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MH370

Source, Evidence, Calculation & Register Control

AUTHOR APPROVED COMPLETE RESEARCH EDITION - AWAITING INDEPENDENT SPECIALIST REVIEW

Evidence cut-off: 7 August 2026

External specialist validation: pending

Institutional right of reply: pending

REALITY BEFORE RELIANCE | VERIFICATION BEFORE INTERPRETATION | EVIDENCE BEFORE NARRATIVE

Independent public-source case study - not a client engagement

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Matter	Malaysia Airlines Flight MH370
Aircraft	Boeing 777-200ER, registration 9M-MRO
Operating mode	Independent public-source case study - not a client engagement
Evidence cut-off	7 August 2026, 14:08 UTC / 16:08 SAST
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Prepared by	Paul Hattingh Aperture Research & Verification
Contact	info@apertureforensic.com www.apertureforensic.com

Canonical source-register control

The Step 8 freeze preserved a canonical SR-0001 through SR-0024 range, with future sources beginning at SR-0025. The exact original title-to-ID mapping is not fully recoverable in the active project archive. This rebuild therefore does not overwrite the frozen SR identifiers. Instead it provides a Reconstructed Source Register (RS-001 through RS-024) containing the authoritative sources used to verify and rebuild the dossier.

RS	Authority	Source	Type	Principal use
RS-001	Malaysia Ministry of Transport	Safety Investigation Report MH370/01/2018, Boeing 777-200ER 9M-MRO	Primary official	Flight history, radar, systems, maintenance, crew, cargo, simulator, wreckage, organisational investigation
RS-002	Malaysia Ministry of Transport	MH370 investigation report appendices	Primary official	Underlying report appendices and technical records
RS-003	Malaysia / ATSB	MH370 Data Communication Logs, amended 30 March 2017	Primary technical	BTO/BFO signalling records and calibration notes
RS-004	Ashton, Bruce, Colledge & Dickinson (Inmarsat)	The Search for MH370, Journal of Navigation 68(1)	Peer-reviewed/open technical	SATCOM architecture, BTO/BFO analysis, route-family methodology
RS-005	ATSB	Definition of Underwater Search Areas, 18 Aug 2014	Primary search authority	Early search-area methodology and satellite analysis
RS-006	ATSB	Flight Path Analysis Update, 8 Oct 2014	Primary search authority	Refined SATCOM/flight-path analysis
RS-007	ATSB	Definition of Underwater Search Areas Update, 3 Dec 2015	Primary search authority	Updated SATCOM model and underwater search definition
RS-008	DST Group / Springer	Bayesian Methods in the Search for MH370	Government scientific / technical	Bayesian flight-path and search probability modelling
RS-009	ATSB	MH370 Search and Debris Examination Update	Primary search/debris authority	Final BFO, end-of-flight simulations, flap-state and drift update
RS-010	ATSB	First Principles Review, 20 Dec 2016	Primary multidisciplinary review	33S-36S/25,000 km2 high-priority region and evidentiary reassessment
RS-011	ATSB	Operational Search for MH370 Final Report, 3 Oct 2017	Primary search authority	120,000+ km2 high-resolution sonar search, search outcomes and current analysis
RS-012	ATSB	Debris Examination Reports 1-5	Primary forensic/debris	Manufacturing identifiers, component attribution and structural examination
RS-013	CSIRO	The Search for MH370 and Ocean Surface Drift, 8 Dec 2016	Government scientific	Drift modelling, 36S-33S/35S prospective region
RS-014	CSIRO	MH370 drift modelling using genuine Boeing 777 flaperon / final report publicised Apr 2017	Government scientific	Improved flaperon drift behaviour and geographic constraints
RS-015	Geoscience Australia	MH370 Data Release	Government data	Public marine data from search mapping and seabed search
RS-016	Ocean Infinity	Conclusion of Current Search for MH370, 29 May 2018	Operator primary statement	2018 search >112,000 km2; non-find
RS-017	Ocean Infinity	Conclusion of the Search for MH370, 8 Mar 2026	Operator primary statement	2025/26 search phase and cumulative Ocean Infinity search context
RS-018	Malaysia Ministry of Transport	Update to Families: MH370 Search Operation 2025/2026	Primary official current status	15,000 km2 target; 28 operational days; approx 7,571 km2 surveyed

RS	Authority	Source	Type	Principal use
RS-019	Malaysia Ministry of Transport	Extension of Agreement with Ocean Infinity, 29 Jun 2026	Primary official current status	Extension to 30 Jun 2027; 7,428.54 km2 remaining; \$70m no-find-no-fee
RS-020	Australian Government / JACC history	Timeline of Significant Actions - Search for MH370	Primary official chronology	Search milestones 2014-2018
RS-021	Holland, Ian D.	MH370 Burst Frequency Offset Analysis and Implications on Descent Rate at End-of-Flight	Technical research	Independent final-BFO descent analysis
RS-022	Miron, Beron-Vera, Olascoaga & Koltai	Markov-chain-inspired search for MH370	Academic technical	Competing drift result near ~25S
RS-023	ICAO	Annex 13 - Aircraft Accident and Incident Investigation	International standard	Investigation responsibility and governance context
RS-024	Current reporting cross-check	AP/Reuters coverage of June 2026 Ocean Infinity extension and search status	Secondary current verification	Cross-check current public reporting; not primary evidence where official source available

Source URLs

RS-001 | Safety Investigation Report MH370/01/2018, Boeing 777-200ER 9M-MRO | <https://www.mot.gov.my/en/AAIB%20Statistic%20%20Accident%20Report%20Document/A%200514%209M-MRO%20MH370.pdf>

RS-002 | MH370 investigation report appendices | <https://www.mot.gov.my/en/aviation/reports/archived-report/mh370/mh370ir>

RS-003 | MH370 Data Communication Logs, amended 30 March 2017 | <https://www.atsb.gov.au/publications/educational-fact-sheet/2022/aviation/mh370-update-signalling-unit-logs>

RS-004 | The Search for MH370, Journal of Navigation 68(1) | <https://doi.org/10.1017/S037346331400068X>

RS-005 | Definition of Underwater Search Areas, 18 Aug 2014 | <https://www.atsb.gov.au/investigations/ae-2014-054>

RS-006 | Flight Path Analysis Update, 8 Oct 2014 | <https://www.atsb.gov.au/investigations/ae-2014-054>

RS-007 | Definition of Underwater Search Areas Update, 3 Dec 2015 | <https://www.atsb.gov.au/investigations/ae-2014-054>

RS-008 | Bayesian Methods in the Search for MH370 | https://www.atsb.gov.au/sites/default/files/media/5733804/Bayesian_Methods_MH370_Search_3Dec2015.pdf

RS-009 | MH370 Search and Debris Examination Update | https://www.atsb.gov.au/sites/default/files/media/5773389/ae-2014-054_mh370-search-and-debris-update_aug2017.pdf

RS-010 | First Principles Review, 20 Dec 2016 | <https://www.atsb.gov.au/investigations/ae-2014-054>

RS-011 | Operational Search for MH370 Final Report, 3 Oct 2017 | <https://www.atsb.gov.au/investigations/ae-2014-054>

RS-012 | Debris Examination Reports 1-5 | <https://www.atsb.gov.au/investigations/ae-2014-054>

RS-013 | The Search for MH370 and Ocean Surface Drift, 8 Dec 2016 | <https://publications.csiro.au/publications/publication/Plcsi%3AEP167888>

RS-014 | MH370 drift modelling using genuine Boeing 777 flaperon / final report publicised Apr 2017 | <https://www.csiro.au/en/news/All/Articles/2017/April/mh370>

RS-015 | MH370 Data Release | <https://www.ga.gov.au/about/projects/marine/mh370-data-release>

RS-016 | Conclusion of Current Search for MH370, 29 May 2018 | <https://oceaninfinity.com/news/conclusion-of-current-search-for-malaysian-airlines-flight-mh370/>

RS-017 | Conclusion of the Search for MH370, 8 Mar 2026 | <https://oceaninfinity.com/news/conclusion-of-the-search-for-malaysian-airlines-flight-mh370/>

RS-018 | Update to Families: MH370 Search Operation 2025/2026 | <https://www.mot.gov.my/en/Kenyataan%20Media/Year%202026/MH370%20Search%20Operation%202025-2026%20-%20Update%20to%20Families.pdf>

RS-019 | Extension of Agreement with Ocean Infinity, 29 Jun 2026 | https://www.mot.gov.my/my/Kenyataan%20Media/Tahun%202026/29%20JUN%2026_KENYATAAN%20MEDIA%20ENTERI%20PENGANGKUTAN%20PERLANJUTAN%20PERJANJIAN%20ANTARA%20KERAJAAN%20MALAYSIA%20%26%20OCEAN%20INFINITY%20BAGI%20MENGESAN%20BANGKAI%20PESAWAT%20MH370.pdf

RS-020 | Timeline of Significant Actions - Search for MH370 | <https://www.infrastructure.gov.au/infrastructure-transport-vehicles/vehicles/aviation/joint-agency-coordination-centre/timeline>

RS-021 | MH370 Burst Frequency Offset Analysis and Implications on Descent Rate at End-of-Flight | <https://arxiv.org/abs/1702.02432>

RS-022 | Markov-chain-inspired search for MH370 | <https://arxiv.org/abs/1903.06165>

RS-023 | Annex 13 - Aircraft Accident and Incident Investigation | <https://www.icao.int/safety/airnavigation/aig/pages/annex-13.aspx>

RS-024 | AP/Reuters coverage of June 2026 Ocean Infinity extension and search status | <https://apnews.com/article/21d6bdd3cd662865a56c7cff61484798>

Canonical Evidence Register: exact labels recovered

The following exact ER labels are recoverable from the Step 8 reconciliation record. Where an ID is not listed, the original exact label was not recovered and is not guessed.

ER ID	Recovered canonical label
ER-0007	Last normal radio transmission
ER-0008	Loss of normal secondary surveillance
ER-0010	Westward turnback
ER-0012	Final official military-radar-associated point

ER ID	Recovered canonical label
ER-0014	18:25 SATCOM log-on
ER-0017	BTO measurements
ER-0018	BFO measurements
ER-0022	00:19:29 log-on
ER-0024	Final BFO deviation
ER-0025	Fuel-exhaustion end-state model
ER-0026	Formal 27-item debris corpus
ER-0027	Confirmed Réunion flaperon
ER-0028	Confirmed left outboard flap section
ER-0029	Confirmed right outboard flap section
ER-0030	Positively associated non-confirmed debris
ER-0031	Not Identifiable debris items
ER-0032	Manufacturing/work-order identification
ER-0033	Multijurisdictional recovery pattern
ER-0034	Formal custody/examination chains
ER-0035	Right outboard flap most likely retracted
ER-0036	Breakup evidence
ER-0037	Explosives testing on selected items
ER-0038	Debris drift compatibility with southern Indian Ocean
ER-0039	Early drift wind-data implementation issue
ER-0040	Genuine Boeing 777 flaperon drift test
ER-0041	33S-36S high-priority model family
ER-0042	Alternative approximately 25S drift result
ER-0043	ATSB-led underwater search exceeding 120,000 km2
ER-0044	2016 First Principles priority region
ER-0045	Ocean Infinity 2018 coverage
ER-0046	2018 non-find
ER-0047	Cumulative search approaching 200,000 km2 by 2018
ER-0048	Current 15,000 km2 target area
ER-0049	7,571 km2 reported surveyed
ER-0050	7,428.54 km2 reported remaining
ER-0051	Current search extension through 30 June 2027
ER-0052	Current search model not fully public

Evidence ranges with incomplete original-label recovery

- ER-0001 through ER-0025: Phase 1 flight/radar/SATCOM/end-state evidence. Exact recovered labels include ER-0007, 0008, 0010, 0012, 0014, 0017, 0018, 0022, 0024 and 0025. Other Phase 1 original labels were not preserved in the accessible record.
- ER-0053 through ER-0090: Phase 3 maintenance, cargo, crew, simulator, third-party/security, remote-takeover, governance and official-statement genealogy. Step 8.4 confirms ER-0053 to ER-0058 as the systems/maintenance group and ER-0079 to ER-0090 as governance/official-statement evidence. The exact individual labels for the remainder are not reconstructed without the original Step 7.11 register.

Debris sub-register control

DB-01 through DB-27 identifies physical debris items separately from evidence propositions. DB-01 through DB-03 were populated at core level in the project record. DB-04 through DB-27 remained source-level population pending; this incomplete status is retained rather than silently filled.

DB ID	Status / controlled meaning
DB-01	Réunion flaperon - populated core record
DB-02	Left outboard flap section - populated core record
DB-03	Right outboard flap section - populated core record
DB-04 to DB-27	Individual source-level population pending in the internal research record

Calculation register

ID	Calculation / status	Result / note
CALC-001	50 microsecond BTO basic range conversion	Registered arithmetic control; full SATCOM geometry requires specialist model
CALC-002	Final normal radio (~17:19:30) to 00:19:29	6 h 59 m 59 s
CALC-003	Final radar 18:22:12 to 00:19:29	5 h 57 m 17 s
CALC-004	Final radar 18:22:12 to 18:25:27 log-on	3 m 15 s
CALC-005	00:10:59 to 00:19:29	8 m 30 s
CALC-006	Current surveyed percentage	7,571 / 15,000 = 50.47%
CALC-007	Current remaining percentage	7,428.54 / 15,000 = 49.52%
CALC-008	15,000 km ² reconciliation	7,571 + 7,428.54 = 14,999.54 km ² ; 0.46 km ² rounding difference
CALC-009	2018 search versus 25,000 km ² target	>112,000 / 25,000 > 4.48x initial target
CALC-010 to 012	Reserved	Not reassigned
CALC-013	Flight-plan fuel arithmetic	Registered in original project; exact worksheet not recoverable in active archive
CALC-P01 to P05	Pending technical SATCOM tasks	Not represented as Aperture-reproduced calculations

Contradiction-register aliases

- CR-18:25 - deliberate versus non-deliberate interpretation of 18:25 event.
- CR-DRIFT - 35S/33-36S model family versus more northerly competing drift results.
- CR-MIL - military friendly/non-threat assessment versus unusual route behaviour and later reconstruction.
- CR-LOC-01 - high-priority location model versus non-find.
- CR-SEARCH-01 - nominal surveyed area versus robust practical exclusion.

Evidence-gap register control

EG-001 through EG-018 is frozen. The full descriptions are reproduced in Annex H. Future gaps begin at EG-019.