

Evidence	AI 182	PA103	UAL 811	TWA 800
	(Forward Cargo Door)	(Forward Cargo Door)	(Forward Cargo Door)	(Forward Cargo Door)
Boeing 747	Yes	Yes	Yes	Yes
Early model -100 or -200	Yes	Yes	Yes	Yes
Overpressure relief door(s) in forward cargo door open/jammed	Maybe	Yes	Yes	Yes
Sudden airframe breakup in flight (partial or total)	Yes	Yes	Yes	Yes
Breakup occurs amidships	Yes	Yes	Yes	Yes
High flight time (over 55,000 flight hours)	No	Yes	Yes	Yes
Aged airframe (over 18 years of service)	No	Yes	Yes	Yes
Previous maintenance problems with forward cargo door	Yes	Maybe	Yes	Maybe
Initial event within an hour after takeoff	No	Yes	Yes	Yes
Initial event at about 300 knots while proceeding normally in all parameters	Yes	Yes	Yes	Yes
Initial event has unusual radar contacts	Maybe	Yes	Yes	Yes
Initial event involves hull rupture in or near forward cargo door area	Yes	Yes	Yes	Yes
Initial event starts with sudden sound	Yes	Yes	Yes	Yes
Initial event sound is loud	Yes	Yes	Yes	Yes
Initial event sound is audible to humans	Yes	Yes	Yes	Yes
Initial event followed immediately by abrupt power cut to data recorder	Yes	Yes	Yes	Yes
Initial event sound matched to explosion of bomb sound	No	No	No	No
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Initial event sound matched to explosive decompression sound in wide body airliner	Yes	Yes	Yes	Yes
Torn off skin on fuselage above forward cargo door area	Yes	Yes	Yes	Yes

Unusual paint smears on and above forward cargo door	Maybe	Maybe	Yes	Yes
Evidence of explosion in forward cargo compartment	Yes	Yes	Yes	Yes
Foreign object damage to engine or cowling of engine number three	Yes	Yes	Yes	Yes
Fire/soot in engine number three	Maybe	Yes	Yes	Yes
Foreign object damage to engine or cowling of engine number four	Yes	Yes	Yes	Yes
Right wing leading edge damaged in flight	Yes	Maybe	Yes	Maybe
Vertical stabilizer damaged in flight	Yes	Yes	Yes	Maybe
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Right horizontal stabilizer damaged in flight	Yes	Yes	Yes	Yes
More severe inflight damage on starboard side than port side	Yes	Yes	Yes	Yes
Port side relatively undamaged by inflight debris	Yes	Yes	Yes	Yes
Vertical fuselage tear lines just aft or forward of the forward cargo door	Yes	Yes	Yes	Yes
Fracture/tear/rupture at a midspan latch of forward cargo door	Maybe	Yes	Yes	Yes
Midspan latching status of forward cargo door reported as latched	No	No	No	No
Airworthiness Directive 88-12-04 implemented (stronger lock sectors)	No	No	No	Yes
Outwardly peeled skin on upper forward fuselage	Yes	Yes	Yes	Yes
Rectangular shape of shattered area around forward cargo door	Yes	Yes	Yes	Yes
Forward cargo door fractured in two longitudinally	Yes	Yes	Yes	Maybe
Status of aft cargo door as intact and latched	Yes	Yes	Yes	Maybe
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Passengers suffered decompression type injuries	Yes	Yes	Yes	Yes

At least nine missing and never recovered passenger bodies	Yes	Yes	Yes	Yes
Wreckage debris field in two main areas, forward and aft sections of aircraft	Yes	Yes	No	Yes
Initial official opinion of probable cause as bomb explosion.	Yes	Yes	Yes	Yes
Initial official determination modified from bomb explosion	Yes	Yes	Yes	Yes
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Structural failure considered for probable cause	Yes	Yes	Yes	Yes
Inadvertently opened forward cargo door considered for probable cause	Yes	No	Yes	Yes
Official probable cause as bomb explosion	Yes	Yes	No	No
Official probable cause as 'improvised explosive device'	No	Yes	No	No
Official probable cause as explosion by unstated cause	Yes	No	No	No
Official probable cause as explosion in center fuel tank with unknown ignition source	No	No	No	Yes
Official probable cause as improper latching of forward cargo door	No	No	Yes	No
Official probable cause as switch /wiring inadvertently opening forward cargo door	No	No	Yes	No
Significant Direct and Tangible Evidence Obtained for Four B747 Breakups in Flight	AI 182	PA103	UAL 811	TWA 800