

**Opening Statement To The House
Transportation and Infrastructure Committee**

Of

Captain John M. Cox

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Good morning/afternoon Mr. Chairman. I thank you and the committee for asking me to share my views of the issues raised by the two tragic 737 MAX accidents.

In my 50 years in aviation, and 33 as an aircraft accident investigator, I have not seen a more complex accident than Lion Air flight 610. Sadly, it was a forewarning of unanticipated conditions that existed, which could lead to another accident. Ethiopian Airlines flight 302 was that flight.

For an investigator the most difficult accident is when there is a recurrence of a previous accident. I saw this in the mid 90s in the US Air flight 427 accident near Pittsburgh in September 1994. It was a recurrence of a fault that had brought down United Airlines flight 585 three years earlier. We did not learn all we could from it, as a result 132 perished near Pittsburgh.

We did not learn all we could from Lion Air 610 before the Ethiopian 302 accident. The investigation was not complete, but there was compelling evidence of a single failure that could cause multiple warning and adversely affect the handling characteristics of the airplane. It is crucial that we learn all we can from these accidents so that there are no recurrences of the numerous factors that led the catastrophic loss of these two flights.

There are immense complexities in these accidents. They are characterized as Loss of Control – Inflight accidents. However, the contributing factors are numerous. Since the loss of these flights there have been attempts to blame one or two organizations or individuals, but this is inaccurate and misguided. Only with the

consideration of all contributing factors can we learn all the lessons.

In the Lion Air accident there are contributing factors from aircraft design, certification/oversight, maintenance execution, pilot performance, pilot dependence on automation, human factors, culture and regulatory oversight of the operator. Within each of the contributors are numerous issues. This why I make the statement it is the most complex accident I have seen in 33 years.

As the committee is aware, the National Transportation Safety Board and the Joint Authorities Technical Review have both recommended that future certification of aircraft include review of multiple warning caused by a single failure. This was a critical factor in both accidents. The flight crews had multiple warning occurring simultaneously, including one that is very distracting, the stick shaker. During the ensuing pandemonium, recognition of inappropriate stabilizer trim movement would be difficult. This is one reason that the runaway trim procedure was not immediately completed.

Aviation is the safest form of public transportation. We will fly nearly 4.5 billion passengers this year on 45 million flights safely. We have gotten progressively better since that first flight in 1903. While that record is exceptional, it is not good enough for tomorrow or the day after. Aviation has to continue to be safer.

I frequently am asked the question “Is the MAX going to be safe when it returns to service?” My answer is yes, for I have great confidence in the FAA and in Boeing. Additionally, I have confidence that the recommendations from the Indonesian National Transportation Safety Committee, the US National Transportation Safety Board, and the Joint Authorities Technical Review. These are recommendations for safety enhancements not only for the MAX, but for aviation overall.

We have a chance to take the lessons from these calamities, and make our skies safer. Let us not squander this opportunity. Let us carefully review each of the contributing factors of these accidents and improved design and certification processes to better address human factors, better failure analysis for multiple system failures, better pilot training with improved emphasis on manual flying

skills and improved organizational culture where the focus is on safety first.

This committee's recommendation and actions can improve aviation safety. We can enhance the FAA's ability to improve failure analysis, and system safety analysis, which may prevent a future accident.

Let me conclude with an observation. I first soloed in 1970, had we maintained the same accident rate to today there would have been hundreds more accidents with thousands more fatalities. We were not satisfied with that safety record, nor should be with today's much improved safety record. Let us learn all we can from the MAX accidents to improve aviation's safety record.

I look forward to your questions.

Thank you Mr. Chairman