



# Unlimited Division

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Not #8349A/B

**Thomas L. Camp**  
President

August 22, 2012

**ELECTRONIC SUBMISSION TO  
CORRESPONDENCE@NTSB.GOV**

Ms. Deborah A.P. Hersman  
Chairman  
National Transportation Safety Board  
490 L'Enfant Plaza East, SW  
Washington, DC 20594

RE: NTSB Safety Recommendation A-12-9 through A-12-12

Dear Ms. Hersman:

On July 6, 2012, I responded to the NTSB's Safety Recommendation letter dated April 10, 2012. At that time, I informed you and the NTSB that we, the Unlimited Division of the National Air-racing Group, Inc. (UDNAG), would not comment or implement the Safety Recommendations until the NTSB completes its investigation and issues its final report and all factual reports to the public. Since the time of our initial response, we have had several discussions with NTSB staff and believe that we can, at this time, respond to the Board's Safety Recommendations.

**SAFETY RECOMMENDATION (A-12-9)** – Require Aircraft owners in the unlimited class to provide an engineering evaluation that includes flight demonstrations and analysis within the anticipated flight envelope for aircraft with any modifications, such as to the structure or flight controls.

We believe that implementation of this recommendation will improve safety for not only race fans but for our race pilots also. Our Rules Committee (Committee) considered this Safety Recommendation and concluded that we should require any aircraft owner/operator whose aircraft has undergone a major change or major alteration, as those terms are defined by the FAA, to provide UDNAG with copies of all relevant engineering evaluation data and flight demonstration materials and required analyses, plus provide all approvals by the FAA for any such change or alteration to the aircraft. These requirements will apply only to aircraft that have undergone changes or alterations since their last participation in an air racing event. We have not determined whether implementation of this

recommendation will require a change in the UDNAG rules; however, we believe early adoption is warranted.

The Reno Air Racing Association (RARA), working with the Reno FSDO, is responsible through its entry eligibility process for identifying aircraft that have undergone major changes or alterations since the last time the aircraft raced at Reno or within the last 12 months prior to the current racing event. Under RARA's Official Rules for Competition for 2012, once RARA becomes aware that a change or alteration has occurred, the owner/operator must submit such documentation and related correspondence, as required by the cognizant FAA, to the Reno FAA and RARA at pilot registration and to the UDNAG prior to or during the pre-race aircraft inspection.

In this connection, we have asked RARA this year to provide the UDNAG with a list of all entries and whether the owner/operator did or did not report a major change or major alteration. If a change or alteration has been reported, we have asked RARA officials to request evidence (if required by the FAA) supporting an engineering evaluation and a flight demonstration analysis within the anticipated flight envelope of the aircraft. The evidence obtained by RARA from the owner/operator should be made available to the UDNAG and our Class Compliance Team as soon as it is received by RARA, but no later than the pre-race aircraft inspection.

**SAFETY RECOMMENDATION (A-12-10)** – Develop a system that tracks any discrepancies noted during pre-race technical inspections and verify that they have been resolved.

We agree with the recommendation to develop a tracking system for discrepancies noted during the pre-race aircraft inspection. Because improving the documentation of our pre-race aircraft inspection procedures does not require a rules change, we have revised our Pre-Race Inspection Form to include a written acknowledgement from the particular aircraft owner/operator of discrepancies noted and corrective actions taken. A copy of that revised inspection form is attached. Until this owner/operator acknowledgement is complete and re-inspection by our Inspection Team has been made and documented, the aircraft will not be permitted to enter the race course for any reason.

**SAFETY RECOMMENDATION (A-12-11)** – Provide high G training to pilots including techniques to mitigate the potential effects of high G exposure as part of preparations before the Reno National Championship Air Races (NCAR) and during daily briefs at the NCAR.

The Committee believes that high G training, including techniques to mitigate potential effects, is reasonable and can be implemented without a rules change. All race pilots are required, as a condition for flying in the NCAR, to attend daily briefings by RARA and it is our understanding that RARA will conduct G awareness training during each daily briefing session. RARA will also require all race pilots to fly 4 to 6 laps on the race course prior to requesting a qualification time in order to increase their G tolerance level. The UDNAG race pilots support RARA's efforts in this area and will follow the RARA rules. We will also discuss G awareness during our daily Class specific briefings.

**SAFETY RECOMMENDATION (A-12-12)** – Evaluate the feasibility of requiring pilots to wear G suits when racing at the National Championship Air Races; if the evaluation determines it is feasible, implement a requirement.

Any determination of the feasibility of G suit use must include a practical consideration of cost and benefit. Upon that consideration, our Committee does not believe that G suits would be a beneficial or practical addition and that their use may in fact negatively impact safety. In this regard: (1) the cockpits of the race airplanes are very small and to equip these aircraft with G suit capability would be

a real challenge; (2) the cockpits of these airplanes are hot and as such a pilot's use of a G suit could add heat exhaustion problems (in fact, some pilots now wear cool suits because of that extreme heat); (3) the G forces on the course are normally between 3 and 4 G's which would not require a G suit to fly safely; and (4) we do not feel a G suit would have changed the outcome of the accident in 2011. The sudden and extreme G forces that were put on the aircraft/pilot were to the point of structural failure and far beyond any benefit of a G suit system.

In sum, we do not believe the use of G suits would improve safety to our pilots or spectators in the current race environment and that their use may actually have a negative effect. Therefore, we will not presently recommend a rules change to require the use of G suits. Of course, our owners/operators are not prohibited from using G suits if, in their judgment, the systems can be installed and their use is preferred.

We appreciate the opportunity to assist the NTSB in this important area and look forward to the Board's final report on the tragic accident of September 16, 2011.

Very truly yours,



Thomas L. Camp  
President

**Unlimited Division**  
**Pre-Race Aircraft Inspection**

Airworthiness  
Certificate Type \_\_\_\_\_

Race No. \_\_\_\_\_ A/C Type \_\_\_\_\_

**THIS INSPECTION DOES NOT MEET THE SCOPE AND DETAIL OF FAR 43, APPENDIX D AND, THEREFORE DOES NOT CONSTITUTE A REPRESENTATION OR WARRANTY OF ANY KIND OR CHARACTER WHATSOEVER CONCERNING THE MECHANICAL CONDITION OF THE AIRCRAFT, OR WHETHER OR NOT IT IS AIRWORTHY.**

Records	
A. Aircraft Registration	
B. Airworthiness Certificate	
C. Aircraft, Engine & Propeller Logs	
D. Parachute Pack Date	
D. Hydrostatic Test Date	

Powerplant	
A. Installation	
B. Plumbing	
C. Cowling	
D. Fuel System	
1) Pressure Check	
2) Shutoff Valve	
E. Exhaust System	
1) Stacks	
2) Heat Shields	
F. Engine Cooling System	
G. Electrical System	
H. Battery Mounting	
I. Fire Extinguisher System	

Wings	
A. Structure	
B. Panels / Doors	
C. Ailerons	
D. Trim Tabs	
E. Flaps	
F. Fabric Condition	

Empennage	
A. Structure	
B. Elevator / Trim Tab	
C. Rudder / Trim Tab	
D. Fairings / Panels	
E. Fabric Condition	

Cockpit	
A. Canopy System	
B. Oxygen System	
C. Communication Equipment	
D. Engine Controls	
1) Throttle Control	
2) Prop Control	
3) Mixture Control	
E. Seat Belt / Shoulder Harness	
F. Fuel System Selector	
G. Landing Gear Controls	
H. Instrument Panel	
I. Flight Controls	
J. Helmet System	

Landing Gear	
A. Plumbing	
B. Rigging	
C. Doors	
D. Tires / Wheels	
E. Brakes	
B. Rigging	
C. Doors	
D. Tires / Wheels	
E. Brakes	

Fuselage	
A. Structure	
B. Panel / Doors	
C. Fairings	

Propeller	
A. Hub	
B. Blades	
C. Spinner	
D. Ham. Std. A.D.	

**Unlimited Division  
Pre-Race Aircraft Inspection**

**Remarks/Issues**

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**Initial inspection by**

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Name & Date

I have read this document and understand that the owner/operator is/are responsible for all matters relating to the airworthiness of the aircraft. All remarks/issues have been corrected as follows:

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**Owner/Operator:**

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Name & Date

**Inspection Complete by**

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Name & Date

**Return to Service Inspection**

Documentation for flight critical maintenance since initial inspection.

**Inspection by**

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Name & Date



## Unlimited Division

**Thomas L. Camp**  
President

July 6, 2012

Ms. Deborah A.P. Hersman  
Chairman  
National Transportation Safety Board  
490 L'Enfant Plaza, SW  
Washington, DC 20594

Dear Ms. Hersman:

On April 10, 2012, the National Transportation Safety Board (NTSB), over your signature, sent a letter containing four Safety Recommendations for consideration by the Unlimited Division of the National Air-racing Group, Inc. (UDNAG). These Safety Recommendations were derived from the NTSB's ongoing investigation of the September 16, 2011, accident that occurred at the National Championship Air Races in Reno, Nevada. In your letter you urged the UDNAG to take action on the Safety Recommendations and requested a response from UDNAG within 90 days addressing actions we have taken or intend to take to implement the NTSB's recommendations.

We appreciate the efforts of the NTSB staff in their investigation and the Board's Safety Recommendations A-12-9 through A-12-13. At this time, however, we are not prepared to comment on or implement the NTSB's recommendations until the NTSB's final report and all factual reports are issued. It is our understanding that these reports will be complete and made available to the public by the end of August, 2012. Following our review of these reports, we will provide you and the NTSB with a letter summarizing actions taken or to be taken relative to the four recommendations.

Very truly yours,



Thomas L. Camp  
President