DEBRIS EXAMINATION REPORT

SAFETY INVESTIGATION FOR MH370

Malaysia Airlines MH370 Boeing B777-200ER (9M-MRO)
08 March 2014

Identification of Debris (Item 26 in the "Summary of Possible MH370 Debris Recovered") recovered from Nautilus Bay, South Africa on 23 December 2016

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The Malaysian ICAO Annex 13
Safety Investigation Team for MH370

Email : MH370SafetyInvestigation@mot.gov.my

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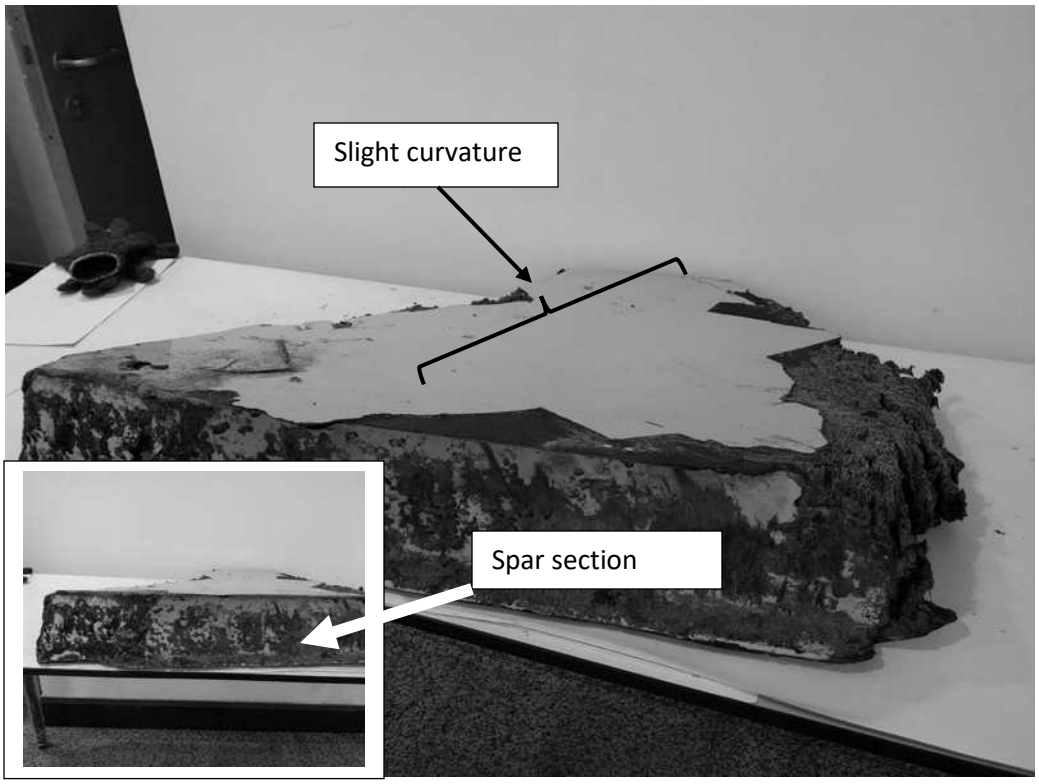
1.0 Introduction

This item was recovered from Nautilus bay, South Africa on 23 December 2016. It is identified as Item No. 26 from the items recovered; refer to the "***Summary of Possible MH370 Debris Recovered".***

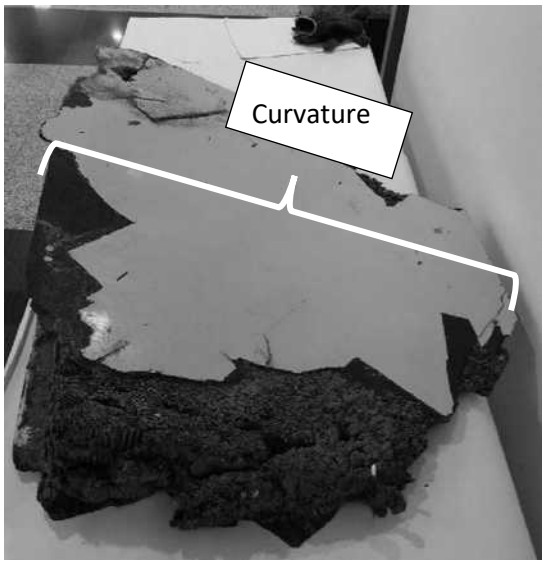
The item was brought back to Malaysia for identification and further examination by the ***"Malaysian ICAO Annex 13 Safety Investigation Team for MH370".***

2.0 Part Characteristics

The part was non-metallic honeycomb sandwich made of Carbon Fiber Reinforced Plastic (CFRP). The skin panel was a laminated fibers structure.



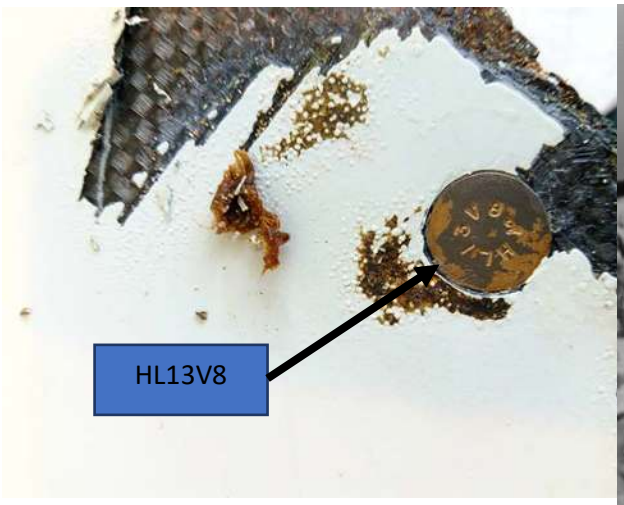
The non-metallic honeycomb was soaked with water resulting in the core material to swell. The following photos show the part's characteristics including the dimension.

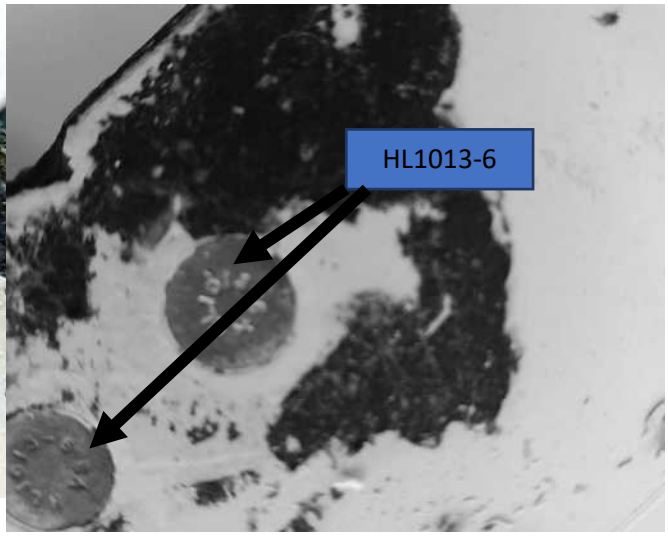


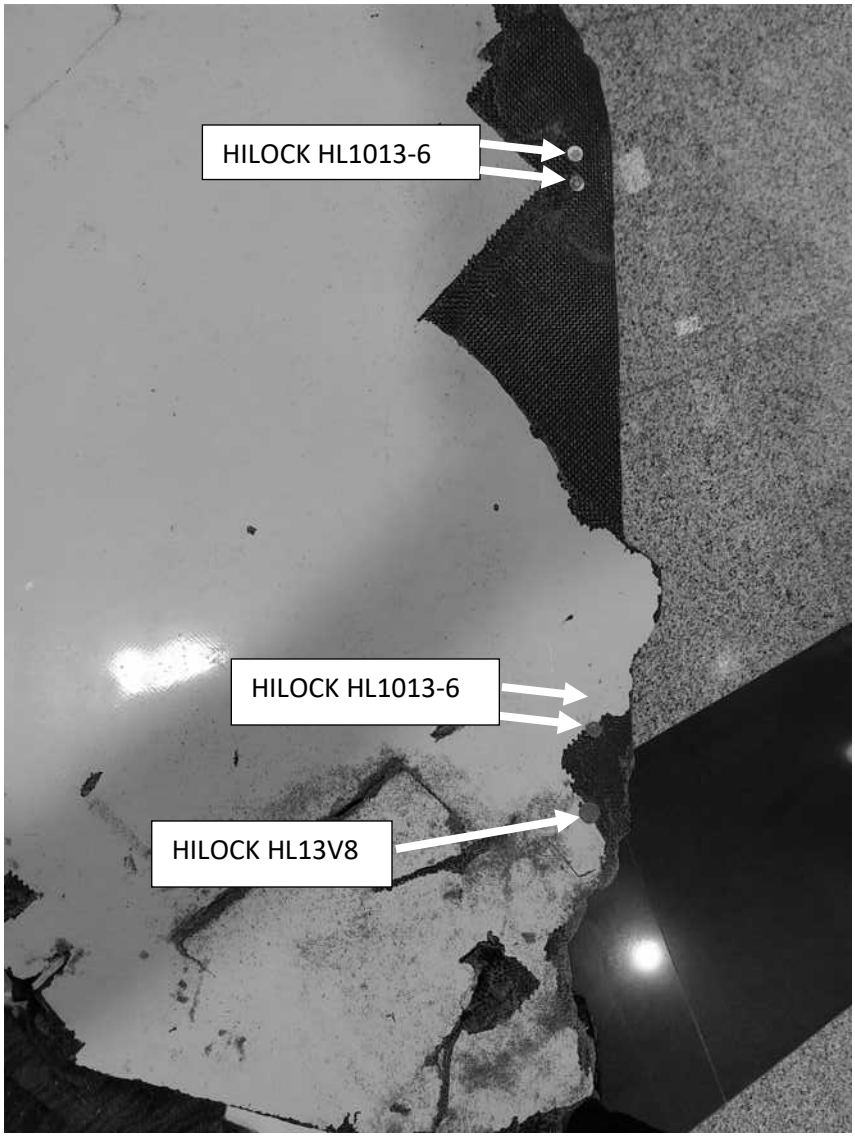
The part showed slight curvature in only one direction; the non-metallic honeycomb core was wet

The spar like section height was 6.5 inches high

Several Hi-lock fasteners with numbers HL1013-6 and HL13V8 were visible as shown below.



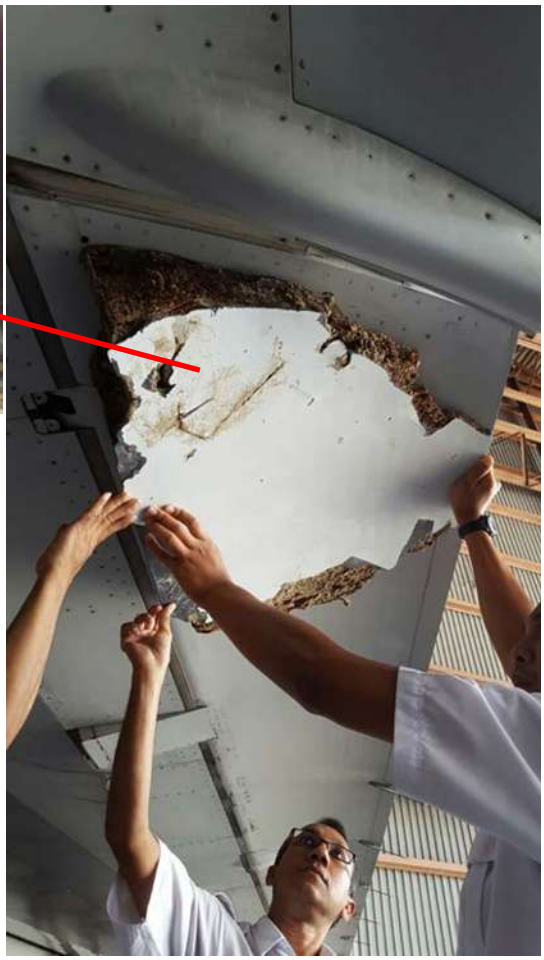




3.0 Identification

The part was taken to a B777-200ER, formerly operated by Malaysia Airlines (MAS), undergoing a maintenance check at Subang, Malaysia, for identification purposes.

The debris closely matched the inboard section of the Right Aileron.



Spacing of fasteners on the aileron on aircraft

Spacing of fasteners on the debris

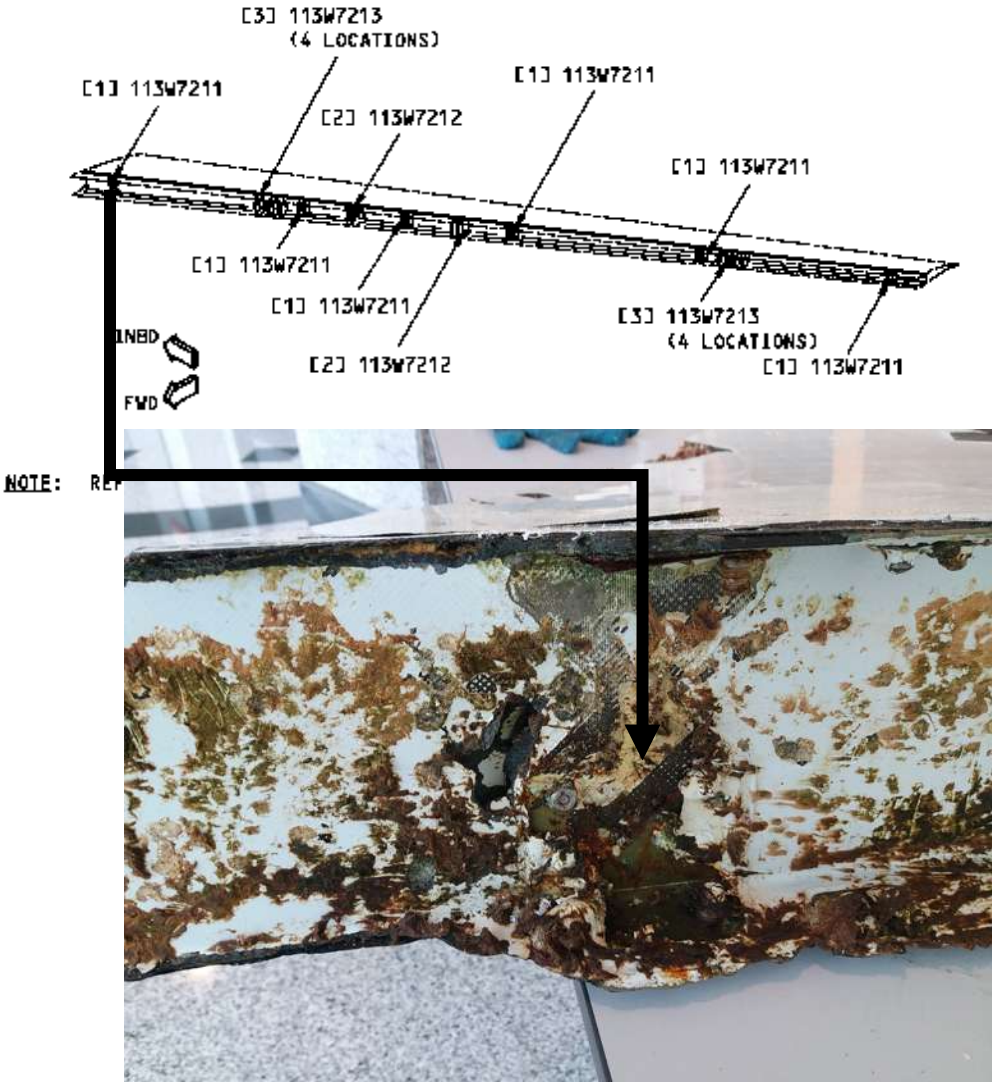
The numbers on the head of the fasteners on the debris were compared with those on the inboard section of the right aileron on the aircraft. These numbers matched. Additionally the spacing of the fasteners on the aileron also matched those on the debris. Refer to the photos above. The core and its dimensions also matched those on the inboard section of the right aileron. These confirmed that the debris is part of the inboard section of the right aileron of a B777 aircraft.

The location of where the part was found, considering that MH370 (aircraft registered as 9M-MRO) ended its flight in the South Indian Ocean, is consistent with the drift path modeling produced by the Commonwealth Scientific and Industrial Research Organisation (CSIRO). This suggests that the part is highly likely from MH370 given that the likelihood of it originating from another source is very remote. The Australian Transport Safety Bureau (ATSB) reports on the drift modeling can be found at http://www.atsb.gov.au/media/5772107/ae2014054_final-first-principles-report.pdf and http://www.atsb.gov.au/media/5771939/ae-2014-054_mh370-search-and-debris-update_2nov-2016_v2.pdf.

4.0 Structure Examination

There were fractures on all sides; however, part of the spar was still intact. Several fasteners were also still intact without failures. Except for the fasteners there were no other identification numbers.

The B777 Structure Repair Manual (SRM) diagram below shows the left aileron (the right is opposite). The hinge fitting area is shown. The fitting on the debris appeared to have suffered a tension overload fracture.



5.0 Conclusion

Based on the dimensions and fit on the aircraft and the visible fasteners it could be confirmed that the debris is part of the inboard section of the right aileron of a B777 aircraft. From the location where it was found, and being consistent with the drift path modeling for debris from an aircraft ending its flight in the South Indian Ocean, it is highly likely that it is from MH370 (aircraft registered as 9M-MRO).