SUBMISSION OF THE

NATIONAL AIR TRAFFIC CONTROLLERS ASSOCIATION

TO THE

NATIONAL TRANSPORTATION SAFETY BOARD

REGARDING THE ACCIDENT INVOLVING

US AIRWAYS FLIGHT 1549

AT

THE HUDSON RIVER, NEW YORK CITY, NEW YORK

ON

JANUARY 15, 2009

I. ACCIDENT

On January 15, 2009, about 1527 Eastern Standard Time, US Airways Flight 1549, an Airbus A320, N106US, encountered bird ingestion into both engines, lost engine thrust, and landed in the Hudson River following take off from New York City's La Guardia Airport (LGA). The 150 passengers and 5 crewmembers evacuated the aircraft successfully. One flight attendant and four passengers were seriously injured. The flight was operating under the provisions of 14 Code of Federal Regulations Part 121 and was destined for Charlotte, North Carolina.[1]

II. AIR TRAFFIC CONTROL AND AWE1549

A) **Numerous ATC Transmissions Were Made To Facilitate Emergency Landing and To Initiate Rescue**
At approximately 15:27:36 Eastern Standard Time, AWE1549 advised the New York TRACON that they had encountered several bird strikes and that they needed to return to La Guardia immediately. AWE1549 successfully ditched in the Hudson River at approximately 15:30:43 Eastern Standard Time. Approximately three minutes and seven seconds had elapsed from the time the crew of AWE1549 advised Air Traffic Control that the flight encountered the birds, to the time of ditching in the Hudson. During this time, the New York area Air Traffic Control system and users made approximately sixty-two (62) transmissions in order to both facilitate the expedited landing of AWE1549 and to initiate rescue efforts.

B) **No Active Bird Advisories Were In Existence at the Time of the Incident**
Controllers are required to issue advisory information on pilot, tower, or radar reports of bird activity.[2] In the case of AWE1549, there were no pilot, tower, or radar reports of any bird activity.

C) Correlated and Uncorrelated Radar Targets
The ASR-9 radar system is primarily intended to track aircraft, with a limited ability to provide information about other phenomena of interest such as precipitation, birds, balloons, or other radar-reflective materials visible to the radar antenna. The preferred method of tracking aircraft is to use secondary radar, which depends on the presence of a transponder aboard the aircraft and positively identifies the flight being tracked, as well as clearly distinguishing it from natural phenomena.

According to FAA radar technicians and software programmers, the ASR-9 can also detect objects via their reflectivity to radar energy, with no requirement for a transponder. Targets detected strictly by reflectivity are known as "primary" returns or uncorrelated. Primary returns may be aircraft, birds, anomalous propagation, terrain, ground vehicles, reflective structures such as bridges, or other objects that are not of interest for ATC purposes and should not be displayed to controllers because of their potential to be distracting or to interfere with the detection of phenomena of interest.

To be useful, primary returns must be subjected to a filtering process that applies various rules to the observed radar reflections and eliminates those which appear to be extraneous for ATC purposes. In particular, the radar system attempts to identify targets that are moving consistently, remain visible from sweep to sweep, and have a

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1 For this paper, US Airways flight 1549 will be referred to as AWE1549 or Cactus 1549.

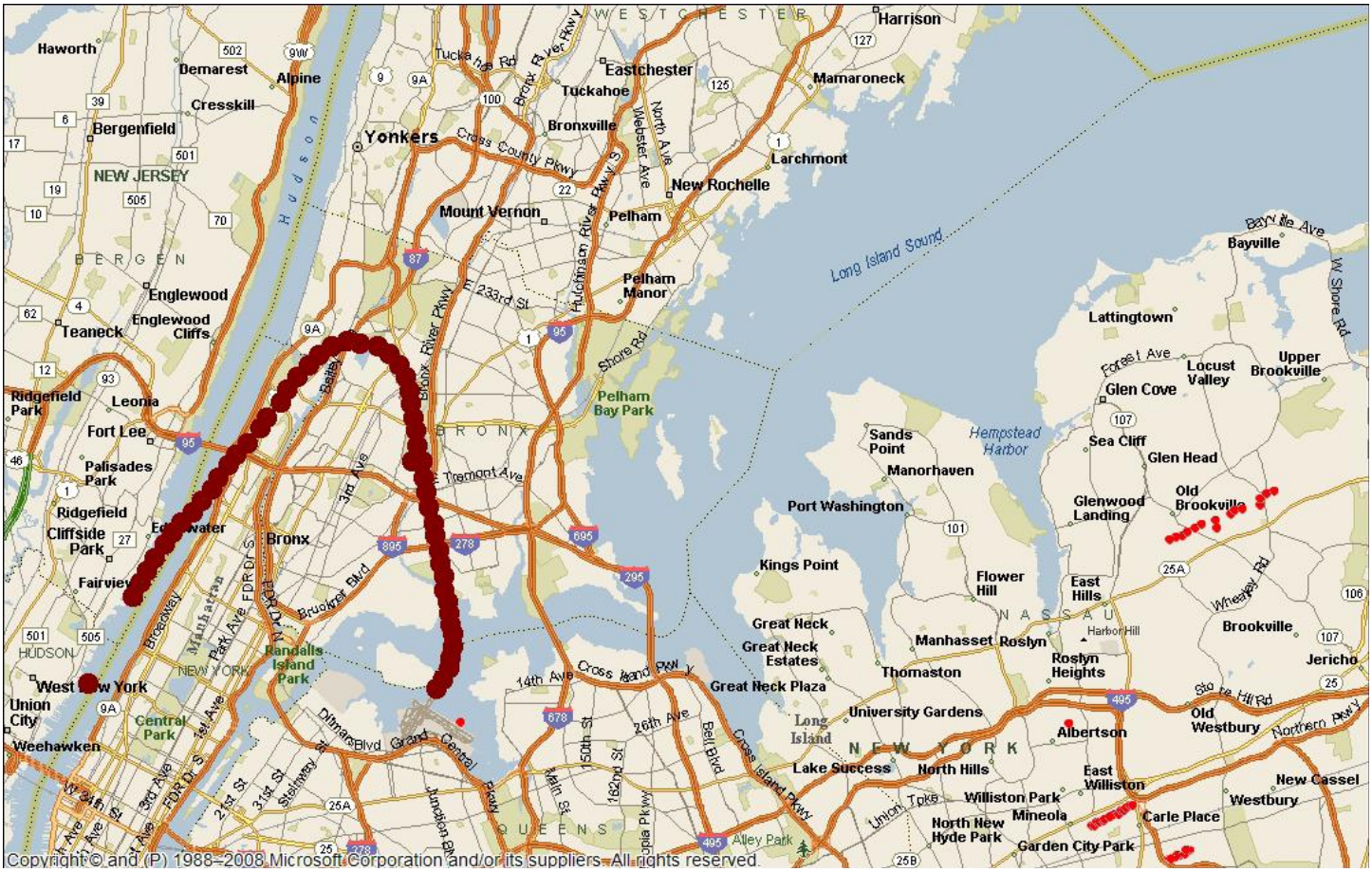
2 E. 2-1-22. BIRD ACTIVITY INFORMATION

a. Issue advisory information on pilot - reported, tower - observed, or radar - observed and pilot - verified bird activity. Include position, species or size of birds, if known, course of flight, and altitude. Do this for at least 15 minutes after receipt of such information from pilots or from adjacent facilities unless visual observation or subsequent reports reveal the activity is no longer a factor.

ground speed of at least 30 knots. If a primary return meets those criteria, it is likely to be classified as a "correlated" target, indicating a high level of confidence that it is of interest for ATC purposes.

A replay of the controller's display did not show any primary targets until the collision occurred. According to the recorded keyboard entries and filter selections in effect at the La Guardia Departure position at the time, the controller had chosen to correctly display only correlated primary targets. More precisely, it is a fact that the controller was using the proper display settings at the time of the collision.

The illustration below is what the controller observed regarding AWE1549 and primary targets. It is clear that there were no primary targets conflicting with AWE1549.[3]



D) **<u>No Anti-Blocking Frequency Technology Was In Existence at the Time of the Incident</u>**[4]

Following the loss of thrust, the Captain of AWE1549 made a "mayday" transmission to air traffic control attempting to declare an emergency. This transmission was blocked by another transmission; however, it became clear to the controller shortly thereafter that there was indeed an emergency. Because of the experience of the controller, this communication difficulty did not result in a substantial problem; however, this could have easily become a major distraction. It also could have been critical in alerting crash, fire and rescue personnel. On a daily basis, blocked radio transmissions affect the safety of thousands of flights. The results vary from altitude deviations to navigation errors, and numerous other critical elements of flight safety. Technology now exists to eliminate this hazard.

3 From the NTSB ATC factual report of AWE1549 incident.

4 NATCA and USAPA concur on this portion of the submission.

III. CONCLUSIONS AND RECOMMENDATIONS OF NATCA

NATCA concludes as follows:

1) Air Traffic Control actions were immediate and correct.
2) The Controller correctly selected “correlated” targets.
3) The initial mayday call from AWE1549 was blocked.

NATCA recommends as follows:

Move forward on the project to use anti-blocking technology on VHF radio frequencies such that ATC frequencies will no longer be susceptible to blocked communications.

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William Shea
NATCA

Submitted in behalf of NATCA on December 24, 2009