# Missing Flight Id from Satellite Log

## Introduction

The purpose of this document is to see how likely it is that after MH370 satellite turned back on again at around 2:40 AM LMT that the aircraft's flight id would be lost.

Normally it would only be reset (i.e. lost) after landing. See Appendix A - Reset of data communications at shutdown for details.

## When MH370 satellite terminal is re-powered

So far it is understood that the Flight Id is held in the FMC. When the Satellite terminal is powered down and powered up again it is generally expected that flight id will not be lost as it is part of the flight plan stored in the flight management system (FMS).

As the flight id is part of the flight plan there should be logical reason to delete it on repowering the Satellite terminal. It would be similar to deleting the aircraft's active flight plan stored in the Flight Management Computer.

It is surprising why a test on the ground to see what would happen on re-powering the satellite terminal has not been performed. See Appendix C - Test outline for repowering satellite terminal on the ground.

Please see also see Appendix B - What happens to flight ID when re-powering satellite terminal.

## Performing a 'Data Link System reset'

It appears most likely that when performing a 'Data Link System reset' it will not clear the Flight-Id as it is part of the active flight plan. In other words it is just data so in order to establish a reset with the satellite system clearing it would not help in re-establishing satellite communications.

Please see Appendix E - What happens to the flight-id after a system reset.

## Validity of Master Menu.

It would be good to confirm that the Master menu which has the 'Data Link System reset' option is an exact copy of what would be seen on a Boeing 777-200. Or is it just a conceptual approximation.

Please see Appendix D - MASTER MENU

# Appendix A - Reset of data communications at shutdown

Except for configuration of ACARS data radios, the data communication system is automatically reset after each flight. Reset occurs approximately 10 minutes after the last engine is shut down, and with any entry door open.

# Appendix B - What happens to flight ID when re-powering satellite terminal

### Question to ChatGpt

If the Satellite terminal is powered down and then powered up again when it logs back onto the satellite system will the flight-id be lost?

**Answer from ChatGpt**

When a satellite terminal in a Boeing 777-200 is powered down and then powered back up, the flight ID information may not be lost, but it depends on how the system is designed. Generally, the flight ID is part of the flight plan stored in the Flight Management System (FMS) or related systems.

Upon rebooting, the satellite terminal will attempt to re-establish a connection to the satellite network. If the flight plan and flight ID were previously loaded into the FMS, they should still be intact. However, if the terminal needs to re-register with the satellite system and there is a disruption in data transmission, there could be a temporary loss of that specific connection.

To ensure continuity, the crew would typically monitor and verify the flight ID and related information upon re-establishing the satellite connection.

# Appendix C - Test outline for repowering satellite terminal on the ground

This is to see if it is possible to delete the Flight Id in flight.

(1) Start up a Boeing 777-200 as per a typical flight.

(2) Make sure Satellite ACARS are being transmitted via the Satcom.

(3) Make note of the Flight-Id entered.

(4) With both engines running disable the left A/C generators, if the APU starts shut it down.

(5) Isolate the left A/C bus.

(6) Confirm the Satellite powered down message appears on the MFD.

(7) Check if Flight-Id is still present and note it down.

(8) Wait same time MH370 had an unpowered Satellite Terminal

(9) Enable the left engine generators and un-isolate the left bus (tie)

(10) Confirm the satellite terminal is powered up (error message should disappear from the MFD)

(11) See if Flight Id is still present and note it down.

(12) Select the communications switch on the display select panel.

(13) Select Manager

(14) Select Master menu

(15) Select data link system reset

(16) Check if flight Id is still present and note it down.

(17) If the flight ID is still present after powering down the aircraft and open the doors wait 10 minutes and re-start up the aircraft and confirm the previous flight id has been deleted.

(18) Make sure the aircraft is using the Inmarsat system and check the satellite log and compare the same against that from MH370,

## Appendix D - MASTER MENU

## Appendix E - What happens to the flight-id after a system reset

**From ChatGpt**

Regarding the flight identification (flight-ID), the removal or retention of this identifier post-reset is contingent upon the specific circumstances and the underlying software configuration. Typically, a Data Link System Reset will not inherently remove the flight-ID; however, if the reset process involves a full system initialization or if there are specific configurations programmed into the aircraft's avionics systems, it is possible for the flight-ID to be reset or altered.

To summarize, while the standard procedure does not explicitly mandate the removal of the flight-ID, various operational scenarios or system configurations might lead to its removal. It is advisable for flight crews to consult the aircraft's operational manual or technical documentation to understand the specific outcomes of performing a Data Link System Reset on their aircraft configuration