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RCG-B002R-95-027

June 14, 1995

Dr. Malcolm Brenner, AS-5D
National Transportation Safety Board
490 L'Enfant Plaza Southwest
Washington, D.C. 20594

BOEING

Re: Human Performance Group Involvement in the Investigation of
USAir 737-300 N513AU Accident Near Pittsburgh, September 8,
1994

Dear Malcolm:

We are writing to express our concerns about the current and future
directions of the Human Performance Group.

It seems evident from our recent meetings that too often the discussion
by our group lacks focus. Our discussion usually breaks down because
one or more participants in the group challenges the work performed by
other groups in the overall investigation.

For example, one member of the group will say that the airplane
"entered the wake vortex" and another member will respond that it is
not known whether the airplane entered a wake vortex. The discussion
will then wander for some time through personal theories of whether a
wake vortex existed and/or why the airplane did or did not encounter a
wake vortex. This discussion occurs regardless of the fact that the
subject of wake vortex encounters has been assigned to the
Performance Group for an in-depth study.

Another example relates to the desire of certain participants in our
group to revisit, reexamine and theorize about airplane system failures
that could have contributed to the accident. This subject has also been
assigned to another group for an in-depth study, namely the Systems
Group.

At one point in our June meetings, even the validity of the FDR
recorded acceleration forces was challenged. These data, which were

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obtained directly from the FDR, have also been part of the work performed by the Performance Group.

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The continuous second-guessing of work performed by the other NTSB groups is one of the major reasons why our group has become distracted from gathering human performance data for analysis by the NTSB. In order to perform our assignment in the investigation, we must be directed to assume that the work and findings of the other groups are correct and are to be relied upon. Once we assume the information established by the other groups is true, we will be in a stable position to examine the crew's performance before and during the initial upset and the crew's ability to recover the aircraft through the time when stick shaker was encountered.

The basic assumptions that we suggest we rely upon are:


1. There is no evidence of any anomaly with the flight control systems. This observation was reported by the chairman of the Systems Group on May 9, 1995. If this observation changes during the ongoing Systems Group investigation, then we will modify our assumptions accordingly.
2. The data on the FDR, including the rates and accelerations derived from the FDR are correct. The Performance Group has not questioned the validity of the FDR data before stick shaker, and neither should we.
3. The timing of the CVR comments is correct. Again, this is a subject assigned to others for determination. We have no basis for challenging the findings.
4. The airplane encountered wake turbulence in the manner described to us by the Performance Group. If a range of possible encounters is described to us, we will take the entire range of possibilities into consideration in our study. We should not, however, inject our own opinions into the work performed by others.

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We would also like to suggest, for the purposes of this group's assignment, that the NTSB instruct members of the group to assume the airplane flight controls systems are operating normally. The leadership of the Human Performance Group must establish the starting point for our group's efforts. Only when we can establish conditions for the flight will we be in a position to evaluate human performance. Without such direction, we will be left with the subjective beliefs of individual participants that take us from one tangent to another, and we will not be able to establish the potential crew operational scenarios needed to facilitate our efforts.

A second item of concern is the timing of the proposed completion date of the group's activities. While September 1 may be a laudable target, we believe that any proposed final meeting should be after the flight tests are completed because they are intended to gather information to validate and verify the simulator model from which we have obtained data.


R. C. Graeber


M. H. Carriker

cc: Mr. Thomas Haueter, NTSB, AS-10
Mr. John Purvis, BCAG Air Safety Investigation