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Airline On-Time Performance Calculation and Denominators

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Executive Summary

Airline on-time performance calculation requires an explicit eligible population: divide qualifying on-time flights by eligible flights, then express the result as a percentage. A percentage without its denominator cannot establish comparability. For U.S. Part 234 reporting, a gate arrival **15 minutes or more** after schedule is late. OAG's public FAQ also makes that boundary explicit. EUROCONTROL's Aviation Intelligence Portal describes a different window, **15 minutes 59 seconds**, for commercially scheduled instrument flight rules operations. Similar OTP15 labels therefore do not guarantee identical classifiers. (www.ecfr.gov) (www.oag.com) (ansperformance.eu)

Cancellation and missing-data treatment can change the result independently of arrival events. New Zealand's official reporting uses operated arrivals for arrival punctuality and scheduled services for cancellation share. OAG Status Analyser+ documents excluding unresolved flights from both numerator and denominator. Its configured workspace should not automatically be equated with a public ranking whose missing-data rules have not been established. Cirium separately defines completion factor as the percentage of flights not cancelled; that definition alone does not establish its OTP denominator. (www.transport.govt.nz) (www.transport.govt.nz) (knowledge.oag.com) (www.cirium.com)

The retrieved BTS reporting-operating summary for **January through July 2026** provides a concrete reconciliation: **3,088,476 on-time arrivals / 4,120,343 total operations = 74.96%**, rounded as published. The total includes delayed, cancelled and diverted operations. This verifies one retrieved output, rather than every BTS table. An entirely synthetic example in this report shows the consequence of changing populations: **80 on-time arrivals** among **100 scheduled legs**, including **10 cancellations**, gives **80.0%** schedule-based punctuality or **88.9%** operated-only punctuality. Those invented inputs describe different management questions, not airline results. (transtats.bts.gov)

Before connecting external benchmark data, approve the event, schedule baseline, operating or marketing entity, service eligibility, threshold operator, cancellation and diversion treatment, missing-data policy, report window and retained revision. Marketing networks and operating-carrier outputs are distinct aggregation entities. Native software already supplies useful controls: Microsoft documents consistent fact grain, and OAG

documents selectable timeliness and flight-state parameters. Test those capabilities against the specification before commissioning a limited custom transformation. Leave unresolved methodology cells visible and defer comparisons that cannot yet be matched. (transtats.bts.gov) (learn.microsoft.com) (www.oag.com)

Introduction and Background

Airline on-time performance (OTP) is a ratio: qualifying on-time flights divided by flights eligible for the selected metric. The hard part is deciding which flights qualify for either side. The **Bureau of Transportation Statistics (BTS)** describes on-time performance using gate arrival or departure less than **15 minutes** after schedule. That definition establishes an event and boundary, but a dashboard still needs an explicit population and treatment of unsuccessful or unobserved operations. (www.bts.gov)

For a director of operations or an **operations control centre (OCC)** analyst, the management question should precede the formula. A schedule-based arrival measure asks what share of intended services delivered an on-time arrival. An operated-only measure asks how punctual the services that operated were. These questions can produce different percentages from identical validated timestamps. New Zealand's official reporting illustrates the separation: arrival punctuality uses operated arrivals, while its cancellation percentage uses scheduled services. (www.transport.govt.nz) (www.transport.govt.nz)

This report examines the metric specification needed before connecting an external benchmark to an airline on-time performance dashboard. It takes validated event times as inputs. Its focus is eligibility, classification, missing observations, aggregation and reproducible reporting, rather than another treatment of event-time reconciliation. Scheduled airline operations are the primary buyer scope. The U.S. reporting directive expressly excludes nonscheduled and charter flights from Part 234 reporting, so that population is not a representative benchmark for every charter operator or flight department. (www.bts.gov)

The software question is whether existing reporting can express the agreed specification and expose its evidence. **LANDING.AERO** describes custom applications designed around each operator's needs; its relevant role here is integration and dashboard development alongside existing systems. That description does not establish a proprietary OTP methodology or an external ranking product. (www.landing.aero)

Key Changes: From a Percentage to an Approved Specification

Define changes to the metric, not an assumed new industry rule

The changes proposed here concern internal metric design. A team replacing a loosely labelled punctuality card with a documented ratio should change its specification before comparing results. Current U.S. sources retain the strict gate-arrival boundary: **15 minutes or more late** is a late arrival under Part 234. (www.ecfr.gov)

There is a current regulatory timing distinction to preserve. A U.S. final rule published in September 2026 creates a new delay and cancellation cause-reporting category and becomes effective **October 19, 2026**, after this report's October 13 publication date. It should not be described as already effective or as introducing a new OTP threshold. The dashboard's cause-category edition can change separately from its punctuality classification version. (www.federalregister.gov)

The approval record should distinguish:

- **Purpose:** the management question answered by the percentage.
- **Population:** the geography, routes, service type and source coverage.
- **Entity:** the operating certificate, marketing network or airport being measured.
- **Event:** gate arrival or gate departure, with the scheduled baseline identified.
- **Eligibility:** which intended flight legs enter the denominator.
- **Classification:** cancellation, diversion, late, on-time and unresolved states.
- **Version:** the rule edition, data snapshot and correction policy.

These are proposed specification fields. They make the comparison auditable without implying that software configuration changes an operator's reporting obligations. The importance of an agreed question is consistent with the **International Air Transport Association (IATA)** airport collaborative decision-making recommendations, which support common objectives and performance metrics agreed among stakeholders. Those recommendations provide governance context, not a universal current OTP formula. (www.iata.org)

Separate source identity from methodology identity

OAG public rankings and **Status Analyser+** workspaces should not be treated as one automatically identical metric. The retrieved public global page displayed the **September 2026** edition; its public methodology counts cancellations as not on-time and requires coverage and volume criteria. The workspace documentation instead explicitly makes the displayed percentage dependent on configuration. (www.oag.com) (knowledge.oag.com)

A source registry should therefore identify the exact product, page or export, edition and selected settings. A dashboard caption such as “OAG comparable” is insufficient unless the entity, cohort, threshold, exclusions and missing-data treatment have been matched. The same principle applies to internal cards that share a display name but use different filters or calculation measures.

Population, Eligibility and the On-Time Performance Denominator

Write numerator and denominator as separate expressions

The proposed general formula is **OTP = qualifying on-time legs / eligible legs**, expressed as a percentage. Define the eligible-leg set first. Then derive the numerator from that set using the selected event and classification rules. Do not let the presence of an arrival timestamp define eligibility accidentally. PostgreSQL documents that counting an expression counts only non-null inputs; that behaviour can silently turn a schedule-based denominator into an observed-arrival denominator. (www.postgresql.org)

Table 1 is a proposed specification worksheet. The example source rules are evidence for particular fields, not a complete reproduction of every BTS or vendor output.

Specification field	Required decision or stored value	Evidence and boundary
Source and edition	Exact table, export, methodology page and effective edition	A provider name alone does not fix workspace settings. (knowledge.oag.com)

Specification field	Required decision or stored value	Evidence and boundary
Geography and service	Domestic/international, route universe and scheduled-service eligibility	Canadian guidance includes qualifying charter and scheduled services, illustrating jurisdiction-specific scope. (tc.canada.ca)
Aggregation entity	Operating certificate, marketing network or airport; stable identifier	U.S. Department of Transportation (DOT) identifiers represent reporting certificates. (transtats.bts.gov)
Event and schedule	Arrival/departure event and frozen scheduled baseline	Part 234 delay calculations use the designated computer reservations system source. (www.ecfr.gov)
Threshold	Value, unit, precision and explicit comparison operator	The U.S. boundary is less than 15 minutes; EUROCONTROL describes 15:59. (www.ecfr.gov) (ansperformance.eu)
Cancellation/diversion	Eligibility and numerator status for each terminal state	New Zealand explicitly classifies diverted arrivals as late. (www.transport.govt.nz)
Missing observation	Retain, exclude or separately report according to the selected method	Status Analyser+ documents unresolved-flight exclusions. (knowledge.oag.com)
Completeness	Numerator, coverage denominator and observation requirements	Cirium's FAQ states a flight-data coverage criterion. (www.cirium.com)
Reporting window	Attribution date, local-time convention and month assignment	Local-time conversion depends on historical zone rules. (www.iana.org)
Snapshot and revision	Extraction time, retained inputs, rule version and correction release	dbt documents recording changes to mutable tables over time. (docs.getdbt.com)

The worksheet prevents an attractive percentage from hiding an unspecified denominator. **Unknown** is a valid registry value when the fetched methodology does not answer a question. It is a reason to defer equivalence, not a reason to supply a convenient default. Implementation choices in the final column remain recommendations unless a cited source explicitly requires them.

Keep unsuccessful operations and missing observations distinguishable

Cancellation is a known operational outcome. A missing arrival observation is a data state. A diversion is another known outcome that may require a distinct arrival classification. Combining all three as “no arrival time” discards the distinction the metric needs. TranStats explicitly leaves ordinary **ArrDelay** null for diverted flights and provides separate diversion-related fields; a null ordinary arrival delay does not prove an on-time destination arrival. (transtats.bts.gov)

Cancellation eligibility also depends on the source's schedule window. U.S. Part 234's cancellation definition refers to a reservation-system listing within **seven calendar days** of departure. The UK Civil Aviation Authority (CAA) notes use a cancellation announcement less than **24 hours** before or after scheduled departure. A feed's generic cancellation flag cannot establish that the same population has been selected under both definitions. (www.ecfr.gov) (www.caa.co.uk)

For an internal scheduled-service KPI, publish **status completeness** separately: classified eligible legs divided by eligible scheduled legs, using an agreed definition of a sufficient classification. Publish arrival-observation completeness separately if useful. Neither should be labelled OTP. In a fully specified schedule-

based measure, unresolved eligible legs stay visible even when the report cannot yet assign a definitive punctuality result. A source that explicitly excludes unresolved records should be reproduced with that exclusion and a separately disclosed excluded count. (knowledge.oag.com)

Implementation Considerations and Process Changes

Prevent entity and codeshare duplication

The **marketing carrier** and **operating carrier** answer different aggregation questions. TranStats describes the marketing network as including relevant regional codeshare partners, while its reporting-carrier table concerns flights those carriers operate. An operating certificate therefore cannot simply be relabelled as the marketing network. The relationship must be represented deliberately in the comparison cohort. (transtats.bts.gov)

The proposed internal fact grain is **one intended physical flight leg**, with marketing relationships represented separately. Summing joined marketing rows should not create additional physical operations. This modelling recommendation aligns with Microsoft's guidance that Power BI fact tables load data at a consistent grain. It does not prescribe which external marketing network should own a particular operation. (learn.microsoft.com)

Use an explicit mapping that distinguishes:

- **Physical-leg identity:** the stable operation key used for counting.
- **Operating identity:** the reporting certificate or relevant operator identifier.
- **Marketing relationship:** the network or codeshare association for the selected output.
- **Validity interval:** when a mapping applies to the historical leg.
- **Source identity:** the external identifiers and their interpretation.
- **Duplicate disposition:** the retained operation and excluded join copies.

Historical mapping deserves care because TranStats warns that carrier codes can be reused and are not always unique. A display code alone is a weak historical join key. Preserve the reporting identifier and the effective mapping used in each published snapshot. (transtats.bts.gov)

Make the calculation survive ordinary BI behaviour

In **business intelligence (BI)** software, a denominator must be an explicit measure over the intended eligible set. Tableau automatically aggregates measures added to a view and ignores nulls in distinct counts. A chart can therefore show a mathematically valid result for a different set than the specification intended. Check the actual count expression and its response to filters, rather than relying on a field label. (help.tableau.com)

Recommended acceptance checks include:

- **Grain check:** a codeshare join preserves the physical-leg count.
- **Population check:** every eligible scheduled leg has a retained row.
- **State check:** terminal outcomes and unresolved observations remain separate.
- **Filter check:** route, date and entity selections apply consistently to both counts.
- **Empty-set check:** no eligible flights produces an explicitly unavailable ratio.
- **Reconciliation check:** displayed component counts reconcile to the stated denominator.

Power BI's Data Analysis Expressions **DIVIDE** function returns blank by default for division by zero. That native primitive can support an empty-set policy, but the team still needs to decide how the dashboard presents it. A blank, a zero-percent punctuality result and a fully observed poor-performance result should be visually distinguishable. (learn.microsoft.com)

These controls are part of approving the reporting measure. They are not dispatch instructions, operating targets or advice to alter schedules. Their purpose is to preserve the intended meaning when data pass through joins, filters, aggregate functions and dashboard presentation.

Thresholds, Scheduled Baselines and Reproducible Reporting

Test the boundary explicitly

The phrase “within fifteen minutes” is not a sufficient comparison operator. BTS uses **less than 15 minutes** after schedule, and Part 234 calls gate arrival **15 minutes or more** late. Under that selected rule, an arrival exactly at the boundary is late. OAG's public FAQ similarly says arrival fifteen minutes or more after schedule is not on-time. (www.ecfr.gov) (www.oag.com)

EUROCONTROL's Aviation Intelligence Portal instead describes **instrument flight rules (IFR)** flights arriving or departing within **15:59 minutes** after the airline schedule. It excludes IFR flights without a commercial schedule. A team should not translate that source automatically into the BTS boundary merely because both displays use an OTP15 label. (ansperformance.eu) (ansperformance.eu)

The UK Department for Transport describes its on-time band as early or **up to 15 minutes late**. Preserve that published wording and confirm the precision and operator in the relevant extract before asserting second-level equivalence. Its notes also identify a methodology discontinuity from **January 2018**, which matters when a dashboard backtests a long time series. (www.gov.uk) (www.gov.uk)

Freeze the schedule and reporting window

An arrival-delay calculation needs a named scheduled baseline, not whichever schedule happens to be available when a dashboard refreshes. Part 234 specifies the designated **computer reservations system (CRS)** schedule source for delay calculations. UK CAA notes say planned times include changes made up to **30 minutes before operation**. These are different baseline rules to preserve in the registry, rather than silently substituting one source's latest schedule. (www.ecfr.gov) (www.caa.co.uk)

The proposed report record should retain:

- **Scheduled baseline:** source, validity and retained value.
- **Event inputs:** the validated timestamps used by the classification.
- **Date attribution:** the selected service date and reporting-period convention.
- **Time conversion:** the zone identifier and relevant conversion rules.
- **Extraction identity:** the input snapshot and retrieval timestamp.
- **Correction release:** the revised record, reason and publication state.

For U.S. reporting, the directive assigns operations crossing a month boundary to the month in which they begin. A separate internal Coordinated Universal Time (UTC) reporting month may answer a useful question, but it should be labelled as a different window. The **Internet Assigned Numbers Authority (IANA)** maintains time-zone history, including boundaries, UTC offsets and daylight-saving changes; storing the applicable conversion basis helps reproduce period attribution. (www.bts.gov) (www.iana.org)

The proposed **metric-version ledger** stores rule changes separately from data corrections. Retain both the originally published and corrected result when backtesting matters. dbt snapshots provide a native mechanism for tracking mutable-table changes, but their documentation cautions that usefulness depends on running them frequently. A snapshot process cannot recover every intervening update it never observed. No specific BTS finalization policy is asserted here. (docs.getdbt.com) (docs.getdbt.com)

Matched-Cohort Comparisons and the Reference Registry

An external percentage becomes comparable only after its population and classification have been matched. **Cirium** distinguishes airline gate-arrival punctuality from airport departing-flight punctuality. Airports Council International (ACI) World likewise describes departure OTP as a closely watched airport measure. Comparing an airline arrival card with an airport departure card changes the event and the aggregation question simultaneously. (www.cirium.com) (blog.aci.aero)

Table 2 records the benchmark-methodology source review completed on **13 October 2026**. “Unresolved” identifies fields not verified in that dated review; it does not imply that the organization lacks a rule. **Access date: 13 October 2026** for the cited BTS Flight Delays at a Glance page; OAG global and North America monthly-ranking pages and Status Analyser+ guide; Cirium review, history and FAQ pages; EUROCONTROL punctuality and operated-schedules definitions; and New Zealand July 2026 report and reporting page. These access dates identify the sources consulted for this review; subsequent page updates are outside its scope.

Reference	Established event and population	Denominator or state evidence	Comparison limitation
BTS reporting-operating Flight Delays at a Glance	Particular retrieved U.S. reporting-operating table	Its component counts reconcile to total operations, including cancelled and diverted flights. (transtats.bts.gov)	Arithmetic verified for this output; do not generalize to every BTS table.
OAG public monthly rankings	Airline gate arrival; public eligibility includes coverage and flight-volume requirements	Cancellations count as not on-time; FAQ sets arrival 15 minutes or more as late. (www.oag.com)	Fields still to verify: denominator eligibility of diverted flights and flights with missing status or arrival observations.
OAG Status Analyser+	Workspace-selected scope and timeliness configuration	Unresolved states are excluded from both numerator and denominator. (knowledge.oag.com)	Record configuration; do not infer that public rankings use identical exclusions.
Cirium public review methodology	Airline arrival versus airport departure; data-coverage eligibility	Completion factor is the percentage of flights not cancelled. (www.cirium.com)	Field still to verify: cancellation eligibility in the OTP denominator; the separate completion-factor definition does not settle it.

Reference	Established event and population	Denominator or state evidence	Comparison limitation
EUROCONTROL portal	Commercial-schedule IFR flights, using the published 15:59 window	Operated schedules are a distinct matched-schedule measure. (ansperformance.eu)	Fields still to verify: OTP denominator treatment of cancellations, diversions and missing timestamps; download metadata identifying the reporting period, extraction time and revision.
New Zealand July 2026 report	Covered routes; operated-arrival punctuality	Arrival denominator uses operated arrivals; cancellation denominator uses scheduled services. (www.transport.govt.nz) (www.transport.govt.nz)	Participation is voluntary; this is not the universe of all services. (www.transport.govt.nz)

The registry supports a decision rather than a league table. It identifies a verified comparison, a comparison needing additional methodology, or a different management question. Never turn an unresolved cell into assumed equivalence. EUROCONTROL's percentage of operated schedules compares matched operated flights with expected schedules; that is useful completion context, but not an interchangeable cancellation percentage. (ansperformance.eu)

Build the proposed comparison cohort in sequence:

- **Match service:** retain common geography, scheduled-service scope and route eligibility.
- **Match entity:** choose the same operating or marketing aggregation.
- **Match period:** align attribution date, month and revision release.
- **Match schedule:** document the baseline or disclose the difference.
- **Match states:** reconcile cancellation, diversion and unresolved eligibility.
- **Match threshold:** retain the published operator and precision.
- **Retain evidence:** save counts, exclusions and registry version with the result.

Coverage remains distinct from punctuality. Cirium's FAQ requires data for at least **80%** of flights for inclusion in its analysis. OAG also states **80%** status coverage, but its global page describes minimum monthly flights as operated (www.oag.com) while its North America FAQ says at least **1,500 scheduled flights**. Preserve that wording difference and confirm the applicable edition instead of silently harmonizing it. (www.cirium.com) (www.oag.com)

Data Analysis and Evidence

A verified denominator in one published output

The retrieved BTS reporting-operating Flight Delays at a Glance table covers **January through July 2026**. It displays **3,088,476 on-time arrivals**, **926,183 delayed arrivals**, **92,612 cancellations**, **13,072 diversions** and **4,120,343 flight operations**, with published on-time performance of **74.96%**. These are period-specific retrieved figures, not a full-year forecast or a ranking recommendation. (transtats.bts.gov)

The component reconciliation is reproducible: **3,088,476 + 926,183 + 92,612 + 13,072 = 4,120,343**. Dividing the on-time count by total operations gives **74.96%** after rounding to the displayed precision. This arithmetic verifies the denominator of that particular retrieved output. It does not establish the formula of all marketing-carrier, airport or historical BTS summaries. (transtats.bts.gov)

Directive 40 separately specifies the CRS performance-code calculation using on-time reported operations divided by total reported operations of that flight during the month. That explicit flight-code formula is another source-specific rule. It should not be used as a shortcut to claim a denominator for a different summary whose formula or component reconciliation has not been checked. (www.bts.gov)

Schedule-based versus operated-only (Hypothetical Example)

Consider entirely illustrative inputs: **100 eligible scheduled legs**, **10 cancellations**, **90 operated legs** and **80 qualifying on-time arrivals**. Assume all operated legs have sufficient observations and no diversions. A schedule-based ratio is **80/100 = 80.0%**. An operated-only ratio is **80/90 = 88.9%**. These are author calculations from invented inputs, not measured airline performance or reproductions of an identified vendor ranking.

The difference is **8.9 percentage points** after rounding. Nothing about the validated arrival events changed. The denominator changed the question. Alongside these illustrative ratios, cancellation share is **10/100 = 10.0%**, and status completeness is **100/100 = 100.0%** if the cancellations and all operated outcomes have known classifications. This illustrates why completeness should have its own definition rather than inherit the arrival numerator.

Classification tests (Hypothetical Example)

Table 3 is a synthetic acceptance worksheet for a selected internal schedule-based gate-arrival metric with a strict less-than-fifteen-minute rule. Its test times and outcomes are invented. Cancellations and diversions remain eligible and cannot qualify as on-time in this selected specification; unresolved records remain eligible and are disclosed separately. These internal choices are not presented as universal source rules. The threshold itself matches the BTS boundary. (www.bts.gov)

Synthetic record	Selected expected classification	Denominator and reporting consequence
Ordinary arrival 14 minutes late	On-time	Eligible; adds to numerator.
Ordinary arrival exactly 15 minutes late	Late	Eligible; does not add to numerator.
Cancelled eligible scheduled leg	Cancelled	Eligible; does not add to numerator.
Diverted leg arriving at another airport	Diverted	Eligible; alternate-airport arrival does not qualify as destination arrival.
Diverted leg later reaching destination	Diverted under this selected rule	Retain recovery detail; classification stays method-dependent.
Eligible leg with no resolved status	Unresolved	Retain in denominator; report incomplete classification explicitly.

Synthetic record	Selected expected classification	Denominator and reporting consequence
Duplicate marketing row for a counted physical leg	Duplicate join record	Adds neither another eligible leg nor another on-time arrival.
Later correction changes arrival from 14 to 15 minutes late	Corrected late outcome	Revised numerator changes; retain the original published snapshot.

This worksheet tests semantic decisions before benchmark integration. A source-specific replay should replace the selected internal choices with that source's established rules. New Zealand's retrieved methodology, for example, explicitly treats a diverted service as a late arrival. TranStats's ordinary arrival-delay field is null for diverted flights. These facts prevent treating every destination or alternate arrival time as an ordinary qualifying observation. (www.transport.govt.nz) (transtats.bts.gov)

If an illustrative operated leg becomes unresolved, its denominator treatment must follow the agreed method. Status Analyser+ documents exclusion of unresolved states, while the selected synthetic schedule-based rule retains them. Publish the excluded or unresolved count either way, so a smaller observed population is visible. (knowledge.oag.com)

Implications and Future Directions

Approve the measure before buying an integration

The first procurement question is whether current tools can implement the approved specification. OAG documents native parameters including timeliness, flight state and departure and arrival actuals. Cirium documents multiple data-delivery methods and analytics workbooks. These vendor descriptions establish available reporting capabilities, not proof that a particular operator's required cohort or revision controls are already configured. (www.oag.com) (www.cirium.com)

Test native capabilities against the worksheet before commissioning custom software. A limited transformation may be justified when the current stack cannot preserve stable leg identity, effective entity mapping, an agreed denominator or retained corrections. It should have a defined input contract, an auditable output and acceptance tests. LANDING.AERO's first-party description includes integrating disparate sources, automating workflows and building custom dashboards, which is an adjacent implementation option for a demonstrated gap. (www.landing.aero)

Access rights are another input to integration. OAG's public North America page says non-media copying requires explicit permission. Publication on a public webpage should therefore not be treated as a grant to redistribute data into an operational product. Confirm the permitted use of the exact dataset before connecting it. (www.oag.com)

Preserve jurisdiction and sample boundaries

An airport or jurisdiction label does not guarantee a representative flight population. ACI EUROPE describes its airport performance reports as covering participating member airports. New Zealand's official reporting says airline participation is voluntary. Neither should be presented as an unrestricted census or automatically

matched with the U.S. reporting universe. (www.aci-europe.org) (www.transport.govt.nz)

Transport Canada's retrieved performance-data guidance includes qualifying charter and scheduled services, a different scope from the U.S. exclusion discussed earlier. Its landing page (accessed **13 October 2026**) offers detailed guides by request. The **13 October 2026** source review left the Canadian OTP event, scheduled baseline, threshold operator, eligible denominator, cancellation and diversion treatment, missing-observation policy and intended comparison population unverified. Leave the Canadian methodology incomplete until those fields can be verified. (tc.canada.ca)

Future dashboard releases should treat methodology as versioned data: retain the source edition, change reason, effective period and affected calculations. The outcome sought is an explainable comparison and a reproducible report, rather than a percentage that appears consistent only because its exclusions are hidden.

Frequently Asked Questions (FAQs)

How is airline on-time performance calculated?

Divide qualifying on-time flights by the eligible flights defined in the metric specification, then express the result as a percentage. For the specific retrieved BTS reporting-operating summary, component reconciliation supports a denominator that includes on-time, delayed, cancelled and diverted operations. Other outputs require their own verified definition. (transtats.bts.gov)

Are cancelled flights included in on-time performance?

It depends on the selected measure. The retrieved BTS summary includes cancellations in its total operations, and OAG explicitly treats cancellations as not on-time. New Zealand uses operated arrivals for arrival punctuality and scheduled services for cancellation share. Always name the metric rather than asserting an industry-wide answer. (knowledge.oag.com) (www.transport.govt.nz)

How do diverted flights affect on-time performance?

Their treatment is methodology-dependent. TranStats leaves ordinary arrival delay null for diverted flights; New Zealand's retrieved report counts a diverted service as a late arrival. Retain diversion state and apply the selected destination and eligibility rule. Do not convert a null ordinary delay into a qualifying arrival. (transtats.bts.gov) (www.transport.govt.nz)

What is the difference between arrival and departure OTP?

They compare different events with their corresponding scheduled times. Cirium's public methodology uses arrival for airlines and departure for airports. An internal dashboard may publish both, but its captions and comparison registry should identify which event each percentage measures. (www.cirium.com)

Does exactly fifteen minutes late count as on-time?

Under BTS's strict less-than-fifteen-minute rule, it does not. EUROCONTROL's portal describes a 15:59 window, and the UK Department for Transport uses up-to-fifteen-minutes wording. Store the explicit source boundary and precision rather than giving every OTP15 label the same classifier. (www.ecfr.gov)

(ansperformance.eu) (www.gov.uk)

What should an airline on-time performance dashboard show?

The proposed minimum is the numerator, denominator, event, eligible population, cancellation and diversion counts, completeness, unresolved count, methodology version and reporting snapshot. A headline percentage should allow the analyst to inspect the supporting population. Native BI tools provide calculation primitives, but consistent fact grain and explicitly controlled measures remain design decisions. (learn.microsoft.com)

Conclusion

An airline on-time performance calculation should begin with an approved population and end with a retained reporting snapshot. The numerator is meaningful only when the eligible denominator, event, schedule baseline, threshold and state treatment are explicit. The report's registry distinguishes established source rules from unresolved details and proposed internal controls.

The verified BTS example demonstrates that a denominator can be checked through component counts rather than inferred from a dataset name. The synthetic worksheet demonstrates that schedule-based and operated-only punctuality answer different questions even when the arrival events are unchanged. Neither lesson establishes a universal cancellation or diversion rule.

Before approving an external comparison, the director of operations and dashboard owner should require a matched cohort, stable operating or marketing identity, explicit missing-data treatment and an identified edition. If an important registry field remains unknown, the defensible result is a deferred comparison with a named evidence gap. If the measures answer different questions, publish them separately with accurate captions.

Implementation should follow that decision. Native analytics may already provide the required filters and measures; a custom transformation is appropriate only for a demonstrated gap. The useful deliverable is an explainable ratio with inspectable counts and reproducible revisions. That specification lets analysts accept a valid benchmark, reject an invalid comparison and understand what changes when the methodology changes.

Source links

Links cited in this article, in order of first appearance. Full addresses are provided for readers using extracted text.

1. https://www.ecfr.gov/current/title-14/chapter-II/subchapter-A/part-234
2. https://www.oag.com/on-time-performance-data
3. https://ansperformance.eu/definition/punctuality/
4. https://www.transport.govt.nz/assets/Air/Aviation-on-time-performance-July-2026.pdf
5. https://knowledge.oag.com/docs/user-guide-analyser-flight-status-performance-features
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About LANDING.AERO

LANDING.AERO builds custom software for aviation operations teams at airlines, charter operators and flight departments. It is based in Montreal.

What it builds

Operations tools that reduce manual steps in day-to-day flight operations; integration of existing systems and data sources into one operational picture; workflow automation; real-time operational dashboards; bridges between legacy systems and modern applications; and mobile apps for staff in the field. Each application is designed around the operator's own workflows rather than sold as an off-the-shelf platform.

How it works

Work starts with discovery of the operator's workflows, continues with iterative development alongside the operator's team, and includes integration with the tools already in use and ongoing support.

Its own tools

LANDING.AERO also publishes small tools for aviation professionals, including UTC Alarm, which sets alarms in Zulu time, and NOTAM Notifier, announced for NOTAM change alerts on chosen airports.

Visit

See LANDING.AERO and its projects.

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