

## **ETHOS, PATHOS, LOGOS, AND THE NTSB**

### **Brett Hansen**

Graduate Student in Rhetoric Composition and Professional Communication,  
Iowa State University  
Office: 515-294-0289  
Email: bwh1@iastate.edu

**Submission Date:** 10/20/2003

### **ABSTRACT**

The NTSB's use of rhetoric can provide us as rhetoricians, professional writers, and others with new insights into rhetoric as a persuasive tool. The NTSB relies wholly on its rhetoric to persuade those who have decision-making authority to follow its recommendations. In this paper, I will discuss how the NTSB provides new insights into the persuasiveness of documents from a bureaucratic organization. To provide a theoretical base for this argument, I will examine the NTSB's rhetoric through the lens of Aristotle's rhetorical appeals of logos, ethos, and pathos. I will also show why the NTSB does not use one appeal exclusively to persuade its audience by comparing it with similar organizations. Organizations, including the NTSB in its early years fail to persuade their audiences because they either attempt to use one appeal exclusively, or ignore an appeal. The NTSB's success in persuading its audience shows the importance of finding a balance between the three appeals.

## INTRODUCTION

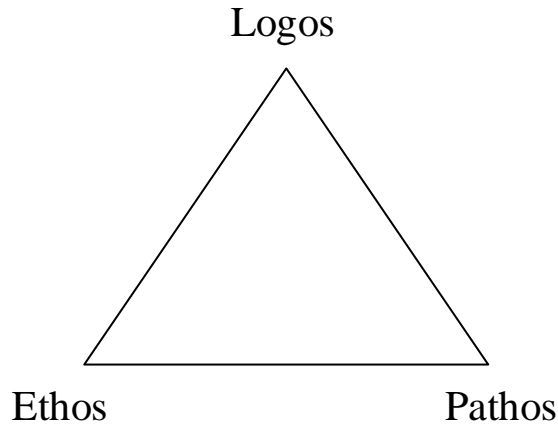
The National Transportation Safety Board (NTSB) is responsible for investigating transportation accidents such as airline accidents and traffic incidents. The NTSB itself claims that it is an organization independent of any influence or subjectivity (1). The NTSB has no power to make decisions to prevent further accidents and incidents, yet its recommendations are implemented by those with the power to effect change (e.g. the Federal Aviation Administration, Railroad Companies) almost 80 percent of the time. How does the NTSB maintain such a high percentage of successfully persuading those organizations to implement its recommendations?

The NTSB's use of rhetoric provides us as rhetoricians, professional writers, and others with new insights into rhetoric as a persuasive tool given that the NTSB relies wholly on its rhetoric to persuade those who have decision-making authority to follow its recommendations. Because the NTSB's purpose is primarily persuasive, its documents provide a great example of how bureaucratic organizations persuade each other. In this paper, I will discuss how the NTSB provides us with new insights into the rhetoric of a bureaucratic organization. To provide a theoretical base for this argument, I will examine the NTSB's rhetoric through the lens of Aristotle's rhetorical appeals of logos, ethos, and pathos. I will also show why the NTSB does not use one appeal exclusively to persuade its audience by comparing it with similar organizations.

## THEORETICAL BACKGROUND

Aristotle defines rhetoric as both "an art with essential principles and a changing, contextual art shaped by politics through the creation of forums that regulate its practice" (2,3) Essentially, Aristotle saw rhetoric as a principle of spoken persuasion exercised both by the individual speaker and also as a persuasive tool used by politically charged forums. (4) Aristotle also defines rhetoric as an ability to see the available means of persuasion which he classifies as three persuasive principles or appeals: logos, ethos, and pathos. These appeals have been situated in several different ways by critics.

Andrea Lunsford states that Aristotle was the first who separated persuasion into the rhetorical appeals listed above (5). These rhetorical appeals come together to form the rhetorical triangle (see figure 1). Other critics have taken the rhetorical triangle and applied it to other disciplines. James Kinneavy in "Theory of Discourse", for example applies the rhetorical triangle to literary theory. Hult and Huckin in *The New Century Handbook* apply the triangle to writing and change the triangle to reflect the modern writer's "rhetorical approach." (6). Wisse, argues that the rhetorical triangle is not a triangle at all, but more of a linear progression of communication (see figure 2) (7).



**FIGURE 1 The Rhetorical Triangle**



**FIGURE 2 Linear Rhetorical Flowchart (Source: Wisse)**

The above authors discuss the rhetorical triangle (or linear flowchart) including its three appeals as the basis of all rhetoric (5). The rhetorical triangle has been applied to many discourses that span from science to the humanities. Therefore, using the appeals will provide a useful framework gain insight into the rhetoric of a bureaucratic organization such as the NTSB. The results of looking through Aristotle’s rhetorical lens at such an organization may provide us with new ideas about how to be more successful at persuading our audience, and how rhetoric functions in certain settings. To focus my rhetorical lens, I will discuss each appeal, how each applies to the NTSB.

## **LOGOS**

W. Rhys Roberts defines logos as what “makes the argument of [an orator’s] speech demonstrative and worthy of belief” (3). Kennedy defines logos simply as “the true and probable argument” (2). Lunsford describes logos as “appeals to reason of the message itself—with all eels reflecting or affecting the universe.” (5). The definitions provided by the above critics describe logos as proof of the message that is embedded within the message. Therefore, logos includes facts and proofs that, from a scientific point of view, lack the bias that comes from subjectivity. Facts and proofs are difficult to dispute and more credible.

## NTSB Logos

Like many scientists and engineers, the NTSB attempts to omit the subjectivity in its communication. It uses strategies to divorce the active human agent from the text to make it seem more logical or “objective”. One such logical strategy is that of using empirical evidence to support claims and recommendations. Much of the NTSB’s reports recount empirical data such as time, mechanical data, operator, pilot or engineer function, and other data in tables and/or charts. The NTSB presents this information as facts only, thereby constructing logos and eliminating the active human agent, making its argument more credible. Here is an example of an NTSB report that incorporates some of the strategies elements listed above:

The Safety Board addressed the issue of incomplete compartmentalization and the lack of energy-absorbing material on interior surfaces in its special investigation report on bus crashworthiness issues and in its investigation report on the Conasauga accident. This accident demonstrates again the need for NHTSA to continue its work on occupant protection for lateral impacts and its work to reduce the non energy-absorbing surfaces within school buses. Both efforts have the potential to reduce injuries to those occupants seated outside the area of impact. (NTSB, *Collision*)

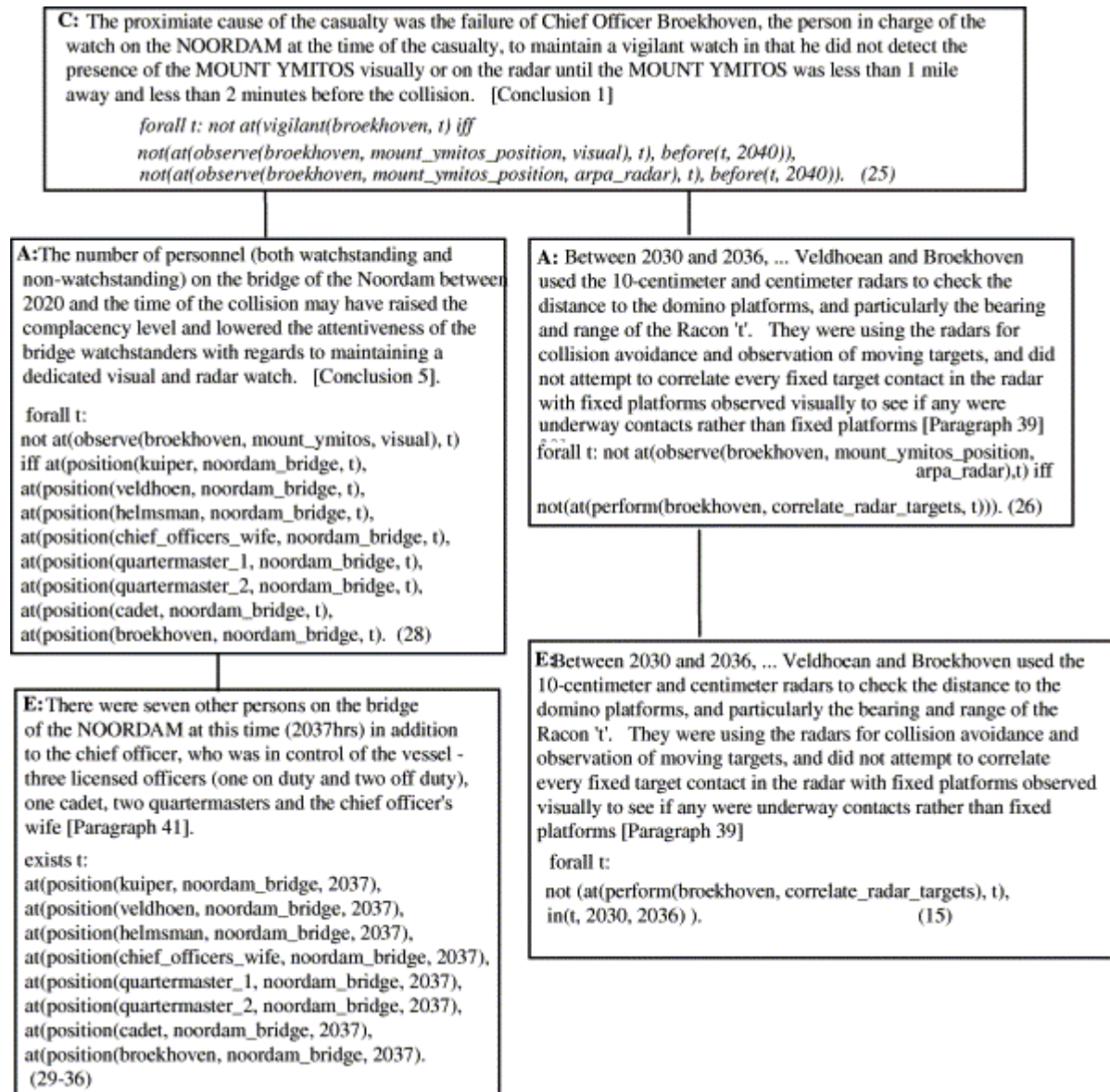
There is no human agent in the above paragraph. The non-human subject “the Safety Board” gives an authoritative posture that further relies on the entire organization and its reputation for scientific objectivity. The paragraph also shows an empirical demonstration of the disembodied “need” for the National Highway Traffic Safety Administration (NHTSA) to make changes in its policy concerning school buses. The above example shows that the NTSB effectively omits the human agent and makes the argument more logical and more persuasive.

## Why can’t the NTSB just use facts? The Glasgow scientists

C.W. Johnson believes that he can construct mathematical equations that omit “the ambiguity and inconsistency of natural language” used in the sometimes lengthy NTSB accident reports. Johnson believes that the current “natural language” system used by the NTSB leaves room for too much interpretation by the readers and that “there are clear risks if designers draw radically different lessons from the same account of a major accident especially if their interpretation is not grounded in the arguments that are presented in the report.” (9) Johnson believes that the NTSB fails to present the facts in such a way that will allow multiple readers to formulate the same, or similar, conclusions. He does not enter into details of the problem with the NTSB’s methods.

Johnson attempts to remedy the “ambiguous” NTSB’s reports. He uses the NTSB’s final report of a collision between the bulk carrier Mount Ymitos and the passenger vessel Noordam to apply his logic-based argument. Johnson reduces all of the facts about the incident such as operator error, mechanical failure, and other variables into a mathematical equation. He proposes to create a more uniform, objective way of presenting accident data so that more uniform conclusions and actions can be established.

Johnson admits that “it is difficult for people without some mathematical background to understand the various proof rules that are applied during the formal derivation of particular conclusions.” He use graphs like the one in Figure 3 to, in his opinion, better explain the NTSB’s conclusions and rationales.



**Figure 3 Glasgow simplification of NTSB report that incorporates “informal” text with formal mathematical proofs (Source: Johnson).**

Figure 3 is the mathematical representation of the events that happened leading up to the collision. Yet, Johnson also places less mathematical text into the figure so that an audience unfamiliar with the mathematical terms (which I daresay is everyone except for Johnson and his scientists) will understand it.

Johnson believes that the NTSB should eradicate all “unnecessary” text in favor of mathematical equations. However, he fails to notice that he incorporates the needs of his audience and reintegrates some of the non-mathematical text into his presentation. Therefore, I believe that the argument fails because its logic alone is not enough to inform or persuade its audience. The scientists were forced to reintegrate a narrative, which contradicts their proposal that logic is enough for the audience. This example shows that there is more to persuasion than just the facts associated with logic.

## **ETHOS**

Aristotle defines rhetoric as “character” (2). Kennedy, in the footnotes of his translation of *On Rhetoric* extends the definition into “moral character”, which he believes is not used “in the technical sense [which is] the presentation of the character in a discourse.” Kennedy believes that it is only the reputation based upon the speakers’ character that Aristotle meant by ethos (37). However, other critics disagree. Wisse, for example, states that ethos takes on a type of authority in that it builds the speakers credibility inasmuch as it is brought about only in the speech itself (35). Walzer et al. agree with Wisse saying that ethos necessarily arises within the speech only and not as a function of the audience’s previous knowledge of the speaker’s character (194). In other words, ethos is not created or bound to the author, but is embedded in the message.

To apply these semi-contradictory definitions to the NTSB, I define ethos as synonymous with credibility or the authority given to a speaker or writer that is capable of being believed. In *Reading Critically, Writing Well*, Axelrod and Cooper state that, “for an argument to be considered credible by readers, they must find it authoritative, believable, or trustworthy” (10). Therefore, there is an authority that is given to NTSB even though they have no power to directly make decisions.

### **NTSB Ethos**

To gain credibility and authority, the NTSB uses certain words, sentence structure, and grammar elements to show that it is the authority on an accident that it investigates. For example, the NTSB uses its knowledge of airline mechanics to study the accident of Alaska Airlines flight 261. Investigators found that the crash that killed 83 passengers was caused by a special component called a jackscrew. In its final report, the NTSB used jargon and words that let its constituents know that the NTSB is the authority on the subject. In the executive summary, the NTSB states

The safety issues discussed in this report include lubrication and inspection of the jackscrew assembly, extension of lubrication and end play check intervals, jackscrew assembly overhaul procedures, the design and certification of the MD-80 horizontal stabilizer trim control system . . .” (NTSB *Report*, 14)

I believe that it is important to note that perhaps very few who read the executive summary of the report knew what the jackscrew assembly or horizontal stabilizer trim control system were. Nevertheless, it is possible that those who read the airline mechanic jargon recognized that the NTSB’s investigation was thorough and employed experts in the field. Therefore, the NTSB’s rhetorical use of jargon about the part and how it works assumed an authoritative stance that helped build its ethos as a knowledgeable and reliable source of investigation and information.

Since the NTSB has created an image for itself as an authoritative research organization, why can’t it rely only on the rhetorical appeal of ethos to persuade its audience? The following

example describes a situation involving an organization similar to the NTSB, the Environmental Protection Agency (EPA), where the EPA relied solely on its ethos. Unlike the NTSB, the EPA has authority to make important decisions concerning the environment; it is not just a research organization.

### **Why can't the NTSB just rely on their past credibility? Ethos failure and the EPA**

In Aspen, Colorado, the EPA's reputation "has degenerated from that of a protector to that of a rigid, unreasonable monolith" (11). Stratman et al. closely examine the rhetorical issues that led to the EPA's "degeneration" in the eyes of the citizens and public officials in Aspen. The reversal brought the EPA under severe criticism about its administrative and risk communication policies. According to Stratman et al., the reversal of opinion was caused by the fact that the EPA refused to argue the details of its findings despite that the findings were contradictory. The EPA relied solely on its authority as the policy maker of environmental protection and risk communication.

Heath and Nathan (cited in Stratman et al.) state "that if people receive credible and clear information regarding assessed risk levels they will accept the conclusions and recommendations of risk assessors." Unfortunately, the EPA refused to discuss the issues in a clear and credible way. For example, when blood tests were given to the residents of Smuggler's Mountain, a former silver mining site near Aspen, for lead poisoning, the EPA found only one case with a slightly higher lead toxicity (which was still much lower than what health officials consider a critical amount). The EPA used that one case to promote its decision to move the mobile homes situated near the site and overturn thousands of cubic yards of dirt. However, when the local residents and administrators balked at the idea saying that the one case was not enough to merit such an overhaul, the EPA undermined their own argument saying that blood toxicity is not a reliable indicator of high lead levels in the environment. The contradiction in the logical argument augmented the opposition and eventually led to a third party investigation that completely overturned the EPA's results.

Although rare, the reversal of the EPA's decision in Aspen demonstrates a case where the EPA's ethos was not enough to persuade its audience. The EPA assumed its authority saying

"while we continue to welcome input from the community and neutral third parties concerning the actual and potential health risks from lead-contaminated mining wastes, EPA is required by statute to be the decision-maker in selecting remedial actions for Superfund sites. Therefore, I can not agree to allow a third party to determine the appropriate scope of EPA's remediation plan" (11).

The EPA could not disguise the flaws in its logical argument and therefore did not succeed in its persuasion. This example shows that ethos is not enough by itself to successfully persuade one's audience.

### **PATHOS**

Aristotle describes pathos as the "persuasion through the hearers when they are led to feel emotion by the speech" (2). Wisse defines pathos as "the arousing of emotions in the audience"

(3). Walker, in *Pathos and Katharsis in Aristotelian Rhetoric: Some Implications* believes that pathos has power over logos. He states that emotion (pathos) will determine how the mind perceives and interprets any logical arguments presented to it. He states that pathos can take “facts that are acknowledged to be true, completely out of the process of deliberation.” (12). Therefore, the NTSB must be aware of the emotions of the audience and tailor its discussion to those emotions.

## **NTSB Pathos**

Tailoring its reports and discussions of incidents and accidents to the emotions of its recipients can be difficult, given the NTSB’s claims of its “reputation of impartiality” (1). Nevertheless, I believe that the NTSB recognizes which investigations are higher profile investigations, such as those that involve many fatalities or are considered extraordinary by the general public and the press. Knowing the profile of the incidents, the NTSB can then, in its press releases, emphasize that it is the organization that will eradicate future tragedy by finding the cause of the accident and recommending future measures.

The NTSB’s use of pathos is evident in its press release about its investigation into the fatal crash of Air Midwest flight 5481, which killed 21 people. The press release contains certain phrases that emphasize the tragedy and how the NTSB will help prevent future crashes. Specifically, the NTSB emphasizes the sadness of the tragedy by using phrases like, “there were no survivors,” and “the fatal crash” (13). The NTSB also emphasizes its important role by using phrases such as, “information from the hearing will be used by the Safety Board to prepare a final report on the accident, including safety recommendations aimed at preventing similar accidents in the future” (14).

The NTSB uses pathos by appealing to the emotional sense of tragedy of its higher profile investigations and by emphasizing its authority as an agency that will make sure that such a tragedy does not happen again based on its recommendations. The NTSB recognizes that pathos can be used as an important tool and cannot be ignored. For example, a situation involving the newly created NTSB in 1976 demonstrates pathos’ importance in persuasion.

## **Why can’t the NTSB just ignore the pathos surrounding an issue? The Chicago Transit Authority**

Up to this point in this paper, I have presented the NTSB as effective in communication and persuasion. The following example shows how the newly formed NTSB lacked an understanding of the emotional appeals of its audience. I present that the NTSB in the following example is not the same as the current NTSB. In 1976, when the example occurred, the NTSB was in its infancy as an organization and did not act independently of the federal government. (1) Therefore, its role as an independent organization is not the same as it was nearly thirty years ago.

In 1976, a train crash caused the NTSB to investigate communications within the Chicago Transit Authority (CTA). In “Public Rhetoric and Public Safety at the Chicago Transit Authority,” David Coogan closely examines the rhetoric of the NTSB’s involvement in the crash

(15). The notable aspect of this crash is not that it happened once, but twice: in 1976 and 1984. Coogan questions why the CTA failed to act after the first accident.

Coogan believes that CTA did not accept the changes primarily because the NTSB failed to recognize the emotions of its audience. Specifically, it failed to consider the strife between the workers and the administration of CTA.

Consensus was difficult to obtain . . . because of increased tensions between CTA management and the Regional Transit Authority (RTA) of Illinois, a mayoral race in which transit efficiency became a hot-button issue, a memorable blizzard that nearly shut down rail service, and a four-day strike by the Amalgamated Transit Union (ATU) over wage increases that actually did shut down rail service. To change the policy about rail communication, the NTSB had to persuade CTA managers, RTA regulators, and ATU workers to collaborate on a solution. (15)

Coogan confirms that the NTSB failed to take into consideration the emotions caused by the political and organizational struggles that were happening at the time. Specifically, the NTSB recommended that hand held radios be installed to facilitate communication between the train operators and the administrators. The power relations that existed between the workers and administration at that time caused the recommendation to fail. Therefore, the NTSB's lack of pathos was insufficient to persuade the, at that time, warring factions, to effectively implement the recommendation. Wilson states that pathos can take "facts that are acknowledged to be true, completely out of the process of deliberation." (15)

## CONCLUSION

To successfully persuade an audience through writing, one must use all three rhetorical appeals. Organizations, including the NTSB in its early years fail to persuade their audiences because they either attempt to use one appeal exclusively, or ignore an appeal. The NTSB's success in persuading its audience shows the importance of finding a balance between the three appeals. Because NTSB relies on all three appeals to persuade its audience, it proves a good example of how to balance the three appeals.

I also believe that the application of Aristotle's construction of argument, as applied to non-theoretical settings, helps us better understand how rhetoric is used to persuade in a bureaucracy. With a better understanding of rhetoric, we will be able to continue to extend the applications of classical rhetoric beyond the book covers and classrooms and into a more practical setting.

## WORKS CITED

1. History and Mission. National Transportation Safety Board. [http://www.nts.gov/Abt\\_NTSB/history.htm](http://www.nts.gov/Abt_NTSB/history.htm). Accessed May 2003.
2. Aristotle. *On Rhetoric*. Trans. George A. Kennedy. Oxford University Press, New York, 1991.
3. Aristotle. *On Rhetoric*. Trans. W. Rhys Roberts. Ed. Lee Honeycutt. <http://www.public.iastate.edu/~honeyl/Rhetoric/homepage.html>, 2001. Accessed July 9 2003.
4. Gross, Alan G., and Arthur E. Walzer, Editors. *Rereading Aristotle's Rhetoric*. Carbondale: Southern Illinois University Press, 2000.
5. Lunsford, Andrea and Cheryle Glenn, Rhetoric and the Dynamic Elements of Written Communication. *St. Martin's Guide to Teaching Writing*. 3rd ed. Bedford/St. Martins, New York, 1999.
6. Huckin, Thomas N., Christine A. Hult, *The New Century Handbook*. Allyn & Bacon, Massachusetts, 1999.
7. Wisse, Jakob. *Ethos and Pathos: From Aristotle to Cicero*. Ed. Adolf M. Hakkert, Amsterdam, 1989.
8. National Transportation Safety Board. Collision Between Truck-Tractor Semi trailer and School Bus Near Mountainburg, Arkansas on May 31, 2001. ALTRASPORN. Doc. AAR-02/01. Washington D.C., 2002.
9. Johnson, C.W. Proving properties of accidents. *Reliability Engineering & System Safety* Vol. 67, No. 2, February 2000.
10. Axelrod, Rise B., and Charles R. Cooper. *Reading Critically, Writing Well: A Reader and Guide*. Bedford/St. Martins, New York, 1999.
11. Stratman, James F., Carolyn Boykin, Marti C. Holmes, M. Jane Laufer, and Marion Breen. Risk Communication, Metacommunication and Rhetorical Stases in the Aspen-EPA Superfund Controversy. *Journal of Business and Technical Communication*. Vol. 9, No. 1, 1995, pp. 5-41.
12. Walker, Jeffrey. Pathos and Katharsis in 'Aristotelian' Rhetoric: Some Implications. In *Rereading Aristotle's Rhetoric*. Ed. Alan Gross and Art Walzer. SIU Press, 2000.
13. National Transportation Safety Board. NTSB determines that poor maintenance practices led to the crash of Alaska Airlines Flight 261. Doc. SB-02-39. *National Transportation Safety Board Press Release*. Washington D.C., 2002.

14. National Transportation Safety Board. NTSB to Convene Hearing May 20 on Air Midwest Flight 5481 Crash. Doc. SB-03-16. *National Transportation Safety Board Press Release*. Washington D.C., 2003.
15. Coogan, David. Public Rhetoric and Public Safety at the Chicago Transit Authority: Three approaches to accident analysis. *Journal of Business and Technical Communication*. Vol. 16, No. 3, 2002, pp. 277-305.