Plausibility Of 9/11 Aircraft Attacks Generated By GPS-Guided Aircraft Autopilot Systems

Aidan Monaghan (B.Sc., EET)

Because information collected after the terrorist attacks of September 11, 2001 has raised questions about the alleged ability and motivation of the people accused of piloting four Boeing 757 and 767 planes into the World Trade Center (WTC), the Pentagon building and a field in Shanksville, Pennsylvania, speculation has since lingered regarding the covert use of technology to precisely navigate the four airliners that day without onboard pilot control.

American Airlines Flight 11 (N334AA)

United Airlines Flight 175 (N612UA)

American Airlines Flight 77 (N644AA)

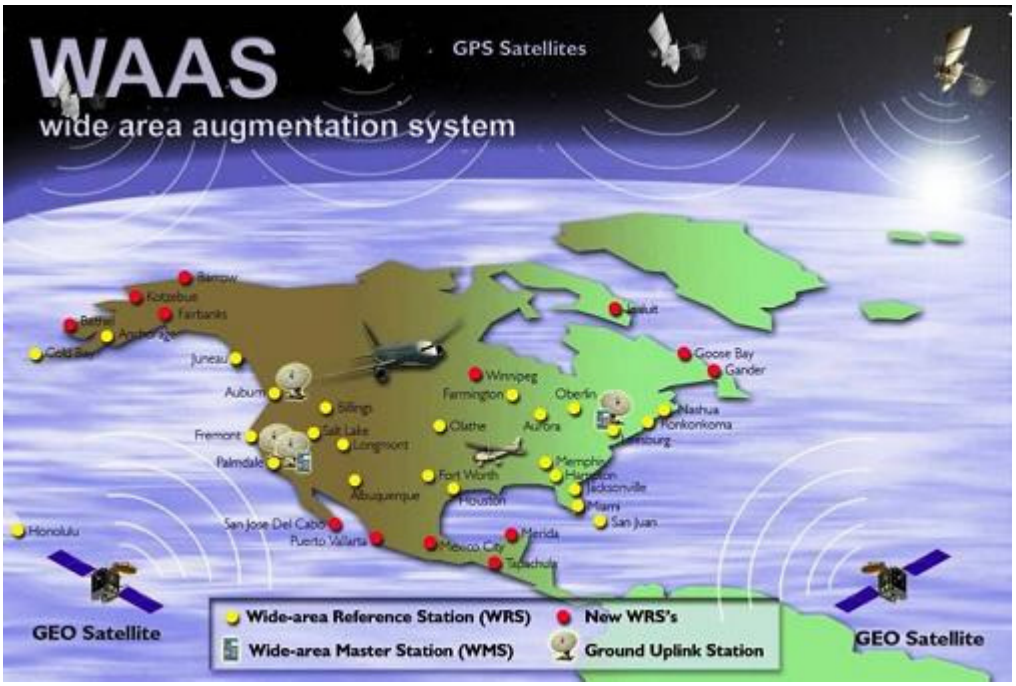
United Airlines Flight 93 (N591UA)

U.S. federal government and civil aviation industry publications describe the development and implementation pre-September 11, 2001, of state-of-the-art systems capable of facilitating precise automated navigation of the Boeing 757 and 767 aircraft used that day to a given destination. The Global Positioning System (GPS) is a space-based radio-navigation system that generates accurate positioning, navigation and timing information for civil use at no cost. The information signal can be obtained through the use of GPS signal receiving equipment.[1]

Augmented GPS signal service intended to replace dated and expensive ground-based aviation navigation signals, was developed during the mid-to-late 1990s by the Federal Aviation Administration (FAA) and Raytheon. Serving on Raytheon's Special Advisory Board was "Project for the New American Century" signatory Richard Armitage, although it is unknown precisely when he served in this capacity.[2] Known as the Wide Area Augmentation System (WAAS), precisely surveyed ground-based Wide-area Reference Stations monitor and collect GPS satellite signal errors. Ground-based Wide-area Master Stations then transmit corrected GPS signal information to ground-based Ground Uplink Stations, that then transmit the corrected GPS signal information to Geostationary Satellites. These satellites then broadcast the corrected positional information back to Earth for use within a GPS-like signal.[3]

The FAA announced on August 24, 2000 - just 13 months prior to the September 11, 2001 attacks - that the WAAS signal was available pending final approval by the FAA. Horizontal and vertical positional data accurate to between one to three meters and sufficient for Category I precision aircraft runway approaches, was now available throughout the contiguous United States.[4][5] Conventional en route aviation navigation beacon signals were only able to provide placement information accurate to within one mile.[6] Raytheon's director of satellite navigation systems even reported that rescue personnel utilized the newly activated WAAS

signal, in order to precisely survey the Ground Zero site following the September 11, 2001 terrorist attacks.[7]



WAAS Architecture

For U.S. aviation purposes utilizing GPS navigation, a waypoint is a three dimensional location within the National Air Space, comprised of longitude, latitude and altitude coordinates. An aircraft flight path can be comprised of a series of waypoints.[8] The WTC towers themselves occupied waypoint coordinates. Other noteworthy U.S. structures occupying domestic waypoint coordinates are the Washington Monument in Washington, DC and the Space Needle in Seattle, Washington.[9]

During numerous FAA and National Aeronautics and Space Administration (NASA) sponsored runway approach and touchdown test flights between 1994 and 2002, involving augmented GPS positional signals and the auto-land systems of Boeing 757, 767 and other Boeing 700 series aircraft, horizontal and vertical positional accuracies of just several meters or less were routinely achieved. The four aircraft used to carry out the September 11, 2001 terrorist attacks were also Boeing 757-200 and 767-200 model aircraft. Runways of major U.S. airports like JFK International, Chicago-O'Hare International and Los Angeles International are between 150 and 200 feet wide.[10][11][12] The WTC towers were each 208 feet wide.[13]

- During October of 1994 at NASA's Crows Landing Flight Facility in California, 110 autopilot approaches and touchdowns of a United Airlines Boeing 737 aircraft facilitated by augmented GPS positional signals, were successfully conducted, with "accuracies on the order of a few centimeters" being consistently achieved. [14]

United Airlines Boeing 737

- During October of 1994, augmented GPS signal flight tests sponsored by the FAA in cooperation with Ohio University were conducted. 50 autopilot approaches and touchdowns were successfully performed by a donated United Parcel Service Boeing 757-200 series aircraft. The augmented GPS positional signal was integrated into the aircraft Flight Management System (FMS).[15]

United Parcel Service Boeing 757-200

- During July and August of 1995, Honeywell, Boeing and NASA sponsored tests using NASA's Boeing 757-200 test aircraft and performed 75 autopilot approaches and touchdowns. The predicted augmented GPS system aircraft positional accuracy of 1-2 meters was successfully achieved.[16][17]

NASA Boeing 757-200

- During August of 1999, multiple augmented GPS signal autopilot approach and touchdown tests were performed using a donated United Parcel Service 767 aircraft. These tests were sponsored by the FAA and were centered on the prototype GPS-based Local Area Augmentation System (LAAS), which is intended to compliment the FAA's WAAS signal. The LAAS signal can provide aircraft positional accuracy of less than one meter vertically and laterally.[18]

United Parcel Service Boeing 767

- On August 25, 2001, a Fed-Ex 727-200 aircraft equipped with a Rockwell-Collins GNLU-930 Multi-Mode Receiver, conducted six full auto-lands during joint U.S. Air Force and Raytheon sponsored test flights, using the Joint Precision Approach and Landings System (JPALS), the military augmented GPS counterpart of the civil LAAS system.[19]

Federal Express 727

- On January 17, 2002, a series of auto-coupled (hands-off) approaches, through touchdown and rollout, were conducted to further test the LAAS system with a Fed-Ex Boeing 737-900, equipped with a Rockwell-Collins GLU-920 Multi-Mode receiver.[20] The augmented GPS capable GLU-920 Multi-Mode receiver pre-dates September, 2001 [21] and is designed for use within the Boeing 757-200 and 767-200 model aircraft, like those used during the September 11, 2001 terrorist attacks.[22]

Federal Express Boeing 737

LAAS Architecture

The installation of GPS signal utilizing avionics systems for use in the Boeing 757 and 767 model aircraft like those involved in the September 11, 2001 terrorist attacks was planned several years prior.

On September 6, 1996 Rockwell-Collins Commercial Avionics announced plans by Boeing and major commercial airlines, to install Rockwell-Collins Multi-Mode Receiver (MMR) landing systems within their Boeing 757 and 767 aircraft.[23] The MMR system can utilize the WAAS signal as well as the basic GPS signal, the VHF, UHF, VOR navigation signals and eventually the LAAS navigation signal.[24]

Rockwell-Collins Multi-Mode Receiver

On September 7, 1998 Honeywell International announced plans by American Airlines and United Airlines, to install the GPS capable Pegasus Flight Management System (FMS) within their Boeing 757 and 767 aircraft, with 150 waypoint route capacity.[25][26] An aircraft FMS is comprised of three major systems including an aircraft's Auto-Flight System.[27] Aircraft Auto-Flight Systems were utilized during the afore mentioned GPS signal test flight approaches and touchdowns.

By 1999, Boeing 757 and 767 aircraft contained digital flight control systems that can "automatically fly the airplanes on pre-selected routes, headings, speed or altitude maneuvers."[28]

On October 9, 2001, Cubic Defense Systems, Inc. applied for a U.S. patent that removes control of an aircraft from its pilot and utilizes an aircraft's auto-pilot system to implement an uninterruptable pre-programmed auto-pilot flight plan in order to navigate an aircraft to a given destination during an emergency. This would be accomplished through the use of an electronic or mechanical relay or relays, that become activated by pilot operation of an aircraft hijack notification system. Surprisingly to some, none of the four aircraft destroyed on September 11, 2001 are known to have entered unique transponder hijack notification codes, suggesting either modified function or insufficient activation time. One optional feature of the Cubic system is termination of an aircraft's ability to communicate. In two cases, hijacker communications

reportedly aimed at passengers on-board American Airlines flight 11 and United Airlines flight 93 on September 11, 2001 were heard instead by air traffic controllers, suggesting modified communication functions. The Cubic patent also references Honeywell's 1995 augmented GPS flight navigation research and development, presumably as a signal navigation aid. The system also envisions the use of new aircraft flight instructions transmitted by a remote sender, that would override aircraft functions already underway and direct an aircraft auto-pilot system to navigate an aircraft to a predetermined landing destination.[29] A data link interface between an aircraft Flight Management System (FMS) and the Management Unit for the Aircraft Communication Addressing and Reporting System (ACARS), was developed during the early 1990s. This communication system allows for the update an aircraft FMS in mid-flight.[30] An aircraft auto-pilot system is part of the FMS.

Because the Flight Data Recorders (FDRs) for American Airlines flight 11 and United Airlines flight 175 were not recovered, details regarding the operation of each aircraft are not known. The FDRs for American Airlines flight 77 and United Airlines flight 93 were recovered and indicate pilot control of each aircraft. However, the FDR readout file for American Airlines flight 77 was completed four hours and fifteen minutes before the said FDR was recovered, suggesting false or altered FDR information.[31] And the FDRs for American Airlines flight 77 and United Airlines flight 93 are virtually the only ones during the previous 20 years of major National Transportation Safety Board (NTSB) U.S. aviation mishap investigations, for which unique inventory control serial numbers were not published.[32] Such serial numbers are required to facilitate FDR data readouts.[33] In fact the NTSB possesses no records pertaining to the positive identification of the FDRs for American Airlines flight 77 and United Airlines flight 93.[34]

Solid State Flight Data Recorder

Increasing the plausibility of precision automated control of the two aircraft striking the WTC, is the fact that each aircraft struck precisely the only sections within each WTC tower reportedly upgraded with thermal protection materials, suggesting a clandestine relationship between the visually spectacular aircraft attacks upon the WTC and activity pre-September 11, 2001 within each WTC aircraft impact region, initiating complete structural failure within these regions not generated by the aircraft attacks themselves.[35][36]

References:

[1] Global Positioning System.
http://www.gps.gov/
[2] The Making of U.S. Foreign Policy -- BIOGRAPHIES OF THE AUTHORS, AMBASSADOR RICHARD LEE ARMITAGE
http://usinfo.state.gov/journals/itps/0900/ijpe/pj52bios.htm
[3] Wide Area Augmentation System.
http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/navservices/gnss/waas/
[4] AMENDED VERSION: Wide Area Augmentation System Signal Now Available, August 24, 2000
http://www.faa.gov/news/press_releases/news_story.cfm?newsId=5249
[5] WAAS Fact Sheet
http://www.freeflightsystems.com/waas_factsheet.htm
[6] DIRECT FLIGHT NEW TECHNOLOGY WILL GUIDE PLANES
http://www.highbeam.com/doc/1P2-8569182.html
[7] WAAS: Back in Step, Avionics Magazine, February 1, 2002
http://www.aviationtoday.com/av/categories/commercial/12571.html
[8] Waypoint
http://en.wikipedia.org/wiki/Waypoint
[9] The International GPS Global Positioning System Waypoint Registry TM
http://www.waypoint.org/
[10] JFK International Airport
http://upload.wikimedia.org/wikipedia/commons/b/b0/JFK_airport_map.gif
[11] Chicago-O'Hare International Airport
http://upload.wikimedia.org/wikipedia/commons/3/30/ORD_airport_map.PNG
[12] Los Angeles International Airport
http://upload.wikimedia.org/wikipedia/en/a/a3/LaxAirportDiagram2.jpg
[13] The World Trade Center
http://en.wikipedia.org/wiki/Image:World_Trade_Center_Building_Design_with_Floor_and_Elevator_Arrangment.svg
[14] GETTING TO THE POINT IN PINPOINT LANDING, NASA, 1998
http://www.sti.nasa.gov/tto/spinoff1998/t2.htm
[15] FAA/Ohio University Avionics Engineering Center Partnership, Federal Aviation Administration, December, 1998
http://www.tc.faa.gov/logistics/grants/success/OU.pdf
[16] Honeywell's Differential GPS Satellite Landing System, reprinted from Avionics News Magazine, September, 1996

http://www.bluecoat.org/reports/Lewison_96_DGPS.pdf
[17] ARIES: NASA's 'Flying Lab' Takes Wing
http://oea.larc.nasa.gov/PAIS/757.html
[18] FAA, ATA, UPS Test New Satellite Technology, Federal Aviation Administration, August 13, 1999
http://www.faa.gov/news/press_releases/news_story.cfm?newsId=5052
[19] Civil-Military Interoperability For GPS Assisted Aircraft Landings Demonstrated
http://www.spacedaily.com/news/gps-01k.html
[20] Raytheon conducts successful flight test of global positioning system (GPS) precision landing system
http://www.raytheon.com/newsroom/briefs/022102.html
[21] FedEx Express Selects Rockwell Collins Multi-Mode Receivers
http://www.rockwellcollins.com/news/page2930.html
[22] GLU-920 MMR Global Landing System
http://www.rockwellcollins.com/ecat/AT/GLU-920.html?smenu=204
[23] Rockwell's Collins Landing System Picked for Both Airbus and Boeing Planes; Lead Announcement at Farnborough Air Show, PRNewswire, September 6, 1996
http://www.highbeam.com/doc/1G1-18652301.html
[24] GNSS - Frequently Asked Questions - WAAS
http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/navservices/gnss/faq/waas/index.cfm#29
[25]HONEYWELL ANNOUNCES ORDERS FOR NEW-GENERATION "PEGASUS" FLIGHT MANAGEMENT SYSTEM, Aviation Week, September 7, 1998
http://www.aviationnow.com/shownews/farnday1/pressr15.htm
[26] Boeing 757/767 State of the Art Upgrade
http://www.honeywell.com/sites/aero/Flight_Management_Systems3_C1997B88E-FCF9-72B5-3A26-801F48F156BD_H79C28D81-B679-A247-C0CE-32B08C84BC08.htm
[27] Flight Management System
http://en.wikipedia.org/wiki/Flight_management_system
[28] Rockwell Collins To Provide Autoland System for Boeing Next-Generation 737, Business Wire, October 5, 1999
http://www.highbeam.com/doc/1G1-55993162.html
[29] Anti-hijacking system operable in emergencies to deactivate on-board flight controls and remotely pilot aircraft utilizing autopilot, United States Patent, Filed: October 9, 2001
http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&d=PALL&RefSrch=yes&Query=PN%2F6641087
[30] Aircraft Communication Addressing and Reporting System
http://en.wikipedia.org/wiki/ACARS
[31] NTSB Explains 9/11 Pentagon Flight "Black Box" File Time Stamp Discrepancy
http://www.911blogger.com/node/17616
[32] Was Essential 9/11 Aircraft 'Blackbox' Identification Information Withheld From NTSB?
http://www.911blogger.com/node/16089
[33] Flight Data Recorder Handbook for Aviation Accident Investigations
http://www.ntsb.gov/Aviation/Manuals/FDR_Handbook.pdf

[34] NTSB Elaborates On Absent Records Pertaining To Positively Identified 9/11 Aircraft Wreckage, Including 2 Flight Data Recorders
http://www.911blogger.com/node/17139
[35] Federal Building and Fire Safety Investigation of the World Trade Center Disaster: Passive Fire Protection
http://wtc.nist.gov/NISTNCSTAR1-6A.pdf
[36] World Trade Center Building Performance Study
http://www.fema.gov/pdf/library/fema403_ch1.pdf