、蘭嶼機場 13 及 31 跑道非精確進場滑降指示燈 (APAPI)、南竿機場 03 及 21 跑道 PAPI、北竿機場 03 跑道 APAPI 及 21 跑道 PAPI 設備，以及蘭嶼機場助航燈光，並完成汰換澎湖機場 02 跑道進場燈及跑道邊燈供電迴路，提升離島機場助航燈光之穩定度，確保航機運作安全。

▲ 金門機場 06 跑道 PAPI
Kinmen Airport's Runway 06 PAPI

(六) 辦理電力總體檢

113 年 12 月 25 日辦理電力總體檢，更新各陣地電力系統、燈光迴路、不斷電系統及電池盤點表等 10 項資料，並訂定變壓器、發電機、箱型冷氣汰換年限，確保各項電力設備穩定運作。

4. Meteorological equipment

The AWOS replacements at Beigan, Kinmen and Nangan Airports have been implemented on August 1 and December 30, 2024, respectively. Furthermore, the construction of AWOS at Taitung, Ludao and Lanyu Airports were completed, improving the stability and availability of equipment gradually.

▲ 北竿機場 21 跑道 AWOS
Beigan Airport's Runway 21 AWOS

5. Visual aids for navigation

In 2024, ANWS completed the replacement and installation of the PAPI of Runway 06 at Kinmen Airport, the APAPI of Runways 13 and 31 at Lanyu Airport, the PAPI of Runways 03 and 21 at Nangan Airport, the APAPI of Runway 03 and PAPI of Runway 21 at Beigan Airport, and the visual aids for navigation at Lanyu Airport. Furthermore, the replacement project was completed for the power supply circuits for the approach lighting system and runway edge lights of Runway 02 at Penghu Airport, improving the stability of visual aids for navigation at outlying islands airports and enhancing aircraft operational safety.

6. General review of electrical power systems

On December 25, 2024, a general review of electrical power systems was conducted, in which 10 types of tables and forms were updated, including the electrical systems, lighting circuits, uninterruptible power supply systems, and battery inventory at field units. Furthermore, replacement periods were set for transformers, generators, and box-type air conditioners, thereby ensuring that all types of electrical power systems will continue to operate stably.

(七) 強化資通安全業務及防護作為

- 113 年 4 月至 9 月配合行政院辦理網路攻防演練，進行社交工程演練、資通系統實兵演練及分散式阻斷服務攻擊，透過加強防護措施及監控作為，強化資安防護。
- 113 年 8 月 13 日數位發展部辦理「113 年度政府數位韌性巡航健檢」，由國家資通安全研究院 7 位專家進行飛航管理系統韌性檢查，提升資訊系統運作安全。
- 各項核心資通訊系統均通過 ISO/IEC 27001：2022 新版驗證，並執行資訊系統滲透測試、弱點掃描、資安健診等措施，確保飛航服務系統資訊安全。
- 持續推動資通安全短中長程精進計畫，辦理各項系統及設備精進措施，強化資安韌性。


證書 TW22/00000445, 號
交通部民用航空局飛航服務總臺
SGS
ISO/IEC 27001:2022
版次 4
TAF
IAF

▲ ISO IEC 27001：2022 新版驗證
The latest IEC 27001:2022 certification

7. Strengthening information security and protection

- From April to September, 2024, the Executive Yuan conducted Cyber Offensive and Defensive Exercise, which included social engineering drills, practical drills for information and communications systems, and distributed denial-of-service (DDOS) attacks. By strengthening protective measures and monitoring, information security can be bolstered.
- On August 13, 2024, the Ministry of Digital Affairs held the "2024 Government Digital Service Assessment", in which seven experts from the National Institute of Cyber Security conducted resilience checks on the ATMS, enhancing the operational security of information systems.
- ANWS's core aeronautical services systems passed ISO 27001:2022 certification. In addition, we also conducted cyber security penetration tests, vulnerability scans, and IT security diagnostic assessments to ensure the integrity of air traffic service IT systems.
- ANWS continues to conduct various improvement measures in accordance with ANWS's short-, medium-, and long-term improvement plans in order to strengthen our information security resilience.

服務實績 Service achievements

各類系統妥善率 System Availability

年度 year / 系統名稱 System Name	109 年 2020	110 年 2021	111 年 2022	112 年 2023	113 年 2024
監視設備 Surveillance Equipment	99.9928%	99.9923%	99.9970%	99.9522%	99.9926%
助航設備 Navigation Aid Equipment	99.9958%	99.9891%	99.9959%	99.9936%	99.8373%
飛航管理系統 Air Traffic Management System (ATMS)	100%	100%	100%	100%	100%
航空情報服務系統 Aeronautical Information Service System (AISS)	99.9934%	99.9920%	99.9951%	99.9933%	99.9945%
飛航訊息處理系統 Air Traffic Services Messages Handling System (AMHS)	99.9991%	100%	100%	100%	100%
航空氣象服務網 Aeronautical Meteorological Service Page (AMSP)	99.98%	99.98%	99.97%	99.96%	100%
數位語音交換系統 Digital Voice Communication Switching System (DVCSS)	100%	100%	100%	99.9991%	100%
飛航服務業務網路 ATS Service Network (ASN)	100%	99.9996%	100%	99.9982%	99.9999%
行政網路 Office Administration Network (OAN)	100%	100%	100%	100%	100%

六、安全管理

(一) 落實三階層控管機制

透過三階層管理機制，每季召開安全委員會、每月召開安全工作會議、作業單位每週召開安全行動小組會議，全面推動安全管理四大面向相關工作、監控總臺安全管理系統、識別潛在危害與風險、追蹤安全相關議題及安全績效達成情形。

(二) 飛航服務安全管理資訊系統 (ANWS Safety Management Information System, ASMIS) 功能精進

- 完成強制報告產製 EXCEL、統計圖表及增加相關案件資訊欄位，並新增開課單位上傳他單位參訓人員資料、欄位定義說明及修正 EXCEL 表單等功能。
- 為使系統功能更契符需求，規劃重新檢討系統架構與功能，持續辦理系統精進作業。

▲ 新增 ASMIS 強制報告產製統計圖表功能
Added functionality to produce statistical charts for mandatory ASMIS reports

(三) 修訂安全管理指導文件

- 配合民航局自 113 年起依「飛航服務安全管理系統查核評量表」(PSOE) 作為評量安全管理系統 (SMS) 推動成效之依據，與原有「飛航服務安全管理實施計畫」(SMIP) 內容及評分方式具同質性，為使 SMS 成熟度評估方式一致，完成前述 2 文件分析比對作業，將 SMIP 內容調整以 PSOE 項目辦理。
- 完成修訂並函頒「飛航服務安全管理系統手冊」、「飛航服務安全管理實施計畫」及「飛航服務安全查核手冊」等文件，據以辦理各項安全管理事務。

(四) 強化安全風險管理機制

- 以作業單位每日簡報 (Briefing)、安全行動小組會議、業務檢討會及臺務會報等機制辨識組織、系統及日常作業危害因子；列管並追蹤相關安全議題辦理情形，落實安全風險管理機制。
- 共辦理安全風險評估 2 案、改變管理評估 13 案及自願報告 1 案，系統性識別改變過程中可能的危害及提出風險緩解策略。

(五) 執行安全績效控管與查核

- 安全績效指標值及作業效率指標達警示值或不符合目標值部分，均依規定進行原因分析、辦理檢討改善、研擬改善行動計畫或辦理專案查核，並納入下次安全查核重點項目，確保落實各項改善措施。
- 配合民航局實施 1 次系統性查核及 13 次符合性查核，另總臺依自主安全管理精神計執行 13 次飛航服務安全管理符合性查核，列管所有查核發現缺失及改善建議，透過每月及每季追蹤改善機制，以精進服務作業，確保飛航安全。

VI. Safety Management System (SMS)

1. Implemented a three-level management and control mechanism

With the three-level management and control mechanism, safety committee meetings are held quarterly, safety work meetings are held monthly, and safety action group meetings are held weekly for operation units. Work related to the four major aspects of safety management are comprehensively carried out, safety management systems at ANWS are monitored, potential hazards and risks are identified, issues related to safety and safety performance are tracked.

2. Enhanced the functionality of the ANWS Safety Management Information System (ASMIS)

- Completed the function of producing an Excel file and statistical charts for mandatory report and creating extra fields for reporting case-related information. Furthermore, functions such as trainee information from other units uploaded by training host unit, the definitions and explanations for fields to be filled out, and Excel file editing are added.
- To ensure the system's functions are in line with requirements, ANWS is planning to review the system architecture and functionality, and continues to make improvements.

3. Amendment of safety management guidance documents

- In accordance with the CAA's decision to use the "Flight Service Safety Management System Audit and Evaluation Form (PSOE)" as the basis for evaluating the effectiveness of promoting safety management systems (SMS) starting from 2024, as the new system's contents and evaluation methods overlap with the original Safety Management Implementation Plan (SMIP), to ensure that the SMS's maturity evaluation methods are consistent, an analysis and comparison of these two documents was performed to adjust the SMIP contents to bring them in line with PSOE contents.
- Documents such as the "SMS System Manual", the "Safety Management Implementation Plan", and the "Safety Audit Manual" were amended and issued, to serve as references for all types of safety management work.

4. Strengthened safety risk management mechanisms

- Mechanisms such as daily briefings by operation units, safety action group meetings, business review meetings, and ANWS business reports are implemented to identify risks on an organizational level, in systems, and in daily operations. The handling of safety issues is managed and tracked in order to implement strong safety risk management mechanisms.
- A total of 2 safety risk assessments, 13 change management evaluations, and 1 voluntary report were conducted, which helped ANWS systematically identify potential operational hazards during the amendments and propose strategies to mitigate risk.

5. Implemented safety performance monitoring and safety audits

- For safety performance indicator values and operation performance indicator values that reached warning levels or did not meet target values, the cause analyses, reviews for improvements, enhancement action plans or special audits were carried out according to the rules and regulations, as well as included in the key items for review in the next safety audit to ensure the improvement measures being implemented effectively.
- In 2024, ANWS was subject to audits under CAA's supervision, including 1 systematic audit and 13 external compliance audits. ANWS also conducted 13 internal audits based on the principle of autonomous safety management. Defects and suggestions for improvement found during the audits were listed for follow-up progress tracking, while monthly and quarterly follow-ups were further conducted to improve services and ensure flight safety.

(六) 辦理安全推廣與訓練

- 編撰並發布 4 期安全布告欄、辦理 4 次專題演講或交流研討會，強化安全認知並宣導主動透過各種管道提報作業中所發現的危害與風險，落實正向安全文化。
- 協助民航局完成安全文化評估問卷調查，續依調查結果辦理分析及瞭解，以持續改善並營造更優質之工作環境。
- 舉辦「飛航服務安全符合性查核員訓練」2 梯次 17 人次、「飛航服務安全符合性查核員複訓」1 梯次 7 人次及「飛航服務安全管理訓練」2 梯次 33 人次；另派員參加財團法人中華民國台灣飛行安全基金會辦理之「安全管理系統普通班」、「安全管理系統民航專班」及「人為因素與意外事件調查班」等訓練。

▲ 飛航管制員與航空器駕駛員無線電溝通安全研討會
Safety Conference for Radio Communications between Air Traffic Controllers and Pilots

6. Safety promotion and training

- 4 safety bulletins were issued, and 4 themed lectures or exchange seminars were held. These activities strengthened overall awareness toward safety and promoted the active reporting of hazards and risks discovered during work through a wide range of channels, thus creating a culture of active safety.

▲ 安全布告欄
safety bulletins

- Assisted the CAA in completing the questionnaire survey on safety culture. The results of the survey were used for analysis and achieving a better level of understanding in order to make continuous improvements and create better working environments.
- We also held 2 sessions of "SMS Compliance Auditor Training" for a total of 17 participants, 1 session of "SMS Compliance Auditor Recurrent Training" for 7 participants, and 2 sessions of "Safety Management Training" for a total of 33 participants. Furthermore, ANWS personnel attended "SMS General Course", " SMS Civil Aeronautics Course", and "Human Error and Accidents Investigation Class" organized by the Flight Safety Foundation-Taiwan.

七、55 週年臺慶活動

(一) 為歡慶總臺成立 55 週年，製作紀念帽及襯衫，由各單位發揮創意巧思團拍，秀出青春洋溢氣息「活力無限 - 帥美酷」，展現同仁青春活力，揮灑活動魅力。

(二) 辦理多元祝賀活動，5 人以上成行，結合聚餐、出遊等方式，同仁共襄盛舉，增進情誼及機關向心力。

VII、55th anniversary of ANWS

1. In order to celebrate the 55th anniversary of the establishment of ANWS, we have made commemorative hats and shirts, and individual units took creative group photos to demonstrate their youthful vitality based on the theme of "Unlimited Energy - Smart, Beautiful, and Cool". This showcased the youthful energy of colleagues and helped create a memorable event.
2. A variety of celebration activities were held as long as 5 or more people signed up for an activity, such as meals and outings. Colleagues came together to celebrate this momentous event, enhancing their friendship and the overall cohesion of ANWS.

▲ 紀念帽及襯衫團拍
▼ Creative group photo with commemorative hats and shirts

八、交流合作與人才培訓

(一) 汲取國際新知

- 113 年 5 月 20 日至 8 月 21 日赴英國及盧森堡參訪倫敦希斯洛機場塔臺、模擬實驗室及管制中心，執行「TBSTime-Based Separation 一以時間間隔取代機型浬數為基礎之進場航機隔離」研究計畫。
- 113 年 5 月 29-31 日參加韓國主辦之第 16 屆非正式東亞飛航管制協調小組會議，共同優化邊境點流管、整合區域作業共識及飛航流量管理 (ATFM) 進程分享，促進東亞飛航管制作業合作。
- 113 年 7 月 7-12 日參加民用飛航服務組織 (CANSO) 亞太區年會暨工作小組會議，會中分別就全面飛航服務 (Complete ATS) 願景、開放式雲端飛航管理 (ATM) 平臺、香港數位塔臺之發展、亞太區數國之 TBO 試行說明及 CANSO 亞太區白皮書技術面等議題進行交流與分享，瞭解國際民航發展現況。
- 113 年 9 月 2-6 日參加國際航空運輸協會 (International Air Transport Association, IATA) 辦理之「航空人為因素」訓練，瞭解 SHELL MODEL 及 SWISS CHEESE MODEL 兩種人為因素探討模型之理論及實務應用，提升航管事件調查之分析能力，並強化改變管理及風險管理之考量面向。
- 113 年 9 月 2-15 日赴美國執行「航空氣象現代化作業系統汰換及更新計畫 (AOAWS-RU)- 研習航路及機場天氣預報產品演算法原理及發展技術」，研習系統校驗、系統操作及原理、系統各項演算法科學原理、架構與參數設定等，精進本區航空氣象預報作業品質。
- 113 年 9 月 7-13 日赴美國參加「航空氣象現代化作業系統汰換及更新計畫 (AOAWS-RU) 協調會議」，與美方針對未來可能之合作方向，及航空氣象預報演算法之後續維護及訓練等議題進行討論，做為我國未來航空氣象預報作業發展之參考。
- 113 年 9 月 14-27 日赴美國執行「航空氣象現代化作業系統汰換及更新計畫 (AOAWS-RU)- 研習航空氣象天氣預報及劇烈天氣守視技術出國訓練」，瞭解美國航空天氣中心 (AWC) 人員使用最新劇烈天氣預報演算法技術之作業方式，提升同仁對預報產品掌握度，精進預報品質。
- 113 年 9 月 24-27 日赴日本執行「亞洲地區航管作業與席位空域規劃交流」，瞭解日本飛航流量管理技術、系統設計與運作模式，做為本區未來飛航流量管理 (ATFM) 席位開設時之參考。

▲ 第 16 屆東亞飛航管制協調小組會議
EATMCG 16 meeting

▲ CANSO 亞太區年會暨工作小組會議
CANSO Asia Pacific Conference and Workgroup Meetings

VIII、Collaboration and Personnel Training

1. Internalizing international knowledge

- From May 20 to August 21, 2024, representative from ANWS went to UK and Luxembourg, visiting the airport tower, simulation rooms, and control rooms for Heathrow Airport, and carried out the "TBS—Time-Based Separation: Separating Incoming Aircraft Based on Time Intervals Instead of Aircraft Type and Mileage" research project.
- From May 29 to 31, 2024, representatives from ANWS participated in the 16th Meeting of the East Asia Air Traffic Management Coordination Group (EATMCG) held by South Korea. The participants collectively worked to optimize border flow management measures, build consensus on regional work, and share Air Traffic Flow Management (ATFM) development, thereby accelerating collaborations in East Asia air traffic control operations.

▲ 赴英國及盧森堡執行 TBS 計畫
Visited the UK and Luxembourg for TBS project

- From July 7 to 12, 2024, representatives from ANWS attended the Civil Air Navigation Services Organisation (CANSO) Asia Pacific Conference 2024 and Workgroup Meetings, during which subjects such as the goal of "complete ATS," open cloud-based ATM platform, the development of digital towers in Hong Kong, explanations of TBO trials taking place in multiple countries in the Asia Pacific, and technical aspects of the CANSO Asia Pacific ATM White Paper were discussed and opinions were exchanged. This helped ANWS gain a better understanding of the current developments in civil aviation worldwide.
- From September 2 to 6, 2024, representatives from ANWS participated in the “Human Factors in Aviation” course organized by International Air Transport Association (IATA), developing a deeper understanding of the theory and practice of the "Shell model " and "Swiss cheese model" of human factors, thereby enhancing the ANWS's analytical abilities in investigating air traffic control incidents as well as strengthening the various considerations in change management and risk management.
- From September 2 to 15, 2024, representatives from ANWS visited U.S. to attend the "Training for the Advanced Operational Aviation Weather System Renewal and Update - Principles and Development Technology of Algorithms for Airways and Airport Weather Forecast Products". At this event, ANWS learned about topics such as system verification, system operation and principles, the scientific principles, architecture, and parameter settings of the algorithms, etc., thereby improving the quality of aviation weather forecasting in Taipei FIR.
- From September 7 to 13, 2024, representatives from ANWS participated in the "AOAWS-RU Project Coordination Meeting", holding discussions with the U.S. side on future collaboration possibilities, as well as topics such as future maintenance of and training for aviation weather forecasting algorithms. These discussions will serve as a reference for future aviation weather forecasting operations in Taiwan.
- From September 14 to 27, 2024, representatives from ANWS visited U.S. to attend the "AOAWS-RU - Training Abroad on Aviation Weather Forecasting and Severe Weather Watch Technology", developing a deeper understanding of how the U.S.'s Aviation Weather Center (AWC) personnel use the latest severe weather forecasting algorithms and enhancing colleagues' ability to use forecasting products and improve the quality of forecasts.
- From September 24 to 27, 2024, representatives from ANWS visited Japan to attend the "Exchanges on Regional Air Traffic Control Operations and Planning for Position and Airspace in Asia ", developing an understanding of the ATFM technologies in Japan, as well as their system settings and operational modes. This can serve as a reference for ATFM position setting in Taipei FIR in the future.

- 113 年 10 月 5-11 日赴法國執行「先進國家機場雙管制塔臺及數位化塔臺規劃建置參訪交流」，參訪戴高樂機場管制臺及飛航管理系統廠商 Thales 公司，就多塔臺運作模式、數位塔臺應用及到場管理系統 (MAESTRO) 應用等議題進行經驗交流。

▲ 赴法執行機場雙管制塔臺及數位化塔臺規劃建置參訪交流
Visited the France for the exchange visit on the planning and construction of dual control towers and digital control towers

- 113 年 10 月 19-27 日赴美國參加國際飛航安全電子協會聯盟 (IFATSEA) 第 52 屆年會，會中對於航電人員訓練與考核、安全與人為因素及未來航管系統等議題進行交流討論，瞭解國際航電發展趨勢。
- 113 年 11 月 8-12 日赴印度參加國際飛航管制員協會（IFATCA）亞太地區年會，會議主題為「Safety in Future Air Traffic Management」，以最新技術、創新策略及可持續性為主軸，探討未來飛航管理之安全。
- 113 年 11 月 11-14 日赴日本執行「航空氣象資料技術協調」，與日本氣象協會討論氣象資料交換及服務，並參訪日方航空氣象作業單位，進行業務交流，促進臺日雙邊合作關係。
- 113 年 11 月 26-29 日赴大邱流量管理中心及大邱區域管制中心實地參訪及交流研討相關議題，瞭解韓國飛航流量管理與航管運作之實際作業。
- 113 年 12 月 5 日參加 CANSO 亞太區總裁聯會 (APC3) 網路會議，會中討論亞太區飛航管理現代化白皮書 (CANSO APAC ATM Modernisation White Paper) 後續技術規劃與相關研討會安排、跨區無縫之飛航服務及 114 年 CANSO 工作規劃等，瞭解亞太區民航發展趨勢。
- 113 年 12 月 8-14 日赴美國參加「美國地球物理聯盟 (American Geophysical Union, AGU)2024 年國際學術研討會」，期瞭解氣象新知與科學技術發展趨勢。

▲ 赴大邱流量管理中心及大邱區域管制中心實地參訪
Visited the Daegu Air Traffic Control Center and the Daegu Area Control Center

▲ 赴印度參加國際飛航管制員協會亞太地區年會
Visited the India for the IFATCA Asia Pacific Regional Meeting

- From October 5 to 11, 2024, representatives from ANWS visited France to attend the "Exchange Visit on the Planning and Construction of Dual Control Towers and Digital Control Towers at National Airports in Advanced Countries", visiting the control tower at Charles de Gaulle Airport and air traffic system manufacturer Thales, as well as conducting experience exchanges on topics such as multi-tower operational modes, the implementation of digital towers, and the arrival management system(MAESTRO).
- From October 19 to 27, 2024, representatives from ANWS attended the 52nd IFATSEA General Assembly in U.S., at which exchanges and discussions were conducted on issues such as the training and evaluation of aeronautical electronics personnel, safety and human factors, and the air traffic control systems of the future, thereby developing a deeper understanding of international navigation aids developments.

▲ 赴日執行航空氣象資料技術協調會議
The Aeronautical Meteorological Data Technical Coordination Meeting in Japan

- From November 8 to 12, 2024, representatives from ANWS visited India to attend the IFATCA Asia Pacific Regional Meeting. The central theme of the meeting was "Safety in Future Air Traffic Management," and discussions focused on the latest technologies, innovative strategies, and sustainability to explore safe flight management in the future.
- From November 11 to 14, 2024, representatives from ANWS visited Japan to attend the "Aeronautical Meteorological Data Technical Coordination Meeting", conducting discussions with the Japan Weather Association on meteorological data exchanges and services, and visiting aeronautical meteorology units in Japan to conduct work exchanges and enhance bilateral cooperation between Taiwan and Japan.
- From November 26 to 29, 2024, representatives from ANWS visited the Daegu Air Traffic Control Center and the Daegu Area Control Center for exchanges and discussions on related topics, developing a better understanding of the ATFM and air traffic control operations in South Korea.
- On December 5, 2024, representatives from ANWS participated in the Asia Pacific CANSO CEO Committee (APC3) meeting, which included discussions on the CANSO APAC ATM Modernisation White Paper and its follow-up technical planning and related conference arrangements, seamless cross-FIR flight services, and CANSO's work planning for 2025. This led to a better understanding of development trends in civil aviation in the Asia Pacific region.
- From December 8 to 14, 2024, representatives from ANWS visited U.S. to attend the American Geophysical Union (AGU) 2024 Annual Meeting (AGU 24), where they gained a better understanding of the latest meteorological knowledge and the development trends in science and technology.

▼ 赴美參加 IFATSEA 第 52 屆年會 The 52nd IFATSEA General Assembly in USA

(二) 強化業務交流

- 因應軍方演訓及研商軍民航機管制作業，與軍方共召開 34 次會議，研討雙方協調機制，並完成雙方 9 份協議書修訂，增進軍民航作業安全。
- 113 年 1 月 9 日赴星宇航空公司參訪，學習該公司人員訓練作法外，並讓駕駛員與管制員進行面對面的業務交流，增進雙方瞭解。
- 113 年 1 月 9-11 日及 4 月 30 日辦理新一代低空風切警報系統建置先期計畫委託專業服務案專家諮詢會議，邀請專家學者與相關單位討論並確認各項規劃符合作業、學理及相關規範，並於 9 月 13、24 日邀請中華、長榮、星宇等航空公司之飛行員進行訪談，瞭解航空公司對低空風切之作業及服務需求。
- 113 年 3 月 8 日辦理「從航空公司角度探討緊急事件應變」訓練課程，由中華航空總機師及空服專任教官講授，計有臺北國際航空站、桃園國際機場公司及總臺相關單位共 140 人參加，擴大學習效益。
- 113 年 4 月 19 日日本氣象協會 (JWA) 一行 6 人拜會本總臺並參加「氣象資料服務年度會議」，會中就國際航空氣象服務最新發展議題進行討論並交換意見，精進航空氣象服務品質。
- 113年5月3日辦理「飛航管制員與航空器駕駛員無線電溝通安全研討會」，透過簡報與航管單位案例分享、無線電溝通安全議題研討與其他管制議題探討，讓管制員與駕駛員相互瞭解彼此作業細節，提出無線電溝通中應注意之風險，共維飛安。
- 113 年 9 月 3-5 日參與中央氣象署辦理之第三十八屆天氣分析及預報研討會，研討新一代航空氣象資訊系統發展、機場低空風切警報系統、劇烈天氣觀測及預報、簽派作業與航空氣象協同合作、機場天氣分析與數值模式優化等議題，以精進航空天氣預報、測報、應用、監測及分析效率與品質。

▲ 參與第三十八屆天氣分析及預報研討會
Participated in the 38th Conference on Weather Analysis and Forecasting

2. Strengthening cooperation and exchange

- In order to discuss coordination mechanisms regarding military training and drill activities and to improve military-civilian aircraft management, 34 meetings were held and 9 letters of agreement were signed, further strengthening operational safety for both military and civilian aircraft.
- On January 9, 2024, representatives from ANWS visited Starlux Airlines to learn about the company's personnel training methods. This visit allowed pilots and air traffic controllers to meet in person and conduct exchanges, thereby enhancing their mutual understanding.
- From January 9 to 11 and on April 30, 2024, the expert consultation meetings were conducted to pre-plan the construction of a Low Level Windshear Alert System (LLWAS). Experts and researchers were invited to discuss and confirm that the various aspects of the project were in line with operational requirements, academic theories, and relevant regulations. On September 13 and 24, pilots from airlines such as China Airlines, EVA Air, and Starlux Airlines participated in discussions to enhance understanding of airlines' operational and service requirements facing low level windshear.
- On March 8, 2024, ANWS held the "Emergency Response from the Perspective of Airlines" training course lectured by China Airlines's chief pilot and flight attendant instructors, with a total of 140 participants from Taipei Songshan Airport, Taoyuan International Airport Corporation Ltd., and ANWS, improving the effectiveness of the training.

▲ 赴星宇航空參訪
Visited Starlux Airlines

▲ 辦理「從航空公司角度探討緊急事件應變」訓練
Training course held for the Emergency Response from the Perspective of Airlines

- On April 19, 2024, a group of 6 members from the Japan Weather Association (JWA) visited ANWS and participated in the "Meteorological Data Service Annual Conference" to discuss and exchange opinions about the latest developments in international aeronautical meteorological services, thereby enhancing the quality of aeronautical meteorological services.
- On May 3, 2024, ANWS held the "Safety Conference for Radio Communications between Air Traffic Controllers and Pilots." Through presentations and case studies by air traffic control units, discussions on safety issues in radio communications, and discussions on other control-related topics, air traffic controllers and pilots gained a better understanding of the details of each other's work, and identified the risks that should be given special attention during radio communications, thereby collectively maintaining flight safety.
- From September 3 to 5, 2024, representatives from ANWS participated in the 38th Conference on Weather Analysis and Forecasting organized by Central Weather Administration, discussing topics such as the development of next-generation aviation meteorological information systems, low level windshear alert system for airports, severe weather observations and forecasting, dispatch operations and aviation meteorological collaborations, airport weather analysis and the optimization of numerical models, etc., thereby improving the efficiency and quality of aviation weather forecasting, measurements, applications, monitoring, and analysis.

- 113 年 10 月 23 日協辦「數位新世代：AI 驅動創新與民航發展應用研討會」，透過相關產業代表分享，共同探討 AI 及大數據在民航產業的應用方向，增加飛航服務人員對 AI 技術的理解和應用能力。

▲ 辦理新一代飛航管理系統工作交流會議
Hosted the Next Generation Air Traffic Management System Workshop

- 113 年 11 月 12 日辦理「新一代飛航管理系統工作交流會議」，探討配合國際民航組織 (ICAO) 航空系統區塊升級 (Aviation System Block Upgrades, ASBU) 發展進程將納入之系統功能、雲端技術與系統中心化處理架構、數位塔臺、飛航管理與無人機管理 (ATM-UTM) 資訊整合、人工智慧運用、資訊安全等議題，增進對飛航管理技術發展趨勢之瞭解。
- 113 年 11 月 14 日辦理「航空器操作性能與飛航管制研討會」，由民航局張科長泰誠與航管單位案例分享、航機操作經驗分享探討等，增進管制同仁對航機操作性能之瞭解，以強化管制技巧，確保飛安。
- 113 年 11 月 19 日辦理星基 ADS-B 技術研討，瞭解如何透過通訊衛星收發訊號的星基 ADS-B 技術，應用於飛航管理、流量管理、安全數據監測工具及搜救工具等相關議題及運用範疇，做為未來飛航服務精進之參考。
- 113 年 11-12 月於北部、中部及南部地區辦理 10 梯次之年度戰航管巡迴研習暨機場管制作業軍民座談，提升軍民雙方合作能力。

▲ 協辦數位新世代：AI 驅動創新與民航發展應用研討會
Co-organized the Digital New Generation AI-Driven Innovation and Applications in Civil Aviation Development Seminar

- On October 23, 2024, ANWS co-organized the "Digital New Generation AI-Driven Innovation and Applications in Civil Aviation Development Seminar." Representatives from relevant industries shared their experiences to explore how AI and big data can be applied in the civil aviation sector, and how flight service personnel's knowledge and application skills regarding AI can be enhanced.

▲ 辦理航空器操作性能與飛航管制研討會
Organized the Aircraft Operating Performance and Flight Control Conference

- On November 12, 2024, ANWS hosted the "Next Generation Air Traffic Management System Workshop," to discuss system functions to be integrated in alignment with the ICAO Aviation System Block Upgrades (ASBU) development process. Topics included cloud technology, centralized system processing architecture, digital towers, integration of air traffic management and unmanned aircraft management (ATM-UTM) information, the application of artificial intelligence, information security, and other related issues, to enhance understanding of trends in air traffic management technology development.
- On November 14, 2024, ANWS organized the "Aircraft Operating Performance and Flight Control Conference." CAA Section Chief Chang Tai-Cheng shared case studies and aircraft operating experiences with representatives from air traffic control units, thereby enhancing air traffic controllers' understanding of the operation of aircraft and improving their air traffic control skills to ensure flight safety.
- On November 19, 2024, ANWS organized the Space-based ADS-B Technology Technical Exchange Workshop to gain a deeper understanding of how space-based ADS-B technology, which receives signals through communication satellites, can be applied to areas including air traffic management, flow control, safety data monitoring tools, search and rescue tools, as well as the scope of applications. This can serve as a reference for improving air traffic services in the future.
- During November and December, 2024, 10 workshops between military and civil ATCs were held in northern, central, and southern areas, thereby strengthening the cooperative capabilities for both sides.

(三) 厚植專業實力

◆ 訓練培育

- 專業訓練：飛航管制類 12 項，合計 163 梯次，共 1,408 人次；飛航情報類 4 項，合計 11 梯次，共 79 人次；航空氣象類 6 項，合計 31 梯次，共 320 人次；航空通信類 5 項，合計 7 梯次，共 29 人次；航空電子類 (含資訊管理)7 項，合計 41 梯次，共 365 人次。
- 行政知能訓練：簡報設計技巧課程、騷擾防治 (含跟蹤騷擾防治法) 宣導講座、尊重人權就從珍愛生命開始等 16 項課程，合計 19 梯次，共 1,850 人次。

◆ 席位查核

為使飛航服務更臻完善，確保同仁適職性，提高飛航管制、飛航情報、航空氣象、航空通信及航空電子等各類人員技術水準，共完成飛航管制 (含航管模擬機) 983 人次、飛航情報 34 人次、航空氣象 86 人次、航空通信 16 人次、航空電子 (含資訊管理)238 人次席位查核。

◆ 航電專案查核

- 為提高設備妥善率，發掘潛在系統性風險並進行監督，完成 4 次航電專案查核，列管發現 36 項查核缺失並進行改善。
- 113 年 5 月 14 日邀請外部專家至臺北裝修區臺進行電力系統檢視 (含基礎圖說之建立、保養維護之頻率與項目、實際操作之作業流程等)，強化電力設備維護作為，確保服務韌性。

◆ 辦理國家關鍵基礎設施部級安全檢視

總臺北部飛航服務園區獲指定為部級安全檢視訪視單位，113 年 8 月 27 日由民航局陳組長昭諭率相關領域委員，至北部飛航服務園區進行安全檢視，對安全防護工作表現給予正面肯定。

▲ 行政知能訓練 - 簡報設計技巧
Administrative competency training - presentation design skills

▲ 專業訓練 - 航管年度複訓
Professional training - annual recurrent training for Air Traffic Controllers

▲ 健康講座 - 釋放情緒壓力
Health seminar-stress buster

3. Cultivating proficiency and skill

◆ Training

- Professional training: 12 categories of ATC training with a total of 163 sessions and 1,408 participants; 4 categories of Flight Information training with a total of 11 sessions and 79 participants; 6 categories of Aeronautical Meteorological training with a total of 31 sessions and 320 participants; 5 categories of Aeronautical Telecommunication training with a total of 7 sessions and 29 participants; 7 categories of Aeronautical Electronics training (including Information Management) with a total of 41 sessions and 365 participants.

▲ 飛航管理自動化系統持續運作演練
Tabletop Drill of Business Continuity for the Air Traffic Management System

- Administrative competency training: a total of 16 courses, 19 sessions, with 1,850 participants were conducted focusing on various topics, including presentation design skills, harassment prevention (including the Stalking and Harassment Prevention Act) lectures, respecting human rights starts with cherishing life, etc.

◆ On-job competency assessment

To ensure operational proficiency in providing high-quality air traffic services and to cultivate professional skills for all staff members (Air Traffic Control, Flight Information, Aeronautical Meteorology, Aeronautical Telecommunication, and Aeronautical Electronics), ANWS completed 983 on-job competency assessments (including simulator evaluation) for ATCs, 34 Flight Information personnel, 86 Aeronautical Meteorology personnel, 16 Aeronautical Telecommunication personnel, and 238 Aeronautical Electronics personnel (including Information Management personnel).

◆ Aeronautical electronics personnel proficiency assessment

- To improve the availability of equipment, identify potential systemic risks, and implement supervision, 4 assessments were carried out, 36 deficiencies were found for follow-up improvement.
- On May 14, 2024, ANWS invited external expert to the Taipei Aviation Facilities Sector to conduct inspections of the power system (including the existing basic drawings, the frequency of maintenance, the items to be maintained, the procedures for actual operations, etc.), thereby strengthening the maintenance of power equipment and ensuring the resilience of services.

◆ Conducted the Ministry Level Critical Infrastructure Protection Inspection

ANWS's North ATS Park was selected for Ministry Level Critical Infrastructure Protection Inspection. On August 27, 2024, Director of Planning Division of CAA, Chen, Jau-Yuh led members to visit North ATS Park for the inspection, and expressed their approval toward our performance.

▶ 關鍵基礎設施部級安全檢視
The Ministry Level Critical Infrastructure Protection Inspection

◆ 緊急應變演練

- 113 年 5 月 31 日辦理北部飛航服務園區國家關鍵基礎設施防護演習，共 29 人次參與。
- 113 年 6 月 20 日辦理「113 年度航空器失事或重大意外事件通報應變演習」，共 37 人次參與。
- 113 年 9 月 26 日辦理 113 年度飛航管理自動化系統持續運作演練，以兵棋推演方式進行，共 25 人次參與。
- 113 年 11 月 27 日辦理助航設備災害防救演習，共 25 人次參與。
- 飛航管制人員於各機場塔臺進行航管業務持續運作演練共 13 梯次，132 人次參與。
- 飛航情報人員每人每月以備援系統作業 1 次，確保裝備故障緊急應變能力。
- 航空氣象人員辦理各類緊急應變演練 (異地備援、航機意外事件發生之緊急應變處理、天然災害及電力中斷、代發報演練、各類氣象裝備故障演練及氣象人員支援航管作業演練) 共 35 梯次，302 人次參與。
- 航空通信人員辦理各類緊急應變演練 (飛航管理自動化系統持續運作、飛航資料處理緊急應變及飛航訊息處理系統持續運作) 共 15 梯次，34 人次參與。
- 航空電子人員辦理各類裝備故障及非法干擾緊急應變演練共 34 梯次，203 人次參與。

◆ Emergency response drills

- On May 31, 2024, the Critical Infrastructure Protection Drill in North ATS Park was held, with a total of 29 participants.
- On June 20, 2024, the "2024 Notification and Response Drill for Aircraft Crashes or Major Accidents" was held, with a total of 37 participants.
- On September 26, 2024, the 2024 Tabletop Drill of Business Continuity for the Air Traffic Management System was held, with a total of 25 participants.
- On November 27, 2024, the Drill for Navigation Aids Facility Disaster Prevention and Response was held, with a total of 25 participants.
- 13 drills for air traffic control contingency operations were held for towers in various airports, with a total of 132 participants.
- Flight Information personnel operated backup systems for daily operation once a month to ensure operational integrity in case of equipment failure.
- Various types of emergency response drills for Aeronautical Meteorology personnel were held over 35 sessions with 302 participants. These included: remote backup operation exercises, aircraft accident response, natural disasters, power outages, processing weather reports on behalf of other units, various types of meteorological equipment failures, supporting ATC operations, etc.
- 15 emergency response drills were held for Aeronautical Telecommunication personnel(ATMS contingency, flight data processing emergency response and AMHS contingency), with a total of 34 participants.
- 34 drills for the emergency response of navigational aids equipment failure and unlawful interference were held for Aeronautical Electronics personnel, with a total of 203 participants.

(四) 推廣飛航服務

◆ 至各地分享

- 113 年 3 月 13 日、4 月 23、24、26 及 30 日赴陽明交通大學、淡江大學、輔仁大學、臺灣海洋大學及成功大學推廣民航特考考試資訊。
- 113 年 3 月 23 日協助臺北市立圖書館總館「吳大猷科學沙龍講座」活動，介紹臺北飛航情報區飛航服務範疇。
- 113 年 4 月 12 日及 11 月 26 日黃總臺長麗君分別至朝陽科技大學及高雄餐旅大學演講，分享「淺談臺北飛航情報區飛航服務」，並推廣民航人員考試資訊。
- 113 年 8 月 15、22 日協助財團法人中華航空事業發展基金會辦理「我的青航時代－ 2024 航發會 × 暑期航空營」課程講授並介紹飛航管制業務，鼓勵青年學子投入飛航管制工作。

◆ 國內媒體採訪

113 年 12 月 31 日接受天下雜誌「Cheers 快樂工作人」採訪拍攝，介紹飛航管制員工作內容及緊急事件之應變處理，增進大眾對飛航管制工作之瞭解。

◆ 提供參訪服務

113 年提供參訪服務共計 50 梯次，640 人次參與。

▲ 推廣民航特考考試資訊
Provided information on the Special Examination for Civil Aviation Personnel

▲ 協助辦理「我的青航時代暑期航空營」
Assisted in organizing themed lectures for the 2024 Air Camp Summer Camp

4. Promoting air traffic services

◆ Share aviation knowledge to various places

- On March 13 and April 23, 24, 26 and 30, 2024, ANWS held a series of campus briefing sessions at National Yang Ming Chiao Tung University, Tamkang University, Fu Jen Catholic University, National Taiwan Ocean University, and National Cheng Kung University to provide information on the Special Examination for Civil Aviation Personnel.
- On March 23, 2024, ANWS assisted the Taipei Public Library Main Branch's "Wu Da You Science Salon Lecture Event", introducing air traffic services in Taipei FIR.
- On April 12 and November 26, 2024, Director of ANWS, Huang, Li-Chun delivered speeches at Chaoyang University of Technology and National Kaohsiung University of Hospitality and Tourism to discuss the topic of "The Air Traffic Services in Taipei FIR" and provided information on the Special Examination for Civil Aviation Personnel.
- On August 15 and 22, 2024, ANWS assisted in organizing themed lectures "My Aviation Youth" for the 2024 Summer Air Camp held by the China Aviation Development Foundation, at which the speakers introduced air traffic control operations and encouraged young students to join the ranks of air traffic controllers.

◆ Media interviews

On December 31, 2024, ANWS was interviewed and photographed by CommonWealth Magazine for the Cheers Magazine publication. The article introduced air traffic controllers' work and emergency response handling, enhancing the general public's understanding of air traffic control operations.

◆ Facility visits

In 2024, in-person visits were conducted for a total of 640 people visiting ANWS facilities over the course of 50 sessions.

九、辦理飛航服務先期規劃

(一)推動「臺北飛航情報區新一代航管系統建置計畫」

為滿足本區現役飛航管理系統屆期後接續支援航管服務之需，112 年完成先期規劃，規劃建置因應未來航行量成長與新興作業型態之航管系統，導入新技術以接軌國際，同時兼顧韌性以確保航管作業之持續運作能力，預計 114 年完成計畫書陳報，116-123 年進行新一代航管系統之建置。

(二)推動「臺灣桃園國際機場第二塔臺建設計畫」

配合臺灣桃園國際機場園區綱要計畫及第三跑道建設期程，113 年完成先期規劃，規劃建置桃園國際機場第二塔臺，以因應未來 3 條跑道作業及航行量成長所需，並規劃 2 座塔臺相互備援，提升航管作業韌性，預計 114 年完成計畫書陳報，116-121 年進行第二塔臺之建置。

(三)推動「松山機場塔臺暨整體園區新建工程計畫」

配合松山機場 2040 年整體規劃、中長程發展及各類業務需求，啟動先期規劃作業，規劃松山機場塔臺及相關基礎設施之新建，提供優質飛航服務，預計完成建設計畫書陳報，進行整體園區新建工程之建置。

▲ 新一代航管系統建置計畫 Next Generation ATM Implementation Plan

IX、Preliminary Planning for air traffic services

1. Promotion for "Taipei FIR Next Generation ATMS Implementation Plan"

To address Taipei FIR's need for continued air traffic management services after the current air traffic management system reaches the end of its service life, ANWS completed the preliminary planning for the Next Generation ATMS Implementation Plan in 2023. The plan aims to implement a new air traffic management system that will accommodate future growth in air traffic volume while incorporating emerging operational methods and new technologies, aligning with international standards and ensuring resilience to maintain continuous operations. The plan is expected to be submitted for approval in 2025 and carried out from 2027 to 2034.

2. Promotion for "Taoyuan International Airport Second Air Traffic Control Tower Construction Plan "

In alignment with the Taiwan Taoyuan International Airport Park Master Plan and the airport's third runway construction timeline, ANWS completed the preliminary planning for the second air traffic control tower at Taiwan Taoyuan International Airport in 2024. This initiative aims to accommodate future operations with three runways and the anticipated growth in air traffic volume. Additionally, the plan includes provisions for mutual backup between the two control towers to enhance air traffic management resilience. The plan is expected to be finalized and submitted for approval in 2025, with construction of the second tower scheduled to take place from 2027 to 2032.

3. Promotion for "New Air Traffic Control Tower Complex Construction at Songshan Airport Project"

In accordance with Songshan Airport's integral planning for 2040, its mid-to-long term development, and its business requirements, the preliminary planning for the new air traffic control tower for Songshan Airport has been activated to provide outstanding aviation services. The whole construction project is expected to be completed and approved, then the construction of the entire project will take place.

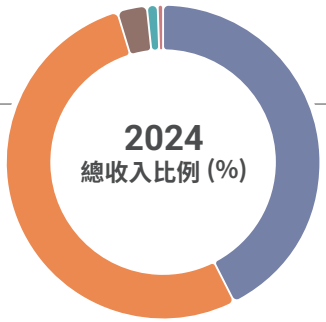
4 收入支出 Finances

一、收入 Revenue

年度 / year	收入 / Revenue
109 年 / 2020	2,088,035,488 元 /TWD
110 年 / 2021	1,848,621,119 元 /TWD
111 年 / 2022	2,133,157,063 元 /TWD
112 年 / 2023	3,583,281,771 元 /TWD
113 年 / 2024	**4,108,071,393** 元 /TWD

註：113 年度總收入 4,108,071,393 元，較 112 年度增加約 14.65%。

Note: 2024 total revenue: 4,108,071,393 TWD, a 14.65% increase compared with 2023.



53.74%
過境航路服務費
Overflight charge

0.18%
租金及權利金收入
Rent and premium

45.07%
飛航服務費
Air traffic services charge

0.04%
航空通信費
Telecommunication facilities fee

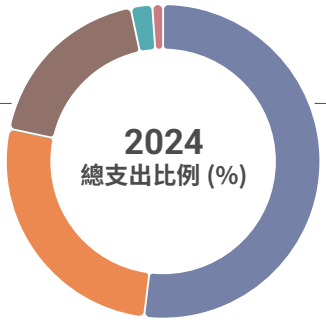
0.97%
業務外收入
Non-operation income

二、支出 Expenditure

年度 / year	支出 / Expenditure
109 年 / 2020	2,395,563,575 元 /TWD
110 年 / 2021	2,493,213,126 元 /TWD
111 年 / 2022	2,812,816,960 元 /TWD
112 年 / 2023	2,910,144,692 元 /TWD
113 年 / 2024	**2,927,466,133** 元 /TWD

註：113 年度總支出為 2,927,466,133 元，較 112 年度增加約 0.6%。

Note: 2024 total expenditure 2,927,466,133 TWD, a 0.6% increase compared with 2023.



54.07%
用人費用
Salary and wages

2.11%
材料及用品費
Equipment and raw materials

25.25%
折舊
Depreciation

1.01%
租金及雜項費用
Rent & Non-operation expenses

17.56%
服務費用
Service expenses

三、收支餘絀 Balance

單位：新臺幣元 / Currency:TWD

113 年度作業科目 Current expenditures details for 2024	收入 Revenue	支出 Expenditure
過境航路服務費 Overflight charge	2,207,830,000	
飛航服務費 Air traffic services charge	1,851,316,813	
業務外收入 Non-operation income	39,721,413	
租金及權利金收入 Rent and premium	7,553,167	
航空通信費 Telecommunication facilities fee	1,566,000	
停車費 Parking fee	84,000	
用人費用 Salary and wages		1,582,889,991
折舊 Depreciation		739,162,283
服務費用 Service expenses		514,155,408
材料及用品費 Equipment and raw materials		61,773,734
租金與利息 Rent and interest expenses		10,206,072
業務外費用 Non-operation expenses		9,277,954
稅捐與規費 Tax and charges		8,382,872
會費、捐助、補助、分攤、救助 (濟) 與交流活動費 Membership fees, donations, reimbursements, shared costs, relief funds and public relation expenses		1,617,819
短絀、賠償與保險給付 Budget shortages, compensation and insurance payments		0
合計 / Total	**4,108,071,393**	**2,927,466,133**

盈餘 Surplus 1,180,605,260 元 /TWD

5 未來展望 Aspirations

一、提升飛航安全水準，落實正向安全文化

- 賡續推動飛航服務安全管理系統並提升安全管理成熟度，檢視安全政策與目標，落實危害識別與風險管理、監控各項關鍵績效指標，辦理符合性安全查核並追蹤改善措施，精進安全控管作為，型塑組織正向安全文化。
- 落實飛航服務安全管理資訊系統及總臺設備與建物管理系統各項資料彙整、統計及分析功能，協助危害識別及風險管控作業，提升維管工作效率及縮短設備故障停機時間。
- 持續辦理安全文化宣導與推廣，透過邀請業界專家或學者，分享風險控管之機制及公正文化之推動方式，辦理安全文化問卷調查，持續提升安全管理效能。

二、推動設備系統汰新，優化飛航服務能量

- 規劃辦理「114-118 年汰換臺北飛航情報區儀降系統案」，提升設備之可靠度與穩定性。
- 規劃辦理「汰換桃園國際機場北場終端航管雷達案」及「汰換高雄及馬公終端航管雷達案」，確保監視設備妥善率及穩定度。
- 賡續辦理新一代航空情報服務系統及航空氣象服務系統轉移啟用，提升本區飛航情報及航空氣象服務品質與水準。
- 陳報「臺北飛航情報區新一代航管系統建置計畫」、「臺灣桃園國際機場第二塔臺建設計畫」及「松山機場塔臺暨整體園區新建工程計畫」等飛航服務建置計畫，與時俱進接軌國際飛航服務發展。

I、Improving flight safety standards and implementing a positive culture of safety

- ANWS will continually promote the air traffic service safety management system and increase the maturity of safety management measures, and will examine safety policies and goals. ANWS will also implement hazard identification and risk management, monitor key performance indicators, conduct internal safety audits for compliance, track corrective measures, and improve safety control operations. Through these efforts, ANWS will create a positive safety culture throughout the organization.
- ANWS will implement data collection and statistical analysis features of the ASMIS and ANWS Equipment & Building Management System in order to assist in the identification of hazards and risk management operations, thereby improving maintenance and management efficiency and shortening the downtime in the event of equipment malfunction.
- ANWS will continue to spread and promote a culture of safety, and will continue to improve the effectiveness of safety management by inviting industry experts and scholars to share their experience in risk control mechanisms, the promotion methods for a just culture, and implementing questionnaire surveys on safety culture.

II、Replacing CNS/ATM-related equipment and systems to optimize air traffic service capacity

- Plan to conduct the "the replacement of instrument landing systems in Taipei FIR from 2025 to 2029" to enhance the reliability and stability of equipment.
- Plan to replace northern Taoyuan, Kaohsiung and Penghu Terminal ATC Radars to ensure the availability and stability of surveillance equipment.
- Continue to implement the transition and implementation of the N-AIS and AOAWS-RU to improve the service quality and standards of flight information and aeronautical meteorology services in Taipei FIR.
- To submit the air traffic service implementation plans like "Taipei FIR Next Generation ATMS Implementation Plan", "Taoyuan International Airport Second Air Traffic Control Tower Construction Plan" and "New Air Traffic Control Tower Complex Construction at Songshan Airport Project" to keep pace with the development of international aviation services.

三、重視回應用戶需求，精進飛航服務作為

- 加強與民航業者及軍方等單位溝通互動，並強化航空情報服務網與航空氣象服務網功能，透過辦理使用者訓練及會議，提供符合需求、精緻化且客製化之服務。
- 持續辦理內、外部顧客滿意度調查，精進各項飛航服務措施。
- 持續配合桃園國際機場場面各項工程，調整航管及航電相關作業，確保機場正常運作。

四、瞭解關注國際趨勢，確保符合國際規範

- 持續參與民用飛航服務組織 (CANSO) 與東亞飛航管理協調小組 (EATMCG) 等相關會議與技術合作，瞭解國際民航組織 (ICAO) 及區域發展最新現況，同時積極透過參與國際飛航管制員協會聯盟 (IFATCA) 之會務，爭取擔任國際組織要角、在臺舉辦或協辦航管相關國際會議與交流座談會，建立且維持國際人脈，提升本區能見度。
- 持續關注國際民航組織之全球空中航行計畫 (Global Air Navigation Plan, GANP)、航空系統區塊升級 (Aviation System Block Upgrades, ASBU) 之進程與亞太區相關計畫，及國際間飛航服務相關技術之發展，做為建置本區新一代飛航服務系統之參考。
- 依循最新國際民航組織規範及建議作法，推動通訊、導航、監視及飛航管理 (CNS/ATM) 等功能及設備汰新，確保本區飛航服務作業符合國際發展趨勢。

III、Focusing on user feedback to improve air traffic services

- Strengthen communication and interactions with civil aviation operators and military authorities while enhancing AES and AMSP functions. Meanwhile, ANWS will continue to conduct user training and meetings to ensure the provision of sophisticated and customized services to better meet user needs.
- Continue to carry out internal and external satisfaction surveys to improve air traffic services.
- Continue to adjust air traffic control and engineering operations in accordance with surface constructions at Taiwan Taoyuan International Airport, ensuring smooth and normal operations.

IV、Monitoring and analyzing global trends to stay aligned with international standards

- Continue to attend CANSO and EATMCG meetings and implement technical cooperation to stay on top of ICAO's global and regional developments. At the same time, ANWS will also actively participate in IFATCA events, strive to pursue key roles within international communities, host international conferences and workshops related to air traffic control, and establish and maintain international connections to enhance Taipei FIR's international presence.
- Continue to stay updated with the progress of ICAO's Global Air Navigation Plan (GANP), Aviation System Block Upgrades (ASBU), and related planning in Asia Pacific region, and the international development of air traffic services technology to serve as references for Taipei FIR's Next Generation ATMS.
- Continue to endeavor to upgrade and replace Communication, Navigation, Surveillance, and Air Traffic Management (CNS/ATM) functions and equipment based on the latest ICAO regulations and recommendations, ensuring Taipei FIR's air traffic services are in line with international development trends.

6 大事紀要
2024 in Review

1月 Jan.

1/1 臺北飛航情報區新增 U 類飛航公告，發送本區所有遙控無人機資訊。

Drone activity information is promulgated by U series NOTAM in Taipei FIR..

1/4、11、17、18、25 民航局方副局長志文視察金門、大屯山、澎湖、臺東及清泉崗地區，慰勉駐守同仁辛勞，並發放春節慰問金。

Deputy Director General of CAA, Fang Chih-wen visited Kinmen, Datunshan, Penghu, Taitung and Cingcyuangang areas, gave thanks to and encouraged the colleagues on duty for their hard work, and distributed Chinese New Year subsidies..

1/18 數位發展部主計處視察陳毓娟調任飛航服務總臺主計室主任。

Inspector of Department of Budget, Accounting and Statistics of Ministry of Digital Affairs, Chen Yu-chuan was promoted to the Chief of Accounting and Statistics Office of ANWS.

1/25 民航局林副局長俊良視察花蓮助航臺，慰勉駐守同仁辛勞，並發放春節慰問金。

Deputy Director General of CAA, Lin Jiunn-liang visited Hualien Navaids Site, gave thanks to and encouraged the colleagues on duty for their hard work, and distributed Chinese New Year subsidies.

1/26 汰新啟用金門機場 06 跑道精確進場滑降指示燈 (PAPI)，確保航機操作安全，提高設備妥善率與可靠度。

The PAPI replacement of Runway 06 at Kinmen Airport has been completed, ensuring the operational safety of aircraft, and enhancing the availability and reliability of equipment.

1/29 民航局何局長淑萍在黃總臺長麗君陪同下，視察桃園塔臺園區，慰勉同仁辛勞，並發放春節慰問金。

Director General of CAA, Ho Shu-ping accompanied by Director of ANWS, Huang Li-chun visited Taoyuan Airport Control Tower Park, gave thanks to and encouraged the colleagues for their hard work, and distributed Chinese New Year subsidies.

2月 Feb.

2/6-7 民航局何局長淑萍視察北部飛航服務園區及濱江地區，慰勉同仁辛勞，並發放春節慰問金。

Director General of CAA, Ho Shu-ping, visited North ATS Park and Binjiang area, gave thanks to and encouraged the colleagues on duty for their hard work, and distributed Chinese New Year subsidies.

2/14 交通部王部長國材在航政司韓司長振華、民航局何局長淑萍及黃總臺長麗君陪同下，視察北部飛航服務園區及松山機場管制臺，瞭解飛航服務整備情形，慰勉同仁辛勞，並發放春節慰問金。

Minister of MOTC, Wang Kwo-tsai, accompanied by Director of Department of Navigation and Aviation, Han Chen-hua, Director General of CAA, Ho hu-ping, and Director of ANWS, Huang Li-chun, visited North ATS Park and Songshan Airport Control Tower to understand the preparation of air traffic services for holidays, gave thanks to and encouraged the colleagues on duty for their hard work, and distributed Chinese New Year subsidies.

2/20 啟用桃園國際機場第二套場面搜索雷達，提升涵蓋監視範圍，確保監視訊號品質。

The second SMR in Taoyuan International Airport was commissioned to increase surveillance coverage and enhance signal quality.

3月 Mar.

3/13 立法院交通委員會一行 18 人在交通部及民航局陪同下，視察桃園塔臺園區，瞭解飛航管制作業情形。

A group of 18 members from the Transportation Committee of the Legislative Yuan, accompanied by representatives from Ministry of Transportation and Communications and Civil Aviation Administration, visited Taoyuan Airport Control Tower Park to gain more understanding of the air traffic control operations.

3/15 113 年北部退休人員聯誼餐會於大直典華舉行，共計 133 人參加。

The 2024 northern area annual retiree banquet was held in Dazhi Denwell, there were total 133 retirees presented.

3/22 113 年南部退休人員聯誼餐會於高雄海寶軒會館舉行，共計 35 人參加。

The 2024 southern area annual retiree banquet was held in Hai Pao Xuan Kaohsiung Luxury Hall, there were total 35 retirees presented.

3/26 花蓮雷達進行停機汰換，由黃總臺長麗君主持施工祈福儀式。

The construction commencement ceremony for the replacement of Hualien radar was presided over by Director of ANWS, Huang Li-chun.

3/27 交通部人事處一行 3 人，在民航局林副局長俊良及黃總臺長麗君陪同下，視察大屯山助航臺，瞭解飛航服務及人員值勤情形。

A group of 3 from Department of Personnel of MOTC, accompanied by Deputy Director General of CAA, Lin Jiunn-liang and Director of ANWS, Huang Li-chun, visited Datunshan Navaids Site to understand air traffic services operation and staff duty status.

4月 Apr.

4/19 日本氣象協會 (JWA) 一行 6 人拜會本總臺並參加「氣象資料服務年度會議」，會中就國際航空氣象服務最新發展議題進行討論並交換意見，精進航空氣象服務品質。

A group of 6 members from the Japan Weather Association (JWA) visited ANWS and participated in the "Meteorological Data Services Annual Conference" to discuss and exchange opinions about the latest developments in international aeronautical meteorological services, enhancing the quality of aeronautical meteorological services.

4/23 完成飛航管理系統備援系統 (EBAS) 期中升級作業轉移，納入多項新功能及介面強化，提升做為飛航管理系統 (ATMS) 之備援系統的韌性，確保本區空中交通安全與順暢。

The transition of ATMS-Extended Backup ATC System (EBAS) Mid-Life Upgrade (MLU) has been completed to incorporate several functional improvements and interface enhancements, which will serve continuously as the backup system of Air Traffic Management System (ATMS) to ensure flight safety and efficiency in our region.

5月 May

5/1 啟用新臺東終端雷達。

The new Taitung Terminal Radar has been launched.

5/1 汰新啟用廣播式自動回報監視系統 (ADS-B) ，汰換原有 11 座地面接收站臺並增設高雄機場、花蓮舞鶴、臺東池上及綠島等 4 座地面接收站臺，提升花東縱谷區域低高度作業航空器之動態監視。

The "Replacing and Adding ADS-B" was completed, in which eleven ADS-B land-based receiving stations were replaced and four additional ADS-B land-based receiving stations were installed at Kaohsiung Airport, Hualien Wuhe, Taitung Chihshang and Ludao, enhancing the active surveillance of low-altitude aircraft flying in East Longitudinal Valley.

5/2 高雄裝修區臺副區臺長張秋山調陞該區臺簡任技正。

Deputy Chief of Kaohsiung Aviation Facilities Sector, Chang Chiu-shan was promoted to the Senior Technical Specialist of Sector.

5/4 舉辦總臺 113 年度桌球聯誼賽，共 160 人參加。

Hosted 2024 Table Tennis contest, with a total of 160 participants.

5/6 辦理 113 年飛航管制員飛行專業知能訓練第 1 梯次開訓典禮，分 2 梯次辦理，共 20 人參加。

Hosted the 2024 opening ceremony of ATC flight expertise training program, with a total of 2 sessions and 20 trainees.

5/8 桃園機場公司一行 8 人參訪桃園塔臺園區，瞭解飛航管制作業情形，促進雙方在航務、航管、氣象作業上之工作交流。

A group of 8 members from Taoyuan International Airport Corporation Ltd. visited Taoyuan Airport Control Tower Park to gain more understanding of the air traffic control operations and promote work exchanges between the two parties on flight operations, air traffic control and meteorological operations.

5/21 新增提供每日「民用及軍民合用機場天氣預報」取代原「連續假期輸運期間預報」服務。

The daily service of "Weather Forecast for Civilian and Military Joint-Use Airports" was newly added to replace the original service of "Weather Forecast for Airports during Consecutive Holidays Period".

5/24 民航局財產管理與活化考核小組高執行秘書炳雄一行 7 人至北部飛航服務園區及濱江地區進行考核。

Executive secretary of property management evaluation team of CAA, Kao Ping-hsiung led 6 evaluation committees to visit North ATS Park and Binjiang area for property inspection.

5/31 於北部飛航服務園區辦理 113 年關鍵基礎設施防護演習，受邀之外部安全防護支援單位及本總臺，共 29 人參與。

Hosted 2024 Critical Infrastructure Protection (CIP) Drill in North ATS Park, with a total of 29 participants including invited external security protection support units and ANWS

6月 Jun.

6/7 本總臺通過資訊安全管理系統 ISO/IEC 27001：2022 新版驗證，取得 ISO 27001 驗證證書。

Passed ISO/IEC 27001:2022 Information Security Management System Assessment, obtained ISO 27001 certificate.

6/14 航電技術室副主任朱逸文陞任主任。

Deputy Chief of Engineering Office, Chu Yi-wen was promoted to be the Chief of Office.

7月 Jul.

7/12 本總臺與中華航空氣象協會共同舉辦航空氣象專題研討，邀請中央研究院環境變遷研究中心王寶貫院士講授「雷暴產生機制與環流及對飛航之影響」，共計 80 人與會。

A specialized seminar on aviation meteorology was jointly held by ANWS and the Chinese Aeronautical Meteorological Association (CAMA). The Academician of Academia Sinica, Wang, Pao-kuan, gave a lecture titled "Thunderstorm generation mechanism and circulation and impact on aviation", with a total of 80 participants.

7/22 交通部公路局新竹區監理所政風室主任張德邦調任飛航服務總臺政風室主任。

Chief of Civil Service Ethics Office Hsinchu Motor Vehicles Office, Highway Bureau, MOTC, Chang Te-pang was promoted to the Chief of Civil Service Ethics Office of ANWS.

7/31 中央氣象署程署長家平一行 7 人參訪金門機場管制臺，並進行場勘觀霧雷達預訂地。

Director of Central Weather Administration, Cheng Chia-ping, led 6 members of staff to visit Kinmen Airport Control Tower and inspect fog detection radar reservation site.

8月 Aug.

8/1 法國管制員 Janssens Francois 參訪松山機場管制臺並瞭解相關管制作業。

Air Traffic Controller Janssens Francois from France visited Songshan Airport Control Tower to understand the air traffic control operations.

8/1 汰新啟用馬祖北竿機場 03/21 跑道自動氣象觀測系統 (AWOS)，提供精準與穩定之機場氣象資訊，提升航空氣象服務品質。

The AWOS replacements of Runway 03/21 at Matsu Beigan Airport have been completed, providing accurate and stable airport weather information, further improving aeronautical meteorological service quality.

8/1 汰新啟用蘭嶼機場 13/31 跑道簡式精確進場滑降指示燈 (APAPI)，確保航機操作安全，提高設備妥善率與可靠度。

The APAPI replacements of Runway 13/31 at Lanyu Airport have been completed, ensuring the operational safety of aircraft, and enhancing the availability and reliability of equipment.

8/8 汰新啟用馬祖南竿機場 03/21 跑道及馬祖北竿機場 21 跑道精確進場滑降指示燈 (PAPI)、馬祖北竿機場 03 跑道簡式精確進場滑降指示燈 (APAPI)，確保航機操作安全，提高設備妥善率與可靠度。

The PAPI replacements of Runway 03/21 at Matsu Nangan Airport and Runway 21 at Matsu Beigan Airport have been completed, the APAPI replacement of Runway 03 at Matsu Beigan Airport has been completed, ensuring the operational safety of aircraft, and enhancing the availability and reliability of equipment.

8/8 汰新啟用臺中機場 18 跑道滑降臺及測距儀 (GP/DME)，確保航機操作安全，提高設備妥善率與可靠度。

The GP/DME replacement of Runway 18 at Taichung Airport has been completed, ensuring the operational safety of aircrafts, and improving the availability and reliability of equipment.

8/8 啟用蘭嶼機場 13/31 跑道頭 / 末端燈、跑道頭識別燈、跑道邊燈、直昇機起降區周邊燈及照明燈，提升離島機場助航燈光之穩定度，確保航機運作安全。

The runway threshold/end lights, runway threshold identification lights, runway edge lights of Runway 13/31, and helipad touchdown and lift-off area perimeter lights and floodlights at Lanyu Airport have been completed, improving the stability of visual aids for navigation at outlying islands airports and enhancing aircraft operational safety.

8/13 數位發展部國家資通安全研究院數位韌性巡檢團隊至北部飛航服務園區，進行總臺飛航管理系統數位巡檢實地輔導。

A digital resilience inspection team of the National Institute of Cyber Security, MODA, visited North ATS Park for providing guidance on enhancing the Air Traffic Management System's digital resilience.

8/14 舉辦飛航管制員飛行專業知能訓練聯合心得分享，由參訓同仁發表飛航操作的學習成果。

ANWS held a post-training joint experience sharing seminar for the Air Traffic Controller flight expertise training program. The trainees shared the learning results of flight operations.

8/16 行政院季政務委員連成率中央災害防救會報訪視小組與相關部會至桃園塔臺園區進行113年交通部空難暨桃園國際機場災害防救業務實地現勘。

Minister without Portfolio of Executive yuan, Chi Lien-cheng led Central Disaster Prevention and Response Council Group and relevant ministries to visit Taoyuan Airport Control Tower Park for "2024 MOTC on-site survey of air crash disaster and Taoyuan International Airport disaster prevention and rescue business".

8/27 民航局綜合企劃組陳組長昭諭率相關領域委員，至北部飛航服務園區進行113年關鍵基礎設施部級安全檢視，共40人參加。

Director of Planning Division of CAA, Chen Jau-yuh led members to visit North ATS Park for 2024 Ministry Level Critical Infrastructure Protection Inspection, with a total of 40 participants.

9月 Sep.

9/2 榮獲民航局113年公文績效檢核第2名。

ANWS received second place honor of "Evaluation of Document Performance" from CAA.

9/18 邀請國家運輸安全調查委員會運安組鄭組長永安至總臺講授「安全文化與事故調查」，共計73人參加。

ANWS invited Director of Safety Analysis and Recommendations Division of Taiwan Transportation Safety Board, Cheng Yung-an to give a lecture with the title "Safety Culture and Accident Investigations", with a total of 73 participants.

9/20 民航局林副局長俊良一行9人至北部飛航服務園區進行113年度為民服務績效實地評鑑。

Deputy Director General of CAA, Lin Jiunn-liang led 8 members of staff to visit North ATS Park for 2024 Citizen-Service Assessment.


9/2

9/20

10月 Oct.

10/26 舉辦總臺 113 年度羽球聯誼賽，由民航局林副局長俊良致開幕詞，何局長淑萍致閉幕詞，共 165 人參加。

ANWS held 2024 Badminton Friendship Tournament, with Deputy Director General of CAA, Lin Jiunn-liang, giving the opening speech and Director General of CAA, Ho Shu-ping, delivering the closing speech, attended by a total of 165 participants.

10/28 立法院交通委員會在交通部陳部長世凱及民航局何局長淑萍陪同下，視察恆春機場管制臺，關切恆春機場航情與人員值勤情形。

The Transportation Committee of the Legislative Yuan accompanied by Minister of MOTC, Chen Shih-kai and Director General of CAA, Ho Shu-ping visited Hengchun Airport Control Tower, expressing concern about the current status of air traffic conditions and staff duty status.

11月 Nov.

11/27 民航局飛航管制組蔡組長宗穎一行 3 人至總臺濱江地區進行 113 年度助航設施災害防救演習。

Director of Air Traffic Services Division of CAA, Tsai Tsung-ying, led 2 staff members to visit Binjiang area for "2024 Navigation Aids Facility Disaster Prevention and Response Drill".

12月 Dec.

12/12 榮獲民航局 113 年財產管理與活化考核績優單位。

ANWS received excellent performance of "Evaluation of National Property Management and Revitalization" from CAA.

12/13 汰新啟用綠島機場 NDB 設備，確保航機操作安全，提高設備妥善率與可靠度。

The NDB replacement at Ludao Airport has been completed, ensuring the operational safety of aircraft, and enhancing the availability and reliability of equipment.

12/16 榮獲民航局 113 年為民服務績效定期評鑑第 2 名。

ANWS received second place honor of "Regular Evaluation of Citizen Service Performance" from CAA.

12/30 汰新啟用金門機場 06/24 跑道及馬祖南竿機場 03/21 跑道自動氣象觀測系統 (AWOS)，提供精準與穩定之機場氣象資訊，提升航空氣象服務品質。

The AWOS replacements of Runway 06/24 at Kinmen Airport and Runway 03/21 at Matsu Nangan Airport have been completed, providing accurate and stable airport weather information, further improving aeronautical meteorological service quality.

12/30 榮獲民航局所屬各機關行政績效考核第 1 名。

ANWS received first place honor of "Annual Administrative Performance Evaluation of CAA Affiliated Agencies" from CAA.

12/31 民航局何局長淑萍視察花蓮助航臺，慰勉駐守同仁辛勞，並發放春節慰問金。

Director General of CAA, Ho Shu-ping, visited Hualien Navaids Site to comfort and encourage the colleagues for their hard work, and distribute Chinese New Year subsidies.

7 附錄 Appendix

一、助航裝備 Navigation Equipment

名稱 Name	數量 Number	設置地點 Location
歸航臺 (NDB) Non-Directional Beacon (NDB)	7 套 7 sets	大屯山、金門、南竿、後龍、花蓮、綠島及蘭嶼等處 Datunsan, Kinmen, Nangan, Houlong, Hualien, Ludao and Lanyu
定位臺 (LOCATOR) LOCATOR	9 套 9 sets	高雄 (1 套)、臺北 (1 套)、花蓮 (1 套)、臺東知本 (2 套)、臺中清泉崗 (1 套)、恆春 (1 套)、北竿 (1 套) 及嘉義 (1 套) 等處 Kaohsiung (1 set), Taipei (1 set), Hualien (1 set), Taitung Zhiben (2 sets), Taichung Cingcyuangang (1 set), Hengchun (1 set), Beigan (1 set) and Chiayi (1 set)
特高頻多向導航臺 (VOR) VHF Omni-directional Range (VOR)	8 套 8 sets	臺北松山機場、大屯山、臺南西港、恆春、花蓮、馬公、後龍及綠島等處 Taipei Songshan Airport, Datunsan, Tainan Xigang, Hengchun, Hualien, Magong, Houlong and Ludao
測距儀 (DME) Distance Measuring Equipment (DME)	38 套 38 sets	臺灣桃園國際機場 (4 套)、高雄國際機場 (2 套)、臺北松山機場 (3 套)、臺中清泉崗機場 (3 套)、臺南機場 (2 套)、澎湖機場 (3 套)、嘉義機場 (2 套)、花蓮機場 (3 套)、臺東豐年機場 (1 套)、金門機場 (3 套)、馬祖北竿機場 (2 套)、馬祖南竿機場 (2 套)、恆春機場 (1 套) 及大屯山 (1 套)、後龍 (1 套)、臺南西港 (1 套)、恆春 (1 套)、知本 (1 套)、綠島 (1 套)、蘭嶼 (1 套) 等處 Taiwan Taoyuan Int'l Airport (4 sets), Kaohsiung Int'l Airport (2 sets), Taipei Songshan Airport (3 sets), Taichung Cingcyuangang Airport (3 sets), Tainan Airport (2 sets), Penghu Airport (3 sets), Chiayi Airport (2 sets), Hualien Airport (3 sets), Taitung Fongnian Airport (1 set), Kinmen Airport (3 sets), Matsu Beigan Airport (2 sets), Matsu Nangan Airport (2 sets), Hengchun Airport (1 set) and Datunsan (1 set), Houlong (1 set), Tainan Xigang(1 set), Hengchun (1 set), Taitung Zhiben (1 set), Ludao (1 set), Lanyu (1 set)
儀器降落系統 (ILS) (含 GP 及 LOC) Instrument Landing System (ILS) (including GP and LOC)	18 套 18 sets	臺灣桃園國際機場 (4 套)、高雄國際機場 (2 套)、臺北松山機場 (1 套)、臺中清泉崗機場 (2 套)、臺南機場 (2 套)、澎湖機場 (2 套)、嘉義機場 (2 套)、金門機場 (2 套) 及花蓮機場 (1 套) Taiwan Taoyuan Int'l Airport (4 sets), Kaohsiung Int'l Airport (2 sets), Taipei Songshan Airport (1 set), Taichung Cingcyuangang Airport (2 sets), Tainan Airport (2 sets), Penghu Airport (2 sets), Chiayi Airport (2 sets), Kinmen Airport (2 sets) and Hualien Airport (1 set)
左右定位輔助臺 (LDA) Localizer-type Directional Aid (LDA)	6 套 6 sets	臺北松山機場 (1 套)、花蓮機場 (1 套)、臺東豐年機場 (1 套)、馬祖北竿機場 (2 套) 及馬祖南竿機場 (1 套) Taipei Songshan Airport (1 set), Hualien Airport (1 set), Taitung Fongnian Airport (1 set), Matsu Beigan Airport (2 sets) and Matsu Nangan Airport (1 set)

二、助航燈光裝備 Visual Aids for Navigation

種類 Facilities	設置地點 Location
跑道邊燈、跑道頭 / 末端燈、跑道中心線燈、滑行道中心線燈、滑行道邊燈、進場燈 (SSALR-10)、跑道頭識別燈 (RTIL-28)、精確進場滑降指示燈 (PAPI)、跑道警戒燈、指示牌、千呎牌 Runway edge lights, Runway threshold/end lights, Runway center line lights, Taxiway center line lights, Taxiway edge lights, Approach lighting systems (SSALR-10), Runway threshold identification lights (RTIL-28), Precision approach path indicator (PAPI), Runway guard lights, Signs, Runway distance remaining sign	臺北松山機場 Taipei Songshan Airport
跑道邊燈、跑道頭 / 末端燈、跑道中心線燈、著陸區燈、滑行道邊燈、滑行道中心線燈、進場燈 (CAT II APCH)、精確進場滑降指示燈 (PAPI)、跑道警戒燈、停止線燈、指示牌、千呎牌 (全部由桃園國際機場公司維護) Runway edge lights, Runway threshold/end lights, Runway center line lights, Runway touchdown zone lights, Taxiway edge lights, Taxiway center line lights, Approach lighting systems (CAT II APCH), Precision approach path indicator (PAPI), Runway guard lights, Stop bars, Signs, Runway distance remaining sign (all maintained by Taoyuan International Airport Corporation Ltd.)	臺灣桃園國際機場 Taiwan Taoyuan International Airport
跑道邊燈、跑道頭 / 末端燈、跑道中心線燈、滑行道邊燈、滑行道中心線燈 (A、G 滑行道)、進場燈 (MALSR-09、CAT I APCH-27)、著陸區燈 (09)、精確進場滑降指示燈 (PAPI)、跑道警戒燈、指示牌、千呎牌 Runway edge lights, Runway threshold/end lights, Runway center line lights ,Taxiway edge lights, Taxiway center line lights (A、G Taxiway), Approach lighting systems (MALSR 09、CAT I APCH-27), Runway touchdown zone lights (09), Precision approach path indicator (PAPI), Runway guard lights, Signs, Runway distance remaining sign	高雄國際機場 Kaohsiung International Airport
跑道邊燈、跑道頭 / 末端燈、滑行道邊燈、進場燈 (MALSF-21、ALS-03)、跑道頭識別燈 (RTIL-03)、精確進場滑降指示燈 (PAPI)、跑道警戒燈、指示牌、千呎牌 (部分由軍方維護) Runway edge lights, Runway threshold/end lights, Taxiway edge lights, Approach lighting systems (MALSF-21、ALS-03), Runway threshold identification lights (RTIL-03), Precision approach path indicator (PAPI), Runway guard lights, Signs, Runway distance remaining sign (partially maintained by the Military)	花蓮機場 Hualien Airport
跑道邊燈、跑道頭 / 末端燈、滑行道邊燈、進場燈 (MALSR-02、CAT I APCH-20)、精確進場滑降指示燈 (PAPI)、跑道警戒燈、指示牌、千呎牌 Runway edge lights, Runway threshold/end lights, Taxiway edge lights, Approach lighting systems (MALSR-02、CAT I APCH-20), Precision approach path indicator (PAPI), Runway guard lights, Signs, Runway distance remaining sign	澎湖機場 Penghu Airport
跑道邊燈、跑道頭 / 末端燈、滑行道邊燈、進場燈 (MALSR-36R、MALSF-18L)、精確進場滑降指示燈 (PAPI-18L/36R)、跑道警戒燈、指示牌、千呎牌 (全部由軍方維護) Runway edge lights, Runway threshold/end lights, Taxiway edge lights, Approach lighting systems (MALSR-36R, MALSF-18L), Precision approach path indicator (PAPI-18L/36R), Runway guard lights, Signs, Runway distance remaining sign (all maintained by the Military)	臺南機場 Tainan Airport
跑道邊燈、跑道頭 / 末端燈、滑行道邊燈、進場燈 (MALSR-04、ALS-22)、跑道頭識別燈 (RTIL-22)、精確進場滑降指示燈 (PAPI)、跑道警戒燈、指示牌、千呎牌 Runway edge lights, Runway threshold/end lights, Taxiway edge lights, Approach lighting systems (MALSR-04、ALS-22), Runway threshold identification lights (RTIL-22), Precision approach path indicator (PAPI), Runway guard lights, Signs, Runway distance remaining sign	臺東豐年機場 Taitung Fongnian Airport
跑道邊燈、跑道頭 / 末端燈、滑行道邊燈、進場燈 (RAI-18、ALSF-36)、精確進場滑降指示燈 (PAPI)、跑道警戒燈、指示牌、千呎牌 (部分由軍方維護) Runway edge lights, Runway threshold/end lights, Taxiway edge lights, Approach lighting systems (RAI-18、ALSF-36), Precision approach path indicator (PAPI), Runway guard lights, Signs, Runway distance remaining sign (partially maintained by the Military)	臺中清泉崗機場 Taichung Cingcyuangang Airport

種類 Facilities	設置地點 Location
跑道邊燈、跑道頭 / 末端燈、滑行道邊燈、進場燈 (SSALR-06、MALSF-24)、精確進場滑降指示燈 (PAPI-06)、跑道警戒燈、指示牌、千呎牌 Runway edge lights, Runway threshold/end lights, Taxiway edge lights, Approach lighting systems (SSALR-06、MALSF-24), Precision approach path indicator (PAPI-06), Runway guard lights, Signs, Runway distance remaining sign	金門機場 Kinmen Airport
跑道邊燈、跑道頭 / 末端燈、滑行道邊燈、進場燈 (MALSR-36、ALS-18)、精確進場滑降指示燈 (PAPI)、指示牌、千呎牌 (全部由軍方維護) Runway edge lights, Runway threshold/end lights, Taxiway edge lights, Approach lighting systems (MALSR-36、ALS-18), Precision approach path indicator (PAPI), Signs, Runway distance remaining sign (all maintained by the Military)	嘉義機場 Chiayi Airport
跑道邊燈、跑道頭 / 末端燈、跑道頭識別燈 (RTIL)、簡式精確進場滑降指示燈 (APAPI)、指示牌、千呎牌 Runway edge lights, Runway threshold/end lights, Runway threshold identification lights (RTIL), Abbreviated precision approach path indicator (APAPI), Signs, Runway distance remaining sign	七美機場 Qimei Airport
跑道邊燈、跑道頭 / 末端燈、跑道頭識別燈 (RTIL)、簡式精確進場滑降指示燈 (APAPI)、指示牌、千呎牌 Runway edge lights, Runway threshold/end lights, Runway threshold identification lights (RTIL), Abbreviated precision approach path indicator (APAPI), Signs, Runway distance remaining sign	望安機場 Wangan Airport
跑道邊燈、跑道頭 / 末端燈、滑行道邊燈、跑道頭識別燈 (RTIL)、簡式精確進場滑降指示燈 (APAPI-03)、精確進場滑降指示燈 (PAPI-21)、指示牌、千呎牌 Runway edge lights, Runway threshold/end lights, Taxiway edge lights, Runway threshold identification lights (RTIL), Abbreviated precision approach path indicator (APAPI-03), precision approach path indicator (PAPI-21), Signs, Runway distance remaining sign	馬祖北竿機場 Matsu Beigan Airport
跑道邊燈、跑道頭 / 末端燈、滑行道邊燈、簡式著陸區燈、跑道頭識別燈 (RTIL)、精確進場滑降指示燈 (PAPI)、指示牌、千呎牌 Runway edge lights, Runway threshold/end lights, Taxiway edge lights, Simple touchdown zone lights, Runway threshold identification lights (RTIL), precision approach path indicator (PAPI), Signs, Runway distance remaining sign	馬祖南竿機場 Matsu Nangan Airport
跑道頭 / 末端燈、滑行道邊燈、跑道頭識別燈 (RTIL)、精確進場滑降指示燈 (PAPI)、指示牌、千呎牌 Runway threshold/end lights, Taxiway edge lights, Runway threshold identification lights (RTIL), Precision approach path indicator (PAPI), Signs, Runway distance remaining sign	恆春機場 Hengchun Airport
跑道邊燈、跑道頭 / 末端燈、跑道頭識別燈 (RTIL)、簡式精確進場滑降指示燈 (APAPI-17)、指示牌、千呎牌 Runway edge lights, Runway threshold/end lights, Runway threshold identification lights (RTIL), Abbreviated precision approach path indicator (APAPI-17), Signs, Runway distance remaining sign	綠島機場 Ludao Airport
跑道邊燈、跑道頭 / 末端燈、跑道頭識別燈 (RTIL)、簡式精確進場滑降指示燈 (APAPI)、指示牌、千呎牌 Runway edge lights, Runway threshold/end lights, Runway threshold identification lights (RTIL), Abbreviated precision approach path indicator (APAPI), Signs, Runway distance remaining sign	蘭嶼機場 Lanyu Airport

三、雷達及監視裝備 Radar and Surveillance Equipment

名稱 Name	數量 Number	設置地點 Location
航路雷達 En-route Radar	2 座 2 sets	三貂角與鵝鑾鼻 Sandiaojiao and Eluanbi Radar Sites
終端雷達 Terminal Radar	9 座 9 sets	臺灣桃園國際機場 (2 座)、高雄國際機場 (1 座)、臺北松山機場 (1 座)、臺中清泉崗機場 (1 座)、臺東豐年機場 (1 座)、澎湖機場 (1 座)、花蓮機場 (1 座) 及金門機場 (1 座) Taiwan Taoyuan Int'l Airport (2 sets), Kaohsiung Int'l Airport (1 set), Taipei Songshan Airport (1 set), Taichung Cingcyuangang Airport (1 set), Taitung Fongnian Airport (1 set), Penghu Airport (1 set), Hualien Airport (1 set) and Kinmen Airport (1 set)
都卜勒氣象雷達 Doppler Weather Radar	1 套 1 set	臺灣桃園國際機場 Taiwan Taoyuan Int'l Airport
場面搜索雷達 (SMR) Surface Movement Radar (SMR)	2 套 2 sets	臺灣桃園國際機場 (2 套) Taiwan Taoyuan Int'l Airport (2 sets)
多點定位系統 (MLAT) Multilateration (MLAT)	1 套 1 set	臺灣桃園國際機場 Taiwan Taoyuan Int'l Airport
廣播式自動回報監視 (ADS-B) 裝備 Automatic Dependent Surveillance-Broadcast (ADS-B)	1 套 1 set	共有 15 個陣地： 臺中清泉崗機場、金門機場、臺東豐年機場、花蓮機場、馬祖南竿機場、澎湖機場及大屯山、高雄壽山、三貂角、金門北側 (太武山和金沙)、舞鶴、池上、綠島、高雄國際機場 Taichung Cingcyuangang Airport, Kinmen Airport, Taitung Fongnian Airport, Hualien Airport, Matsu Nangan Airport, Penghu Airport and Datunsan, Kaohsiung Shoushan, Sandiaojiao, Northern Kinmen (Mt. Taiwu and Jinsha), Wuhe, Chishang, Ludao, Kaohsiung Int'l Airport

四、通信裝備 Communication Equipment

名稱 Name	數量 Number	設置地點 Location
高頻 (HF) 陸空通信收發訊臺 High Frequency(HF) Air-Ground Communication receiving/ transmitting station	7 組 7 sets	北部飛航服務園區 (2 組)、臺灣桃園國際機場 (5 組) North ATS Park (2 sets), Taiwan Taoyuan Int'l Airport (5 sets)
特高頻 / 超高頻 (VHF/UHF) 陸空通信收發訊機 Very and Ultra High Frequency (VHF/UHF) Air-Ground Communication receiver/ transmitter	620 組 620 sets	臺灣桃園國際機場 (62 組)、高雄國際機場 (65 組)、臺北松山機場 (25 組)、金門機場 (20 組)、馬祖北竿機場 (12 組)、馬祖南竿機場 (15 組)、臺中清泉崗機場 (50 組)、澎湖機場 (62 組)、望安機場 (3 組)、七美機場 (3 組)、嘉義機場 (24 組)、臺南機場 (10 組)、臺東豐年機場 (49 組)、花蓮機場 (36 組)、綠島機場 (25 組)、蘭嶼機場 (7 組) 及大屯山 (71 組)、三貂角 (22 組)、恆春 (40 組)、北部飛航服務園區 (19 組) 等處 Taiwan Taoyuan Int'l Airport (62 sets), Kaohsiung Int'l Airport (65 sets), Taipei Songshan Airport(25 sets), Kinmen Airport (20 sets), Matsu Beigan Airport(12 sets), Matsu Nangan Airport (15 sets), Taichung Cingcyuangang Airport (50 sets), Penghu Airport (62 sets), Wangan Airport (3 sets), Qimei Airport (3 sets), Chiayi Airport (24 sets), Tainan Airport (10 sets), Taitung Fongnian Airport (49 sets), Hualien Airport (36 sets), Ludao Airport (25 sets), Lanyu Airport (7sets) and Datunsan (71 sets), Sandiaojiao (22 sets), Hengchun (40 sets) and North ATS Park (19 sets)

名稱 Name	數量 Number	設置地點 Location
數位語音交換系統 (DVCSS) Digital Voice Communication Switching System (DVCSS)	11 套 11 sets	北部與南部飛航服務園區、臺灣桃園國際機場、臺北松山機場、馬祖北竿機場、馬祖南竿機場、金門機場、高雄國際機場、澎湖機場、恆春機場、臺東豐年機場 North and South ATS Parks, Taiwan Taoyuan Int'l Airport, Taipei Songshan Airport, Matsu Beigan Airport, Matsu Nangan Airport, Kinmen Airport, Kaohsiung Int'l Airport, Penghu Airport, Hengchun Airport, Taitung Fongnian Airport
微波系統 Microwave System	7 套 7 sets	臺灣桃園國際機場 (1 套)、高雄國際機場 (1 套)、臺北松山機場 (1 套)、澎湖機場 (1 套)、大屯山 (2 套)、高雄壽山等處 Taiwan Taoyuan Int'l Airport (1 set), Kaohsiung Int'l Airport (1 set), Taipei Songshan Airport (1 set), Penghu Airport (1 set), Datunsan (2 sets), Kaohsiung Shoushan (1 set)
錄音系統 Recording System	15 組 15 sets	北部與南部飛航服務園區、臺灣桃園國際機場、臺北松山機場、馬祖北竿機場、馬祖南竿機場、金門機場、澎湖機場、七美機場、望安機場、臺東豐年機場、高雄國際機場、恆春機場、綠島機場、蘭嶼機場 North and South ATS Parks, Taiwan Taoyuan Int'l Airport, Taipei Songshan Airport, Matsu Beigan Airport, Matsu Nangan Airport, Kinmen Airport, Penghu Airport, Qimei Airport, Wangan Airport, Taitung Fongnian Airport, Kaohsiung Int'l Airport, Hengchun Airport, Ludao Airport, Lanyu Airport

五、氣象裝備 Meteorological Equipment

名稱 Name	數量 Number	設置地點 Location
自動氣象觀測系統 (AWOS) Automatic Weather Observation System (AWOS)	28 套 28 sets	臺灣桃園國際機場 (6 套)、高雄國際機場 (2 套)、臺北松山機場 (2 套)、馬祖北竿機場 (2 套)、馬祖南竿機場 (2 套)、金門機場 (2 套)、恆春機場 (2 套)、七美機場 (2 套)、望安機場 (2 套)、臺東豐年機場 (2 套)、綠島機場 (2 套) 及蘭嶼機場 (2 套) Taiwan Taoyuan Int'l Airport (6 sets), Kaohsiung Int'l Airport (2 sets), Taipei Songshan Airport (2 sets), Matsu Beigan Airport (2 sets), Matsu Nangan Airport (2 sets), Kinmen Airport (2 sets), Hengchun Airport (2 sets), Qimei Airport (2 sets), Wangan Airport (2 sets), Taitung Fongnian Airport (2 sets), Ludao Airport (2 sets) and Lanyu Airport (2 sets)
低空風切警報系統 (LLWAS) Low Level Windshear Alert System (LLWAS)	2 套 2 sets	臺灣桃園國際機場、臺北松山機場 Taiwan Taoyuan Int'l Airport, Taipei Songshan Airport
航空氣象現代化作業系統 (AOAWS) Advanced Operational Aviation Weather System (AOAWS)	1 套 1 set	臺北航空氣象中心 Taipei Aeronautical Meteorological Center

六、航管自動化系統 Air Traffic Control Automation System

名稱 Name	數量 Number	設置地點 Location
飛航管理系統 (ATMS) Air Traffic Management System (ATMS)	2 套 2 sets	北部與南部飛航服務園區 11 個塔臺管制席位：臺北、高雄、松山、豐年、恆春、馬公、金門、北竿、南竿、綠島及蘭嶼等機場管制臺 North and South ATS Parks Controller Working Position in 11 airport control towers: Taipei, Kaohsiung, Songshan, Fongnian, Hengchun, Magong, Kinmen, Beigan, Nangan, Ludao and Lanyu
飛航管理系統擴充備援系統 (EBAS) ATMS-Extended Backup ATC System (EBAS)	2 套 2 sets	北部與南部飛航服務園區 6 個塔臺管制席位：臺北、高雄、松山、豐年、馬公及金門等機場管制臺 North and South ATS Parks Controller Working Position in 6 airport control towers: Taipei, Kaohsiung, Songshan, Fongnian, Magong and Kinmen
塔臺自動化系統 (TAS) Tower Automation System (TAS)	1 套 1 set	桃園國際機場塔臺園區 Tower Park of Taiwan Taoyuan International Airport
360 度塔臺模擬機系統 360-Degree Tower Simulator	1 套 1 set	桃園國際機場塔臺園區 Tower Park of Taiwan Taoyuan International Airport

七、其他飛航服務系統 Other Aviation Service Systems

名稱 Name	數量 Number	設置地點 Location
飛航訊息處理系統 (AMHS) Air Traffic Services (ATS) Message Handling System (AMHS)	3 套 3 sets	北部飛航服務園區 2 套與南部飛航服務園區 1 套 工作站：飛航服務總臺所屬各飛航服務作業單位、各航空站、航空公司、軍方及相關政府單位 North ATS Park (2 sets) and South ATS Park (1 set) Working Position: ATS units of ANWS, airports, airlines, military and related government units
航空情報服務系統 (AISS) Aeronautical Information Service System (AISS)	3 套 3 sets	北部飛航服務園區 2 套與南部飛航服務園區 1 套 工作站：臺北、桃園及高雄等飛航諮詢臺 North ATS Park (2 sets) and South ATS Park (1 set) Working Position: Taipei, Taoyuan and Kaohsiung Flight Information Station
語音 / 資料鏈路航空氣象資料廣播服務系統 (V/D-VOLMET) Voice/Datalink METeorological information for aircraft in flight System (V/D-VOLMET)	1 套 1 set	北部飛航服務園區 North ATS Park
語音 / 資料鏈路終端資料自動廣播服務系統 (V/D-ATIS) Voice/Datalink Automatic Terminal Information Service System (V/D-ATIS)	4 套 4 sets	臺北、松山、臺中清泉崗及高雄機場管制臺 Taipei, Songshan, Taichung Cingcyuangang and Kaohsiung Airport Control Tower
語音終端資料自動廣播服務系統 (ATIS) Voice Automatic Terminal InformationService System (ATIS)	5 套 5 sets	豐年、馬公、金門、南竿及北竿機場管制臺 Fongnian, Magong, Kinmen, Nangan and Beigan Airport Control Tower

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