



## **SEVENTH WORLDWIDE AIR TRANSPORT CONFERENCE (ATCONF/7)**

**Montréal, HQ, 16 to 20 November 2026**

### **Agenda Item 3: Strengthening regulatory and institutional frameworks**

#### **3.3: Strengthening emergency planning mechanism and consumer protection for a resilient aviation system**

### **MANAGING VOLCANIC ASH DISRUPTION AT A MAJOR HUB: AERODROME OPERATOR EMERGENCY RESPONSE AND PASSENGER CARE DURING THE ANAK KRAKATAU VOLCANIC ASH EVENT OF SEPTEMBER 2026**

(Presented by Indonesia)

#### **EXECUTIVE SUMMARY**

This paper presents the experience of PT Angkasa Pura Indonesia (Persero) (API), the State-owned airport operator, in managing the volcanic ash event associated with the eruption of Anak Krakatau in September 2026. Four airports were closed, including Soekarno-Hatta International Airport (CGK), Indonesia's main international gateway. During the period from 5 to 8 September 2026, 4,132 flights and 454,551 passengers were affected across the closed airports and 31 connected airports. The paper describes API's emergency response: real-time monitoring and information sharing, an emergency command post (Posko) dashboard for monitoring the impact on flights and passengers, distributed diversion to alternate airports, extended operating hours, pre-operational assurance before reopening, and a Service Recovery Activation for passengers funded by API. It also shares the lessons learned for emergency planning and consumer protection.

## **1. INTRODUCTION**

1.1 Indonesia lies on the Pacific Ring of Fire, where volcanic eruptions can disrupt its air transport network. When volcanic ash forces a major hub to close, the impacts extend beyond flight safety. Large numbers of passengers may be stranded, aircraft may require short-notice parking arrangements, and domestic and international connectivity is cut until operations can safely resume.

1.2 PT Angkasa Pura Indonesia (API), part of InJourney Airports, is the State-owned airport operator of Indonesia's main airports, including Soekarno-Hatta International Airport (CGK) in Jakarta. In September 2026, the eruption of Anak Krakatau in the Sunda Strait provided a significant test of API's emergency planning and response capabilities at the national level.

1.3 Under Agenda Item 3.3, this paper presents API's experience in managing the event. It describes the event and its impact on flights and passengers, the operational measures implemented by API, and the arrangements put in place to support affected passengers. It ends with the lessons API has drawn for emergency planning and consumer protection.

## 2. DISCUSSION

### *The Anak Krakatau volcanic ash event*

2.1 On 6 September 2026 at 0010 UTC, AirNav Indonesia (Jakarta FIR, WIIF) issued ASHTAM VAWR3751 for Anak Krakatau, with an Aviation Colour Code RED. Satellite imagery from Himawari-9, interpreted in coordination with the Centre for Volcanology and Geological Hazard Mitigation (CVGHM), together with dispersion modelling, identified two ash layers. The upper layer moved westward up to FL500, while the lower, continuous layer moved eastward up to FL200 over the Greater Jakarta area. **Table 1** gives the sequence of events.

**Table 1 Chronology of the event**

| Date / time                | Event                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6 September 2026, 0010 UTC | ASHTAM VAWR3751 issued for Anak Krakatau (Colour Code RED), valid until 7 September 2026, 0010 UTC.                                                                                                                                                                                                                                                                                                                                                                                                             |
| 6–7 September 2026         | Aerodrome closure NOTAMs (“AD CLSD DUE TO KRAKATAU VOLCANIC ASH”) in force for CGK, Halim Perdanakusuma International Airport (HLP), Husein Sustranegara International Airport (BDO) and Radin Inten II Airport (TKG). Flights were diverted to alternate airports.                                                                                                                                                                                                                                             |
| 7–8 September 2026         | Volcanic ash paper tests at 14 airports (BDO, Fatmawati Soekarno Airport (BKS), CGK, Dhoho International Airport (DHX), HLP, Adisutjipto Airport (JOG), Kertajati International Airport (KJT), Depati Amir Airport (PGK), Sultan Mahmud Badaruddin II International Airport (PLM), Jenderal Besar Soedirman Airport (PWL), Adi Soemarmo International Airport (SOC), Jenderal Ahmad Yani International Airport (SRG), TKG and Yogyakarta International Airport YIA): with all tests returning negative results. |
| 8 September 2026           | CGK, HLP, BDO and TKG reopened. By 0447 UTC (1147 local time) no aerodrome closure Notice to Airmen (NOTAM) remained in force.                                                                                                                                                                                                                                                                                                                                                                                  |

### *Impact on flights and passengers*

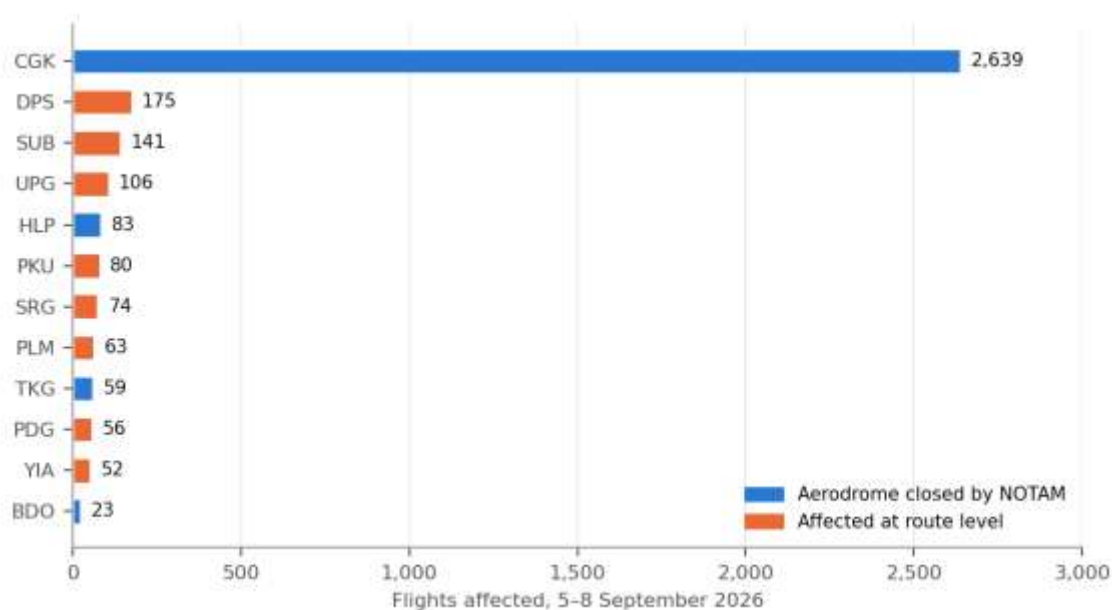
2.2 **Table 2** shows the impact at the four airports affected by closure NOTAMs during the period from 5 and 8 September 2026. Almost all scheduled flights at these airports were cancelled.

**Table 2. Impact at the four closed airports (5–8 September 2026)**

| Aerodrome                               | Flights affected | Passengers affected | Cancelled    | Delayed   | Divert / RTB / RTA |
|-----------------------------------------|------------------|---------------------|--------------|-----------|--------------------|
| Soekarno-Hatta International (CGK)      | 2,639            | 286,769             | 2,601        | 37        | 1                  |
| Halim Perdanakusuma International (HLP) | 83               | 4,755               | 82           | –         | 1                  |
| Radin Inten II (TKG)                    | 59               | 7,193               | 59           | –         | –                  |
| Husein Sastranegara International (BDO) | 23               | 2,882               | 23           | –         | –                  |
| <b>Total</b>                            | <b>2,804</b>     | <b>301,599</b>      | <b>2,765</b> | <b>37</b> | <b>8*</b>          |

\* Total for all diversions and returns (RTB/RTA) linked to the event; see Appendix, Table A-2.

2.3 Because CGK is a major hub in the domestic network, the closures also affected 31 other airports that were not themselves subject to closure. Flights to and from CGK and the other closed airports were consequently unable to operate. At these airports, 1,328 flights and 152,952 passengers were affected (1,301 cancellations, 21 delays and 6 diversions or returns). Denpasar (DPS), Surabaya (SUB) and Makassar (UPG), which have the most routes to CGK, were hit hardest (**Figure 1** and Appendix, Table A-1).

**Figure 1. Flights affected at the most affected airports**

2.4 Across the network, the event affected 4,132 flights and 454,551 passengers and led to 4,066 cancellations in four days. Eight flights carrying 1,572 passengers were diverted or returned to base or apron. They included international services from Medina and Jeddah (diverted to Kertajati, KJT), Amsterdam (diverted to Kualanamu, KNO) and Xiamen (diverted to Singapore, SIN) (Appendix, Table A-2).

#### ***Emergency response by the airport operator***

2.5 API worked with the airport authority, AirNav Indonesia, airlines, Customs, Immigration and ground handling agents. Its response had six parts:

- a) *Monitoring and information sharing.* Significant Meteorological Information – Volcanic Ash (SIGMET-VA) and Ash NOTAM (ASHTAM) were monitored in

real time through the national aviation meteorological information system (INA-SIAM). Wind direction and speed at each flight level were cross-checked against local wind reports. Air traffic control (ATC), airlines and aerodrome stakeholders were informed as soon as an ash polygon was forecast to approach, and flight delay and cancellation status was updated with each new SIGMET cycle.

- b) *Emergency command post (Posko) dashboard.* API activated an emergency command post (Posko) with an integrated dashboard as the single centre for information and for monitoring the impact on flights and passengers. The dashboard brought together, in near real time, the status of each airport (open or closed by NOTAM), the number of flights cancelled, delayed and diverted at each airport, the number of passengers affected, the availability of alternate airports and stands, and the progress of passenger care services. It served as a common reference for coordination with the airport authority, AirNav Indonesia and airlines, and as the basis for regular situation reports to the Directorate General of Civil Aviation (DGCA) (Figure 2).

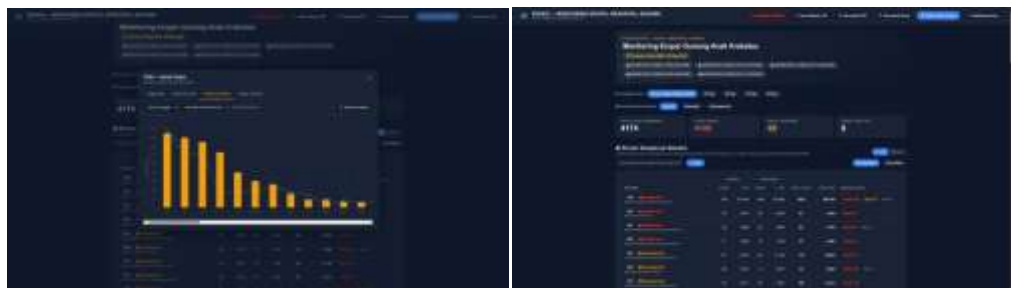


**Figure 2. API emergency command post (Posko) dashboard for monitoring the impact on flights and passengers**

- c) *Distributed diversion.* Flights that could not use CGK, HLP, BDO or TKG were diverted to a cluster of nearby airports that had tested negative for ash: Kertajati (KJT), Yogyakarta (YIA), Semarang (SRG), Solo (SOC) and Surabaya (SUB). KJT was activated as an alternate aerodrome with stands kept ready for aircraft unable to land at CGK or BDO. The Yogyakarta–Solo–Semarang (Joglosemar) cluster received and served diverted passengers.
- d) *Extended operating hours.* Airports with the largest parking capacity in the distributed diversion scheme, including SOC, YIA and DHX, extended their operating hours to take diverted aircraft.
- e) *Apron and stand capacity.* Stands were prepared at 19 alternate airports in case of further diversions, with a maximum capacity of 127 narrow-body and 4 wide-body aircraft.
- f) *Pre-operational assurance before reopening.* Before each closed airports were reopened, API carried out a structured re-verification of airside, terminal and operational readiness. An airport was reopened only after all aspects of API's 3S+1C principle (safety, security, service and compliance) had been verified. The re-verification covered five areas:
- (i) *Airside cleaning.* Runways, taxiways, aprons and airfield lighting were cleaned of volcanic ash, using runway sweepers and water spraying by airport rescue and fire-fighting (ARFF) vehicles. Airside areas were then inspected to confirm that they were free of foreign object debris (FOD) and volcanic ash residue. Their condition was monitored intensively, and cleaning was repeated at regular intervals.

- (ii) *Volcanic ash testing.* Paper tests for volcanic ash were carried out on the runway and other movement areas. Tests at 14 airports on 7–8 September 2026 were all negative (Table 1).
- (iii) *Terminal and landside readiness.* Every service point was inspected to confirm that it was in good condition and ready for operation, including curb side areas, check-in counters, air conditioning, boarding gates, baggage reclaim belts, signage, flight information displays and toilets. Check-in areas, boarding gates and other public areas were confirmed free of volcanic ash.
- (iv) *Flight and passenger planning.* Before reopening CGK, API prepared a flight and passenger estimate for each terminal and compared it with the hourly capacity of each terminal.
- (v) *Stakeholder coordination and public information.* Readiness to reopen was confirmed jointly with the airport authority, ATC, Customs, Immigration, airlines and ground handling agents. The NOTAM was updated, and the reopening was announced through official information channels.



(a) Runway sweeping



(b) Volcanic ash paper test on the runway



(c) Runway washing by ARFF vehicles

**Figure 3. Pre-operational assurance before reopening**

### ***Passenger care: Service Recovery Activation***

2.6 To protect affected passengers, API ran a Service Recovery Activation (SRA). API fully funded the SRA services, and passengers were not charged. The SRA covered:

- a) *Free transportation.* DAMRI buses, free shuttle services and rail connections were provided, with buses running to Yogyakarta, Solo, Semarang and Surabaya so that passengers could reach the alternate airports or their final destinations.



**Figure 4. Free buses for passengers**

- b) *Basic needs.* Food, drinks and rest areas were provided for all affected passengers while they waited or were rerouted.



**Figure 5. Provide basic needs for passengers**

- c) *Passenger help desks.* Staffed help desks operated in Terminals 1, 2 and 3 at CGK to assist passengers in person.



**Figure 6. Staff help desk for assisting passenger**

- d) *Rebooking and refunds.* Airlines handled rescheduling and refunds directly with affected passengers.



**Figure 7. Desk for rescheduling and refunds**

### ***Lessons learned***

2.7 From this event, API has drawn the following lessons for emergency planning and consumer protection at airports exposed to natural hazards:

- a) *A shared picture of the situation is essential.* Real-time sharing of ash forecasts, aerodrome status and flight status among ATC, airlines and aerodrome stakeholders allowed decisions on closure, diversion and reopening to be made quickly and consistently. The Posko dashboard gave all parties a single, common source of information.
- b) *Alternate aerodrome capacity keeps the network connected.* Having nearby airports with stands ready, extended operating hours and road and rail links meant that passengers and aircraft could stay in the network while the hub was closed.
- c) *Passenger care needs to be planned in advance.* Transport, meals and help desks for large numbers of passengers are easier to deliver when the arrangements, and who pays for them, are agreed with airlines and authorities before an event happens.
- d) *Reopening has to be safe.* Runway and airside cleaning, ash testing, terminal checks, flight and passenger planning, and joint confirmation by all stakeholders under the 3S+1C principle allowed operations to resume safely about two days after the ASHTAM was issued.

2.8 Indonesia is ready to share API's experience in volcanic ash emergency response and passenger care with other States and airport operators, particularly those exposed to similar natural hazards.

### **3. CONCLUSION**

3.1 The Anak Krakatau event of September 2026 showed that a volcanic ash event lasting several days can affect more than 4,100 flights and 450,000 passengers across a national network. Coordinated monitoring through the Posko dashboard, distributed diversion, extended aerodrome operations and passenger care funded by the airport operator helped limit the impact and allowed operations to resume safely. Indonesia invites the Conference to note this experience as a contribution to discussions on emergency planning and consumer protection for a resilient aviation system.

---



## APPENDIX

**Table A-1. Airports affected at route level (not closed), 5–8 September 2026**

| No. | Aerodrome                                                  | Flights affected | Passengers affected |
|-----|------------------------------------------------------------|------------------|---------------------|
| 1   | I Gusti Ngurah Rai International (DPS)                     | 175              | 18,094              |
| 2   | Juanda International (SUB)                                 | 141              | 9,906               |
| 3   | Sultan Hasanuddin International (UPG)                      | 106              | 14,152              |
| 4   | Sultan Syarif Kasim II International (PKU)                 | 80               | 10,812              |
| 5   | Jenderal Ahmad Yani International (SRG)                    | 74               | 9,360               |
| 6   | Sultan Mahmud Badaruddin II International (PLM)            | 63               | 7,912               |
| 7   | Minangkabau International (PDG)                            | 56               | 7,736               |
| 8   | Yogyakarta International (YIA)                             | 52               | 6,050               |
| 9   | Supadio International (PNK)                                | 50               | 6,940               |
| 10  | Sultan Aji Muhammad Sulaiman Sepinggan International (BPN) | 48               | 6,267               |
| 11  | Syamsudin Noor International (BDJ)                         | 47               | 6,496               |
| 12  | Hang Nadim (BTH)                                           | 47               | 6,282               |
| 13  | Lombok International (LOP)                                 | 41               | 5,204               |
| 14  | Sultan Iskandar Muda International (BTJ)                   | 39               | 4,616               |
| 15  | Sultan Thaha (DJB)                                         | 39               | 4,740               |
| 16  | Adi Soemarmo International (SOC)                           | 32               | 3,665               |
| 17  | Adisutjipto International (JOG)                            | 31               | 1,071               |
| 18  | Fatmawati Soekarno (BKS)                                   | 26               | 2,762               |
| 19  | El Tari International (KOE)                                | 25               | 2,757               |
| 20  | Depati Amir (PGK)                                          | 24               | 3,431               |
| 21  | Sam Ratulangi International (MDC)                          | 24               | 2,174               |
| 22  | Tjilik Riwut (PKY)                                         | 18               | 2,120               |
| 23  | Silangit (DTB)                                             | 16               | 2,381               |
| 24  | Kualanamu (KNO)                                            | 16               | 471                 |
| 25  | Pattimura (AMQ)                                            | 14               | 1,619               |
| 26  | Sentani International (DJJ)                                | 14               | 1,608               |
| 27  | H.A.S. Hanandjoeddin (TJQ)                                 | 12               | 1,810               |
| 28  | Raja Haji Fisabilillah (TNJ)                               | 8                | 967                 |
| 29  | Dhoho International (DHX)                                  | 4                | 327                 |
| 30  | Banyuwangi (BWX)                                           | 4                | 485                 |
| 31  | Kertajati International (KJT)                              | 2                | 737                 |
|     | <b>Total (31 airports)</b>                                 | <b>1,328</b>     | <b>152,952</b>      |

Breakdown: 1,301 cancelled, 21 delayed, 6 diverted/RTB/RTA.

**Table A-2. Diverted and returned flights, 5–8 September 2026**

| No. | Route                          | Status    | Flights  | Passengers   |
|-----|--------------------------------|-----------|----------|--------------|
| 1   | MED/JED – CGK, diverted to KJT | Diversion | 2        | 737          |
| 2   | UPG – CGK, diverted to HLP     | Diversion | 1        | 106          |
| 3   | SOQ – CGK, diverted to SUB     | Diversion | 1        | 154          |
| 4   | AMS – CGK, diverted to KNO     | Diversion | 1        | 356          |
| 5   | JED – CGK, diverted to BTJ     | Diversion | 1        | –            |
| 6   | XMN – CGK, diverted to SIN     | Diversion | 1        | 165          |
| 7   | HLP – JOG, returned to JOG     | RTB/RTA   | 1        | 54           |
|     | <b>Total</b>                   |           | <b>8</b> | <b>1,572</b> |

Source: PT Angkasa Pura Indonesia (Persero), impact report on the Anak Krakatau eruption, September 2026.

— END —