

Club Meetings

Board Of Trustees: -
7:00 PM 12/1/16
Club House

General Meeting:
9:00 AM 12/17/16
N12 CAP Building



Editorial Staff: Charles Burke,
Dave Pathe, Karen Barbagelata

Fly Safe, Have Fun & Keep Learning! **Aviation Tips for Pilots and Pilots-In-Training** by Matt D'Angelo **The See and Avoid Challenge**

Inside this issue:

Page 1
See and Avoid

Page 2: cont'd

Page 3
A good read
ATC Private!
What's in your bag?

Page 4
Spotlight on
Flight Following

Page 5 cont'd

Page 6
By Law change
Rules & regs
Important dates

Page 7
Hypoxia
Of Special Note
Takeoffs are optional

The big three hazards we face as pilots are fire, failure and collision.

Fire and failure can, for the most part, be prevented with a thorough preflight and by keeping situational awareness throughout the flight, especially regarding fuel status and engine instruments. Collision, however, can only be prevented by consistent vigilance and focus by the pilot throughout the entire flight, from engine start to shutdown. The pilot has to maintain a disciplined see and avoid scan, despite distractions, limitations of our eyes, fatigue, illusions, oxygen deprivation, changing light conditions and unintentional complacency.

Our primary responsibilities as pilots are:

1. Maintain smooth airflow over the airplane at all times.
2. Look outside for traffic.
3. Conduct Single-Pilot Resource Management (SRM), including maintaining situational awareness, making good decisions and mitigating risk.

Everything else we add to this, such as navigating, communicating and programming, are of significantly less importance. As pilots, we do an unfortunately poor job with these three tasks, including scanning outside for traffic. When we don't keep smooth airflow over the airplane, we begin to violate basic aerodynamics, losing control of the airplane. When we don't look outside and maintain vigilance so as to, "see and avoid other aircraft," we're putting ourselves at risk and are in violation of a regulation: [14 CFR 91.113: Right-of-Way Rules: Except Water Operations](#).

This lack of consistent, effective see and avoid scan is, in my opinion, part of the reason we also have such a poor track record maintaining control of our flying machines. When we look outside and scan for traffic, we're seeing exactly what the airplane is doing, in the moment. We're in tune with the attitude and the airflow. We're using our controls correctly and keeping smooth airflow over the airplane at all times. Unfortunately, many pilots either don't look outside nearly enough, or look only in a very limited area, usually around 11:00 to 1:00, which is basically over the nose.

Most mid-air collisions occur when and where pilots fly most: Day, VFR, warm weekend afternoons, within five miles of an airport, below 3000 feet AGL. Almost half of these occur below 500 feet AGL. The highest risks are from overtaking traffic and traffic converging from the side. This is why it is so important to visually and verbally clear prior to all turns and to look all around the airplane, not just over the nose. Only a small percentage of mid-air collisions occur head-on. Be especially vigilant entering, flying and departing the traffic pattern. Use standard procedures and predictable maneuvers. Visually and verbally clear the 45° entry and airport overflight area when on crosswind and downwind. Visually and verbally clear opposite base, final, extended final and the runway when turning base.

For flying in Visual Meteorological Conditions (VMC), we should be looking outside for traffic, effectively scanning all around the airplane, 90% of the time. 90% outside, 10% inside. Use half of that inside time to monitor your engine gauges. The flight instruments only need a quick glance, not fixation. The ratio for night VMC should be around 85% outside and 15% inside.

The Airplane Flying Handbook discusses what an effective see and avoid scan pattern should look like, both day and night. The [Aeronautical Information Manual \(AIM\)](#) contains multiple sections discussing collision avoidance. Advisory Circular (AC) [AC90-48D: Pilots' Role in Collision Avoidance](#) goes into further detail. Joint Base McGuire-Dix-Lakehurst produced an excellent poster, "[Mid-Air Collision Avoidance](#)". Review these periodically to make sure you're keeping your scan and awareness sharp.

If the see and avoid scan and vigilance isn't ingrained as habit early in primary training, it is very difficult to "add in" and develop later on. So, here are three challenges for all pilots to improve your collision avoidance skills.

Challenge One: Passengers:

Ask your passengers, whether pilots or not, to help look for and call out traffic. Explain specifically how they should do this, using the clock system, during your passenger briefing. Remember, as Pilot-in-Command (PIC), you are fully responsible, but it's good SRM to ask for help!

The challenge: Offer a small prize or high five for every traffic your passengers call out before you do. This keeps both of you engaged and gives your passengers a nice challenge. Their numbers should be very low - you should be much better at this than they are!

Challenge Two: ATC:

Always utilize ATC radar services (flight following) when you're doing anything but closed traffic. For more info on flight following, please see Oliver Lin's excellent article on page 4 in this newsletter.

The challenge: Spot and keep aware of traffic prior to being advised of that traffic by ATC. Your goal should be to always say, "traffic in sight", instead of, "negative contact." Of course, never, ever call traffic in sight unless you're 100% sure you actually have them in sight.

This is a tough challenge, as ATC will sometimes call out traffic several miles out, potentially in the same direction as the sun or a haze layer. Once you have the traffic in sight, keep them in sight, but don't fixate. There are always other bogeys, so keep your scan going all around the airplane. If you lose sight of previously issued traffic, immediately advise ATC, "negative contact."

Remember, ATC won't see all traffic and they aren't responsible for Visual Flight Rules (VFR) pilots. Their primary responsibility is to keep Instrument Flight Rules (IFR) pilots from bumping into each other and from getting too close to VFR traffic.

Challenge Three: Technology:

Seeing traffic on a screen means nothing until you see them with your eyeballs. With technologies such as Automatic Dependent Surveillance - Broadcast (ADS-B) and Traffic Information Service (TIS) becoming more common, I fear we'll only get more complacent with our see and avoid scans, relying on advisories for collision avoidance.

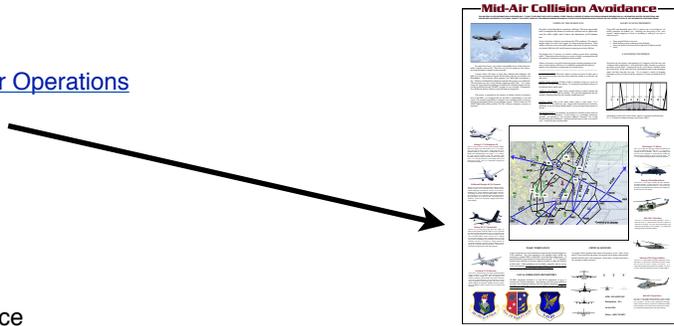
The challenge: Observe traffic outside before you see it on the screen or hear it as an advisory. You should scan the screen as part of your inside 10%, but this is secondary to looking outside. Ideally, you already have all depicted traffic in sight and you're using the screen in case you missed someone out there.

A common trend I see with "traffic tech" is to hear a traffic advisory, then watch pilots bury their heads in the cockpit, looking for the traffic on the screen. The traffic's outside, so that's where we should be looking! Outside scan, quick glance inside, then eyes back outside!

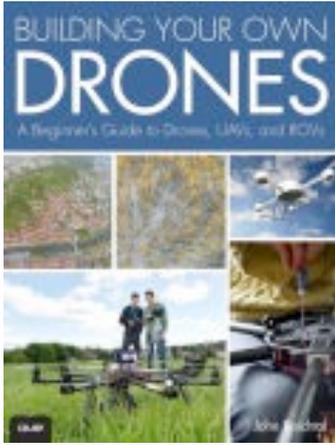
One more thing...clean the windows! I'm often heckled for being the window guy, always cleaning the windows before...and usually after...flights. It's not just to keep them looking clean! According to AIM 8-1-8: Judgment Aspects of Collision Avoidance, "Dirty or bug-smeared windshields can greatly reduce the ability of pilots to see other aircraft." Because of empty field myopia, our eyes will focus on the dirt or bugs on the windows if they don't have much else to focus on outside. This greatly reduces our ability to see other traffic. We need every advantage we can get, so keep 'em clean!

If you rise to these challenges every flight, you'll keep more aware of the quality of your see and avoid scan and you'll continually improve this important skill. By looking outside more and scanning effectively, keeping control of the airplane and keeping coordinated using outside references will become more second nature, which it should be for every pilot.

References: [AC90-48D: Pilots' Role in Collision Avoidance](#)
[FAA-H-8083-3B: Airplane Flying Handbook](#)
[14 CFR 91.113: Right-of-Way Rules: Except Water Operations](#)
[McGuire Mid-Air Collision Avoidance Poster](#)
 Aeronautical Information Manual (AIM):
 AIM 4-4-15: Use of Visual Clearing Procedures
 AIM 5-5-8: See and Avoid
 AIM 7-5-1: Accident Cause Factors
 AIM 7-6-3: Near Midair Collision Reporting
 AIM 8-1-6: Vision in Flight
 AIM 8-1-8: Judgment Aspects of Collision Avoidance



A Good Read



You've heard about drones. You've seen drones. Now, build your own—it's a lot easier than you think!

Drones are the newest frontier for the DIY/maker community, and you don't need to be a technical expert to build one. John Baichtal, the #1 author of hardware hacking books for beginners, will teach you all the skills you need.

First, Baichtal shows you the amazing drones others have built. Then, he walks you through several complete projects: quadcopters, UAVs, ROVs, and more. Not ready to start from scratch? No problem: Baichtal helps you choose from today's best new kits.

Hundreds of full-color step-by-step photos teach you every step, every skill. When you're ready for more advanced concepts, Baichtal explains them in plain English.

- Discover what drones are and why they're so exciting
- Explore today's most imaginative projects, from 3D-printed mini quadcopters to floating robot armies
- Compare kits, from \$200 up: Parallax ELEV-8, DJI Phantom 2 Vision+, OpenROV, Actobotics Nomad, Brooklyn Aerodrome Flack, and more
- Create your own practical Drone Builder's Workbench
- Build complete rocket, blimp, waterborne, and automotive drones
- Construct both fully autonomous and radio-controlled drones
- Choose and assemble your chassis (airframe), motor, props, flight control, power system, accessories, and software
- Integrate Arduino to make radio-controlled drones operate autonomously
- Teach a drone to navigate via RFID tags
- Learn all the basic electronics and programming you'll need

ATC Going Private: Fox News

A House committee chairman says Donald Trump has told him that he likes the idea of spinning off air traffic control operations from the government and placing them under the control of a private, non-profit corporation chartered by Congress.

Rep. Bill Shuster, the House transportation committee chairman, told The Associated Press that he spoke to Trump about the idea several times before and during the presidential election campaign. He said he believes the president-elect would be supportive, although details would have to be worked out.

The Republican lawmaker endorsed Trump early on and campaigned twice with him in his Pennsylvania congressional district.



What's in Your Flight Bag? by Charles Burke



Have you ever been faced with the problem of trying to reach a cover strap that the wind keep blowing in the wrong direction? It can be extremely frustrating if you are working alone. Those who tangled with the cover that was on 93KK had to be an octopus with those straps that were anchored on the wings.

A solution is to add to your bag a simple tool, a third hand. Mine took the form of a small weight with a 3 ft cord and a hook at the end. All that you have to do is attach the hook end to the strap then toss the weight under the belly, walk around and pull the strap to you.

The weight can consist of a small piece of soft wood, a piece of plastic pipe or anything else that will not scratch or damage the aircraft's paint. The hook can consist of a plastic clasp, a strap of velcro or any other device that will grip the strap.



Chris Hill: My family was involved with various elements of aviation before I can even remember. My father flew hot air balloons since my earliest memories, after that it was various types of ultralights and then a kit built helicopter. This opened the door to a variety of careers in commercial aviation. The careers included working for a few carriers and charter operations, doing everything from refueling to deicing and customer service for airlines such as US Airways Delta and Southwest.

As a young child my father bought me an introductory ride and it was to the same FBO I returned almost 20 years later. There I flew a PA 140 and a C-150. After they closed down I flew for a time at Ken Morrison's flying club. I finished up at Cross Keys in 2006 and pretty much stopped flying.

I joined the MAFC back in July with the hopes of adding on my IFR and commercial ratings with the end goal of securing a job as a pilot for a regional airline.



Isabella DiPianta: Isabella "Izzy" DiPianta is a senior at Brick Memorial High School. She has had aspirations of flying since the age of two. She is excited and honored to be a member of MAFC and eager to begin flight lessons. Izzy looks forward to meeting other members of MAFC and learning as much as she can. She is currently in the process of applying to colleges and hopes to major in Aerospace Engineering.

\$100 Hamburger Cambridge, Dorchester Airport (KCGE) : by Bob Tozzi

If you're looking for a good place to eat and get some Cross Country time for your logbook, you must try 'Kay's at the Airport', located at Cambridge, Dorchester Airport (KCGE), in Maryland. Bob Watkins and I took a flight down there November. It was a beautiful day and surprisingly no other club planes were flying. We had a great lunch which came to less than \$ 17.00 for the both of us.

The flight over the Delaware Bay was calm and the waters were flat. Approaching KCGE, we had a beautiful view of the Choptank River with the Hyatt Regency Hotel and Marina right on the shore. The airport has a nicely paved 4500 foot runway.

The flight is about 125nm taking us about 1:35 flying direct. We used flight following both ways, starting with McGuire and ending with Patuxent approach. 24 gallons total were used in 93KK. Enough for a round trip.

If your in the mood for a good lunch or Sunday Morning Breakfast, check out Kay's.

Like most airport restaurants, I would check to make sure they are open the day that you plan on going.



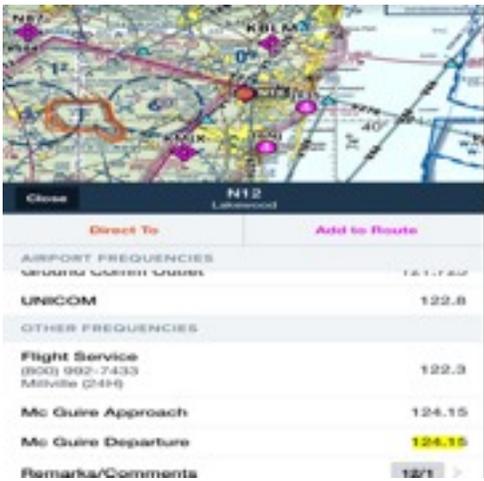
Flight Following: By Oliver Lin

One tool that VFR pilots can use to make the experience safer is to pick up flight following. Flight following with air traffic control (ATC) allows the controller to provide pilots with valuable traffic alerts and gives the pilot another pair of eyes to help look out for traffic. Picking up flight following is recommended if you're doing anything outside of a traffic pattern.

During my recent cross-country solo from Allentown (KABE) to Lakewood (N12), I had VFR flight following. ATC informed me that there were two aircraft flying at the same altitude I was (3,500 ft) but going from east to west at my 10 o'clock. Even though the traffic was well far off, she recommended that I descend to 3,000 ft. to avoid any issues with other traffic. After about a minute or two, I saw the pair of aircraft right where she said they were and a few moments later the aircraft passed without incident. This is just one example of how VFR flight following can be useful.

So how do you pick up flight following? This example uses N12 Lakewood.

1. First, know the right frequency. Depending on the airport you'll either need the departure frequency or center frequency. Below are examples of how to find it in Foreflight or using the Chart Supplement for N12 Lakewood. The McGuire Approach/Departure frequency is 124.15.
2. After departure from Lakewood and having made the final position call, switch over to 124.15 (McGuire Approach/Departure.)



LAKWOOD (N12) 3 SE UTC-5(-4DT) N40°04.01' W74°10.66'
 42 B TPA—842(800) NOTAM FILE MIV
 Rwy 06-24: H2907X60 (ASPH) 5-25 MIRL 0.3% up SW
 Rwy 06: PAPI(P2R)—GA 3.0° TCH 15'. Thid displd 261'. Trees.
 Rwy 24: PAPI(P2L)—GA 3.0° TCH 24'. Thid displd 244'. Road. Rgt tlc.
 SERVICE: S4 FUEL 100LL LGTACTIVATE MIRL Rwy 06-24 and PAPI Rwy 06 and Rwy 24—CTAF
 AIRPORT REMARKS: Attended May-Oct 1300-0100Z. Nov-Apr 1300-2300Z. Deer on and invol arpt. Heavy banner towing ops Apr-Oct. Avoid overflying banner pickup and drop area southeast of Rwy 06-24.
 AIRPORT MANAGER: 732-363-6400
 WEATHER DATA SOURCES: AWOS-AV 122.8 (732) 363-6471.
 COMMUNICATIONS: CTAF/UNICOM 122.8
 (K) **MC GUIRE APP/DEP CON 124.15**
 600 121.725 (MCGUIRE APCH)
 RADIO AIDS TO NAVIGATION: NOTAM FILE MIV.
 COYLE (R) VORTAC 113.4 CYN Chan 81 N39°49.04' W74°25.90' 048° 19.0 NM to fld. 204/10W.

3. Depending on the amount of chatter when calling McGuire approach, you can either get their attention first or just go into your request. Remember the standard format of calls:

- a. Who you are calling
- b. Who you are
- c. Where you are
- d. What do you want

Pilot: “McGuire Approach, Skyhawk 4287Q”

ATC will usually respond with an altimeter and ask what you need.

McGuire Approach: “Skyhawk 4287Q, McGuire altimeter 30.02, state position and request”

Provide them with your full information and request. In this example, the flight is going to Cape May at 3,500 feet.

Pilot: “30.02 Skyhawk 4287Q, three miles east of N12 Lakewood airport 2,000 ft climbing to 3,500 ft, would like VFR flight following direct to WWD Cape May County Airport.”

ATC will respond with a squawk code. Make sure to have a pencil ready to write down the information.

McGuire Approach: “Skyhawk 4287Q, squawk 0434.”

Reply to them to make sure that you heard them correctly and punch in the squawk code.

Pilot: “0434, 4287Q”

Now ATC will make sure they have the right aircraft.

McGuire Approach: “4287Q, radar contact 4 miles east of Lakewood airport. Maintain VFR.”

Confirm that the position is correct.

Pilot: “Position checks, 4287Q”

Now you have flight following!

4. Remain vigilant and listen to ATC as they warn about traffic that may be nearby. Respond when given a traffic advisory.

McGuire Approach: “Skyhawk 4287Q, traffic at 10 o'clock, moving west at 3,500 feet.”

Pilot: “Negative contact, 4287Q” or “Traffic in sight, 4287Q.”

5. When leaving McGuire’s range, their controller will hand the flight following off to the next controlling center.

McGuire Approach: “Skyhawk 4287Q, contact Atlantic City approach 124.6.”

Pilot: “124.6 Thanks, 4287Q.”

Switch frequencies and contact Atlantic City with your callsign and altitude so the controller knows you’re there.

Pilot: “Atlantic City Approach, Skyhawk 4287Q, 3,500 ft.”

Atlantic City Approach: “Skyhawk 4287Q, altimeter 30.04”

Pilot: “30.04, 4287Q.”

6. When the pilot has the airport in sight or wishes to terminate flight following:

Pilot: "Atlantic City Approach, Skyhawk 4287Q, Cape May in sight, cancel flight following."

Atlantic City Approach: "Skyhawk 4287Q, radar services terminated, squawk VFR."

Pilot: "Squawk VFR, Skyhawk 4287Q"

That's all there is to it! Flight following is an additional safety measure and also gives good practice with the radios!

Changes to the MAFC By Laws:

At the November 19, 2016 meeting, the membership voted to make changes to two (2) of the By Laws. Here are the changes:

Article IV, Section 1, Part b. The club members voted to eliminate the requirement that two signatures be required to sign club checks for money market transfers and/or payments for approved expenditures.

Article X, Section 1, Part d. The addition was approved as follows: "The President shall be limited to two consecutive one year terms of office, or in the case of an unfilled term, no more than one half of a regular one year term and one additional full year term."

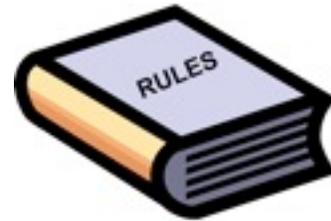
MAFC Rules and Regulations Part 3

4. Paperwork, Scheduling, etc.

1. Members shall provide evidence of membership eligibility, recent flight experience, current medical certificate, or valid pilot certificate, upon request of any Club officer.

2. The Club maintains records of member status including:

- medical certificate class and date
- pilot certificate (category, class and additional ratings)
- aircraft (day, night) checkout status
- flight review date
- member name, address, telephone, e mail address and emergency contacts.



Members shall notify the Operations Officer of any change in this information. For your convenience, Pilot Database Update Forms are provided at the clubhouse and on the MAFC website. These forms must be used for flight reviews and checkouts and must be signed by an MAFC flight instructor. Other updates may be e-mailed to the Operations Officer. The Club may from time to time post lists of pilots whose Club records indicate that they may not meet Club and/or FAA requirements for flight.

These lists are non-binding; the purpose is to assist you in meeting your responsibilities. The pilot remains solely responsible.

Pilot status is not a requirement for Club membership. There are many active Club members who rarely if ever fly Club aircraft.

3. You should indicate your name and account number on all correspondence with the Club. Clubrecords are indexed by account number. The name is a valuable crosscheck against the number.

4. All payments to the Club shall be made by check, money order or credit card. The Club does not deal with cash.

Important Dates In Aviation for December

December 4, 1991: A Pan American World Airways Boeing 727-200 lands at Miami International Airport to end 64 years of Pan Am operations.

December 5, 1960: Boeing announces it has orders from Eastern Airlines and United Airlines for its new medium range 727.

December 7, 1981: Lockheed announces the L-1011 TriStar is to be phased out of production.

December 8, 1965: Delta Airlines puts the Douglas DC-9 into service.

December 9, 1998: Trans World Airlines places an order for 50 Boeing 717-200's, 50 Airbus A318's, and 25 aircraft of the Airbus A320 series. Following the 2001 takeover of TWA by American Airlines, the orders are cancelled.

December 11, 1967: The first British Aerospace/Aerospatiale Concorde is rolled out.

December 15, 1996: Boeing announces that it plans to acquire McDonnell Douglas.

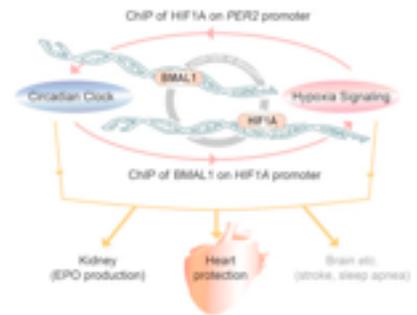
December 17, 1997: Southwest Airlines takes delivery of its first Boeing 737-700.

- December 18, 1970: Airbus Industries is formally established. It is made up of Aerospatiale, Deutsche Airbus, Fokker, and Hawker Siddeley.
- December 19, 2000: The Airbus A3XX is officially launched. Renamed the A380, it has gained 50 orders from Singapore Airlines, Virgin Atlantic, Qantas, Air France, Emirates, and International Lease Finance Corporation.
- December 22, 1976: The Ilyushin Il-86 wide-body jet makes its first flight.
- December 23, 1963: New York International Airport is renamed John F. Kennedy International Airport.
- December 26, 1974: The Airbus A300B4 makes its first flight.
- December 31, 1966: Boeing is awarded a U.S. government contract to develop the U.S. Supersonic Transport.

Hypoxia on a Metabolic Level: Reported by Charles Burke

The topic of hypoxia has been raised a number of times by the FAA and other aviation related entities because on its implication to flight safety. In all cases, a pragmatic approach has been employed to describe the cause and impact it has on pilots. But there is a deeper layer that is found on the cellular level and this was recently described in study published in Cell Metab 10/2016 issue titled, Reciprocal Regulation between the Circadian Clock and Hypoxia Signaling at the Genome Level in Mammals. For those who fly for extended periods of time, or are on rotating shifts, which can cause problems to the sleep cycle, the implications to hypoxia may be significant. Here is a summary taken from the magazine while the entire study can be found in the journal.

“Circadian regulation is critically important in maintaining metabolic and physiological homeostasis. However, little is known about the possible influence of the clock on physiological abnormalities occurring under pathological conditions. Here, we report the discovery that hypoxia, a condition that causes catastrophic bodily damage, is gated by the circadian clock in vivo. Hypoxia signals conversely regulate the clock by slowing the circadian cycle and dampening the amplitude of oscillations in a dose-dependent manner. CHIP-seq analyses of hypoxia-inducible factor HIF1A and the core clock component BMAL1 revealed crosstalk between hypoxia and the clock at the genome level. Further, severe consequences caused by acute hypoxia, such as those that occur with heart attacks, were correlated with defects in circadian rhythms. We propose that the clock plays functions in fine-tuning hypoxic responses under pathophysiological conditions. We argue that the clock can, and likely should, be exploited therapeutically to reduce the severity of fatal hypoxia-related diseases”



Of Special Note!

Ryan Betts passed his CFI-I, Neil Wilson instructor.

Ollie Lin completed his long solo cross-country! N12 - KRDG - KABE - N12. Matt D'Angelo instructor



Takeoffs are Optional, Landings are Mandatory

