DEBRIS EXAMINATION REPORT

SAFETY INVESTIGATION FOR MH370

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

Identification of Debris (Item 27 in the "Summary of Possible MH370 Debris Recovered") recovered from Mpame Beach, South Africa on 27 January 2017

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Safety Investigation Team for MH370

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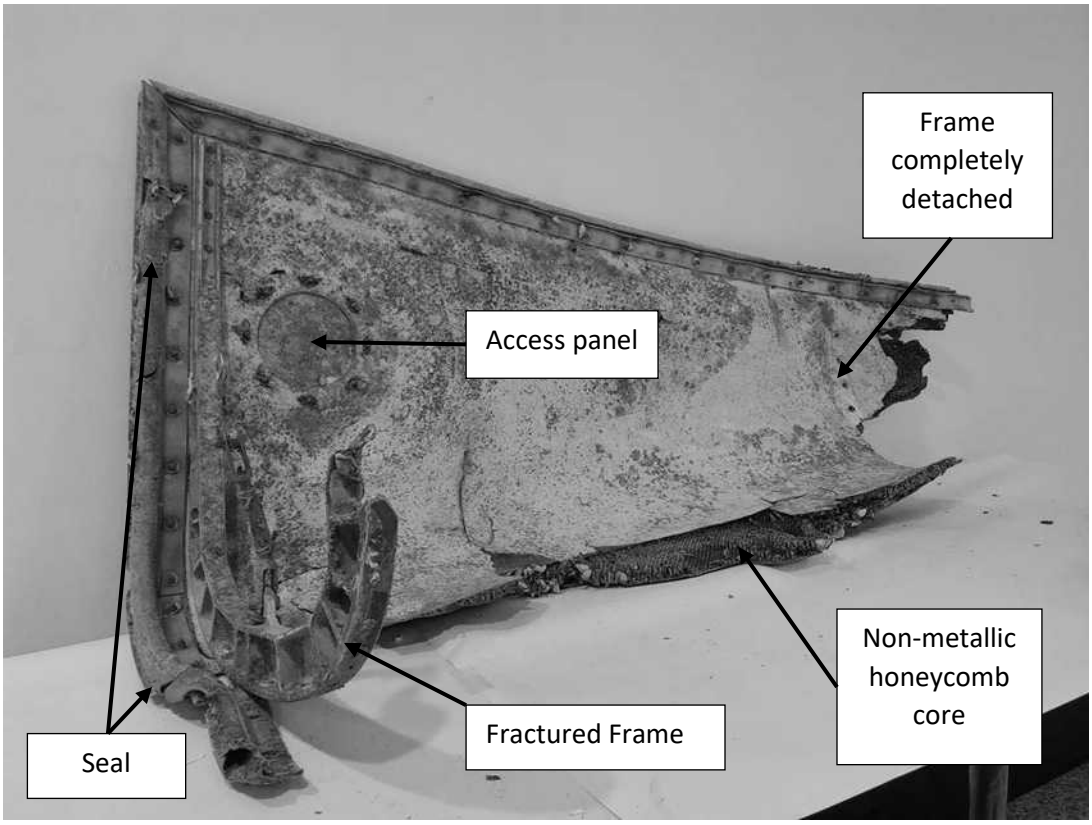
1.0 Introduction

This item was recovered from Mpame beach, South Africa on 27 January 2017. It is identified as Item No. 27 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

This part was made of composite Carbon Fibre Reinforced Plastic (CFRP) with non-metallic honeycomb core. A fractured metallic frame was still attached to the assembly. Seals were still intact around the part. An access panel was also still intact and completely attached in its position. There was evidence of another metallic frame installed on the part shown by its visible fastener holes; however this was completely detached from the part assembly. Refer to the picture below.



3.0 Identification

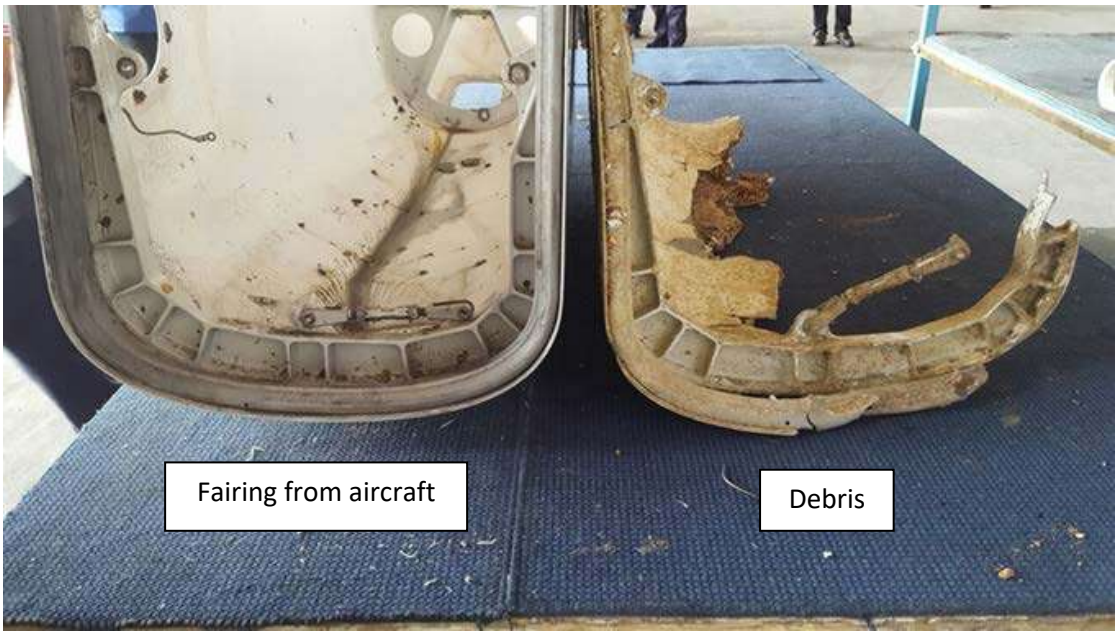
The part was taken to a B777-200ER, formerly operated by Malaysia Airlines (MAS), undergoing a maintenance check at Subang, Malaysia, for identification purposes. The possible location of the part on the aircraft was determined.

It was easily matched to the fixed, forward section of the No. 7 flap support fairing, as shown in the pictures below. Item No. 2, found on 27 December 2015 at Daghatane Beach, Mozambique, is also part of the same fairing; however it is part of the rear, moveable section.

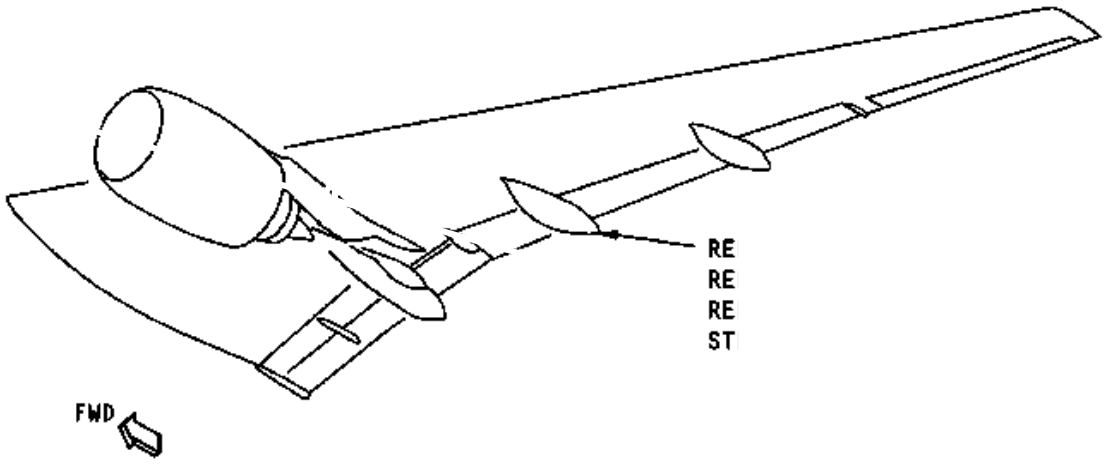

Fixed section of
No. 7 Flap Support Fairing
The part was brought
and matched in situ.


Fixed section of
No. 7 Flap Support Fairing

The fairing from the aircraft was removed and matched side by side with the debris as shown below. The features were found to be identical.

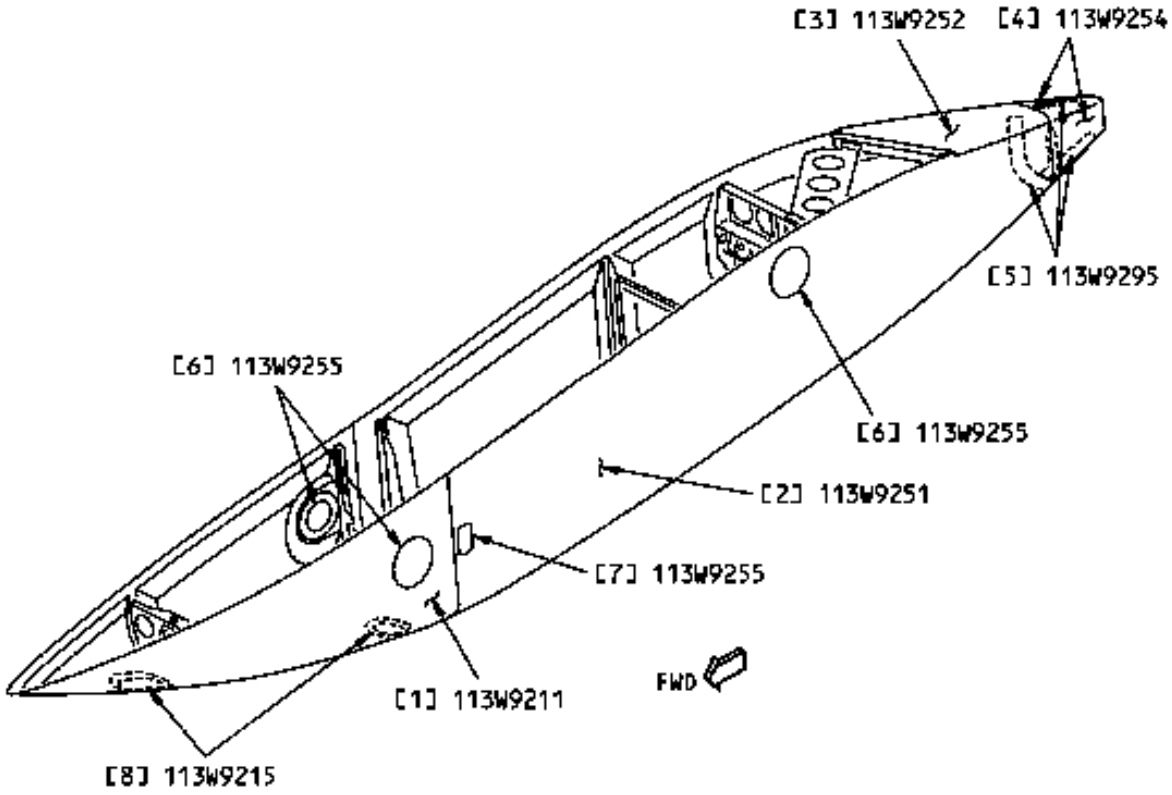


The diagrams below from the B777 Structural Repair Manual (SRM) show the location of the No. 2 flap support fairing and the complete assembly. The No. 7 fairing is in a similar location on the opposite wing.



NUMBER 2 FAIRING IS SHOWN, NUMBER 7 FAIRING IS OPPOSITE

The following diagram shows the complete No. 2 flap fairing, No. 7 is opposite.



NUMBER 2 FAIRING IS SHOWN, NUMBER 7 FAIRING IS OPPOSITE

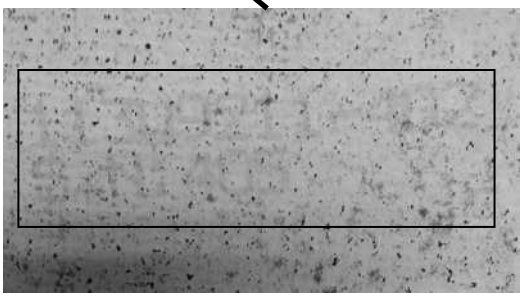
The part and serial numbers were evident on the inner surface of the fairing removed from the aircraft.

The debris was thoroughly cleaned to reveal any identification numbers. After cleaning, the part and serial numbers of the debris were found almost exactly at the same location found on the aircraft part.

The numbers on the debris were 113W9211-402, S/N: 406. The part number was identical to the one found on the fairing removed from the aircraft, which was 113W9211-402 indicating that the debris was indeed a part of the No. 7 flap support fairing of a B777 aircraft. Refer to the pictures below. The serial number could not be used to link it to any particular aircraft as there were no records available to confirm this.

Inside surface of the Debris

This number from the part removed from a B777



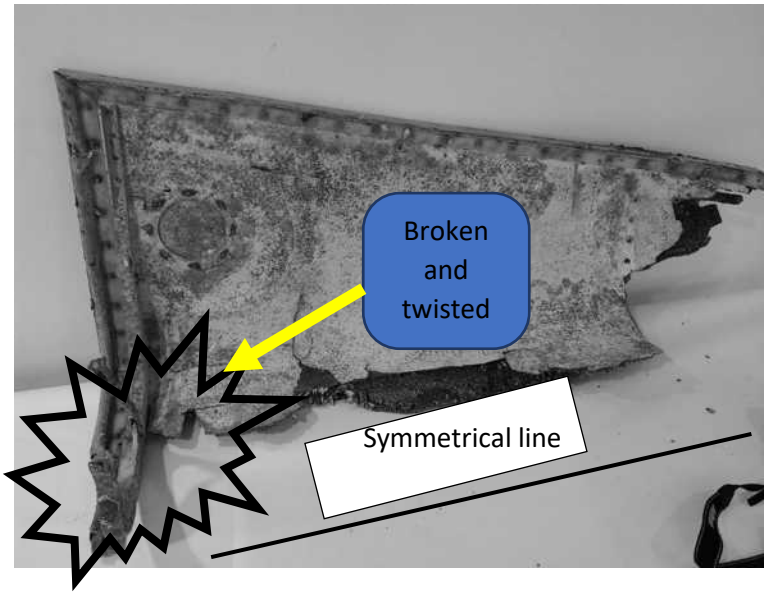
113W9211-402

S/N: 406

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 quite 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

The part was fractured almost through its symmetry axis. One of the frames was completely detached from the skin. It may be due to fasteners pull through as the fasteners' holes appeared to be torn off with diameters larger than the fasteners. The bracket had broken off with some sign of twist which is evidently shown by the bent push rod.



5.0 Conclusion

Based on the legible part number and the match of the part on the aircraft it is confirmed that the debris is part of the fixed, forward No. 7 flap support fairing 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).