

**NINETEENTH CONGRESS OF THE )  
REPUBLIC OF THE PHILIPPINES )  
First Regular Session )**



23 MAR -7 A9:51

**SENATE**

RECEIVED BY: 

**COMMITTEE REPORT NO. 39**

Submitted by the Committee on Public Services on MAR - 7 2023.

Re: **P.S. Res. Nos. 390, 391, 392, 400, 401, 402, 403, 418, and 421**

Recommending the adoption of the recommendations contained herein and their immediate implementation

Sponsor: **Senator Grace Poe**

**MR. PRESIDENT:**

The Committee on Public Services to which were referred **Proposed Senate Resolution No. 390**, introduced by **Senator Joel Villanueva**, entitled:

**"RESOLUTION**

**DIRECTING THE APPROPRIATE COMMITTEE/S OF THE SENATE TO CONDUCT AN INQUIRY, IN AID OF LEGISLATION, ON THE RECENT TECHNICAL GLITCH IN THE COUNTRY'S AIR TRAFFIC MANAGEMENT SYSTEM WITH A VIEW TO IMPROVING THE PHILIPPINES' OVERALL AIR TRAFFIC SERVICES, UTILIZING IT AS AN ENGINE OF FURTHER ECONOMIC GROWTH, AND ALIGNING THE RELEVANT AGENCIES' PLANS WITH THE GOALS OF THE PHILIPPINE DEVELOPMENT PLAN 2023-2028 TO SPUR THE ECONOMY, REVITALIZE THE TOURISM SECTOR, AND CREATE MORE OPPORTUNITIES FOR JOB GENERATION"**

**Proposed Senate Resolution No. 391**, introduced by **Senator Ramon Bong Revilla Jr.**, entitled:

**"RESOLUTION**

**DIRECTING THE SENATE COMMITTEE ON PUBLIC SERVICES TO CONDUCT AN INQUIRY, IN AID OF LEGISLATION, ON THE SHUTDOWN OF PHILIPPINE AIRSPACE ON JANUARY 1, 2023,**

**WITH THE END IN VIEW OF EVALUATING PHILIPPINE AIRPORT OPERATIONS AND MANAGEMENT INCLUDING ITS EXISTING FACILITIES AND EQUIPMENT; ASSESSING THE SHUTDOWN'S TOURISM AND ECONOMIC IMPACTS; AND PROTECTING THE RIGHTS OF THE PASSENGERS FOR COMFORT AND EFFICIENCY"**

**Proposed Senate Resolution No. 392**, introduced by **Senator Jinggoy Ejercito Estrada**, entitled:

**"RESOLUTION**

**DIRECTING THE APPROPRIATE SENATE COMMITTEE/S TO CONDUCT AN INQUIRY, IN AID OF URGENT REMEDIAL LEGISLATION, ON THE REPORTED POWER OUTAGE AND TECHNICAL ISSUES IN THE NINOY AQUINO INTERNATIONAL AIRPORT (NAIA) ON JANUARY 1, 2023 WHICH RESULTED IN THE CANCELLATION OF HUNDREDS OF FLIGHTS, INCONVENIENCE OF THOUSANDS OF PASSENGERS, AND THE SHUTDOWN OF PHILIPPINE AIRSPACE, THEREBY FURTHER ADVERSELY IMPACTING THE IMAGE OF THE COUNTRY AS A TOURISM DESTINATION, AND HURTING THE NATIONAL ECONOMY"**

**Proposed Senate Resolution No. 400**, introduced by **Sen. Joseph Victor G. Ejercito**, entitled:

**"RESOLUTION**

**DIRECTING THE SENATE COMMITTEE ON PUBLIC SERVICES TO CONDUCT AN INQUIRY IN AID OF LEGISLATION ON THE RECENT AIRPORT NAVIGATION SYSTEM FIASCO THAT PARALYZED THE OPERATION OF THE NINOY AQUINO INTERNATIONAL AIRPORT (NAIA), RISKED THE SAFETY OF TRAVELERS, AND POSED NATIONAL SECURITY CONCERNS, WITH THE END IN VIEW OF STRENGTHENING AND ENSURING SAFETY IN THE AVIATION INDUSTRY, AND PREVENTION OF ANY OTHER SIMILAR INCIDENTS IN THE FUTURE"**

**Proposed Senate Resolution No. 401**, introduced by **Sen. Risa Hontiveros**, entitled:

**"RESOLUTION**

**DIRECTING THE APPROPRIATE SENATE COMMITTEE TO CONDUCT AN INQUIRY, IN AID OF LEGISLATION, INTO THE NEW YEAR SYSTEM FAILURE CRISIS AT THE NINOY AQUINO INTERNATIONAL AIRPORT (NAIA), RESULTING IN THE BREAKDOWN OF AIR TRAFFIC CONTROL AND THE DISRUPTION OF A TOTAL OF 282 FLIGHTS AFFECTING AROUND 56,000 PASSENGERS"**

**Proposed Senate Resolution No. 402**, introduced by **Sen. Maria Lourdes Nancy S. Binay**, entitled:

**"RESOLUTION**

**DIRECTING THE PROPER SENATE COMMITTEES TO CONDUCT AN INQUIRY, IN AID OF LEGISLATION, ON THE REPORTED AIRPORT SERVICE FAILURE THAT CRIPPLED INTERNATIONAL AND DOMESTIC FLIGHT OPERATIONS WITH THE OBJECTIVE OF REVIEWING ALL THE NAVIGATIONAL AND COMMUNICATIONS EQUIPMENT INSTALLED IN ALL AIRPORTS AND SEAPORTS"**

**Proposed Senate Resolution No. 403**, introduced by **Sen. Aquilino "Koko" Pimentel III**, entitled:

**"RESOLUTION**

**DIRECTING THE APPROPRIATE SENATE COMMITTEE TO CONDUCT AN INQUIRY, IN AID OF LEGISLATION, ON THE AIR TRAFFIC MANAGEMENT SYSTEM GLITCH AT THE NINOY AQUINO INTERNATIONAL AIRPORT LAST JANUARY 1, 2023, WHICH CAUSED IMMEASURABLE ECONOMIC LOSSES AND INCONVENIENCES TO AIRLINE PASSENGERS"**

**Proposed Senate Resolution No. 418**, introduced by **Sen. Loren B. Legarda**, entitled:

**"RESOLUTION**

**URGING THE APPROPRIATE SENATE COMMITTEE TO CONDUCT AN INQUIRY, IN AID OF LEGISLATION, ON THE TECHNICAL ISSUE THAT AFFECTED THE COMMUNICATIONS, NAVIGATION, SURVEILLANCE/ AIR TRAFFIC MANAGEMENT (CNS/ATM) SYSTEMS OF THE CIVIL AVIATION AUTHORITY OF THE PHILIPPINES (CAAP) ON NEW YEAR'S DAY OF 2023, TO THE**

**DETRIMENT OF AIR PASSENGERS AND PHILIPPINE AIR  
TRANSPORT SYSTEM”**

and **Proposed Senate Resolution No. 421**, introduced by **Sen. Win Gatchalian**,  
entitled:

**“RESOLUTION**

**DIRECTING THE APPROPRIATE SENATE COMMITTEE TO  
CONDUCT AN INQUIRY, IN AID OF LEGISLATION, ON THE  
VULNERABILITIES OF THE ENTIRE AIRPORT  
INFRASTRUCTURE SYSTEM, GIVEN THE RECENT TECHNICAL  
GLITCH AFFECTING THE COMMUNICATIONS, NAVIGATION  
AND SURVEILLANCE SYSTEMS FOR AIR TRAFFIC  
MANAGEMENT (CNS-ATM), WITH THE END VIEW OF  
SAFEGUARDING OUR ECONOMIC RECOVERY INITIATIVES FOR  
THE TOURISM AND TRANSPORTATION SECTORS, IMPROVING  
SECURITY AND REDUNDANCY MEASURES INVOLVING  
SIMILAR INCIDENTS, AND ENSURING THE SAFETY,  
CONVENIENCE AND RIGHTS OF AFFECTED AIR PASSENGERS”**

have considered them and have the honor to submit its report back to the Senate,  
recommending the adoption of the recommendations as contained in this Report and  
their immediate implementation.

Respectfully submitted:

*Chairperson:*

  
**SEN. GRACE POE**

*Vice Chairpersons:*



**SEN. JOSEPH VICTOR G. EJERCITO**



**SEN. FRANCIS "TOL" N. TOLENTINO**



**SEN. JINGGOY EJERCITO ESTRADA**


**SEN. RAMON BONG REVILLA JR.**

*Members:*



**SEN. MARIA LOURDES NANCY S. BINAY**

MAY INTERPELLATE



**SEN. RONALD "BATO" DELA ROSA**



**SEN. FRANCIS "CHIZ" G. ESCUDERO**

**SEN. WIN GATCHALIAN**



**SEN. CHRISTOPHER LAWRENCE T. GO**



**SEN. MANUEL "LITO" M. LAPID**

**SEN. MARK VILLAR**

  
**SEN. RISA HONTIVEROS**

*May interpellate  
& propose amendments.*

*Vice Chairpersons:*

**SEN. JOSEPH VICTOR G. EJERCITO**

**SEN. FRANCIS "TOL" N. TOLENTINO**

**SEN. JINGGOY EJERCITO ESTRADA**

**SEN. RAMON BONG REVILLA JR.**

*Members:*

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**SEN. WIN GATCHALIAN**

**SEN. CHRISTOPHER LAWRENCE T. GO**


**SEN. MANUEL "LITO" M. LAPID**


**SEN. MARK VILLAR**

**SEN. RISA HONTIVEROS**

*Ex Officio Members:*

**SEN. LOREN LEGARDA**  
*Senate President Pro-Tempore*

  
"may interpellate and/or amend"  
**SEN. JOEL VILLANUEVA**  
*Majority Leader*

with interpellate  
  
**SEN. AQUILINO "KOKO" PIMENTEL III**  
*Minority Leader*

**HON. JUAN MIGUEL "MIGZ" F. ZUBIRI**  
*Senate President*

*Ex Officio Members:*



**SEN. LOREN LEGARDA**  
*Senate President Pro-Tempore*

**SEN. JOEL VILLANUEVA**  
*Majority Leader*

**SEN. AQUILINO "KOKO" PIMENTEL III**  
*Minority Leader*

**HON. JUAN MIGUEL "MIGZ" F. ZUBIRI**  
*Senate President*



This **committee report** is a culmination of the public hearing conducted by the Committee on Public Services ("Committee"), joint with the Committees on Civil Service, Government Reorganization and Professional Regulation, and Finance last 12 January 2023, and the ocular inspection of the Air Traffic Management Center (ATMC) last 06 February 2023 at the Civil Aviation Authority of the Philippines (CAAP) in Pasay City, in response to the nine (9) resolutions (P.S. Res. Nos. 390, 391, 392, 400, 401, 402, 403, 418, 421) filed directing the Committee to investigate the air traffic system "glitch" that paralyzed the operations of the Ninoy Aquino International Airport (NAIA) on 01 January 2023, New Year's Day.

To supplement the understanding of the findings and recommendations of the Committee presented in this report, the following topics shall also be discussed as an introductory narrative to what we call the NAIA air system traffic "glitch" incident:

- a. Background and history of the Communications, Navigation, Surveillance System for Air Traffic Management (CNS/ATM) System Development project of the Philippines;
- b. Role of the CAAP in this project; and
- c. Timeline of the 01 January 2023 incident.

## **I. BACKGROUND: UNDERSTANDING THE PHILIPPINE CNS/ATM SYSTEM**

### **A. History of the CNS/ATM System**

#### *ICAO and the pursuit for a CNS/ATM system*

According to the International Civil Aviation Organization (ICAO), the Communications, Navigation, Surveillance System for Air Traffic Management or the CNS/ATM system refers to "communications, navigation, and surveillance systems, employing digital technologies, including satellite navigation systems together with various levels of automation, applied in support of a seamless global air traffic management system".<sup>1</sup>

As a contracting state of the ICAO, the Philippine government recognized the need to keep pace with the advancement of technology in the aviation sector. To realize this, the defunct Air Transportation Office (ATO), predecessor of CAAP, conducted regular consultations and coordination meetings with adjacent countries to harmonize air navigation modernization plans and advance system interoperability.

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<sup>1</sup> Australian Government Civil Aviation Safety Authority. (2017). *CNS/ATM Transforming Airspace Management: Resource Guide*. p. 8. Retrieved from <https://www.icao.int/Meetings/AMC/MA/1998/rio/EXECSUM.pdf>

Thus, as early as the 1990s, the idea of having a centralized air traffic control service in the Philippines using satellite technology has been conceptualized.<sup>2</sup>

In 1997, ATO formed a Technical Working Committee to prepare a CNS/ATM systems transition and implementation plan that sought to revamp and expand the air traffic management system of the Philippines. To supplement this, ATO directed the accelerated implementation of its nationwide Air Navigation Facilities Modernization Program and other related projects.<sup>3</sup>

#### *JICA Loan: The CNS/ATM Systems Development Project*

The Philippine government's global coordination efforts bore fruit when the Japanese Government through the Japan International Cooperation Agency (JICA) decided to conduct a feasibility study for the implementation of a CNS/ATM system in the country. Between 1998 and 2000, JICA sent a team to conduct the feasibility study and set up an advisory committee to examine and review it.<sup>4</sup> Based on the result of this study, on 23 November 2000, the National Economic and Development Authority-Investment Coordination Committee (NEDA-ICC) approved the project.<sup>5</sup>

The project, dubbed as the "New Communications, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) Systems Development Project"<sup>6</sup>, involved the creation of multiple facilities across the country to serve the following purposes: Air Traffic Management (ATM) automation, communications, navigation, surveillance, and meteorological system.<sup>7</sup>

On 28 March 2002, the Philippine and the Japanese governments executed Loan Agreement No. PH-P228 to formalize the financing of the project. It was agreed by both parties that the project will be divided into two contract packages. On 30 June 2002, JICA sent another team to conduct a detailed design study of the project and prepare the documents for its execution.<sup>8</sup>

A loan amount of Php10.8 billion was approved by JICA for the project. To help implement this, the ATO formed a Project Management Office (PMO) to offer technical assistance for the planning, design, implementation, and compliance monitoring, and

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<sup>2</sup> CAAP submission dated 09 January 2023. *Executive Summary and Chronological History pertaining to the CNS/ATM.*

<sup>3</sup> CAAP submission dated 15 February 2023. *Position Paper on the CNS/ATM System.*

<sup>4</sup> *Ibid.*

<sup>5</sup> CAAP submission dated 09 January 2023. *Executive Summary and Chronological History pertaining to the CNS/ATM.*

<sup>6</sup> *CNS/ATM Contract Package Specifications.*

<sup>7</sup> CAAP submission dated 15 February 2023. *Position Paper on the CNS/ATM System.*

<sup>8</sup> *Ibid.*

submit recommendations to the then Department of Transportation and Communications (DOTC). To supplement PMO's manpower, the DOTC likewise initiated the procurement of consulting services for the project scope, phasing, and packaging of the CNS/ATM Systems Development Project.

On 20 September 2005, the procurement of consulting services began, and on 27 November 2007, the contract was awarded to the joint venture of Aviation Systems Consultants Co., Ltd., Azusa Sekkei Co., Ltd., Airways International Ltd., and Katahira & Engineers International (ASCO-AZUSA-Airways-KEI) who began their consulting services on 13 February 2008.<sup>9</sup>

### *The Contract and the Contractors*

On 16 March 2009, an invitation for the pre-qualification bidding of the project contract for Package 1 was published in the newspaper, Philippine Star, and DOTC's Bids and Awards Committee sent out the same to all foreign embassies and consulates.

As a result of the bidding, the contract for Package 1 was awarded to the joint venture of Sumitomo Corporation and Thales Australia Ltd. and signed on 17 November 2010. The package includes the construction of the Air Traffic Management Center (ATMC) in Pasay City. The initial total contract price was Php 785,643,587.00. However, on 13 November 2015, an amendment of the contract increased the total contract price to Php 924,110,793.00. The construction of the ATMC began shortly on 17 December 2010.<sup>10</sup>

The contract for Package 2, which included the installation of the communications, navigation and surveillance system to complete the CNS/ATM, was also awarded to the joint venture of Sumitomo Corporation and Thales Australia Ltd. Together with Thales Air Systems S.A. on 27 April 2011. The initial total contract price was Php 1,435,373,000.00 but was later increased to Php 1,511,268,686.00 after a contract amendment.<sup>11</sup>

### *The COA Notice of Disallowance and Project Suspension*

In May 2011, the Commission on Audit (COA) issued Notice of Disallowance No. 11-004-102(11) for the 15% advance payment for Package-1 (under Disbursement Voucher No. 102-201101-0083). This effectively suspended construction works for the project.<sup>12</sup>

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<sup>9</sup> CAAP submission dated 15 February 2023. *Position Paper on the CNS/ATM System*.

<sup>10</sup> *Ibid.*

<sup>11</sup> *Ibid.*

<sup>12</sup> *Ibid.*

After several appeals in court, the Notice of Disallowance was lifted on 23 May 2013 through COA En-Banc Decision 2013-035. Thereafter, a series of communications between the Department of Foreign Affairs and the Embassy of Japan in Manila encouraged the resumption of the project in August 2013.<sup>13</sup>

The two-year suspension had significant consequences<sup>14</sup> on the progress of the project which include:

- a. Extension of the JICA loan agreement which was supposed to expire on 21 May 2013;
- b. Contract amendments for multiple extension times to which JICA needs to concur; and
- c. Additional management and supervision work during the extension period.

#### *Project Completion and Turn-Over to CAAP*

On 16 October 2017, the project was completed. In a letter by former Secretary Arthur Tugade to former CAAP Director General Jim Sydiongco dated 05 October 2017, CAAP was requested to take over the administration, security, operations, and maintenance of all the facilities and properties under the project effective 16 October 2017.<sup>15</sup> In January 2018, former President Rodrigo R. Duterte inaugurated the Philippine Air Traffic Management Center which hosts the country's CNS/ATM system.<sup>16</sup>

#### *The Philippines' CNS/ATM System*

As described by CAAP during the January 12 Senate Public Hearing, the CNS/ATM "*enhances the safety, reliability and efficiency*"<sup>17</sup> of the air traffic and airspace of the Manila Flight Information Region (FIR). This new system augmented the three (3) radars located at NAIA, Clark, and Tagaytay, which covered only 30% of the Philippine airspace, to thirteen (13) radars. The additional ten (10) radars in Aparri, Laoag, Mt. Majic in Cebu, Quezon-Palawan, Zamboanga, NAIA 2, Mactan, Bacolod, Kalibo, and Davao covered 70% of the Philippine airspace. To supplement this, the CNS/ATM also introduced the Automatic Dependent Surveillance – Contract

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<sup>13</sup> CAAP submission dated 09 January 2023. *Executive Summary and Chronological History pertaining to the CNS/ATM.*

<sup>14</sup> CAAP submission dated 15 February 2023. *Position Paper on the CNS/ATM System.*

<sup>15</sup> *Letter of former DoTr Sec. Arthur Tugade to former CAAP Director General Jim Sydiongco dated 05 October 2017*

<sup>16</sup> CAAP submission dated 15 February 2023. *Position Paper on the CNS/ATM System.*

<sup>17</sup> Page 37. (12 January 2023). *Senate Committee on Public Services Hearing Transcript.*

(ADS-C) and the Controller-Pilot Data Link Communications (CPDLC) technology which enabled the system to cover 100% of the remaining oceanic airspace.<sup>18</sup>

## **B. CAAP and the CNS/ATM System Development Project**

Created by virtue of Republic Act No. 9497 on 04 March 2008, CAAP is “an independent regulatory body with quasi-judicial and quasi-legislative powers and possessing corporate attributes” attached to the DOTC (now Department of Transportation or DOTr).<sup>19</sup> It replaced the ATO which was effectively abolished by this law. It is mandated to “provide safe and efficient air transport and regulatory services in the Philippines by providing for the creation of a civil aviation authority with jurisdiction over the restructuring of the civil aviation system, the promotion, development, and regulation of the technical, operational, safety, and aviation security functions under the civil aviation authority”.<sup>20</sup>

When CAAP replaced ATO in 2008, the CNS/ATM Systems Development Project was already rolling. The project was spearheaded by the DOTC with CAAP’s participation being limited to technical assistance and review. In fact, this is evident in all contracts and amendments thereof where DOTC appears as the signatory.<sup>21</sup>

Moreover, based on the history of the CNS/ATM System Development project and as reiterated in CAAP’s submissions to the Committee, the significant role of the CAAP over the project only began when it was turned over to them by the DOTr on 16 October 2017 when the project was completed.

## **C. Timeline of the 01 January 2023 Incident**

This narrative is based primarily on CAAP’s timeline of events (submissions dated 09 January and 20 January 2023), with other notable events found in the submissions of the following teams which also conducted independent investigations on the incident:

- (a) Department of Information and Communications Technology – Cybercrime Investigation and Coordinating Center (CICC) (submissions dated 20 January and 06 February 2023);
- (b) DOTr (submission dated 15 February 2023); and the

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<sup>18</sup> CAAP submission dated 09 January 2023. *Executive Summary and Chronological History pertaining to the CNS/ATM.*

<sup>19</sup> Chapter II, Section 4 of Republic Act No. 9497

<sup>20</sup> Section 2 of Republic Act No. 9497

<sup>21</sup> CAAP submission dated 15 February 2023. *Position Paper on the CNS/ATM System.*

(c) Institute of Integrated Electrical Engineers of the Philippines (IIEE) as the independent audit team sent by the Senate (submission dated 16 February 2023).

### **01 January 2023**

1:30 am Airfield Lighting and Power Technicians (ALPTs) at the Power Plant building of the ATMC heard a whining noise coming from the Uninterruptible Power Supply (UPS) Unit B. CICC and DOTr described the noise as being loud. The ALPTs took note and monitored the situation as there were no alarming variables.

Note that in DOTr and CICC's submission, the timestamp is at 1:20 am.

6:47 am After reporting the matter to the point person in charge, the ALPTs were instructed to unscrew and uncover the back panel of UPS B which confirmed that the source of noise was the cooling (exhaust) fan.

Note that this inspection was entered in the Daily Maintenance Log at 8:30 am; thus, CAAP and the independent audit team's narrative indicated the 8:30 am timestamp.

8:56 am CCTV data logs indicated a power outage in the Power Plant hallway and the master control room.

9:36 am The Network Monitoring System (NMS) Data Logs show that the VSAT-GEO2 failed to boot which resulted in it being offline.

9:49 am Both UPS units suddenly de-energized and went on standby mode resulting in power loss in the ATMC. All communication, radio, radar, and the internet went offline. All equipment was affected except the lights and air-conditioning units. According to CICC, CAAP noted this as the "initial event" which caused the disruption.

The ALPTs from the Air Navigation Service (ANS) performed manual re-energization. At the same time, the Manila Area Control Center (ACC) conducted mitigating measures to recall and record all flights prior to the distribution.

The ATMC initiated a "Ground Stop" which put on hold all 36 departing flights to prioritize the landing of 34 incoming flights through the use of VHF Tunable Radios located in the Manila and Mactan-Cebu Tower.

9:53 am The Network Monitoring System (NMS) Data Logs show that the VSAT-GEO1 likewise failed to boot which resulted in it being offline.

9:59 am Both UPS units are reported to have shut down. This occurred while the shift supervisor was attempting to clean the unscrewed cover of UPS B.

Note that the IIEE reported a fault in the power transfer switch (PTS) as early as 9:59 which caused both UPS units to shut down. They infer that at 9:50 am, the PTS began deteriorating until it completely failed at 10:00 pm coinciding with the UPS shutdown. Whereas, DOTr and CICC noted the failure of the PTS at 12:29 pm.

10:18 am Upon the suggestion of the Flight Information Center and to determine if the cause of disruption is Meralco's power supply, the emergency generator sets were switched but the UPS still did not have any output. The attempt to transfer to static bypass using the LCD panel also failed to restore output from the UPS.

10:41 am The first Notice to Airmen (NOTAM) was issued stating that "several components of the CNS/ATM System were declared unserviceable due to Philippine ATM Center System technical issues." This NOTAM was noted to be effective until the next day, January 2, 9:00 am.

Note that in DOTr and CICC's submission, the timestamp is 10:40 am.

10:51 am Another NOTAM was issued reporting a system outage at the ATMC.

11:20 am In CAAP's submission, they noted that the Director General, Deputy Director General for Operations, Deputy Director General for Administration, ATS Chief, and ATMC Manager had an inspection and meeting at CNS/ATM facility.

11:40 am Based on CAAP Equipment Record Card logs, the Automatic Voltage Regulator (AVR), which was indicated as faulty since 27 August 2022, was placed into bypass mode to supply power to the UPS.

According to CAAP, the ALPTs turned on UPS A and initiated the procedure to revert it from bypass mode to normal operation, as stated in the UPS Manual. UPS B was not put into operation due to an earlier issue with its cooling fan.

- 12:00 pm Both UPS units have been restored to normally protected mode. ALTPS confirmed that power was present and both UPS units were receiving power. According to CICC and DOTr, all circuit breakers in the Master Control Room (MCR) were switched on.
- 12:15 pm "First Attempt": The ALPTs advised that they would deliver high-priority power loads to the ATMC. After normal power was restored, the generator was switched off (note that in the CICC and DOTr submission, the timestamp is 12:18 pm). The power distribution panel in the Communications room was switched on.
- 12:20 pm Visible emission of smoke and sparks from the GEO1 VSAT and the Aeronautical Message Handling System equipment were observed. When power was checked, the reading measured 344 volts. Overvoltage was suspected so the circuit breaker for all equipment in the Communications Room was immediately turned off.
- 12:29 pm According to DOTr and CICC, the power transfer switch, which is essential in distributing power to virtual machines and routers, failed. The shift supervisor performed a manual bypass.
- 12:45 pm After verification and evaluation, it was suspected that the 125 amp circuit breaker was defective. The voltage measured at Line 3 of the output was higher than the expected 220 volts. The power distribution panel supply power to the breaker was switched off and a continuity test was conducted. It was discovered that the input and output sides of Line 3 and the neutral line are both open.
- 12:47 pm Inquirer.net reported about social media posts indicating a power outage at NAIA with an update from MIAA General Manager Cesar Chiong saying that as per CAAP, "power supply issue fixed and restored to have ATC service to operate shortly after completing system tests."<sup>[1]</sup>
- 1:15 pm Data logs indicate that CCTV power has been restored.
- 1:25 pm "Second Attempt": Since there is no compatible replacement for the breaker in stock, the ALPTs transferred the input side of Line 3 and the neutral line to the output side as a workaround measure.
- CAAP submission indicated this as a continuing event beginning at 12:47 pm.



- 1:30 pm Upon checking with ATMC personnel, stable and clean 220 volts of power was restored to the Communications Room. Equipment restoration began but was unable to power up the VSAT due to the effects of overvoltage.
- 1:40 pm Full resumption of power supply was reported, except those pertaining to VSAT, according to CAAP.
- 1:45 pm VSAT power was restored but GEO1 VSAT and GEO 2 VSAT are still down.
- 2:44 pm Partial restoration and limited operations of the CNS/ATM were reported. According to CAAP, limited operations were achieved using the communication system in the Tagaytay Radar Facility.
- 3:00 pm ATMC started accepting inbound flights.
- 4:00 pm Corrective maintenance protocols continued – damaged parts were replaced while some were declared unserviceable.
- 4:40 pm First plane landed after the partial restoration.
- 5:26 pm GEO1 VSAT was successfully restored.
- Note that in NMS data logs, it shows that the restoration occurred at 8:11 pm.
- 5:33 pm First plane departed NAIA after partial restoration.
- 7:45 pm The ATMC was about 90% restored.
- 8:00 pm DOTr-CAAP-MIAA press conference on the technical issues in the ATMS was conducted.
- 10:20 pm GEO2 VSAT was successfully restored.
- Note that in NMS data logs, it shows that the restoration occurred at 7:41 pm but CAAP incident reports show that it was not operational until 10:20 pm

10:53 pm Normal operations restored at the ATMC. GEO1 and GEO2 VSAT now fully operational. Approach and area control of ATMC reverted back to regular air traffic control flight operations.

**02 January 2023**

10:20 am All NOTAMs were canceled

12:00 nn Manila Approach Hourly Arrival Acceptance Rate back to normal.

## **II. FINDINGS**

### **A. SEVERAL EQUIPMENT MALFUNCTIONS TRIGGERED THE POWER OUTAGE**

The "glitch" that paralyzed the Philippine airspace was due to a power outage in the CNS/ATM triggered by several equipment that malfunctioned prior to and during the incident leading to the failure of the entire system.

Based on the Committee's investigation of the incident and the statements of relevant agencies, this outage was not a result of any disruption to commercial power input from the Manila Electric Company (Meralco). Otherwise, this would have prompted the standby generators at the ATMC to automatically function. It should be stressed that based on CAAP's narrative, at 9:49 am, the lights and air conditioning units at the ATMC were powered and running. Despite this observation, the generator set was manually switched on at 10:18 am to confirm whether the cause of the outage was not an issue with Meralco's power supply.

Further prolonging the restoration of power is the lack of a functional backup system, maintenance program, and contingency procedures which rendered air traffic personnel incapable of determining the cause of the outage and ultimately, fixing equipment issues immediately. This explains why, several days after the incident, CAAP was still unable to provide the public with a conclusive answer as to what caused the power outage at the ATMC which led to NAIA's shutdown.

In the succeeding paragraphs, the Committee shall briefly discuss the subject equipment identified as the cause of the power outage in several of CAAP's statements.

#### **1. CAAP's changing narrative**

After the incident, CAAP made several public declarations and highlighted different equipment as the cause of the power outage on separate occasions. As confusing as it was, this changing narrative revealed that there were actually several components of the CNS/ATM system that malfunctioned before and during the incident which triggered the power outage last 01 January 2023.

### **a. UPS failure due to a blower conking out**

The Uninterruptible Power Supply (UPS) was first identified as the cause of the power outage by DOTr Secretary Jaime Bautista and CAAP Director General (DG) Capt. Manuel Tamayo in a virtual press conference on the same night of the incident.<sup>22</sup>

Essentially, the UPS is a device that provides backup power as quickly as possible in case of a power failure and protects the equipment from power quality issues that may damage it.<sup>23</sup> Within the CNS/ATM system, two (2) identical UPS units are connected in parallel under a load-sharing scheme which connects it to a common distribution panel.

The UPS provides continuous regulated power from an alternative source when the power from Meralco is disrupted. One branch supplies power to the UPS through a main distribution panel while another supplies bypass power through an Automatic Voltage Regulator (AVR) in the UPS' bypass lines.<sup>24</sup> In the main distribution panel of the UPS, there is a power transfer switch (PTS) that automatically transfers power to the other branch circuit in case of power failure.

CAAP initially claimed that the blowing/cooling fan of the second UPS conked out. Since both UPS units are connected, a warning signal was sent to the first UPS then both subsequently failed to operate. Due to the UPS failure, it was not receiving any commercial or standby power so the technicians tried to bypass the allegedly damaged UPS which ultimately led to overvoltage thereby damaging more equipment.<sup>25</sup>

However, CAAP's succeeding statements, which were later on verified by the findings of the independent audit team, revealed that both UPS units did not shut down as it was found to be receiving power.<sup>26</sup> It only de-energized the CNS/ATM equipment, a safety feature of the UPS, after detecting a fault in the power transfer switch. The same explanation was manifested by DG Tamayo during the hearing first hearing of the Committee on Transportation in the House of Representatives (HOR) last 10 January 2023 and the January 12 Senate public hearing. According to him:

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<sup>22</sup> Lalu, G. (01 January 2023) *UPS failure caused glitch at CAAP's Air Traffic Management Center, says DOTr*, Inquirer.Net <https://newsinfo.inquirer.net/1711344/ups-failure-caused-glitch-at-caaps-air-traffic-management-center-says-dotr>

<sup>23</sup> USAID. *Uninterruptible Power Supplies*. <https://www.usaid.gov/energy/powering-health/system-components/uninterruptible-power-supplies>

<sup>24</sup> CAAP. *Technical Report on the ATMC Power Loss Last 01 January 2023*. (20 January 2023).

<sup>25</sup> Lalu, G. *UPS failure caused glitch at CAAP's Air Traffic Management Center, says DOTr*.

<sup>26</sup> CAAP Position Paper (09 January 2023).

**MR. TAMAYO.** The UPS, ma'am, just went on standby--standby mode. It did not shut down. It was working. It did what it had to do. So, sabay nag-shut down iyong dalawang UPS. And as I said earlier, this is a safety feature of the UPS.

*(page 42, Senate Committee on Public Services Hearing Transcript)*

This correlates with the evaluation of the UPS history logs after the incident of the UPS supplier, P2RO Inc., who explained that both units were functioning normally but the second UPS might produce noise when in operation due to its defective fans which they suggested replacing.

Despite the belated verification that the UPS is functional, CAAP made an emergency procurement of two (2) additional UPS units, with a five-year parts and service warranty. CAAP explained that the decision to purchase was merely precautionary since they were told by the supplier that the UPS was already in its mid-life. CAAP also confirmed this when asked by Senator Loren Legarda during the January 12 Senate public hearing:

**SEN. LEGARDA.** Okay. So, the emergency procurement is not the answer to the NAIA glitch of January 1, but it is a preventive measure from a possible UPS breakdown. And in this case, there was no problem with the power in the UPS, but it is this question of the circuit breaker. Is that correct, sir?

**MR. TAMAYO.** That is correct, ma'am.

*(page 90, Senate Committee on Public Services Hearing Transcript)*

Furthermore, in the ocular inspection of the ATMC last 06 February 2023, CAAP said that they already received the two (2) new units. However, they cannot switch these new units to replace the old ones yet because this will cause another downtime in the navigation service which might force another shutdown. As a solution, CAAP is now looking into procuring several mini UPS units to put before the breakers.

However, the independent audit team believes this is not an elegant approach. Switching is possible by focusing on one UPS at a time without having to purchase

dozens of mini-ups amounting to Php1.6 million each as a band-aid solution. Proper installation of the new units with least disruption to flight operations is still under discussion given the differences in technical opinion as to how the old and new UPS can be switched.

**b. Overvoltage due to a faulty circuit breaker**

The circuit breaker is an automatic electrical switch that protects equipment from short circuits or overloads by cutting off the current flow. Several circuit breakers are connected to various equipment of the CNS/ATM system.

In both hearings of Congress, CAAP admitted that they initially thought that the fault which caused the power outage was due to the UPS failure. Later on, CAAP retracted their statement and explained that it was actually the circuit breaker that caused the shutdown. Senator Jinggoy Estrada called out CAAP during the January 12 Senate public hearing for the belated correction of the information submitted to the Committee:

So, ganoon ho ang nangyari doon. So, akala namin, the first defect was the UPS. So, iyon ho unang lumabas, but then, troubleshooting occurred until they found out na iyon hong circuit breaker pala ang nagko-cause noong shut down ng UPS.

**SEN. ESTRADA.** Bakit ngayon ninyo lang nalaman? After eight days, bakit ngayon ninyo lang nalaman na circuit breaker ang may diperensiya?

**MR. TAMAYO.** Hindi po. If I may? We found out on the same day.

**SEN. ESTRADA.** On the same day?

**MR. TAMAYO.** Yes, sir.

**SEN. ESTRADA.** Ngayon lang kayo sumulat kay Senator Grace, January 9, na circuit breaker ang may diperensiya.

*(page 54, Senate Committee on Public Services Hearing Transcript)*

**SEN. ESTRADA.** You mentioned that on the same day that it was the circuit breaker that malfunctioned.

**MR. TAMAYO.** That's correct, sir.

**SEN. ESTRADA.** Why did you report to our Chairperson only now that it was the circuit breaker that malfunctioned?

**MR. TAMAYO.** I would like to apologize, sir, for the late submission to the Chairperson.

*(page 55, Senate Committee on Public Services Hearing Transcript)*

In discussing the events leading to the incident, CAAP demonstrated that the commercial power coming from Meralco goes through the UPS and passes through a central panel and two sets of three circuit breakers before entering the CNS/ATM equipment. The fault occurred at that particular circuit breaker. P2RO Inc. described a short circuit as the worst power anomaly that not even a good UPS can sustain.

At 12:00 noon, when the UPS was restored, all circuit breakers were turned on. In the first attempt to supply power to the UPS, a visible emission of smoke and sparks from the GEO1 VSAT and the Aeronautical Message Handling System (AMHS) equipment was observed. When power was checked, the reading measured 344 volts. Overvoltage was suspected so the circuit breaker for all equipment in the Communications Room was immediately turned off.

To understand the cause of the overvoltage, it should be established that four wires with 380 volts are fed to the circuit breaker - three are live wires (red, yellow, and black) and one is neutral (white). The power supply system of this particular circuit breaker is called single phase load which means it requires voltage only up to 220 volts. Since the live wires are 380 volts, one live and one neutral cable is needed to produce 220 volts. In their incident report dated 20 January 2023, CICC found that due to a loss of connection of the neutral cable, there was no return path for the electric current. This scenario led to the line-to-line voltage of two live wires which produced 380 volts instead of 220.

This explanation is reinforced in the interagency report submitted by the DOTr, adding that the loose connection of the neutral wire could have been due to vibrations from high voltage running through the line. However, the report stressed that based

on its visual/external inspection, the circuit breaker remains sealed and there is no sign of external tampering. A forensic examination of the circuit breaker conducted last 26 January 2023 by the inter-agency committee found that the circuit breaker was functioning as intended. While the tamper test showed metal discoloration and broken plastic debris in the switching mechanism in Line 3, the independent audit team, and Fuji-Haya, the supplier of the equipment, maintained that this does not affect the reliability and integrity of the breaker's operations.

In the January 10 HOR hearing, CAAP stressed that the circuit breakers could not be opened for regular inspection as they had to be kept sealed. They also reported that the faulty circuit breaker has already been replaced with the same model from the same manufacturer. DG Tamayo, however, admitted that a similar problem may occur from such a replacement.

**c. Previously damaged AVR not yet repaired/replaced**

An Automatic Voltage Regulator (AVR) is a device that maintains the appropriate constant voltage level for equipment. In a UPS system, a branch supplies power to an AVR to be used during the maintenance of the UPS. This UPS bypass is engaged to protect the load against voltage spikes, sags, and swells from the power source.<sup>27</sup>

The issue of the AVR was first raised during the January 12 Senate public hearing when Senators Joel Villanueva, JV Ejercito, and Risa Hontiveros inquired about the status of the AVR. Acting Air Navigation Service (ANS) Chief Engr. Arnold Balucating claimed that the AVR is only used when the UPS is under maintenance. As such, the UPS will still work despite the absence of an AVR. CAAP also claimed that they already coordinated with the supplier to have it assessed.

**SEN. EJERCITO.** With the indulgence of Senator Hontiveros.

The Chair received a report that the automatic voltage regulator (AVR) in the power plant of CAAP was damaged or was not working last August. Is this ano—totoo ba ito? Mayroon lang info.

Engineer, please answer.

**MR. BALUCATING.** Yes, Your Honor. During that time, the AVR is under maintenance. But like what the Director General stated before, the AVR is used only when the UPS is under maintenance, when the two

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<sup>27</sup> CAAP submission dated 20 January 2023. *Annex A: Technical Report on the ATMC Power Loss Last 01 January 2023.*



UPS is under maintenance. The UPS performs the voltage regulation and this AVR is a mechanical wherein it will also perform automatic voltage regulation but not like the smart UPS.

**SEN. EJERCITO.** So ayos na po iyon, iyong AVR that was damaged in August?

**MR. BALUCATING.** We have already coordinated with the supplier. And right now, we have assessed already ... mjp/imjv/agc

*(pages 146 to 147, Senate Committee on Public Services Hearing Transcript)*

Contrary to the claims of CAAP, the independent audit team emphasized that the AVR is a critical part of the UPS system. This was confirmed in the DOTr-led interagency report which noted that the AVR is an inherent part of the safety design.<sup>28</sup> The AVR provides regulated clean power to the UPS bypass thereby allowing its normal operation. The lack of a functioning AVR could lead to another catastrophic incident. In case of fluctuations in the electric supply, the system is still vulnerable to power interruptions and damage to equipment. Replacing the defective AVR immediately should thus be made a high priority.

During the February 6 ocular inspection, the Senate found out that the AVR, which has not been working since 27 August 2022, was not yet replaced or repaired. In the press conference that followed, CAAP committed to repairing the AVR by February 9. But as of the Committee's last visit to CAAP on February 13, the AVR is still not yet replaced. According to the interagency report, the procurement of a new AVR is still underway.

## **2. Findings of the Senate Independent Audit Team (IIEE)**

To shed light on the cause of the power outage, the Committee invited an independent audit team to provide aid in examining the technical aspect of the investigation. The team from the Institute of Integrated Electrical Engineers of the Philippines was composed of duly-licensed and accredited electrical engineers with extensive academic backgrounds and professional experience in the energy sector. The audit team thoroughly inspected and tested the electrical installations and

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<sup>28</sup> Page 16. DoTr submission dated 15 February 2023. *CNS/ATM Interagency Investigation Committee Report.*

equipment onsite. They also interviewed operations personnel and management regarding their procedures and methods and examined all available reports and data logs of the incident.

The Independent Audit Team found that the New Year's Day "glitch" was a problem of prolonged loss of power in the communication, navigation, and surveillance equipment. It is better understood as divided into two (2) events. First, there was the tripping of both UPS units that led to the power outage. Second, an overvoltage in the circuit breaker led to the failure of the communications and navigation equipment. Without the proper troubleshooting tools and procedures to fix the equipment and restore the power, these events led to the prolonged loss of function of the CNS/ATM and the virtual shutdown of the Philippine airspace for several hours.

**a. Simultaneous tripping of both UPS units**

The independent audit team emphasized that the two UPS units supply all the critical power to the CNS/ATM equipment. During the incident, the UPS units tripped or had no electrical flow due to the following: (1) protection devices for downstream wires or those connected to other devices did not trip, (2) a short circuit occurred on the power transfer switch, and (3) there was no functioning redundancy to back up the system.

On 27 August 2022, the AVR of the UPS system failed based on CAAP data logs. CAAP technicians reported a burnt smell and notified the management and the supplier. A supervisor, as instructed by the ANS Chief Engr. Balucating, ordered that the AVR be placed at the "0" position or switched off. This caused the output from the AVR, including the bypass line, to be isolated and de-energized the bypass supply to the UPS units. From that day until noon of 01 January 2023, the AVR remained switched off.

This is the first cause. The audit team found that the ***lack of a functioning AVR*** may have contributed to the tripping of the UPS unit. A defective AVR violates the design intent of the system. Herein, the defective AVR was not replaced immediately and not switched on to maintenance bypass mode during the incident. Placing it on maintenance bypass mode or at the "LINE" position energizes the UPS and allows it to restart.

On 01 January 2023 at 8:30 am, based on data logs, CAAP ALPTs inspected UPS B due to an abnormal sound. The source turned out to be a blower/fan. When the ALPTs opened the panel to clean it, another technician from the Communications Equipment Room informed them of the power failure in the equipment.

At 9:59 am, based on data logs, a fault occurred on a power transfer switch used in the AMHS and caused both UPS units to trip. Protection devices downstream of the UPS were not able to isolate the fault.

CAAP technicians tried to close the maintenance bypass switch of the UPS to provide power via the bypass line. However, they failed to do so as the AVR was still in the "0" position or switched off and the bypass supply was still de-energized.

This is the second cause. The power transfer switch manages the transfer of power to alternative sources if it encounters a problem. A **short circuit of a power transfer switch** may be caused by the entry of moisture, insects, or, rodents or excessive heating. The audit team noted that the most likely scenario is **overheating**. Upon inspection, the switch input terminal and wiring were melted. This was possibly caused by loose termination or connection which is preventable through regular inspection and maintenance by qualified personnel.

The third and last cause is the **absence of a functional redundancy in the CNS/ATM equipment**. A redundancy is a duplicate of the critical components of a system that can take over in case of a problem.

The audit team found that both the critical primary and secondary CNS/ATM equipment are powered by the two (2) UPS units in a parallel load-sharing scheme. In such a design, a single failure will result in a total loss of functionality. As evident in the New Year's Day incident, a single fault or power outage brought down the entire CNS/ATM system.

At 10:18 am, based on data logs, the generator set was switched on in the hopes of providing power to the UPS. However, since the AVR was still in an off position, power was not provided to the UPS via the bypass line.

At 11:40 am or 1 hour and 40 minutes later, based on data logs, technical personnel finally switched the AVR to "LINE" position or on maintenance bypass mode. The bypass supply was now energized and allowed power to run through the UPS bypass line. Only UPS A was restarted as personnel suspected that the initial fault occurred in UPS B.

The audit team notes that a safety feature of the UPS requires it to check the availability of power before initiating other commands. As such, to successfully restart the UPS, all power inputs (including those in the charger and bypass) must be energized.

## **b. Overvoltage led to the failure of communications and navigations**

The audit team found that when the ALPTs tried to bypass the system in order to restore power, an overvoltage occurred. This resulted in the continued shutdown of the CNS/ATM operation and, worse, damage to the equipment.

The overvoltage occurred due to: (1) a floating neutral or the neutral wire of the circuit is disconnected from its source and (2) the lack of power frequency overvoltage protection.

At 12 noon, based on data logs, the UPS was back online. ALPTs performed voltage checks and found them at normal levels. All circuit breakers were then switched on. However, sparks and smoke were observed at the AMHS and Geo-Stationary Satellite. One circuit breaker was turned off after they found it had an overcurrent of 344 volts.

The independent audit team found that the protective casing of the line side terminal (the wire that connects the incoming power source) showed signs of overheating. This is evident from the black and gray portion on one of the wires. The audit team postulates that this is an indication of loose termination or the connection due to a lack of regular inspection and maintenance by competent personnel.

## **B. SYSTEM FAILURE IN THE CNS/ATM CAUSED THE SHUTDOWN**

At its root, the New Year's Day Air Traffic fiasco happened due to a ***system failure*** in the ***engineering design, maintenance, and personnel*** of the CNS/ATM. These three issues are interrelated and are often all present in the equipment issues that led to the power outage.

### **1. Engineering Design**

Engineering design issues may either be due to an improper design or a design intent violation. The improper design may be rooted in the lack of engineering guidelines during the project's Engineering, Procurement, and Construction phase under the general contractor or the lack of engineering competency of the designer. On the other hand, design intent violation refers to the failure of the project owner to carry out the design specifications under the operational procedures and maintenance guidelines.

The independent audit team found that the following engineering design issues contributed to the power outage:

- a. Lack of reliability standards which should identify the level of redundancy for a critical system and define the crucial emergency procedures such as the Mean Time Between Failure<sup>29</sup> and Mean Time To Repair<sup>30</sup>;
- b. Lack of engineering standards and guidelines on the protection coordination design of a UPS system; and
- c. Lack of engineering standards and guidelines on the overvoltage protection of equipment, particularly protection from a Power Frequency Overvoltage in a system.

These engineering issues were present in the equipment malfunctions that occurred before and during the New Year's Day incident.

First, there was a ***design intent violation in CAAP's failure to immediately repair or replace the AVR***. The UPS design intent included a power supply to the bypass line as regulated by the AVR. Under usual engineering practice, the Mean Time to Repair crucial equipment, such as an AVR, is eight (8) hours. At the time of the incident, the AVR had not been working for four (4) months already. Despite CAAP's commitment to repair it by February 9, the AVR was still not functioning during the audit team's inspection on February 13 nor in the inter-agency verification on February 15.

Second, the ***malfunctioning of the circuit breaker that led to the overvoltage also poses various engineering issues***. Instead of a loose connection, there may have been a circuit breaker failure. This may be caused by factory defects or mishandling during transport. However, the findings of the CICC panel of experts found that the breaker was functioning as intended. Consequently, the remaining cause may be an overdutied breaker. In an overdutied circuit breaker, available current is higher than the short circuit capacity of the breaker. This may be caused by the wrong selection of the device due to the lack of engineering guidelines by the contractor or the lack of engineering competency in the design.

There was also no protection against overvoltage in case of a floating neutral and loose connection in the circuit breaker. This can be traced to the lack of engineering guidelines and equipment on power frequency overvoltage protection during the engineering, procurement, and construction with the contractor.

Third, the ***restoration of power during the outage could have been carried out faster through appropriate troubleshooting and maintenance***

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<sup>29</sup> *Mean Time Between Failure* shows the average expected number of hours the equipment runs before the system breaks down.

<sup>30</sup> *Mean Time to Repair* shows the expected time an equipment is put back into service from the time it failed.

**guidelines.** The audit team recommends a simple step-by-step procedure that should be available and taught to the technicians onsite. The absence of such an established procedure can be inferred from the various bypass and remedial measures done by the personnel during the incident.

Lastly, a **redundancy or functional backup system was not part of the original design intent.** This should have been established as well during the engineering, procurement, and construction phase under the contract. Such redundancy is a necessary component of a critical installation like the CNS/ATM which handles the navigation service of the entire country.<sup>31</sup>

The audit team also found other engineering design issues within the CNS/ATM though indirectly related to the air navigation equipment. One was the absence of fire suppression measures where some of the crucial components are located. Another issue is the lack of proper explosion-protection-rated lighting and exhaust systems in the equipment rooms.

## **2. Maintenance**

### **a. Lack of a Regular Maintenance Program**

During the January 12 Senate public hearing, CAAP claimed that its personnel conducted periodic maintenance checks daily, weekly, monthly, and yearly. Each technician also followed the protocols based on their training and the posted maintenance checklist and recorded such actions in daily logs.

Contrary to these claims, the audit team identified many crucial maintenance lapses that led to the power outage. The findings herein are further supported by the findings of CAAP's Safety Investigation Team composed of personnel from the Aerodome and Air Navigation Safety Oversight Office.<sup>32</sup>

First, there was an **inadequate maintenance program on critical CNS/ATM equipment** based on the findings of both CAAP's Safety Investigation Team and the Senate's independent audit team.

According to the audit team, the short circuit on the PTS shows a lack of an extensive maintenance program. Excessive heating caused by loose termination/connection can be addressed through regular inspection and

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<sup>31</sup> This is discussed more extensively in subtopic (C) CAAP FAILED TO PRIORITIZE THE CREATION OF AN INDEPENDENT REDUNDANT SYSTEM.

<sup>32</sup> CAAP Safety Investigation Team submission dated 08 February 2023. *01 January 2023 Air Traffic Management Center (ATMC) System Outage: Executive Summary.*

maintenance. One of the most critical monitoring methods is the regular conduct of thermal inspection and/or scanning. This could have been used to detect any heating in the equipment before any damage occurred.

Other regular but important measures include routine inspection of circuit boards and regular vacuum-cleaning with proper equipment. These are preventive measures that should have been followed beforehand to prevent any outages.

The CAAP Report noted that the remaining budget for Air Navigation Services in the 2022 Annual Procurement Program was only P500.00. The diagnosis fee alone for the repair of the AVR costs P75,000.

The independent audit team also highlighted the need to follow manufacturer recommendations on spares and life cycles of equipment. According to P2RO Inc., critical parts of the UPS system are time-sensitive or have pre-determined lifespans. Even if they are not showing signs of defect, they should be replaced according to their specified life cycle.<sup>33</sup>

- 1.) Alternating Current Capacitors - seven (7) years
- 2.) Direct Current Capacitors - five (5) years
- 3.) Fans/Blowers - four (4) years
- 4.) Power Control Board - six (6) years
- 5.) Batteries - three (3) to five (5) years

Second, there were ***no troubleshooting guidelines*** that could have aided technicians and engineers in addressing any system, power, or equipment issue. A proper maintenance program should contain procedures for both regular operations and emergencies or abnormal situations. Without such emergency procedures, personnel could not immediately identify the problem in the equipment and restore the power.

The audit team found no step-by-step guidelines in the equipment rooms of the CNS/ATM. CAAP's investigation report even noted that there was an inaccurate wiring diagram posted as a job aid for the UPS which could have led to an inaccurate analysis of the problem and further delayed the restoration of power.

Third, the audit team found that CAAP has **not yet complied with the required energy audit**. Under R.A. No. 11825 or the "Energy Efficiency and Conservation Act" enacted in 2016, designated establishments are required to, among others, conduct an energy audit every three (3) years, set up programs for energy

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<sup>33</sup> P2RO Inc. submission dated 12 January 2023. *Position Paper on the NAIA Air Traffic System Glitch Incident*.

efficiency and conservation, and employ a Certified Energy Conservation Officer or Certified Energy Manager. A designated establishment is a private or public entity in transport, public works, or other sectors identified by the Department of Energy as energy-intensive for having an annual energy consumption of at least 500,000 kilowatt-hours (kWh).

Based on CAAP's submissions, the facility had a total energy consumption of 2.1 million kWh in 2022 and 2.02 million kWh in 2021. The audit team asserts that CAAP thus qualifies as a designated establishment and should undergo the energy audit as well as use energy efficiency technologies to improve its operations.

**b. Lack of a Third-Party Maintenance Service Provider**

During the January 12 Senate public hearing, CAAP agreed with the Senators' inquiry about hiring a third-party maintenance provider. Previously, the CNS/ATM was maintained by Sumitomo-Thales as part of the warranty. Since the warranty expired in October 2020 up to the present, maintenance has been handled solely by CAAP. Notably, CAAP admitted that the UPS has not been checked in the last two (2) years by its supplier, P2RO.

During the Senate hearing, ANS Chief Engr. Balucating claimed that the CNS/ATM has not been upgraded as the software can still provide the required service. In contrast, supplier Thales recommended that the software should be updated at least yearly to maintain pace with international standards.



**MR. BALUCATING.** ... iyong application na ginagamit ng Air Traffic Service ay sufficient naman po na ma-provide iyong required service.

**THE CHAIRPERSON (SEN. POE).** Tingnan ninyo, sir, iyong isang UPS system ninyo, diumano ay naririnig ninyong maingay na, nasira iyong blower, pero sabi ninyo ay umaandar pa naman so itinuloy-tuloy ninyo hanggang ito na nga iyong mga nangyari. Tapos ito, sasabihin mo, "Eh, kasi okay pa naman." So, at what point will you say, "No, it is really crucial that we update it already," until something like this happens?

**MR. BALUCATING.** Madam Chair, iyong mga application po na bago po, iyon po iyong kailangan ma-upgrade. Pero hindi pa naman po natin kailangan iyong application na iyon kasi mayroon pa tayong mga kakulangan. So, sa ngayon po...

**THE CHAIRPERSON (SEN. POE).** Hindi natin kailangan iyong application na iyon kasi mayroon tayong mga—?

**MR. BALUCATING.** Iyon ginagamit po natin ngayon is sufficient pa para ma-provide iyong required service na kinakailangan po.

*(page 221, Senate Committee on Public Services Hearing Transcript)*

However, negotiations for any maintenance agreement with Sumitomo-Thales faced the major roadblock of an outstanding claims issue between the contractor and DOTr. This dispute was unresolved for the last three (3) years.

Sumitomo confirmed that they did push through with the maintenance agreement because of the issue. The contractor has a total claim worth P986,653,157.81. On the other hand, DOTr is seeking to claim P644 million for delay damages.

**MR. NUSKE.** So, Madam Chair, the outstanding claims, particularly in the case of the suspension claim, has been outstanding since 2013. So, the position for Thales is that we are not willing to enter into a new contract until we have resolved the outstanding claims of the existing contract. I should also add that the support service that we are discussing with CAAP relates to the ITMS software ...  
/cmn/alcc/agc

*(page 116, Senate Committee on Public Services Hearing Transcript)*

DOTr Secretary Jaime Bautista narrated that he had already met with JICA and the Embassy of Japan to discuss these claims. The parties agreed to constitute a Claims Resolution Committee (CRC) to review the matter. The CRC issued the resolution on the Delay Damages claim last 30 January 2023. JICA has issued its "No Objection" letter on the matter. Contractors sent a letter last 01 February 2023 indicating that they are accepting the Engineer's recommendation on the Suspension Claim and that they are withdrawing their Prolongation and Price Escalation claims. The CRC met last 03 February 2023 to discuss the Contractors' letter and will issue a resolution on the other claims on or before 17 February 2023.

### **3. Personnel**

The Committee found several personnel issues that contributed to the system failure in the CNS/ATM operations.

#### **a. No certified training and validation on handling equipment**

Relevant personnel had ***no certified training and regular training validation***, particularly on the operation of the AVR, UPS, and generator systems.

Based on CAAP's Safety Investigation Team Report, CAAP personnel were unfamiliar with the power system design, particularly the need for the AVR to trigger the bypass function of the UPS. The audit team took particular note of the fact that it took around 1 hour and 40 minutes for the personnel to turn on the maintenance bypass of the AVR to supply power to the bypass line. This delay could have been avoided if proper training and procedures were provided to the personnel.

The CAAP report also found that technical personnel lacked training, systems knowledge, and proficiency in the operation and maintenance of the ATMC power

supply system resulting in insufficient corrective maintenance procedures. CAAP personnel also lacked correct operation and maintenance manuals for the hardware and processes of the AVR and UPS. Consequently, power plant personnel could not immediately identify faults or restore the operations of the system.

CAAP's internal report also confirmed that there was an insufficient transfer of knowledge from the third party maintenance service providers before the turnover to the agency. The audit team found that personnel in the affected areas only received basic maintenance instructions from a mere half-day-long orientation to handle the equipment.

**b. No proper maintenance training**

There was ***no proper maintenance training*** for all relevant departments and personnel. In particular, the audit team raised that the personnel should have been trained to identify problems in the power supply as well as to detect and prevent overheating of the PTS and loose terminations in the circuit breakers.

The CAAP Report found that technicians were not familiar with the circuit breaker design nor taught about the procedures in turning on the circuit breaker series. This was evident in the failure to do the critical procedure of checking the output voltage before turning on the circuit breakers.

There was also no clear delineation of responsibilities and no coordination between the CNS System Office and power plant personnel. The CAAP Report evaluated that this should have made the personnel aware of any necessary precautions to prevent the incident from escalating.

**c. Lack of qualified personnel**

The CAAP CNS/ATM is an institutional building ***covered by the professional electrical personnel requirements of R.A. No. 7920 or the "New Electrical Engineering Law"***.

Under Section 33 of said law, every electric plant, institutional building, or other installation where persons and properties are exposed to electrical hazards must have at least one (1) professional electrical engineer or registered electrical engineer. For connected loads of up to 500 kilovolt-amperes (Kva) and employing voltage up to 600 volts, there should be one (1) registered master electrician. The law further requires that additional qualified personnel shall be employed to ensure safe operation and safeguard public welfare, life, and property. When the operation requires more than

one shift of personnel every 24 hours, the minimum complement of qualified personnel shall be employed in each shift.

CAAP has a power plant with a connected load of 1,500 Kva. CAAP submissions show that the power plant has two (2) registered master electricians, one of whom was on duty during the New Year's Day power outage. As CAAP is a critical installation with a highly connected load, the audit team raised that CAAP should consequently hire more electrical engineers and ensure their presence in each shift.

### **C. CAAP FAILED TO PRIORITIZE THE CREATION OF AN INDEPENDENT REDUNDANT SYSTEM**

The CNS/ATM had no functioning backup system. Another independent CNS/ATM that can be a backup or that can work together with the current system has long been recommended. However, this was not prioritized by CAAP and DOTr management.

#### **1. Lack of a Functional Backup or Redundancy**

First, the CAAP Safety Investigation Team found that the ***entire ATMC lacked effective independent backup systems*** from air and ground communications and internet connections to the commercial telephone lines and intercom.

In particular, there was no independent and continuous reliable internet for ATM systems. This led to a delay in the issuance of the NOTAMs. Based on the timeline, the power went down at 9:49 am which caused the communications, radio, radar, and internet to all go offline. The first NOTAM was only issued at 10:40 or almost an hour later.

In its submission to the Committee, CAAP claimed that air traffic controllers (ATCs) were able to land thirty-nine (39) aircrafts despite the disruption. While the Committee lauds the skills of the personnel, it is concerning that the lack of available backup communications led the ATCs to use their personal mobile phones to contact other ATS facilities outside of Manila to ensure the safe landing or transfers of all airborne aircraft.<sup>34</sup>

Second, the Senate audit team found that the ***CNS/ATM power system has no functional redundancy.***

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<sup>34</sup> CAAP Safety Investigation Team submission dated 08 February 2023. *01 January 2023 Air Traffic Management Center (ATMC) System Outage: Executive Summary.*

During the Senate hearing, Air Traffic Service Assistant Director Marlene Singson stated that there is only one (1) CNS/ATM system and no independent backup system. Engr. Balucating, however, asserted that the power is supported by two (2) UPS units that can back up each other and two (2) power sources, Meralco and CAAP's own generator.

However, the audit team found that although CAAP has two (2) power sources, both the primary and secondary backup communication, navigation, and surveillance equipment go through the UPS. As designed, both UPS units supply a common distribution panel that would allow one to continue if the other fails. Since the UPS units are connected to the common distribution panel, any fault on the panel or its load will affect both units. Consequently, a single fault in the equipment can and did cause the shutdown of the entire system. The CNS/ATM had no back-up system to power its critical equipment.

## **2. Lack of Urgency in the Completion of CNS/ATM Phase 2 Project**<sup>35</sup>

Discussions on the procurement of a backup CNS/ATM system was initiated as early as 2019 or right after the CNS/ATM System Development project was turned over to CAAP. In February 2019, former Director General Jim C. Sydiongco met with representatives from the Embassy of the United States of America during which the United States Trade and Development Agency (USTDA) offered assistance to finance a backup system.

After this, CAAP sent a Project Concept Note to USTDA regarding the development of an independent CNS/ATM system which must duplicate the operations of the existing system but has more advanced technological specification. This backup must have 100% radar coverage to efficiently operate air traffic which should include, but not be limited to "correspondent training, requisite linkages, Search and rescue functions and capabilities, military cross operations, aeronautical information service, airspace design software, and hardware among others."<sup>36</sup> The PCN also sets parameters in the selection of the location for the backup system. Considering the distinct vulnerability of the present system being housed together with other air navigation systems in the ATMC in the event of a catastrophic occurrence (like an earthquake), CAAP's priority is to look for a secure location away from active fault lines.

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<sup>35</sup> CAAP submission dated 14 February 2023. *Answers to the Committee's queries in a letter dated 24 January 2023.*

<sup>36</sup> Page 8. CAAP submission dated 14 February 2023. *Answers to the Committee's queries in a letter dated 24 January 2023.*

In 2020, prior to the pandemic, the meetings with USTDA continued but due to losses incurred and the need to remit to the national government as a contribution to pandemic efforts, CAAP was only able to resume internal discussions in 2022 when their revenue stream began recovering.

Eventually, it was decided that instead of a backup, the proposed system will now be the main CNS/ATM facility and the existing one will be designated as the backup, considering the age of the latter. With this re-envisioning, the project is now called the "CNS/ATM Phase 2 Project" slated for completion in 2025. With the New Year's Day incident at hand, the project is now being expedited to a shorter timeline. Its status is now in the process of initiating the procurement of the Feasibility Study.

On the other hand, to fast-track the improvements needed for the existing CNS/ATM, the following efforts were undertaken: (a) CAAP met with the Canadian Embassy sometime in September 2022 to explore possible government-to-government partnership in relation to air navigation; (2) CAAP also initiated a funding request from the DOTr last 27 December 2022 amounting to Php 1,336,000,000.00 for the upgrading and replacement of a few critical equipment; and (3) CAAP is seeking to procure an "Ultimate Fallback System" which shall act as a redundancy for the Flight Plan Server which is used to send and receive flight plans and ensure there is no disruption in the transmittal of said data.

In the interim, NEDA already approved the utilization of the loan balance from JICA for the procurement of upgrades, spare parts, and a third-party maintenance service provider.

### **3. Previous air navigation facilities and equipment cannot be utilized**

During the January 12 Senate public hearing, former CAAP Director General Lt. Gen William K. Hotchkiss mentioned the existence of a Manila Area Control Center (MACC), which was meant to replace the Eurocat 2000 as the air control center of CAAP. However, the Php 511 million project remains idle at the CAAP compound, according to COA observation.<sup>37</sup>

According to COA in their 2019 report, the MACC Phase 1 and 2 projects remained idle and unutilized for nine years since their completion. The first phase which costs Php 297,151,010 started in September 2009 and finished in February 2010, while the second phase which costs Php 190,592.730 began in June 2010 and finished in November 2010. Then-DOTC procured the MACC from a Czechoslovakian

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<sup>37</sup> Aurelio, J. (22 October 2020). *COA: Idle P487-M air traffic control center going to waste*. <https://newsinfo.inquirer.net/1351003/coa-idle-p487-m-air-traffic-control-center-going-to-waste>

firm CS-Soft which the Philippine Air Traffic Controllers Association (PATCA) said has not yet proven its name in developing “reliable and dependable air traffic management systems”.<sup>38</sup>

According to Lt. Gen. Hotchkiss, the MACC was not utilized because it was not commissioned at all due to several technical and safety issues. PATCA further noted that MACC’s computers would display questionable data on the aircraft’s position and altitude. This statement is confirmed by COA which tagged it as allegedly below the standards required by international civil aviation. Even DG Tamayo recognized these.

**MR. TAMAYO.** ... kasi ang dami hong defects, ang dami issues kaya ho hindi pumasok.

**SEN. EJERCITO.** So, that’s the reason it was not commissioned?

**MR. TAMAYO.** It was not commissioned.

**SEN. EJERCITO.** So, we spent about 500 million that was never commissioned or never was operational.

*(page 213, Senate Committee on Public Services Hearing Transcript)*

When DOTr commissioned the CNS/ATM Systems Development project, the MACC became outdated and obsolete. It is worth noting that the MACC also halted the CNS/ATM project when in 2011, part of the notice of disallowance was due to the procurement of the MACC.

## **D. THE ATMC LACKS NECESSARY SECURITY MEASURES**

### **1. Facility Security**

The January 12 Senate public hearing revealed that no closed-circuit television (CCTVs) were installed in the CNS/ATM system room. When Senator Juan Miguel Zubiri requested CAAP to submit CCTV footage in the areas where the relevant equipment is located, DG Tamayo revealed that there are none but stressed the rigid security protocols to enter the ATMC building.

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<sup>38</sup> Yu, S. (13 January 2023), Gov’t purchased P511-M Manila air traffic system in 2009 but never used it. <https://www.rappler.com/business/government-purchased-manila-air-traffic-system-2009-never-used-it/>

**MR. TAMAYO.** Madam Chair, unfortunately, we don't have any CCTV coverage inside the equipment room. But in other areas of the facility, we have.

**THE SENATE PRESIDENT.** Are you trying to tell me, Director General, that in the most sensitive portion of the functions and navigational equipment of our country, which is the CNS/ATM room, we have no CCTV? So you cannot tell if somebody actually went inside it and sabotaged the equipment, Director General?

**MR. TAMAYO.** That is correct. We have implemented very strict security protocols as far as the CNS/ATM is concerned and, more specifically, the ATMC building. Not just anybody can enter. In fact, you need a special ID or key just to be able to have access, aside from having 24/7 security at all times.

*(page 98, Senate Committee on Public Services Hearing Transcript)*

As of this writing, CAAP has already installed CCTVs in critical equipment rooms of the CNS/ATM which were observed during the February 6 ocular inspection at the ATMC. A total of 16 CCTVs were added to the facility, adding to the 26 CCTVs installed prior to the incident.

In the interagency report, the National Intelligence Coordinating Agency confirmed there were no indicators of possible sabotage or third-party interference. Nevertheless, they intend to conduct a security survey and inspection of CAAP's facilities, and security briefings to address security gaps.

## **2. Cybersecurity**

The interagency report revealed that CNS/ATM system has several vulnerabilities which include the lack of security policies in its power system, a single firewall for the whole network infrastructure, outdated windows operating system, and the non-maintenance by the supplier or even CAAP's own information technology (IT) team. However, the report concluded that despite these vulnerabilities, no data was compromised during the incident.

DICT and CICC confirmed that a cyber-attack on the CNS-ATM is remotely possible as the equipment which caused the power outage has no cyber network



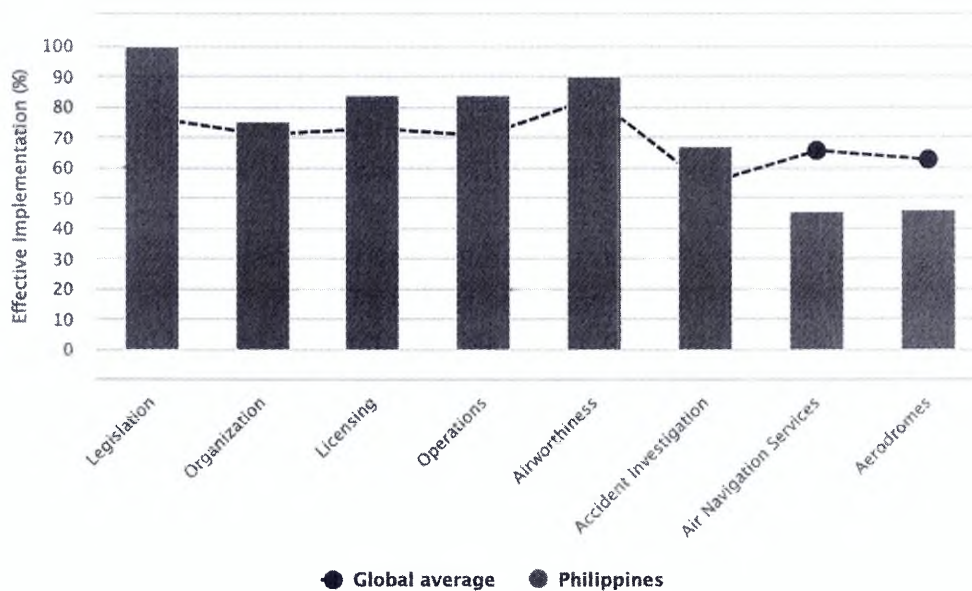
access. However, a conclusive finding negating the cyber-attack will depend on the UPS data logs sent to Turkey for examination.

## E. CAAP FELL SHORT OF ICAO AIR NAVIGATION STANDARDS

### 1. Low Audit Rating in Air Navigation Services

During the January 12 Senate public hearing, Senator Win Gatchalian inquired about the Philippines' low score in the audit of ICAO.<sup>39</sup> CAAP emphasized that the country obtained an overall Effective Implementation score of 69% which is above the global average of 67.6%. CAAP further explained that the categories where the Philippines scored low are still up for validation in 2024 and are not yet considered in the recent audit computation.

This ICAO rating pertains to its Universal Safety Oversight Audit Programme to monitor states' fulfillment of their safety oversight obligations under the recommended procedures in the Convention on International Civil Aviation (CICA). Below, it can be seen that the country's rating for air navigation services and aerodromes fall way below the global average.



(2022 ICAO Safety Audit Results)<sup>40</sup>

<sup>39</sup> Page 191. (12 January 2023). *Senate Committee on Public Services Hearing Transcript*.

<sup>40</sup> ICAO Safety Audit Results: USOAP interactive viewer. <https://www.icao.int/safety/pages/usoap-results.aspx>

Despite CAAP's claims of a passing overall score, it should be noted that for Air Navigation Services (ANS), the country only scored 45.28% while the global average is 65%. ICAO provided the following recommendations to address the low rating:

1. Separate the function of CAAP as a regulator and operator in aerodromes to which CAAP is supportive and believes that by focusing on their regulatory function, they would be more efficient and ICAO compliant;
2. Ensure that all aerodromes used for international operations have certification and oversight; and
3. Address the insufficiency of aerodrome inspectors.

CAAP asserts that the country's low rating in ANS is mainly due to the agency being both regulator and operator of airports. As to insufficient technical personnel, CAAP is allegedly in the process of reorganization to address this issue.<sup>41</sup>

The Committee stresses that the Philippines has legal obligations in CICA as it signed and ratified it in 1954, as well as several other related protocols and conventions.<sup>42</sup> In particular, Article 28(a) of the CICA requires that each contracting State undertake, so far as it may find practicable, to provide air navigation facilities in accordance with the standards and practices recommended or established under the Convention.

Compliance with ICAO standards is crucial for Philippine air travel. The Philippines already has a history of non-compliance. In 2008, the United States Federal Aviation Administration (FAA) downgraded the country from Category 1 to Category 2. Consequently, the European Union also blacklisted Philippine carriers while Japan and Korea banned them from expanding operations in their respective territories. Notably, CAAP was created by law in 2008 after the FAA raised serious concerns about the inability of the then Air Transportation Office to meet ICAO standards.<sup>43</sup> It took the Philippines six (6) years to return to Category 1 status in 2014.<sup>44</sup>

An International Aviation Safety Assessment, a Category 2 rating means that the FAA found that a country's civil aviation authority (CAA) does not provide safety oversight in accordance with ICAO standards under the CICA. The rating is applied in the presence of one or more deficiencies such as when the CAA does not have

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<sup>41</sup> CAAP submission dated 14 February 2023. *Answers to the Committee's queries in a letter dated 24 January 2023.*

<sup>42</sup> ICAO. Status of the Philippines with Regard to International Air Law Instruments. [https://www.icao.int/secretariat/legal/Status%20of%20individual%20States/philippines\\_en.pdf](https://www.icao.int/secretariat/legal/Status%20of%20individual%20States/philippines_en.pdf)

<sup>43</sup> Ronda, R. (16 January 2008) *RP carriers to suffer from FAA downgrade*. Philstar. <https://www.philstar.com/headlines/2008/01/16/38912/rp-carriers-suffer-faa-downgrade>

<sup>44</sup> Reuters. (10 April 2014). *United States upgrades Philippine civil aviation rating* <https://www.reuters.com/article/us-philippines-aviation-idUKBREA390VY20140410>

adequately trained and qualified technical personnel, or the CAA does not provide adequate inspector guidance to ensure enforcement or compliance with minimum international standards.<sup>45</sup>

A Category 2 downgrade has alarming consequences for the aviation sector.<sup>46</sup>

First, the Philippines would be broadcasted as having '**significant safety concerns**'. This means that the State is not providing sufficient safety oversight in accordance with ICAO standards. Consequently, Philippine-registered aircraft and personnel would have to undergo heightened inspections abroad and be subjected to delays in flights.

Second, other countries may impose **restrictions on commercial flights**. The United States and European Union prohibits any new airline services or routes for states with a Category 2 rating. Its citizens can also be prohibited from using Philippine-registered airlines or prevented from claiming insurance on those flights.

To illustrate, FAA downgraded Mexico to Category 2 in 2021. Mexico is estimated to lose USD 7 billion from its Gross Domestic Product and lose over 170,000 direct jobs and 780,000 indirect jobs from the downgrade. Mexican airlines lost an estimated 65% or USD 9.32 billion in revenues.<sup>47</sup>

If CAAP fails to address its compliance with ICAO standards, particularly air navigation, this may put the Philippines at risk again of suffering similar or worse consequences to its airline industry.

## **2. Lack of a Master Contingency Plan**

The Committee found that CAAP failed to create and establish the Contingency Plan required in ICAO Regulations. Under Section 2.32 of ICAO Annex 11 to the CICA, air traffic service authorities are required to develop and promulgate contingency plans for implementation in the event of any disruption to air traffic services.

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<sup>45</sup> FAA. *IASA Results Definitions*. <https://www.faa.gov/about/initiatives/iasa/definitions>

<sup>46</sup> The current list of FAA Category 2 countries include Bangladesh, Curacao, Ghana, Malaysia, Mexico, all supervisees of the Eastern Caribbean Civil Aviation Authority (Antigua & Barbuda, Dominica, Grenada, St. Lucia, St. Vincent & the Grenadines, and St. Kitts & Nevis), Pakistan, Thailand, Venezuela, Russia, and Mexico.

<sup>47</sup> Hanna, S. (01 September 2022). *Mexico's Category 2 Safety Rating Continues to Harm Aviation*. Mexico Business <https://mexicobusiness.news/aerospace/news/mexicos-category-2-safety-rating-continues-harm-aviation>

This plan provides the procedures in case of CNS/ATM system failure or degradation as well as severe weather, military activity, volcanic ash clouds, and other similar events. Among the contents of the contingency plans are:<sup>48</sup>

- a. Composition of the Central Coordinating Committee (CCC) composed of top-level management officers (CAAP Director General and representatives from DOTr, PAG-ASA, DND, military, airline representatives, pilot groups, etc.) who activate the contingency plan;
- b. Procedures of the Air Traffic Management Operational Contingency Group (OCG) composed of CAAP officers who carry out the tactical and monitoring procedures of the plan; and
- c. Protocol for pilot operators containing the contingency procedures and routes.

In its submissions to the Committee, CAAP asserted that it has taken steps to establish contingency plans through its issuances such as the Civil Aviation Regulations - Air Navigation Service, Manual of Standards for Air Traffic Services, and Emergency Response Plan. It also claimed to have established emergency procedures and contingency plans for each of its facilities in airports around the country.

However, the Committee found that CAAP has no official Contingency Plan published in accordance with ICAO standards. The latest Asia/Pacific Region Air Traffic Management Contingency Plan issued in 2019 shows that the Philippines only has a "Working Draft" of the Contingency Plan required from each signatory state. ICAO rated its readiness for CNS/ATM system failure and other disruptions as "Marginal".<sup>49</sup> In its letter to the Committee, CAAP admitted that it is still working on producing a master contingency plan that would contain all emergency procedures for all possible crisis scenarios.<sup>50</sup>

CAAP's Safety Investigation noted that the absence of an established CCC and OCG hampered the emergency response to the power outage. The CCC or OCG could have expediently and effectively disseminated information to all concerned parties through the proper communication network.

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<sup>48</sup> Civil Aviation Authority of Thailand. (2021). *ATM Contingency Plan for Flights Transiting the Bangkok FIR*. [https://www.caat.or.th/wp-content/uploads/2022/12/ATM-Contingency-Plan-Issue-02-Rev00-Eff-30Dec2021\\_2.pdf](https://www.caat.or.th/wp-content/uploads/2022/12/ATM-Contingency-Plan-Issue-02-Rev00-Eff-30Dec2021_2.pdf); AirNav Indonesia. *Indonesia Air Traffic Management Contingency Plan*. <https://airnavindonesia.co.id/cfind/source/files/atm-contingency-plan/ujung%20pandang%20fir%20atm%20cp%20level%20i.pdf>

<sup>49</sup> ICAO. (August 2019). *Asia/Pacific Region ATM Contingency Plan*. <https://www.icao.int/APAC/Documents/edocs/Regional%20ATM%20Contingency%20Plan%20Version%203.0.pdf>

<sup>50</sup> CAAP submission dated 14 February 2023. *Answers to the Committee's queries in a letter dated 24 January 2023*.

The Committee also found that CAAP was aware early on of the necessity to create a Contingency Plan. A Technical Working Group (TWG) was created to prepare it as early as April 2017 or before the CNS-ATM was even completed in October of that year. TWG recommendations included prioritization of the creation of the CCC and OCG.<sup>51</sup>

## **F. CAAP LAWS LIMIT ITS EFFICIENCY AND TRANSPARENCY**

CAAP's Charter and applicable laws affects its efficiency and transparency. Currently, it functions as a regulator, operator, and investigator. CAAP is also not able to fully exercise its fiscal autonomy and use its savings to modernize its equipment. Other existing laws also affect its recruitment and retention of personnel.

### **1. Dual role as Regulator and Operator**

Under Sec. 2 of R.A. No. 9497 or the "Civil Aviation Authority Act of 2008", the CAAP is given jurisdiction over the restructuring of the civil aviation system, and the promotion, development, and regulation of the technical, operational, safety, and aviation security function.

Consequently, CAAP is mandated to plan, design, acquire, establish, construct operate aerodromes and air navigation facilities. Alongside this, it exercises regulatory oversight over these facilities such as prescribing air navigation safety standards, supervising the registration of aircraft, and setting rules on the safe transport of goods and materials by air.

CAAP can also investigate any non-compliance with its regulations. Under Sec. 24, the Director General, on his own or through a private complaint or Board initiative, can investigate, decide, and penalize violations. On the other hand, the Board has appellate and subpoena powers over the decisions of the Director General.

In its submission to the Committee, CAAP recognizes that it has conflicting responsibilities as both regulator and operator. CAAP operates and maintains 81 airports nationwide and performs oversight functions of at least seven (7) airport facilities under different authorities.

Based on position papers submitted to the Committee, relevant government agencies and stakeholders all support the separation of the roles of CAAP. In particular, NEDA noted that the need to separate conflicting functions of CAAP

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<sup>51</sup> CAAP. *Air Traffic Management Contingency Plan: Report by Technical Working Group under A.O. No. 090-17*. <https://caap.gov.ph/wp-content/uploads/2020/02/ATM-Contingency-Plan.pdf>

complies with Section 38 of its National Transport Policy. The immediate restructuring and rightsizing of CAAP will enhance its institutional capacity to perform its function and provide better resources while efficiently using its resources.<sup>52</sup>

## **2. Fiscal Autonomy**

CAAP is unable to fully utilize its earnings and savings to modernize its equipment.

Section 16 of the R.A. No. 9497 provides that CAAP enjoys fiscal autonomy which allows it to use all fees, charges, dues, assessments, and fines it collects to be used solely to fund its own operations.

However, under R.A. No. 7656 or the "Dividend Law", government-owned and -controlled corporations (GOCCs) are required to declare and remit at least 50% of their annual net earnings as dividends to the national government. CAAP was not among the GOCCs expressly exempted under this law.

In an Opinion dated 02 August 2016, the Department of Justice (DOJ) stated that CAAP is a ***GOCC exempted from the coverage of the Dividend Law and should not be obliged to remit dividends***. CAAP is a GOCC that is an independent regulatory body possessing corporate attributes. Its exemption from the Dividend Law stems from its Charter, giving it fiscal autonomy. This special law and the legislative intent behind it should then be recognized over the general Dividend Law.<sup>53</sup>

During the January 12 Senate public hearing, however, CAAP narrated that it has been remitting dividends to the government amounting to P22.4 billion from 2016 to the present.<sup>54</sup> Committee Chairperson Grace Poe pointed out that this could have been used to secure all the necessary equipment and upgrades to modernize its system.

## **3. Employment Issues**

CAAP has been experiencing employee recruitment and retention issues due to limitations set by existing laws. Under R.A. No. 10149 or the "GOCC Governance Act of 2011", officers and employees of GOCCs like CAAP are covered by a Compensation and Position Classification System. CAAP employees are also under the coverage of R.A. No. 11466 or the "Salary Standardization Law".

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<sup>52</sup> NEDA. *NEDA comments on Senate Bill (SB) Nos. 1003 and 1121*. (11 January 2023).

<sup>53</sup> DOJ Opinion No. 049, s. 2016. (02 August 2016).

<sup>54</sup> Page 174. (12 January 2023). *Senate Committee on Public Services Hearing Transcript*.

First, based on the Committee's investigation, CAAP's technical personnel have **low salaries and benefits despite the high qualifications** required. The low entry-level salary has made recruitment difficult. Worse, other countries have been successfully recruiting trained CAAP personnel with substantially bigger compensation. According to CAAP, the entry-level salary is only around PHP 40,000-50,000 for air traffic controllers while states in the Middle East offer at least PHP 300,000 and accommodations for the entire family. Personnel in other departments in the CNS/ATM facility are also recruited abroad or by other departments with offers of promotion and higher pay.

Second, many CAAP employees remain on **job order or temporary appointment for years**. According to its 2021 COA Report, CAAP's 6,869 total personnel is composed of only 2,762 regular employees while the contract of service personnel amounts to 4,107.<sup>55</sup> During the 12 January Senate public hearing, Senator Joel Villanueva noted how the number of job orders increased by 59.8% while regular employees decreased.

This issue affects vital employees of the CNS/ATM. The audit team found that several technical personnel operating the air navigation equipment and the power plant, including those who were present during the incident, were contractual workers.

The Committee investigation revealed that CAAP entered into an institutional manpower outsourcing contract with LServ Corporation. Based on the 2022 Terms of Reference, LServ supplies CAAP with a total of 3,933 technical, non-technical, and contract of service personnel to support its day-to-day operations. CAAP states that it had to outsource substantial manpower due to the inadequacy of its available regular plantilla positions in critical technical, operational, and inspectorate services for the airports it operates nationwide. The contract further provides that since manpower comes from a private contractor, CAAP has no employer-employee relationship with the outsourced personnel and is free from labor-related liabilities.<sup>56</sup>

Based on the Committee's review of CAAP personnel submissions, most ATMC personnel have to go through two (2) to five (5) or more years as job order hire of either CAAP or LServ Corporation. Only a selected few achieve regular appointment due to the limited number of available positions.

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<sup>55</sup> COA. (2021). *CAAP Executive Summary*. [https://caap.gov.ph/wp-content/uploads/2022/07/03-CAAP2021\\_Executive\\_Summary.pdf](https://caap.gov.ph/wp-content/uploads/2022/07/03-CAAP2021_Executive_Summary.pdf)

<sup>56</sup> CAAP. (22 February 2022). *Bid Bulletin No. 2*. <https://caap.gov.ph/wp-content/uploads/2022/02/BB-No.2-Manpower-Outsourcing-with-attachments.pdf>

CAAP responded that they are currently undergoing an employee reorganization to resolve the issue on job orders. Target implementation is in the 1st quarter of 2023. In terms of attractive remuneration to address the issue of retention, CAAP agrees with the need to give higher pay but claims that is unable to do so as existing laws have to be followed.



### III. RECOMMENDATIONS

The Committee investigation focused on finding the cause of the glitch and identifying the areas of improvement for our air navigation system.

It should be recognized that the CNS/ATM was a project spanning several administrations and changes of heads. Consequently, the system failure that led to the glitch started from the project's inception in 1997 up to its present operations. The CNS/ATM and its system and equipment issues were handled by at least six presidents, eleven DOTr and DOTC Secretaries, eight CAAP Directors, four assistant secretaries of the ATO, and many batches of poorly equipped engineers under them. CAAP personnel on the ground did the best they could with the equipment, guidelines, and training given to them.

The January 1 "systems failure" was indeed a confluence of factors and errors. Experts likened it to the planets aligning albeit with an unfortunate consequence. It's rare but it is expected to happen and will continue to happen if nothing is done about the problems besetting our air traffic system. There is much work needed for a better system where travel in our airspace is no longer shut down by causes which could have been avoided.

The Committee thus submits the following recommendations as a form of corrective and preventive action to the deficiencies and inefficiencies in the procedures and protocols of the CAAP as revealed by the 01 January 2023 NAIA technical glitch.

The Committee's recommendations are classified into three:

- a. *Technical remedies* to improve the technical capacity of CAAP's infrastructure, facility, and personnel including their ability to respond properly to technical issues; and
- b. *Legislative Action* to address other non-technical aspects affecting the administration and operation of CAAP's air traffic management;
- c. *Other recommendations* to address other related issues presented in this report.

#### ***Technical Remedies***

1. To direct CAAP to ***urgently carry out the procurement, upgrade, replacement, and/or repair of equipment.***
  - a. Replace the AVR and together with it, install isolation switchgear to allow complete isolation of equipment during maintenance and emergency;
  - b. Update/modernize Air Navigation Service Equipment;

- c. Procure backup supplies of critical equipment and spare parts such as, but not limited to, circuit breakers and cooling blowers of the UPS;
  - d. Procure an Automatic Fire Suppression System for the UPS and Battery Rooms; and
  - e. Procure explosion protection-rated lighting fixtures, exhaust fans, and hydrogen exhaust system in the Battery Room.
2. To urge CAAP to conduct a power quality analysis and audit, review the protection design of power systems, review and audit the grounding system design and installation to verify the integrity and as-built condition, conduct a vulnerability assessment and penetration test on all equipment and the entire CNS/ATM system, undergo an energy audit and other required energy efficiency measures under R.A. No. 11285, and perform periodic inspection and evaluation of electrical and safety measures on critical equipment;
  3. To compel CAAP to formulate target reliability metrics, maintenance program for all CNS/ATM equipment, troubleshooting procedures, and a master contingency plan as recommended by ICAO, and provide personnel training on these guidelines, regular validation for knowledge retention, and adequate tools to execute these guidelines;
  4. To direct CAAP to craft guidelines on regular backup of all event and maintenance logs of critical equipment such as the UPS and AVR, and pursue a time synchronization of all these logs either via Global Position System (GPS) or Network Time Protocol (NTP);
  5. To urge CAAP to fast-track the hiring of a **third-party contractor** for the maintenance of equipment and oversight of the CNS/ATM System;
  6. To urge CAAP to prioritize the **hiring of electrical engineers** and other technical personnel, as required by R.A. No. 7920 and recommended by the accrediting professional institutions;
  7. To direct CAAP to implement the following **redundancy measures**:
    - a. Fast-track the CNS/ATM Phase 2 project;
    - b. Use redundant/independent UPS to separately power a redundant power distribution panel;
    - c. Use redundant Low Voltage Switch Gear; and
    - d. Two Meralco services from two separate Meralco circuits and substations.

8. To urge CAAP to establish measures to ***promote personnel welfare*** and improve the agency's employee retention such as, but not limited to, competitive compensation, benefits packages, training, and promotions.
9. To direct CAAP to submit to this Committee as soon as possible the timeline and funding requirements of the following items tagged as urgent:
  - a. Conduct power quality analysis and energy audit;
  - b. Review the protection design of power systems;
  - c. Review and audit the grounding system design and installation;
  - d. Vulnerability assessment and penetration test on all equipment and the entire CNS/ATM system;
  - e. Periodic inspection and evaluation of electrical and safety measures on critical equipment
  - f. Formulate target reliability metrics;
  - g. Maintenance program and troubleshooting procedures for all CNS/ATM equipment;
  - h. ICAO-approved master contingency plan;
  - i. Personnel training, regular knowledge validation and adequate tools for execution (such as Calibrated Multi-testers, Thermal Scanners, Power Quality Meters) of items (g) and (h);
  - j. Immediate replacement of the AVR and installation of isolation switch gears;
  - k. Automatic Fire Suppression System for UPS Room and Battery Room;
  - l. Explosion protection-rated lighting fixtures and exhaust fans and hydrogen exhaust system for the Battery Room;
  - m. Redundancies for the CNS/ATM system, UPS, power distribution panel, low voltage switchgear, and Meralco circuits and substations;
  - n. Guidelines on regular backup, and time synchronization facility of all event and maintenance logs of critical equipment

### ***Legislative Action***

1. To urge Congress to again pass legislation creating a ***Philippine Transportation Safety Board***, an independent body that shall study transportation safety, and investigate land, sea, air, and rail accidents and incidents. This will relieve CAAP of being its own investigative body.
2. To urge Congress to pass legislation on ***strengthening the Civil Aviation Authority of the Philippines (CAAP)*** through an amendment of Republic Act No. 9497 or the law which created CAAP in 2008. CAAP must be exempted from the GOCC Governance Act and Salary Standardization Law to create competitive compensation packages for highly-technical personnel. CAAP's

fiscal autonomy must also be enhanced in order for them to maximize the use of their revenues for the improvement of their facilities, among others. This will also address the brain drain phenomenon in CAAP, a significant finding of the study, and increase the retention rate of its employees thereby harnessing expertise in such a highly technical line of work.

3. To urge Congress to pass legislation that separates the functions of the CAAP as an airport regulator and operator through the ***Philippine Airports Authority Act***. The proposal would make CAAP purely a regulator, one of the recommendations of the ICAO in their recent safety audit report.
4. To urge Congress to pass legislation to institutionalize the ***Air Passengers Bill of Right*** and, together with the DoTr and other relevant stakeholders, review the existing version under Join DOTC-DTI Admin Order No. 1 in light of the 01 January 2023 NAIA shutdown.
5. To urge Congress to propose an ***augmentation of CAAP's budget*** for the next fiscal year to assist the agency in carrying out the technical remedies as suggested in this report.

#### ***Other Recommendations***

6. To urge the DOTr to fast-track the conduct of ***feasibility studies on the proposed NAIA privatization***;
7. To direct the CAAP and DOTr to work together to ***comply with the recommendations of ICAO***, especially in the area of air navigation services and aerodromes, to improve the country's audit score in these sections and the overall Effective Implementation rating of the country;
8. To urge CAAP to conduct ***administrative investigations*** for disciplinary action or sanctions on culpable personnel.

  
**SEN. GRACE POE**  
*Chairperson*

23 JAN -3 A10 :31

SENATE

RECEIVED BY

P. S. RES. No. 390



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Introduced by **SENATOR JOEL VILLANUEVA**

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**RESOLUTION**

**DIRECTING THE APPROPRIATE COMMITTEE/S OF THE SENATE TO CONDUCT AN INQUIRY, IN AID OF LEGISLATION, ON THE RECENT TECHNICAL GLITCH IN THE COUNTRY'S AIR TRAFFIC MANAGEMENT SYSTEM WITH A VIEW TO IMPROVING THE PHILIPPINES' OVERALL AIR TRAFFIC SERVICES, UTILIZING IT AS AN ENGINE OF FURTHER ECONOMIC GROWTH, AND ALIGNING THE RELEVANT AGENCIES' PLANS WITH THE GOALS OF THE PHILIPPINE DEVELOPMENT PLAN 2023-2028 TO SPUR THE ECONOMY, REVITALIZE THE TOURISM SECTOR, AND CREATE MORE OPPORTUNITIES FOR JOB GENERATION**

**WHEREAS**, on January 1, 2023, due to technical issues experienced by the Philippine Air Traffic Management Center (ATMC), hundreds of flight operations and thousands of passengers were affected;<sup>1</sup>

**WHEREAS**, in a press briefing, Department of Transportation (DOTr) Secretary Jaime Bautista disclosed that "[t]he primary cause identified was a problem with the power supply and the degraded uninterrupted power supply which had no link to the commercial power and had to be connected to the latter manually," and "[t]he secondary problem was the power surge which resulted in the power outage affecting the equipment," leading to the shutdown of the ATMC and resulting to loss of communication, radio, radar, and internet;<sup>2</sup>

**WHEREAS**, the power outage and the ensuing power surge started at 9:50A.M., and was partially restored at 4:00P.M., resulting to limited airport operations. The system was only fully restored at 7:45P.M., or ten (10) hours after the shutdown;<sup>3</sup>

**WHEREAS**, it was reported that at least 361 flights were cancelled, diverted, or delayed and around 65,000 passengers were affected as a result of the temporary closure

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<sup>1</sup> Manila Bulletin. *DOTr: Power outage, power surge caused NAIA air traffic system glitch*. Published on 1 January 2023. Available at <https://mb.com.ph/2023/01/01/dotr-power-outage-power-surge-cause-of-naia-air-traffic-system-glitch/> (Accessed on 2 January 2023).

<sup>2</sup> Ibid.

<sup>3</sup> Manila Bulletin. *Technical glitch in NAIA air traffic system fixed; full operation restored at 7:45P.M. on Sunday*. Published on 1 January 2023. Available at <https://mb.com.ph/2023/01/01/technical-glitch-on-naia-air-traffic-system-fixed-full-operation-restored-at-745-p-m/> (Accessed on 2 January 2023).

of the Philippine airspace,<sup>4</sup> and is expected to cause further flight delays and cancellations due to its domino effect on other scheduled operations;<sup>5</sup>

**WHEREAS**, following the air traffic management fiasco, DOTr Secretary Bautista stated that there is a need to upgrade the country's air traffic management system to prevent future flight suspensions, citing that the existing system, which was first introduced in 2010 but was only completed in 2018 at a cost of Php10.8 billion, and will need to be improved or modernized to a better system;<sup>6</sup>

**WHEREAS**, among those affected were around 3,000 Overseas Filipino Workers (OFWs), most with scheduled flights supposedly going to the Middle East and other Asian countries, which may have potential adverse impact to their employment overseas for failure to return to work as required.<sup>7</sup> Non-improvement of our air traffic systems will likewise affect the mobility of other OFWs expected to continue their employment abroad. To note, the country has deployed 742,796 OFWs in 2021,<sup>8</sup> which was higher than 549,800 OFWs in 2020, but still below pre-pandemic deployment of around 2.2 million OFWs in 2019;<sup>9</sup>

**WHEREAS**, failure to address airspace traffic management will likewise continuously impact the facilitation of domestic trade and seamless business transactions due to, among others, delayed shipment of cargo via air. Based on statistics from the Civil Aeronautics Board (CAB) as of November 16, 2022, cargo chargeable weights for January to September 2022 reached 35,084,571 kilograms;<sup>10</sup>

**WHEREAS**, this may also hinder the continuous promotion of tourism in the country, whether to local or foreign tourists, as well as the much-needed recovery of all enterprises in the travel and tourism sector, which were severely impacted by the COVID-19 pandemic. It must be highlighted that the closure of many tourism enterprises during the pandemic resulted in the decline of employment in the sector from 5.7 million workers in 2019 to 4.7 million workers in 2020.<sup>11</sup> As a result of the displacement of tourism sector workers due to the pandemic, the Department of Labor and Employment (DOLE) distributed Php3.1 billion to 615,214 beneficiaries of the COVID-19 Adjustment Measures Program - Tourism (CAMP2 - Tourism) allocated under Republic Act No. 11494, or the Bayanihan to Recover as One Act.<sup>12</sup> While there was a slight increase of workers in the sector to 4.9 million workers in 2021, more efforts will need to be undertaken to revitalize the industry and recover job losses. Notably, a poor air traffic management system will pose further challenges to the recovery of the industry;<sup>13</sup>

<sup>4</sup> Rappler. *Philippines' main airport scrambles to restore normalcy after power cut*. Published on 2 January 2023. Available at <https://www.rappler.com/business/philippines-naia-scrambles-restore-normalcy-after-power-cut/> (Accessed on 2 January 2023).

<sup>5</sup> GMA News Online. *Expect more flight delays due to domino effect of PH airspace shutdown - airlines*. Published on 2 January 2023. Available at <https://www.gmanetwork.com/news/topstories/nation/856048/expect-more-flight-delays-due-to-domino-effect-of-ph-airspace-shutdown-airlines/story/> (Accessed on 2 January 2023).

<sup>6</sup> Rappler. *DOTr chief: 'Huge amount of money' needed for urgent air traffic system upgrade*. Published on 2 January 2023. Available at <https://www.rappler.com/business/dotr-chief-huge-amount-money-needed-urgent-air-traffic-system-upgrade/> (Accessed on 2 January 2023).

<sup>7</sup> GMA News Online. *3k OFWs affected by air traffic system glitch assisted – DMW*. Published on 2 January 2023. Available at <https://www.gmanetwork.com/news/pinoyabroad/dispatch/856047/3k-ofws-affected-by-air-traffic-system-glitch-receive-aid-dmw/story/> (Accessed on 2 January 2023).

<sup>8</sup> Philippine Overseas Employment Administration. *OFW Monthly Statistics for 2021*.

<sup>9</sup> Senate of the Philippines, Senate Economic Planning Office. *Effect of COVID-19 Pandemic on OFW Deployment and Remittances*. April 2021. Accessible at [https://legacy.senate.gov.ph/publications/SEPO/AAG\\_Migration%20and%20Remittances%20%20amidst%20COVID%2019\\_final.pdf](https://legacy.senate.gov.ph/publications/SEPO/AAG_Migration%20and%20Remittances%20%20amidst%20COVID%2019_final.pdf) (Accessed on 2 January 2023).

<sup>10</sup> Civil Aeronautics Board. *Domestic Airfreight Forwarders Overall Ranking 2022 (Jan-Sep)*. Available at <https://cab.gov.ph/statistics/category/domestic> (Accessed on 2 January 2023).

<sup>11</sup> Philippine Statistics Authority. *Employment in Tourism Industries, 2000-2021*. Available at <https://psa.gov.ph/tourism/satellite-accounts/table> (Accessed on 2 January 2023).

<sup>12</sup> Department of Labor and Employment COVID-19 Adjustment Measures Program Terminal Report.

<sup>13</sup> Ibid.

**WHEREAS**, the Philippines' main air gateway, the Ninoy Aquino International Airport (NAIA), has been regarded as the worst international airport for three (3) years from 2011 to 2013, 4<sup>th</sup> worst in the world in 2014, and 5<sup>th</sup> worst in the world in 2016, which affect both the airport and the country's reputation to travelers;<sup>14</sup>

**WHEREAS**, the preceding points, among others, highlight the impact of the quality of air traffic services to the economy as well as to various stakeholders, thus, it is imperative to review and study existing policies and implement actions and measures that will improve the provision of such services to the public;

**WHEREAS**, the Philippine Development Plan 2023-2028 (the "Plan") recognizes that little progress has been made to improve airport infrastructures in the country<sup>15</sup> and anticipates that airport capacities in 2022 will be inadequate to cater to aviation demand, which is expected to recover by 2025.<sup>16</sup> Thus, the Plan indicates the need to, among others, strategically develop airports to address future demands and meet aerodrome design safety standards, develop and connect gateway airports to feeder airports to facilitate access to various tourist destinations, adopt level of service standards in all airports to quantitatively measure the adequacy of facilities and plans for interventions, and to continue the "night-rating" of airports to alleviate airport traffic congestion;<sup>17</sup>

**NOW, THEREFORE, BE IT RESOLVED BY THE SENATE OF THE PHILIPPINES**, that the appropriate Committee/s of the Senate of the Philippines conduct an inquiry, in aid of legislation, on the recent technical glitch in the country's air traffic management system, with a view to improving the Philippines' overall air traffic services, utilizing it as an engine of further economic growth, and aligning the relevant agencies' plans with the goals of the Philippine Development Plan 2023-2028 to spur the economy, revitalize the tourism sector, and create more opportunities for job generation.

*Adopted,*

  
JOEL VILLANUEVA

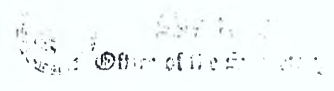
<sup>14</sup> Ceres Victoria Cedo & Marloe B. Sundo, *Assessment of the Level of Service (LOS) in the Check-in Area of the Ninoy Aquino International Airport Terminal 3 using IATA Standards*. Accessible at <https://ncts.upd.edu.ph/tssp/wp-content/uploads/2016/08/Cedo-Sundo.pdf> (Accessed on 2 January 2023); Public-Private Partnership Center, *NAIA ranked 5<sup>th</sup> worst airport in Asia*. Available at [https://ppp.gov.ph/in\\_the\\_news/naia-ranked-5th-worst-airport-in-asia/](https://ppp.gov.ph/in_the_news/naia-ranked-5th-worst-airport-in-asia/) (Accessed on 2 January 2023).

<sup>15</sup> Philippine Development Plan 2023-2028, p.255. Accessible at <https://pdp.neda.gov.ph/philippine-development-plan-2023-2028/> (Accessed on 2 January 2023).

<sup>16</sup> *Ibid.*, p.262.

<sup>17</sup> *Ibid.*, p.271.

NINETEENTH CONGRESS OF THE )  
REPUBLIC OF THE PHILIPPINES )  
First Regular Session )



23 JAN -3 P12 :21

**SENATE**

**P.S. Res. No. 391**

RECEIVED BY: 

**Introduced by SENATOR RAMON BONG REVILLA, JR.**

**RESOLUTION**

**DIRECTING THE SENATE COMMITTEE ON PUBLIC SERVICES TO CONDUCT AN INQUIRY, IN AID OF LEGISLATION, ON THE SHUTDOWN OF PHILIPPINE AIRSPACE ON JANUARY 1, 2023, WITH THE END IN VIEW OF EVALUATING PHILIPPINE AIRPORT OPERATIONS AND MANAGEMENT INCLUDING ITS EXISTING FACILITIES AND EQUIPMENT; ASSESSING THE SHUTDOWN'S TOURISM AND ECONOMIC IMPACTS; AND PROTECTING THE RIGHTS OF THE PASSENGERS FOR COMFORT AND EFFICIENCY**

**WHEREAS**, Republic Act No. 9497 otherwise known as the "*Civil Aviation Authority Act of 2008*" declares that the State shall "provide safe and efficient air transport and regulatory services in the Philippines by providing for the creation of a civil aviation authority with jurisdiction over the restructuring of the civil aviation system, the promotion, development and regulation of the technical, operational, safety, and aviation security functions under the civil aviation authority";

**WHEREAS**, on 01 January 2023, a severe power outage impacted air traffic control at the Ninoy Aquino International Airport (NAIA) - the Philippines' largest airport. The technical issues were first detected on the morning of New Year's Day according to the Civil Aviation Authority of the Philippines (CAAP);<sup>1</sup>

**WHEREAS**, the CAAP shutdown the entire Philippine airspace from inbound and outbound flights around noontime of January 1<sup>st</sup>;

<sup>1</sup> Chen, H. (02 January 2023) *Philippines Thousands stranded on New Year's Day as power outage hits Manila airport*. Retrieved 03 January 2022, from <https://edition.cnn.com/travel/article/naia-philippines-airport-power-outage-flight-chaos-intl-hnk/index.html>



**WHEREAS**, a total of 282 flights were either delayed, canceled or diverted to other regional airports while around 56,000 passengers were affected as of 4 p.m. local time on New Year's Day.<sup>2</sup> The Department of Migrant Workers reported that around 3,000 overseas Filipino workers (OFWs) were among those affected;

**WHEREAS**, CAAP explained that the flight delays are only "precautionary measures" to ensure the safety of the passengers, crew and aircraft";<sup>3</sup>

**WHEREAS**, on 02 January 2023, at least 75 more flights have been canceled;<sup>4</sup>

**WHEREAS**, the chaos that erupted revealed that officials had expected that the "outdated" air traffic system controlled by the CAAP would eventually conk out. However, according to reports, "no concrete plans to replace it or install backups were laid out." Transportation Secretary Jaime Bautista, himself a former airline executive, admitted that he had known about the problems with the Communications, Navigation and Surveillance Systems for Air Traffic Management (CNS/ATM) that went down on New Year's Day. He said he had raised the lack of a backup system for the CNS/ATM during a Cabinet meeting;<sup>5</sup>

**WHEREAS**, air transport has a substantial economic impact both through its own activities and as an enabler of other industries. The malfunction that affected the NAIA Communications, Navigation and Surveillance Systems for Air Traffic Management (CNS/ATM) had a domino effect that not only affected those traveling that day but in effect affected other industries such as logistics, tourism and even our

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<sup>2</sup> *Ibid.*

<sup>3</sup> Boiser, A and Piad, T. (02 January 2023) *NAIA power outage, tech glitch shut PH air space*. Retrieved 03 January 2023, from <https://newsinfo.inquirer.net/1711413/naia-power-outage-tech-glitch-shut-ph-airspace>

<sup>4</sup> (2023, January 2). List: Canceled flights for January 2 due to NAIA Air Traffic Outage. Philstar.com. Retrieved January 3, 2023, from <https://www.philstar.com/headlines/2023/01/02/2234825/list-canceled-flights-january-2-due-naia-air-traffic-outage>

<sup>5</sup> Gregorio, X. (02 January 2023) *Officials aware 'outdated' NAIA air traffic system could fail. What was done about it?* Retrieved 03 January 3, 2022, from <https://www.philstar.com/headlines/2023/01/02/2234849/officials-aware-outdated-air-traffic-system-could-fail-what-was-done-about-it>

OFWs. The movement of goods was delayed and hampered, news of this fiasco was reported worldwide and cast a bad light on our tourism facilities and management, and our OFWs who were expected to get to work by their employers were prevented from doing so;

**WHEREAS**, it is imperative to determine the country's preparedness for technical glitches that affect air traffic which ultimately impacts not only the safety and convenience of passengers, but could likewise directly jeopardize our national security;

**WHEREAS**, the thousands of lives affected by delayed flights is a cause for concern especially because many of the passengers are returning Filipinos whose jobs are on the line after missing their flights. There should thus be thorough investigation as to the country's management plan involving any similar incident;

**WHEREAS**, in an archipelagic country such as ours, travelers depend on air transportation for the ease and convenience thereof. An inquiry into the recent mishap is vital so that similar incidents that are detrimental to public interest will be avoided;

**NOW THEREFORE, BE IT RESOLVED**, as it is hereby resolved, to direct the Senate Committee on Public Services to conduct an inquiry, in aid of legislation, on the shutdown of Philippine airspace, including the malfunction that affected the Ninoy Aquino International Airport (NAIA) Communications, Navigation And Surveillance Systems for Air Traffic Management (CNS/ATM) on New Year's Day, with the end in view of evaluating airport operations and management including its existing facilities and equipment; assessing the shutdown's tourism and economic impacts; and protecting the rights of the passengers for comfort and efficiency.

*Adopted,*

  
**RAMON BONG REVILLA JR.**

NINETEENTH CONGRESS OF THE )  
REPUBLIC OF THE PHILIPPINES )  
*First Regular Session* )

Office of the Secretary

23 JAN -3 P12

SENATE

RECEIVED

P. S. Res. No. 392

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**Introduced by Senator Jinggoy Ejercito Estrada**

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**RESOLUTION**

**DIRECTING THE APPROPRIATE SENATE COMMITTEE/S TO CONDUCT AN INQUIRY, IN AID OF URGENT REMEDIAL LEGISLATION, ON THE REPORTED POWER OUTAGE AND TECHNICAL ISSUES IN THE NINOY AQUINO INTERNATIONAL AIRPORT (NAIA) ON JANUARY 1, 2023 WHICH RESULTED IN THE CANCELLATION OF HUNDREDS OF FLIGHTS, INCONVENIENCE OF THOUSANDS OF PASSENGERS, AND THE SHUTDOWN OF PHILIPPINE AIRSPACE, THEREBY FURTHER ADVERSELY IMPACTING THE IMAGE OF THE COUNTRY AS A TOURISM DESTINATION, AND HURTING THE NATIONAL ECONOMY**

1           WHEREAS, January 1, 2023, the supposedly joyous celebration of New Year's  
2 Day, was marred with chaos, inconvenience and traumatic experience for many  
3 foreign and local airline passengers following the cancellation of more than 300  
4 flights at the Ninoy Aquino International Airport (NAIA), the Philippines' main  
5 international gateway;

6           WHEREAS, the Civil Aviation Authority of the Philippines (CAAP) reported that  
7 there was a "technical issue" at the Air Traffic Management Center (ATMC). In a  
8 statement, CAAP said that "the safety of the passenger is the priority of the agency  
9 and it is better to secure the aircrafts on the ground to avoid any airborne accident";

10           WHEREAS, CAAP explained that "the air traffic management system suffered  
11 a power outage, and although there was a backup supply, it failed to supply enough  
12 power for the system".<sup>1</sup> However, Meralco clarified that it did not monitor any power  
13 outage;

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<sup>1</sup> <https://news.abs-cbn.com/business/01/01/23/naia-flights-put-on-hold-in-new-years-day-crisis>

1           WHEREAS, the incident caused the cancellation, diversion and delay of  
2 hundreds of inbound and outbound flights to and from NAIA. For some hours, there  
3 were no movements in the Philippine airspace. The problem in the country's premier  
4 airport also caused disruption of flight schedules and congestion in other regional  
5 domestic and international airports throughout the Philippines;

6           WHEREAS, some 56,000 to 65,000 passengers who were looking forward to a  
7 cheerful celebration of the holiday season were gravely inconvenienced and were  
8 plunged into confusion and exasperation. Meanwhile, at least 3,000 overseas Filipino  
9 workers (OFWs) were affected by the New Year aviation crisis, with some leaving  
10 their chances of being employed abroad in limbo;

11           WHEREAS, the issue which was detected at around 10:00 am of even date,  
12 lasted up to 4:00 pm when the air navigation was "partially restored" allowing  
13 limited flight operations, and until 8:00 pm when the traffic management system  
14 was "fully restored". Nonetheless, it would still take around 72 hours before the  
15 airport operations can go back to normal;

16           WHEREAS, the incident aggravates the already unpleasant image of the NAIA,  
17 following the same being regularly labelled as one of the "worst" and "most  
18 stressful" airports in the world, thereby necessitating remedial legislation and urgent  
19 action from the authorities, to save it from becoming a national disgrace or  
20 *pambansang kahihyan*;

21           WHEREAS, the latest mess becomes yet another stumbling block for the  
22 recovery and revitalization of the tourism industry, which is among the most severely  
23 affected sectors during the onslaught of the novel Coronavirus pandemic;

24           WHEREAS, the ten-hour technical glitch spells massive losses for the national  
25 economy, not limited to the immediate aftermath of the fiasco, but hurts the overall  
26 image of the country as a viable tourism destination, commercial and investment  
27 hub;

28           WHEREAS, the country's main gateway being paralyzed by "technical issues"  
29 and "power outage" highlights the need for the installation of more sophisticated  
30 technologies, setting up of effective backup mechanisms, and the hiring of  
31 competent manpower and experts to man them, to ensure uninterrupted airport

1 operations and to defend it against cybersecurity attacks, sabotage, disasters, and  
2 other threats;

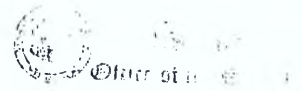
3 WHEREAS, there is a need to properly and comprehensively identify the  
4 needed infrastructure and government- and/or private sector support to modernize  
5 and fully equip the country's main gateway at the soonest possible time to ensure  
6 the highest quality of service for all its users and transform it as one of the world's  
7 best;

8 NOW, THEREFORE BE IT RESOLVED, as it is hereby resolved by the Senate,  
9 to direct the appropriate Senate Committee/s to conduct an inquiry, in aid of urgent  
10 remedial legislation, on the reported power outage and technical issues in the Ninoy  
11 Aquino International Airport (NAIA) on January 1, 2023 which resulted in the  
12 cancellation of hundreds of flights, inconvenience of thousands of passengers, and  
13 the shutdown of Philippine airspace, thereby further adversely impacting the image  
14 of the country as a tourism destination, and hurting the national economy.

*Adopted,*

  
JINGCOY EJERCITO ESTRADA

NINETEENTH CONGRESS OF THE )  
REPUBLIC OF THE PHILIPPINES )  
*First Regular Session* )



23 JAN -4 A11 :29

RECEIVED BY

**SENATE**

**P.S. RES. No. 400**

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Introduced by SENATOR JOSEPH VICTOR G. EJERCITO

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**RESOLUTION**

**DIRECTING THE SENATE COMMITTEE ON PUBLIC SERVICES TO CONDUCT AN INQUIRY IN AID OF LEGISLATION ON THE RECENT AIRPORT NAVIGATION SYSTEM FIASCO THAT PARALYZED THE OPERATION OF THE NINYO AQUINO INTERNATIONAL AIRPORT (NAIA), RISKED THE SAFETY OF TRAVELERS, AND POSED NATIONAL SECURITY CONCERNS, WITH THE END IN VIEW OF STRENGTHENING AND ENSURING SAFETY IN THE AVIATION INDUSTRY, AND PREVENTION OF ANY OTHER SIMILAR INCIDENTS IN THE FUTURE**

**WHEREAS**, on January 1, 2023, nearly three hundred (300) inbound and outbound flights in the Ninoy Aquino International Airport (NAIA) were disrupted, affecting around 65,000 international and domestic passengers. Flights to and from Manila were either cancelled, rerouted, or delayed due to the incident<sup>1</sup>;

**WHEREAS**, in a press statement released by the Department of Transportation (DOTr) on 1 January 2023, Secretary Jaime Bautista said that the Air Traffic Management Center (ATMC) which serves as the facility for controlling and overseeing all inbound and outbound flights and overflights within the Philippine airspace, went down due to power outage, resulting to loss of communication, radio, radar, and

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<sup>1</sup> <https://www.reuters.com/world/asia-pacific/philippines-main-airport-scrambles-restore-normalcy-after-power-cut-2023-01-02/>

internet.<sup>2</sup> The Secretary said that the system issue caused disruption of flights in NAIA as well as in other airports in the country;

**WHEREAS**, the transportation Secretary further explained that the primary cause identified was a problem with the power supply and the degraded uninterrupted power supply which had no link to the commercial power and had to be connected to the latter manually; the secondary problem alleged was the power surge due to the power outage which affected the equipment<sup>3</sup>;

**WHEREAS**, while the DOTr announced that the Air Traffic Management Center (ATMC) resumed normal operations as of 5:50 p.m. on January 1, 2023, the airport navigation system fiasco created a domino effect, delaying several flights scheduled the following day;

**WHEREAS**, in a news report<sup>4</sup>, a Cebu Pacific representative said that the airline had to cancel 259 flights, affecting 26,253 passengers on January 1. Since the cancellations, delays and diversions have a consequential effect, the carrier has canceled 75 flights, affecting 11,578 passengers on January 2, 2023;

**WHEREAS**, the airport fiasco also affected and put the livelihood of some Overseas Filipino Workers (OFWs) at risk. According to Department of Migrant Workers (DMW) Undersecretary Hans Leo Cacdac, at least 3,000 overseas Filipino workers (OFWs) were affected by the airport crisis<sup>5</sup>;

**WHEREAS**, the incident posed a serious national security concern where the territorial integrity of the country might have been jeopardized and the vulnerability of the country's air navigation system exposed;

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<sup>2</sup> <https://dotr.gov.ph/55-dotnews/4609-2023-01-02-03-32-07.html>

<sup>3</sup> Ibid.

<sup>4</sup> <https://www.pna.gov.ph/articles/1191848>

<sup>5</sup> <https://news.abs-cbn.com/news/01/02/23/3000-ofws-affected-by-new-years-day-aviation-crisis>

**WHEREAS**, air passengers' safety and well-being were also put at risk due to the seemingly outdated system that is being used by the ATMC of the country's main airport facility;

**WHEREAS**, the DOTr subsequently announced that an oversight office under the Civil Aviation Authority of the Philippines (CAAP) called the Aerodrome and Air Navigation Safety Oversight Office (AANSOO), composed of engineers, air traffic controllers, pilots and a lawyer, will lead the investigation surrounding the airport fiasco;

**WHEREAS**, in view of the state and integrity of the country's air traffic system, DOTr Secretary Jimmy Bautista initially said that the country's Communications, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) System is around ten (10) years behind compared to our neighboring countries. He claimed that the government plans for an immediate upgrade of the ATM system which will cost more than 13 billion;<sup>6</sup>

**WHEREAS**, it is alarming and disturbing that this kind of glitch - loss of communication, radio, radar and internet access, can happen in the country's main airport, affecting not only the safety of airline passengers, but also of businesses, tourism, national security and the country's image to the whole world;

**WHEREAS**, it is imperative to inquire into the state and integrity of the country's Air Traffic Management System for us to be appraised of the need to upgrade and modernize the system in order to ensure that similar incidents will be averted;

**NOW, THEREFORE, BE IT RESOLVED BY THE SENATE, AS IT IS HEREBY RESOLVED**, to direct the Senate Committee on Public Services to conduct an inquiry in aid of legislation on the recent airport navigation system fiasco that paralyzed the operation of the Ninoy Aquino International Airport (NAIA), risked the safety of travelers, and posed national security concerns, with the end in view of strengthening

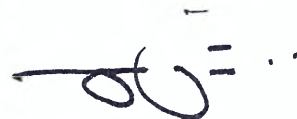
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<sup>6</sup> <https://www.bworldonline.com/top-stories/2023/01/03/496156/airlines-naia-operations-likely-to-normalize-within-3-days-miaa/>



and ensuring safety in the aviation industry, and prevention of any other similar incidents in the future.

Adopted,

A handwritten signature in black ink, appearing to read 'J. Ejercito', with a horizontal line extending to the left and a small mark above the 'E'.

**JOSEPH VICTOR G. EJERCITO**

NINETEENTH CONGRESS OF THE )  
REPUBLIC OF THE PHILIPPINES )  
First Regular Session )

23 JAN -4 P12 :25

SENATE

RECEIVED BY



P.S. R. No. 401

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**INTRODUCED BY SENATOR RISA HONTIVEROS**

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**RESOLUTION**

**DIRECTING THE APPROPRIATE SENATE COMMITTEE TO CONDUCT AN INQUIRY, IN AID OF LEGISLATION, INTO THE NEW YEAR SYSTEM FAILURE CRISIS AT THE NINYO AQUINO INTERNATIONAL AIRPORT (NAIA), RESULTING IN THE BREAKDOWN OF AIR TRAFFIC CONTROL AND THE DISRUPTION OF A TOTAL OF 282 FLIGHTS AFFECTING AROUND 56,000 PASSENGERS**

**WHEREAS**, on New Year's Day, a system failure resulted in the breakdown of the Communications, Navigation and Surveillance Systems for Air Traffic Management (CNS/ATM), forcing the Civil Aviation Authority of the Philippines (CAAP) to close the Philippines' airspace and disrupting flights for around 56,000 passengers scheduled to fly into or out of the Philippines;

**WHEREAS**, the apparent cause of the problem, according to a press briefing conducted by Transportation Secretary Jaime Bautista, was a failure of primary and secondary power supplies, followed by a power surge, that resulted in the loss of communication, radio, radar and internet. This happened when the equipment providing uninterrupted power supply in two NAIA terminals suddenly went offline and failed to connect to the backup commercial power supply of MERALCO;

**WHEREAS**, considering that the unfortunate event happened while the holidays were drawing to a close, many of the affected travelers were overseas Filipino workers returning to their host countries after celebrating the festivities with their Philippines at home, and according to one such OFW, as quoted by Reuters, "in the 24 hours that we have been waiting, we are now very exhausted from lack of sleep, and my body is aching from all the waiting<sup>1</sup>";

**WHEREAS**, aside from the physical toll and discomfort of waiting in the airport or inside airplanes, many also are reportedly worried about losing their jobs because of the flight cancellations;

**WHEREAS**, the incident is also expected to have adverse impacts on our tourism industry, still in the process of recovery after two years of pandemic;

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<sup>1</sup> <https://www.reuters.com/world/asia-pacific/philippines-main-airport-scrambles-restore-normalcy-after-power->

**WHEREAS**, while the DOTr has apparently ruled out sabotage, the breakdown of both the primary and secondary source of power throws into question the capacity of our air traffic control system to withstand cyber attacks and hacking, and exposes our vulnerability to such hostile incursions;

**WHEREAS**, what is mind-boggling is that despite the fact that government officials had known that the outdated air control system of the Philippines main gateway to the world was in danger of conking out any time and this issue was supposedly already raised at a Cabinet meeting<sup>2</sup>, no concrete plans had been made for upgrade or improvement;

**WHEREAS**, it is imperative to also probe into who the private contractor of the CNS/ATM is, whether there was a violation of the performance guarantee as may possibly be seen through an examination of documents from the Commission on Audit in the past years, and investigate the brewing allegations of funding delays and possible corruption in the establishment of the CNS/ATM system, as well as the long interval between the initial negotiations in February 2010 and the inauguration in 2018, and how it may have impacted on air control operations;

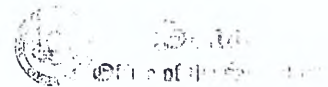
**WHEREAS**, other allegations involve malversation, ie the diversion of Thirteen (13) billion pesos supposedly earmarked for the backup of the air traffic control system to cosmetic projects during the administration of former President Rodrigo Duterte; negligence in the maintenance and upkeep of the equipment; and even possible human error;

**WHEREAS**, given these competing claims, a thorough investigation must be undertaken to identify both the proximate and the contributory causes of the incident, determine liabilities of government officials and private contractors, and ensure that measures are in place to prevent a similar – or worse – scenario in the future;

**NOW BE IT RESOLVED**, as it is hereby resolved, to direct the appropriate Senate Committee to conduct an inquiry in aid of legislation on the January 1, 2023 system failure at the NAIA Airport.

*Adopted,*

*Risa Hontiveros*  
**RISA HONTIVEROS**  
*Senator*



23 JAN -4 P2 :10

**SENATE**  
**P.S. Res. No. 402**

RECEIVED BY \_\_\_\_\_

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Introduced by Senator Maria Lourdes Nancy S. Binay

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**RESOLUTION**  
**DIRECTING THE PROPER SENATE COMMITTEES TO CONDUCT AN**  
**INQUIRY, IN AID OF LEGISLATION, ON THE REPORTED AIRPORT SERVICE**  
**FAILURE THAT CRIPPLED INTERNATIONAL AND DOMESTIC FLIGHT**  
**OPERATIONS WITH THE OBJECTIVE OF REVIEWING ALL THE**  
**NAVIGATIONAL AND COMMUNICATIONS EQUIPMENT INSTALLED IN ALL**  
**AIRPORTS AND SEAPORTS**

1 WHEREAS, the Constitution, Article 2, Section 5, provides: "The maintenance of  
2 peace and order, the protection of life, liberty, and property, and promotion of the  
3 general welfare are essential for the enjoyment by all the people of the blessings of  
4 democracy"<sup>1</sup>;

5  
6 WHEREAS, the Department of Transportation (DOTr) is the primary policy,  
7 planning, programming, coordinating, implementing and administrative entity of the  
8 executive branch of the government on the promotion, development and regulation  
9 of a dependable and coordinated network of transportation and communications  
10 systems, as well as in the fast, safe, efficient and reliable transportation and  
11 communications services<sup>2</sup>;

12  
13 WHEREAS, Republic Act No. 9497 created the Civil Aviation Authority of the  
14 Philippines (CAAP) with the goal of providing the public a safe and efficient air  
15 transportation, having jurisdiction over the restructuring of the civil aviation system,  
16 the promotion, development and regulation of the technical operational safety and  
17 aviation security under the civil aviation authority;

18  
19 WHEREAS, on New Year's Day, flights were on hold/cancelled due to technical  
20 issues in the communications, navigations, and surveillance system for air traffic  
21 management affecting the radar services within the Philippine Flight Information  
22 Region (FIR)<sup>3</sup>;

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<sup>1</sup> Article II, Section 5 of the Constitution of the Republic of the Philippines.

<sup>2</sup> Department of Transportation mandate. Available at <http://caraga.dotr.gov.ph/index.php/about-us/mission-vision/10-about-us/8-lto-district-extension-offices#agency-s-mandate-and-functions>

<sup>3</sup> Cancelled Flights Today, 1 January 2023. Available at <https://www.escapemanila.com/2023/01/canceled-flights-january-1.html>

1 WHEREAS, nearly 300 domestic and international flights at the Manila airport in the  
2 airport in the Philippines were either delayed, cancelled or diverted causing misery  
3 for over 65,000 passengers during New Year holiday after a power outage hampered  
4 air traffic operations<sup>4</sup>;

5  
6 WHEREAS, DOTr Secretary Jaime J. Bautista said the problem started when  
7 the Air Traffic Management Center, which oversees all flights in the Philippine  
8 airspace, lost communication, radio, radar, and internet because of the power  
9 outage<sup>5</sup>;

10  
11 WHEREAS, in addition to the transportation sector problems, on January 3,  
12 2023, tens of thousands of passengers trooped to the Port of Calapan in Oriental  
13 Mindoro which resulted in thousands of travellers to wait for hours before they could  
14 board their trips<sup>6</sup>;

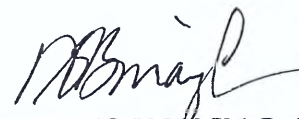
15  
16 WHEREAS, according to the DOTr, the passenger terminal building (PTB) of  
17 the Port of Calapan is currently undergoing construction which limits the capacity of  
18 the facility. There are around 36,000 passengers embarking and disembarking at the  
19 port daily, the department said<sup>7</sup>;

20  
21 WHEREAS, airport service quality and passenger satisfaction have a great  
22 impact on tourism in our country and the said incident has left a big setback in the  
23 government's effort to promote the Philippines;

24  
25 WHEREAS, all concerned agencies should start to identify current and  
26 potential hazards related to airports and seaports operations as we open up our  
27 tourism and host several international events;

28  
29 NOW, THEREFORE, BE IT RESOLVED, AS IT IS HEREBY RESOLVED, that the  
30 Senate of the Philippines directs the proper Senate Committees to conduct an inquiry  
31 in aid of legislation on the reported airport service failure that crippled international  
32 and domestic flight operations with the objective of reviewing all the navigational  
33 and communications equipment installed in all airports and seaports.

Adopted,



**MARIA LOURDES NANCY S. BINAY**

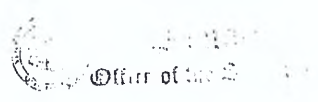
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<sup>4</sup> Air traffic outage in Philippines causes long flight delays. Available at <https://apnews.com/article/philippines-manila-business-power-outages-4ceaaf6486ef6a16d85a196c3b0f3fd1>

<sup>5</sup> Ibid


<sup>6</sup> DOTr appeals for patience as Calapan port swamped with passenger. <https://mb.com.ph/2023/01/03/dotr-appeals-for-patience-as-calapan-port-swamped-with-passengers/>

<sup>7</sup> Ibid



NINETEENTH CONGRESS OF THE )  
REPUBLIC OF THE PHILIPPINES )  
First Regular Session )

23 JAN -4 P 4 :1

RECEIVED BY: 

SENATE  
Proposed Senate Resolution No. 403

Introduced by Senator Aquilino “Koko” Pimentel III

**A RESOLUTION DIRECTING THE APPROPRIATE SENATE COMMITTEE TO CONDUCT AN INQUIRY, IN AID OF LEGISLATION, ON THE AIR TRAFFIC MANAGEMENT SYSTEM GLITCH AT THE NINOY AQUINO INTERNATIONAL AIRPORT LAST JANUARY 1, 2023, WHICH CAUSED IMMEASURABLE ECONOMIC LOSSES AND INCONVENIENCES TO AIRLINE PASSENGERS**

1       **WHEREAS**, on New Year’s Day, January 1, 2023, hundreds of  
2 inbound and outbound flights were delayed, canceled, or diverted due  
3 to an alleged air traffic system glitch at the Ninoy Aquino International  
4 Airport (NAIA);

5  
6       **WHEREAS**, according to the Civil Aviation Authority of the  
7 Philippines (CAAP), the reported glitch was caused by a failure in the  
8 power supply of the Philippine Air Traffic Management Center  
9 Communications Navigation and Surveillance/Air Traffic  
10 Management (CNS/ATM) system causing immeasurable economic  
11 losses and inconveniences for 65,000<sup>1</sup> passengers;

<sup>1</sup> Marasigan, Lorenz S., *Airport Fiasco: Big probe begins*, Business Mirror, dated 2 Jan. 2023.

12           **WHEREAS**, while malfunctions and system glitches are  
13 unavoidable, this should have been already anticipated and back-up  
14 plans and contingencies should have been put in place to avoid the  
15 complete breakdown of air traffic control and management;

16  
17           **WHEREAS**, although the CNS/ATM system is relatively new,  
18 as it only became fully operational in July 2019, after only less than  
19 four years and spending around Php10 Billion, the CAAP now says that  
20 there is a need to upgrade to a better system;

21  
22           **WHEREAS**, there might be a need to introduce measures or  
23 amend existing laws to avert similar incidents in the future;

24  
25           **WHEREAS**, this incident must be investigated as it has exposed  
26 not only the vulnerabilities of the country’s aviation sector but also the  
27 negligence and ineptitude of those managing NAIA’s air navigation  
28 system;

29  
30           **NOW, THEREFORE, BE IT RESOLVED**, as it is hereby  
31 resolved to direct the appropriate Senate committee to conduct an  
32 inquiry, in aid of legislation, on the Air Traffic Management System  
33 glitch at the Ninoy Aquino International Airport last January 1, 2023,  
34 which caused immeasurable economic losses and inconveniences to the  
35 passengers.

*Adopted,*

  
**AQUILINO “KOKO” PIMENTEL III**

NINETEENTH CONGRESS OF THE )  
REPUBLIC OF THE PHILIPPINES )  
First Regular Session )



23 JAN 10 P 3:44

SENATE

RECEIVED BY:

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P. S. Res. No. 418

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Introduced by Senator Loren B. Legarda

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**RESOLUTION**  
**URGING THE APPROPRIATE SENATE COMMITTEE TO CONDUCT**  
**AN INQUIRY, IN AID OF LEGISLATION, ON THE TECHNICAL**  
**ISSUE THAT AFFECTED THE COMMUNICATIONS, NAVIGATION,**  
**SURVEILLANCE/ AIR TRAFFIC MANAGEMENT (CNS/ATM)**  
**SYSTEMS OF THE CIVIL AVIATION AUTHORITY OF THE**  
**PHILIPPINES (CAAP) ON NEW YEAR'S DAY OF 2023, TO THE**  
**DETRIMENT OF AIR PASSENGERS AND PHILIPPINE AIR**  
**TRANSPORT SYSTEM**

**WHEREAS**, on January 1, 2023, at 9:45 A.M., the Civil Aviation Authority of the Philippines (CAAP) declared that the Communication, Navigation and Surveillance/ Air Traffic Management (CNS/ ATM) Systems at the Ninoy Aquino International Airport (NAIA) had suffered from a technical issue;

**WHEREAS**, the unfortunate incident affected over 65,000 passengers from more than 300 flights, and gave rise to security risks and real economic losses to both passengers and airline companies;

**WHEREAS**, the disruption in the air traffic system was due to the power outage at the Ninoy Aquino International Airport, which resulted in the loss of communication, radar, radio, and internet with the rest of the country's airports, causing the entire country's aviation to grind to a halt;

**WHEREAS**, the management of CAAP reported that the outage was the result of the failure of both primary and secondary power supplies, which was only restored at 7:45. P.M., or 10 hours later;



**WHEREAS**, even with the improvements introduced in 2018 to the country's CNS/ATM Systems worth Php 10.8 billion, Transportation Secretary Jaime Bautista said that the air traffic management system is outdated and should be upgraded immediately and supported by a backup plan to protect the system in the event of a breakdown;

**WHEREAS**, the expected gradual recovery from the effects of the Covid-19 pandemic presents an opportunity for global air travel to resume and the economy to improve from recession, reduce economic losses and social uncertainty. Air passenger traffic in the country was 60.06 million in 2019 and plummeted in 2021 to only 7.72 million due to strict impositions on mobility;

**WHEREAS**, efficient transport is critical to economic growth and increase in investments. The incident exposed the country's weak transport governance and institutional capacity. It also severely damaged the country's reputation as a viable investment destination since its transport infrastructure and facilities could not pass muster. The economic and reputational damage will likely cost a great deal more than if we made the necessary investments and paid for the topnotch management so crucial to air traffic control;

**WHEREAS**, the incident in the country's gateway to the world rendered the global airspace vulnerable to attack and exploitation when its critical infrastructure, including its cyber network, was inoperable for a significant period;

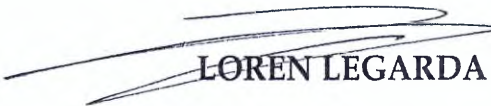
**WHEREAS**, stakeholders must fulfill their responsibilities in maintaining secure and safe civil aviation operations that are conducive to economic growth and development and provide a comprehensive national effort for stability and confidence in aviation activities;

**WHEREAS**, the incident calls for a thorough evaluation and audit of the air traffic management system and the whole aviation operations to properly and efficiently address the institutional needs and policy framework that is responsive and adaptive to the changing demands of the sector;

**WHEREAS**, there is a need for transparency and accountability among public officials and concerned government agencies who must submit a full report of what caused the air transport system fiasco, given the effect of the situation on passengers, industries, and the country's national security.

**NOW, THEREFORE, BE IT RESOLVED AS IT IS HEREBY RESOLVED, TO STRONGLY URGE THE APPROPRIATE SENATE COMMITTEE TO CONDUCT AN INQUIRY IN AID OF LEGISLATION ON THE TECHNICAL ISSUE THAT AFFECTED THE COMMUNICATIONS, NAVIGATION, SURVEILLANCE/ AIR TRAFFIC MANAGEMENT (CNS/ ATM) SYSTEM OF THE CIVIL AVIATION AUTHORITY OF THE PHILIPPINES (CAAP) ON NEW YEAR'S DAY OF 2023, TO THE DETRIMENT OF AIR PASSENGERS AND PHILIPPINE AIR TRANSPORT SYSTEM.**

*Adopted,*

  
**LOREN LEGARDA**



NINETEENTH CONGRESS OF THE ]  
REPUBLIC OF THE PHILIPPINES ]  
First Regular Session ]

23 JAN 11 P4:40

RECEIVED BY:

SENATE

P. S. Res No. 421

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Introduced by SEN. WIN GATCHALIAN

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**RESOLUTION**

**DIRECTING THE APPROPRIATE SENATE COMMITTEE TO CONDUCT AN INQUIRY, IN AID OF LEGISLATION, ON THE VULNERABILITIES OF THE ENTIRE AIRPORT INFRASTRUCTURE SYSTEM, GIVEN THE RECENT TECHNICAL GLITCH AFFECTING THE COMMUNICATIONS, NAVIGATION AND SURVEILLANCE SYSTEMS FOR AIR TRAFFIC MANAGEMENT (CNS-ATM), WITH THE END VIEW OF SAFEGUARDING OUR ECONOMIC RECOVERY INITIATIVES FOR THE TOURISM AND TRANSPORTATION SECTORS, IMPROVING SECURITY AND REDUNDANCY MEASURES INVOLVING SIMILAR INCIDENTS, AND ENSURING THE SAFETY, CONVENIENCE AND RIGHTS OF AFFECTED AIR PASSENGERS**

1           **WHEREAS**, on January 1, 2023, thousands of holiday travelers were  
2 stranded as hundreds of flights to and from Manila were canceled, delayed, and  
3 diverted due to a power outage affecting the communications, navigation, and  
4 surveillance (CNS) system of the Philippine Air Traffic Management Center  
5 (ATMC), which unfortunately resulted to the closure of the Philippine airspace  
6 for more or less ten (10) hours ("New Year Air Traffic Management incident");<sup>1</sup>  
7           **WHEREAS**, on the same day, Transportation Secretary Jaime Bautista  
8 reported that there were two main problems that contributed to the New Year's  
9 Day disruptions, namely, the failure of one of the Uninterruptible Power Supply  
10 (UPS), which had no link to the commercial power and had to be connected

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<sup>1</sup> AvGeek Philippines. "What really Caused the Philippine Airspace Blackout on New Year's Day?" Jan. 3, 2023. Available at <https://www.avgeekph.com/what-really-caused-the-philippine-airspace-blackout-on-new-years-day/>, Last accessed on January 10, 2023.

1 manually, and the power surge due to the power outage, which affected critical  
2 equipment for communication and navigation;<sup>2</sup>

3 **WHEREAS**, Secretary Bautista was reported to saying that the  
4 Philippines is at least 10 years behind Singapore when it comes to air traffic  
5 systems. He further said that a backup system situated in another location is  
6 needed, which would cost more than Php13 billion. However, the current  
7 CNS/ATM system used in the Philippines, which became fully operational only  
8 in 2018, was described during its inauguration as to put the country on the  
9 same level as developed countries, notwithstanding its procurement dating  
10 back as far as November 2010;<sup>3</sup>

11 **WHEREAS**, various speculations were reported as to the cause of the  
12 collapse of the CNS/ATM system, including vulnerability of the system to  
13 cyberattacks, sabotage, diversion of budget allotted for the system to non-  
14 essential civil works at NAIA, absence of a back-up system outside airport  
15 premises, plain incompetence, among others.<sup>4</sup> These reports must be verified  
16 to apprise the public of what really transpired, to enable proper government  
17 authorities to take necessary actions, including redundancy measures, and to  
18 hold airport authorities accountable for the incident, if necessary;

19 **WHEREAS**, the New Year Air Traffic Management incident has  
20 unfortunately disrupted the restoration to normal levels of air travel, affecting  
21 not only the passengers from various points of departure within and outside  
22 the country but also leaving a negative impression to foreign travelers. Causing  
23 a "domino effect", the incident greatly adds to the issues and challenges that  
24 already beset the tourism and transportation sectors. The crippling of the

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<sup>2</sup> Yu, Lance Spencer and Jodesz Gavilan. "What we know so far: Philippines' air traffic system fiasco." Rappler, January 2, 2023, 7:51pm. <https://www.rappler.com/business/what-we-know-philippines-air-traffic-management-system-fiasco-january-2023/>, Last accessed on January 10, 2023.

<sup>3</sup> Ibid, 2.

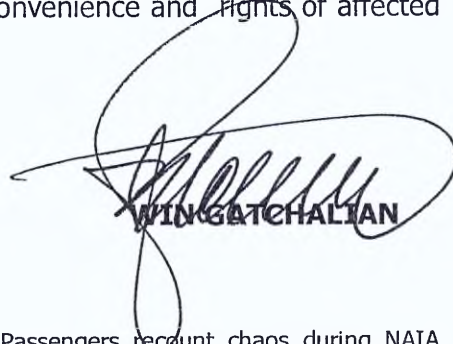
<sup>4</sup> Ibid, 2; Column: "Biz Buzz: Secret Probe's Focus: Sabotage", Philippine Daily Inquirer, January 9, 2023, 2:09AM, Available at <https://business.inquirer.net/381373/biz-buzz-secret-probes-focus-sabotage>; "New Year's Day Airport Fiasco: Tugade Allegedly Diverted P13-B for Air Traffic System Backup for Cosmetic Projects." January 2, 2023. Available at <https://bilyonaryo.com/2023/01/02/new-year-airport-fiasco-tugade-allegedly-diverted-p13-b-for-air-traffic-system-backup-to-cosmetic-projects/business/>; All last accessed on January 10, 2023.

1 country's flagship airport and the shutdown of the Philippine airspace, even for  
2 less than a day, undoubtedly caused significant losses to the air transport and  
3 tourism sectors, considering the correlation between said sectors. It sets back  
4 the government's initiatives to promote the country as a tourist destination,  
5 thereby, warranting an inquiry into the vulnerabilities of the entire airport  
6 infrastructure system to help these sectors to recover;

7 **WHEREAS**, numerous affected passengers from all walks of life have  
8 verbalized their dismay over the incident, including overseas domestic workers  
9 whose employment abroad were in limbo after failing to return to their  
10 respective jobs. Complaints were reported about chaotic scenes at the airport,  
11 including the absence of dedicated staff to handle inquiries and rebookings  
12 following flight cancellations and diversions, inadequate flight information  
13 updates, absence of hotel or transport compensation, disorganized distribution  
14 of meals or the lack thereof, among others. These complaints deserve to be  
15 heard and acted upon as the New Year Air Transport Management incident  
16 stopped these passengers from going back to their homes or their work, and  
17 leaving them at the mercy of airline authorities;<sup>5</sup>

18 **NOW, THEREFORE, BE IT RESOLVED BY THE SENATE**, to direct  
19 the appropriate Senate Committee to conduct an inquiry, in aid of legislation,  
20 on the vulnerabilities of the entire airport infrastructure system, given the  
21 recent technical glitch affecting the communications, navigation and  
22 surveillance systems for air traffic management (CNS/ATM), with the end view  
23 of safeguarding our economic recovery initiatives for the tourism and  
24 transportation sectors, improving security and redundancy measures involving  
25 similar incidents, and ensuring the safety, convenience and rights of affected  
26 air passengers.

*Adopted,*



WING GATCHALIAN

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<sup>5</sup> Ku, Russell. Rappler: "What a New Year's Day! Passengers recount chaos during NAIA outage", Jan. 2, 2023, 2:34 PM. Available at <https://www.rappler.com/nation/passengers-experiences-new-year-glitch-naia-january-2023/>. Last accessed on January 10, 2023.