ATTACHMENT I to JULY 2002 ATSRAC MINUTES

DISSENTING OPINION OF MR. EDWARD B. BLOCK TO THE TRAINING WORKING GROUP's FINAL REPORT: 3/4/02
Mr. Chairman/Working Group Members:

1) I noticed that the wire performance criteria from the ATSRAC's Jan 01 Meeting Presentation presented by Chuck Huber are now gone. It seems to me that this is the nucleus to everything that we are dealing with, especially considering the conclusions of the Intrusive Inspection Group's Final Report. We seem to think if we install the "Firestones" correctly, and make sure that they are properly pressurized, then that will fix the wire problem. Since the FAA does not enter into the selection process for wires during certification, shouldn't there be some safeguards established so that we are not facing another wire problem twenty years from now? I would think as a minimum we wouldn't want to re-create the dry-arcing problems of Kapton. I don't think we want to allow flammable, smoky PVC wiring to be allowed. I don't think another stress-crazed Stilan wire, with internal fracturing would be a good idea. I know the FAA has concluded that the wire type (cross-linked Tefzel) going into the new Boeing 777 (and used in some locations by Airbus), has a 97% smoke obscurity raring compared with a 1-2% rating of other wire types. I know NASA and the FAA have also challenged cross-linked Tefzel's flammability resistance. The 97% smoke rating was also found to be toxic by the AAIB Report, and banned by Grumman for manned aerospace usage. Who is watching the store here? Unless we deal with the characteristics of each type (Firestone) of wire, by establishing minimum performance standards, we will never solve the certifications problems caused by poor wire selection.
2) What does the Implementation Plan do for all the existing aircraft out there with the poor wire type choices, and their faulty installations? We need only to look at the recent MD-11 situation to see the extent of existing problems out there in the fleet. If we look at the number of ADs, Service Bulletins, and Modified Proposals being issued on that one aircraft, we can see the fleet needs fixing. The Intrusive Inspection Group's final Report declared that visual inspections were ineffective in spotting cracks in wiring. The Final Report also concluded that wire cracking was the most common failure mode discovered during these inspections. It also concluded that most of the cracks were found on Kapton wiring. This wire type (Kapton) has also shown to be explosive and resulting in 1,000 C fires that burn through metal.
3) We still have no definition for what cracks are, or what is a significant finding that is acceptable or standardized. All we know is that we have a fleet full of aircraft whose wiring is mis-installed (MD-11 ADs, and otherwise deteriorated to the point where a Reportable Significant Condition (RSC) was found on 6 out of 6 aircraft inspected. Although the OEMs reviewed all of the RSCs and 180 Significant items from the Intrusive and Non-Intrusive inspections respectively, and then announced they found no fleetwide concerns, that was not the objective of these inspections. We were to assess the effectiveness of visual inspections (ineffective), and to assess the state of the wiring in the aging fleet (dangerous). This Implementation Plan does nothing to address either of these conditions/conclusions, nor does it put an end to the practices that allowed this fiasco to begin with, in regard to certification/wire selection procedures. It calls only for more visual inspections and ignores the existing state of the fleet.

4) I have been told that wire performance will be dealt with elsewhere by the FAA. How is it that ATSRAC is supposed to be the vehicle that brings together all the world's experts, to exchange ideas and to remove any abrasion caused by isolated rule-making, and then has to ignore the basic purpose it was chartered to deal with. I have not been given any indication as to who, when, where, or how these wire performance standards are to be developed. I think if it doesn't happen now, it never will. How can the FAA allow dangerous wire that it has tested, to exist in the fleet, and continue to be installed in new aircraft? To send wire performance testing to R&D for three more years when the tests are already in the FAA's Handbook for Flammable Materials released June 1, 2000 is unconscionable.

5) Mixing of wire types continues to be ignored in the current FAA Advisory Circulars.. All FAA documentation, all military testing, all published industry testing, and the Intrusive Inspection Group's Final Report (accepted by ATSRAC) state it should not be done. However, Boeing and Airbus publicly declared at ATSRAC meetings that they blatantly disregard all of this documentation.

It is advisory material, but isn't there an opinion that we are supposed to be instituting this new era of volunteer participation? If we can't get the largest OEMs on the planet to participate with existing documentation/procedures, how are we then to press onward writing even more Advisory Circulars that will likewise be ignored? The airlines are currently ignoring Regulations on the transportation of Hazardous Materials to the tune of $23 million last year. How is it that regulations can continue to be blatantly ignored, yet we supposedly still believe that volunteerism/advisories will work?

6) We need to establish regulatory minimum performance requirements right now for: arc-tracking, smoke emissions, toxicity, and flammability, otherwise we are not fixing the real problems that exist today. The issue of wire type cannot be ignored. Task Group 5 will include training on wire types. The Intrusive Inspection Group was formed to study wire types. In the conclusions of that same group's report were references to the fact that wire type mattered, and contained recommendations to not mix different wire types, so why are we ignoring this important matter?

7) Spec 117, being heralded as the best and brightest information going out there, has not one word about wire type. The video of Spec 117 makes no mention of wire insulation either. Will all insulations dry arc track like Kapton? No. Will all insulations be considered flammable material as PVC wire was so labeled by the FAA, and the Intrusive Inspection Group's Final Report, which was accepted by ATSRAC? No. Will all insulation types burn and emit toxic smoke at a 97% rate like crosslinked Tefzel? No. Are any wire insulation types more prone to radial cracking than Poly-X? No. Are some wire insulations softer at rated temperature and thereby effected by spacing problems? Yes. Does chafing effect all wire types like it does with Kapton? No. Do all wire insulation types delaminate like Kapton? No. Do all wire types split like the extruded Teflon wires that effected Apollo 1, Apollo 13, and TWA 800? No. Clearly not all wire types are Firestones, but some are. Should there have been a recall of all tires, or just Firestone tires?

8) This is the task of ATSRAC, to draw up an Executive Summary stating exactly what the problems are, and not just rubber-stamping 5 separate Reports with no conclusions. Is there a wire problem? If not, what have we been doing for more than two years? If so, then lets fix the problem, not by ignoring it in quantifying hypothetical plausible

scenarios on what is dangerous, but by prioritizing/qualifying the problem. It has already been declared that no one has ever projected what would happen if a Kapton arc-tracking event in the avionics bay occurred, in regard to existing aircraft types and their wiring systems, so lets stop pretending where on the aircraft is dangerous. Cracks, which are not discernable by visual inspection, can ignite flammable Mylar. These same cracks can ignite fuel vapor. These same cracks can result in an arc-tracking event that was never conceived of, and can bring down an aircraft. We need to first state that there is a problem if we ever intend to fix it, otherwise we will share the guilt when the next accident happens. The FAA has recently said, "Currently there is no process or procedure to discern a catastrophic wire failure, short of the accident investigation phase". This may give some here temporary cover, but the NTSB will one day discover that those cracked, burned, arced, lint and dust covered wires we found in the fleet inspections were to blame. The choice is now yours and you can never again say you didn't know.

Note: Since 30 March 2001, the TSB of Canada has come out in support of certification tests for aircraft wiring. The FAA has decided to bury any fixes to the problem in R & D for another three years, to study the problem further. It is time for fact facing and no need of further fact finding. Just as the Senators Hart/Rudman's blue ribbon panel on aviation security warned seven months prior to 11 September 2001, we can't say we were never warned.

1. What does the FAA intend to do with new aircraft being built with wiring that would fail any performance testing done to identify smoke, flammability, toxicity, and arc tracking resistance? These tests were run more than ten years ago by the same FAA facility doing the Research and Development work today, but now ongoing for another three years. There is nothing being done to stop defective wires from being installed today. This is even after the Transportation Safety Board of Canada called on the FAA to have performance testing on 28 August 2001. The FAA's own Advisory Circular 25.16 dated in 1991, calls for the same in-flight testing of wires. The FAA's own Technical Center issued a Handbook on Flammable Materials dated 1 June 2000, that specified these same tests for arc-tracking, flammability, smoke, and toxicity. To now declare that it will take another 3 years of research, ignores all the testing done to date by the FAA that would disallow any further use of the defective wiring going into today's aircraft. To state that, "This is a long term initiative that does not require advice or recommendations from the Committee", is clearly another example of Nero fiddling while Rome burns. These testing contracts are just now going out for solicitation. These tests also parallel the exact points from a 1999 Joint Unsolicited Proposal I submitted with NASA for the FAA to Mr. Rob Pappas.
2. The matter of existing aircraft is also being ignored. We found an average of 1,100 cracks per aircraft during the Intrusive Inspections of the fleet's representative aircraft. These cracks were also found not to be discernable by visual inspection. The idea that somehow a three-point approach-maintenance, training, and rulemaking, will somehow magically fix the 1,100 cracks per aircraft is indeed wishful thinking. I am a member of the Training Task Group who was

given the task of developing an Advisory Circular to address the corrective actions necessary to deal with the dangerous conditions of the fleet. This maintenance, training, and future rulemaking will at best only disallow any further damage. The argument that this action fosters is that it is installation and not insulation (wire type). Clearly the premature aging of Poly-X in TWA 800 and the 160 F-14s that have crashed, points to a bigger problem. It is the nature of the material itself that dictates how it will wear. Kapton wiring has also been found to crack a lot sooner than other types of wire. Housekeeping and more visual inspections will not address the dangerous condition of the fleet. There seems no concern with the results found by the Intrusive Inspection Group. Boeing has declared that non-destructive test equipment and advanced circuit protection devices are technologically immature. They further state that essentially nothing has to be done. They have also publicly declared they don't follow Advisory material. If you consider the industry paid $24 million last year for not following the FAA's rules on carrying hazardous material, you can see why advisories don't really matter. They stated they mix wire types which directly contradicts Advisory Circular 25.16 at ATSRAC meetings.

It is requested that all of the points listed here be responded to point by point. To write any further voluntary Advisory Circulars when regulations are being blatantly ignored, is pointless. The existing fleet with 1,100 cracks per aircraft will not be fixed by more visual inspections that the Intrusive Inspection Group has already proven are ineffective. The choice of wire for new aircraft, should require certification testing by the FAA including testing for; arc-track resistance, vertical flammability, smoke emission, scrape abrasion at rated temperature, and toxicity.

Thank you.

Edward B. Block

Chairman

Global Air Safety Institute

PART II :Dear Mr. Chairman:

I submit this as my Dissenting Opinion to Working Group 8's Final report and their Advisory Circular on Training.

The intent of the second phase of ATSRAC tasking was to decide what should be done about the results of the Intrusive Inspection Group's Final report. We found the fleet's wiring in terrible condition. Inch-high piles of dust and lint covering wire bundles, as well as cracked, chafed, burned, arced, and damaged wiring. We found that visual inspections were obviously inadequate in finding the most prevalent wire flaw, cracks. We then found 1,100 cracks in the wiring per aircraft inspected. The fact that these wire bundles were covered with dust denies the idea that somehow excessive maintenance activities were responsible for the wiring flaws. If no one had obviously even examined the wiring, how could it be believed that excessive maintenance activity had been responsible for all of this damage?

The military has had serious problems with certain wire types which was mentioned in the GAO-02-77 Report, released in January 2002. This report singles out only the problems encountered with one wire type, aromatic polyimide (Kapton). It is interesting that a senior FAA official stated that, "rules that admitted aromatic polyimide 20 years ago would prohibit it today because of the failure modes that have been identified". This is blatantly untrue. The fact is that Boeing states two pages further in the report that they still use Kapton for power feeders (Advisory Circular 25.16 recommends Kapton not be used for power feeders) and Airbus continues to use Kapton as well. Poly-X, Stilan, PVC, and cross-linked Tefzel wire types have also either been banned by the military, or cited by the FAA as smoky and flammable, yet

continue to be used. Clearly the problems with the fleet's wiring were not caused by over-zealous mechanics, but instead by the installation of poor wire type choices. Even though Boeing testified to Congress that it is "installation and not insulation", their own evidence proves otherwise. Boeing Service Bulletins and Emergency letters point out the limitations of Poly-X and Kapton types of wire, regardless of any additional exacerbating poor installation procedures.Boeing also misrepresented facts in the GAO report by saying they now use a different wire type, TKT. This is not true and misleading. Boeing uses cross-linked Tefzel on the 747, 767, and 777. The inch-high piles of dust on the wiring are a matter of Primary Maintenance Inspectors not following the recommendation they received from the FAA that they pass on inspection of wiring to the airlines in the FAA's Handbook Bulletin 91-15 from 1991, or the airlines deciding to ignore these requests.

This brings us to the proposed Advisory Circular on Training by Working group 8. I drafted the last page in Appendix D (History) where I detail the events leading up to this Advisory Circular. I point out how the Intrusive Inspection Group was formed. Based on my insistence that wire type mattered from the very first ATSRAC Meeting in January 1999, and following my presentation to ATSRAC that "Wire type did matter", in regard to service life, temperature rating, abrasion resistance, arc-tracking resistance, flammability, toxicity and smoke generation, then followed by a BBC Panorama show, the Intrusive Inspection Group was formed. It was good that it was formed because the earlier Non-Intrusive Inspection Group decided in their report that wire type didn't matter, after only their arms length inspections. The Intrusive Inspection Group found contrary to this assumption, and that indeed wire type did matter, "that there are typical characteristic flaws for each type of wire". The IIG Final report also pointed out the danger of mixing different wire types in Chapter 6, "The inherent differences in the performance and chemistry of the wire insulation types should be ample reason to conclude that mixing of certain wire types in the same bundle could be hazardous to aircraft safety due to the potential for arcing and fire". Yet despite this warning, there are no mentions of wire types in the Advisory Circular. Due to my continuing to push this issue, Boeing decided to use my information on wire types in their own Training Program that they are now selling to the airlines. There is also mention of wire types in the training program of WG 8. Yet no mention in the Advisory Circular of wire types, other than a reference to Advisory Circular 43.13-1B which cites numerous military specification wire types as being approved by the FAA, when they have only been tested for 10,000 hours despite the 100,000 hour requirement for commercial usage.

The Appendix D (history) is now to be removed in its entirety. This means that in addition to ignoring the dangerous condition of the fleet's wiring by issuing only more Advisory Circulars that the industry already ignores (mixing wire types), and not calling for any new wire performance tests to preclude this problem from continuing in future production aircraft, the ATSRAC/FAA now want to remove any traces of truth that would show their continuing malfeasance. I think this is the last straw. We have misrepresentation to Congress and the GAO by both the aircraft manufacturer and the supposed aviation safety regulator, the FAA. I have tried to be the conscience of ATSRAC. I fully understand how economic considerations cloud people's intentions. I see how personnel from the FAA end up going to work for the very people they were overseeing, without any cooling off period. I have seen tape recordings erased and reused. I have been found to be not qualified for Training Working Groups, and then mysteriously qualified for subsequent Training Working Groups. I have submitted material to ATSRAC that was used by Boeing. I had to plead with the Chairman Kent Hollinger for months to have the ATSRAC Minutes reflect Boeing's publicly thanking me for the contribution. I have seen Minutes rewritten to imply that somehow I was in error rather than the Chairman. I have been treated with disdain by the ATSRAC Chairman and the FAA's Executive Director. My comments have been continually ignored and my character impugned by the ATSRAC membership, for not attending meetings in Europe even though I am not being supported by anyone for my travel. I received ATSRAC voting status as the NADA representative from the White House, only to have it given to someone else, in a deal with the FAA's Thomas McSweeny because I reminded him of Ralph Nader. There you have it. My dissenting opinion. I hereby request it be included in the submission to the FAA and recorded with any reports from ATSRAC. I think it is deplorable the way I have been treated. I have only tried to represent the safety of the flying public, and until the insidious aforementioned

deal, the dead. In seeing all of the chaos on Wall street due to insider trading and dishonest dealings, I am not surprised at the major losses in the aviation industry. Until we decide not to kill the messengers, and consider all sides to any matter under discussion, we will continue to see no light.

Edward B. Block
Chairman
Global Air safety Institute
www.buildingsaferskies.com
215-860-9859