

# MIDAIR COLLISION AVOIDANCE (MACA) PROGRAM GUIDE

## VIRGINIA AIR NATIONAL GUARD, RICHMOND IAP, VA



This guide is provided by the 192nd Fighter Wing (192FW) Safety Office, Virginia Air National Guard.

We are located on the east side of Richmond International Airport in Sandston, Virginia.

The intent of the guide is to provide local aviators and civilian airlines with an overview of flight operations as conducted daily by the Virginia Air National Guard.

The 192FW is the largest of the four units within the Virginia Air National Guard. It is composed of the 149th Fighter Squadron, the 192<sup>nd</sup> Operations Group, the 192<sup>nd</sup> Support Group, the 192<sup>nd</sup> Logistics Group, and the 192<sup>nd</sup> Medical Squadron. The 192<sup>nd</sup> Fighter Wing flies supersonic F-16C Fighting Falcons and has approximately 1,000 members.

192FW Flight Operations at Richmond International Airport...

Our daily flying schedule when training consists of a variety of missions including air-to-air and air-to-ground. After departing Richmond International, training flights typically proceed to the “warning areas” just off the coast of Virginia, or to the “military operating areas (MOA)” in North Carolina. Our air-to-ground missions train in “Restricted Area R-5314” which is located in Dare County, NC. F-16’s operate from 500’ AGL (Above Ground Level) to 20,500’ MSL (Mean Sea Level).



The unit also owns and trains on “military training route (MTR)” VR-1722. This type of route is called a low-level” and training occurs at 500’ AGL and speeds averaging 480 knots ground-speed, unless flight information planning is more restrictive. Virginia Air National Guard aircraft will contact local Flight Service Stations and advise them of their intentions (time, number of aircraft, entry point, altitudes, etc.) All precautions necessary are taken by 192FW aircraft to have minimal impact on civilian flight traffic and the local communities.

Locally, at Richmond International Airport, the 192FW operates only from runway 16/34. Taxiway “mike” is used exclusively by Virginia Air National Guard aircraft.

Pattern altitudes are 1700’ MSL and our airspeeds are 300 knots on “initial,” which is our typical arrival procedure. Unless otherwise directed, F-16 aircraft always break (pitch-out) to the east side of the field. Average final approach airspeed is approximately 160 knots.

Additionally, F-16 aircraft practice “simulated flame-out” landings called SFO’s. The typical starting altitude for this type approach is 7,000’MSL and terminates in a low-approach. Some SFO’s are from a straight-in approach, and some are directly over the field.

F-16 aircraft are required to have the departure-end barrier (known as a BAK-14) in the upright position for all take-offs and landings. This is a cable that can be raised and lowered by the Control Tower. The F-16 is equipped with a “tail-hook” in case of a total brake failure, high-speed abort, or other emergency.

For further information and/or questions, please contact the Wing Chief of Safety.

**192FW Assigned Aircraft Information:**

Assigned Aircraft:

F-16C Fighting Falcon

Type Aircraft:

Multi-role Fighter

Weapons Load:

12,000 pounds of bombs, missiles and/or rockets

Speed:

Exceeds Mach 2 at 40,000 feet altitude

Armament:

20mm M61A1 multi-barrel

Range:

Radius of action is more than 575 miles gun, rockets and/or missiles

Operational Ceiling:

50,000 feet

Gaining Numbered Air Force: Ninth Air Force, Shaw AFB, SC

Major Air Command:

Air Combat Command (ACC)



**192FW Contact Information:**

192FW/SE

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Pictured above, two Virginia Air National Guard F-16C's and one Langley AFB, Va F-22A Raptor over the Atlantic Ocean.

The following excerpt is from <http://www.seeandavoid.org> This web site is currently under development.

Characteristics of U.S. Midairs  
by Robert C. Matthews, Ph.D.

On August 9, 2000, a Piper PA-31 Chieftain and a PA-44 Seminole collided in midair in Burlington County in southern New Jersey. The PA-31 was operating as an unscheduled Part 135 flight under contract with the U.S. Navy and had nine persons on board. The PA-44 was operating as an instructional flight and had a student and an instructor on board. All 11 people were killed. Both aircraft were destroyed. An unoccupied home also was destroyed.

The collision quickly led the FAA's Office of Accident Investigation to review all 329 midair collisions involving U.S. registered aircraft from 1983 through the date of this accident. The review confirmed some well-understood characteristics of midairs and found some characteristics that had not been identified in the past. **GENERAL CHARACTERISTICS OF MIDAIRS** Midair collisions in the U.S. had decreased steadily for over 30 years, but the number has stabilized since 1995 at about 16 per year. From 1983 through August 2000, the U.S. had a total of 329 midair collisions involving 658 aircraft. The 658 aircraft included 14 balloons; 25 gliders; and nine military aircraft, four of which were helicopters.

For the past two decades, midair collisions in U.S. airspace have almost exclusively involved general aviation (GA) aircraft. Midairs involving large commercial aircraft have been virtually eliminated in U.S. airspace.

Since 1995, GA has averaged one midair collision per 1.6 million flight hours. Given that a midair involves two aircraft, this yields an average risk of a midair today of about one per 800,000 flight hours. For instructional and recreational flight, the risk approaches one per 400,000 flight hours. In short, any single pilot's chance of a midair is small, but it is not insignificant.

Yet "only" 56 percent of the 329 midairs involved fatalities and "only" 40 percent of the 658 aircraft had fatalities. This was somewhat surprising: 60 percent of all aircraft involved in midairs manage to land safely, while both aircraft manage to land safely in 44 percent of all midairs. In short, midairs are not always catastrophic.

The aviation community has long understood that poor weather is not a factor in midairs. All 329 midairs from 1983 through August 2000 occurred in visual meteorological conditions (VMC). Perhaps the only surprise related to weather was the utter absence of any exceptions to the rule of VMC. Bright sun was the only commonly cited factor related to weather. Similarly, darkness does not explain midairs. Only six of the 329 midairs occurred at night and just four occurred at dusk.

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Robert C. Matthews is with the Safety Analysis Branch of FAA's Office of Accident Investigation.



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**SEE AND AVOID!**

