APPENDIX D – LHD taxonomy

Code	LHD Cause
	Operational Errors
A	Flight crew failing to climb/descend the aircraft as cleared *Example: Aircraft A was at FL300 and assigned FL360. A CLAM alert was seen as the aircraft passed FL364. The Mode C level reached FL365 before descending back to FL360.*
B	Flight crew climbing/descending without ATC Clearance *Example: At 0648, Aircraft A reported leaving cruise level FL340. The last level clearance was coincident with STAR issue at 0623, when the flight was instructed to maintain FL340. ATC was applying vertical separation between Aircraft A and two other flights. The timing of the descent was such that Aircraft A had become clear of the first conflicting aircraft and there was sufficient time to apply positive separation with the other.*
C	Incorrect operation or interpretation of airborne equipment (e.g. incorrect operation of fully functional FMS, incorrect transcription of ATC clearance or re-clearance, flight plan followed rather than ATC clearance, original clearance followed instead of re-clearance etc) *Example: The aircraft was maintaining a flight level below the assigned altitude. The altimeters had not been reset at transition. The FL assigned was 350. The aircraft was maintaining FL346 for in excess of 4 minutes.*
D	ATC system loop error; (e.g. ATC issues incorrect clearance or flight crew misunderstands clearance message. Includes situations where ATC delivery of operational information, including as the result of hear back and/or read back errors, is absent, delayed, incorrect or incomplete, and may result in a loss of separation.) *Example: All communications between ATC and aircraft are by HF third party voice relay. Aircraft 1 was maintaining FL360 and requested FL380. A clearance to FL370 was issued, with an expectation for higher levels at a later point. A clearance was then issued to Aircraft 2 to climb to FL390, this was correctly read back by the HF operator, but was issued to Aircraft 1. The error was detected when Aircraft 1 reported maintaining FL390.*
E	Coordination errors in the ATC to ATC transfer or control responsibility as a result of human factors issues (e.g. late or non-existent coordination, incorrect time estimate/actual, flight level, ATS route etc not in accordance with agreed parameters) *Example 1: Sector A coordinated Aircraft 1 to Sector B at FL380. The aircraft was actually at FL400.* *Example 2: The Sector A controller received coordination on Aircraft 1 for*

	Waypoint X at FL370 from Sector B. At 0504 Aircraft 1 was at Waypoint X at FL350 requesting FL370.
F	Coordination errors in the ATC to ATC transfer or control responsibility as a result of equipment outage or technical issues *Example: Controller in FIR A attempts to send AIDC message to coordinate transfer of aircraft at FL320. Messaging unsuccessful and attempts to contact adjacent FIR by telephone fail. Aircraft contacts adjacent FIR without coordination being completed.*
Aircraft Contingency Events	
G	Deviation due to aircraft contingency event leading to sudden inability to maintain assigned flight level (e.g. pressurization failure, engine failure) *Example: Aircraft 1 descended from F400 to F300 with a pressurisation issue.*
H	Deviation due to airborne equipment failure leading to unintentional or undetected change of flight level *Example: Aircraft 1 cruising at FL380. ATC receives alert indicating aircraft climbing through FL383. Flight crew advises attempting to regain cleared level with autopilot and navigation system failure.*
Deviation due to Meteorological Condition	
I	Deviation due to turbulence or other weather related cause *Example: During the cruise at F400, the aircraft encountered severe turbulence, resulting the aircraft descending 1,000 ft without a clearance.*
Deviation due to TCAS RA	
J	Deviation due to TCAS resolution advisory, flight crew correctly following the resolution advisory *Example: Aircraft 1 was cruising at FL350. Flight crew received "Traffic Alert" from TCAS and almost immediately after an "RA Climb" instruction. Flight crew responded and climbed Aircraft 1 to approx FL353 to comply with TCAS instruction. TCAS display indicated that opposite direction Aircraft 2 descended to approx FL345 and passed below Aircraft 1.*
K	Deviation due to TCAS resolution advisory, flight crew incorrectly following the resolution advisory.
Other	
L	An aircraft being provided with RVSM separation is not RVSM approved (e.g. flight plan indicating RVSM approval but aircraft not approved, ATC misinterpretation of flight plan)

	Example 1: Original flight plan details submitted by FIR A for outbound leg showed Aircraft 1 as negative RVSM. Subsequent flight plan submitted by FIR B showed Aircraft 1 as RVSM approved. FIR A controller checked with aircraft shortly after entering FIR A and pilot confirmed negative RVSM. *Example 2: Aircraft 2 cruising FL310 was handed off to the Sector X controller who noticed the label of Aircraft 2 indicated RVSM approval. The Sector X controller had controlled the aircraft the day before. It was then a non-RVSM aircraft. The controller queried the status of Aircraft 2 with the pilot who advised the aircraft was negative RVSM.*
M	Other – this includes situations where: i) There has been a failure to establish or maintain a separation standard between aircraft; or ii) Where flights are operating (including climbing/descending) in airspace where flight crews are unable to establish normal air-ground communications with the responsible ATS unit. *Example 1: Aircraft 1 cruising at FL350. At time xxxx Aircraft 1 advised "Negative RVSM" due equipment failure. At that time Aircraft 2 on converging reciprocal track FL360 less than 10 minutes prior to time of passing.*