FEBRURY 2021

THE RITE FLYER

MARTIN AIRFIELD

Easy Mental Math For Pilots

If you're like us, you probably don't consider yourself a math expert. Here are a few easy tips and tricks you can use to make mental math in the cockpit a little easier…

Descent Planning Mental Math

There are three basic steps to follow when planning your descent:

Step 1) How much altitude do I need to lose?
Step 2) How much time to reach the fix?
Step 3) Altitude to lose / Time = FPM Descent Rate

If you're supposed to answer a mental math question for an interview or test, stick to whole, even rounded, numbers. You're not expected to be a flight computer!

Step 1: How much altitude do I need to lose? When you're doing this, stick to rounded, whole numbers. Do you need to lose 5, 10, 15, or 20 thousand feet? That's the altitude value you'll want to keep in mind.

If you need to lose 3,800 feet, round up to 4,000. In most cases, that will make your mental math a lot easier. More on that in a bit...

Step 2: How much time to reach the fix? This is a two-step process. First, you'll figure out how many miles-per-minute (MPM) you're flying.

Think in multiples of 60.

60 knots is 1 mile-per-minute. 120 knots is 2 MPM. Double that (240 knots), and you're going 4 MPM. If the numbers seem too big to work with, take the zero away and make the values 6, 12, or 24.

Calendar Items to share

Week Days   Coffee Club, Martin Field Pilot's Lounge, **Cancelled until further notice**

Fly-outs are sparse due to social distancing and crowd size limitations.

Easy Mental Math *continued*

For example, let's say you're going 180 knots. 6 goes into 18 three times, so that's 3 MPM.

60 knots = 1 MPM
90 knots = 1.5 MPM
120 knots = 2 MPM
150 knots = 2.5 MPM
180 knots = 3 MPM

*Remember, these speeds are **ground speed**. When it comes to figuring out your MPM, ground speed is the only speed that matters.*

60:1 helps you figure out your miles-per-minute (MPM)

@ 60 Knots GS — 1 mile-per-minute
@ 120 Knots GS — 2 miles-per-minute
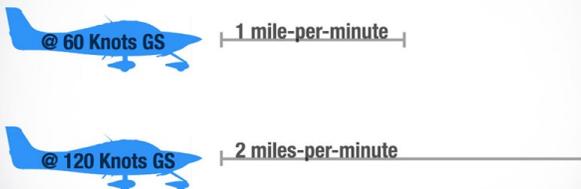
Now that you've got the "miles per minute value", let's look at how far you need to fly.

If you need to fly 20 miles, and you're flying 2 MPM, it'll take you 10 minutes to reach the fix (20 miles / 2 MPM = 10 minutes).

Step 3: Altitude to lose / Time = FPM Descent Rate... Here's an example of a calculated descent rate:

Descent Planning Mental Math Example

Step 1) **How much altitude do I need to lose?**
4000 feet

Step 2) **How much time to reach the fix?**
10 minutes

Step 3) $\dfrac{\text{Altitude to lose}}{\text{Time}}$ = **FPM descent rate**

$\dfrac{4000 \text{ feet}}{10 \text{ minutes}}$ = 400 FPM descent rate

Other Uses For The 60-1 Rule

The basic rule says "at a 1 degree slope (or 1 degree on your attitude indicator or HSI), it's going to be 60 units horizontally for 1 unit vertically." But how else does this apply to your flying?

VOR Courses

If you're flying towards a VOR and you're 1 degree off course at 60 miles, you're 1 mile off track. If you're 2 degrees off track at 60 miles, you'd be 2 miles off track. At 30 miles and 1 degree of deviation, you're 1/2 mile of track. And at 15 miles and 1 degree of deviation, you're only 1/4 mile off track.

At 60 NM, 1 Degree = 1 NM
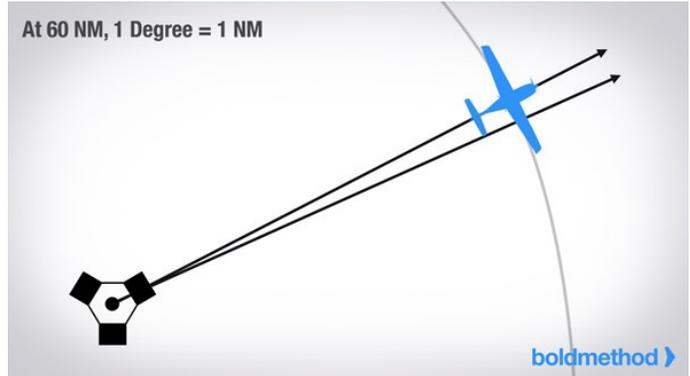
DME Arcs

This math can help with flying arcs too. **A question you might get during an airline interview is, "how long is this arc segment?"**

Let's take a look at this unusual DME arcing approach.

In an arc is 14.7 DME from the VOR, let's call that 15 miles. **At 15 miles, every degree flown around the arc takes 1/4 mile**. If the arc spans from radial 334 to 060 degrees, that's 86 degrees.

Since every degree of the arc is .25 miles, what's a quarter of 86? Without a calculator, you probably can't work that out in your head.

But, what's a quarter of 80? It'd be 20! (80 / 4 = 20) Since we took 6 off of 86 degrees to make the math easy, let's work on that remaining 6. One quarter of 6 is 1.5 miles.

So in this question the arc segment is **21.5 miles long** (20 + 1.5 = 21.5 miles).

EAA 604 Minutes, January 11, 2021

The meeting was called to order by President Bill Herrington at 7:06 p.m. using Zoom Meetings due to Covid-19 and the Stay Home Stay Safe order from our Governor. Don Gibbard took attendance and we had 10 members at the online meeting plus 1 guests, Andrew Maronick.

The minutes were discussed and a motion was made to approve. The motion passed unanimously.

Board Meeting Report:. President Bill gave a report on the Board meeting. Our January 30 Young Eagle Workshop will be in partnership with the Boy Scouts of America. We will be using four modules from the packet of material supplies by EAA. Bill Herrington and Travis Chlarson will be the main presenters for the event. Registration is set for 8:00 a.m. with the start time set for 8:30. Participants are bring their own lunch. Ron Urban arranged for the Certificate of Insurance to cover the Chapter, Martin Airfield, and Taragon NW.

The Board discussed holding an actual Young Eagle Rally in 2021. The date of June 5th was chosen pending Covid-19 restrictions. David Miller and Norm Skiles agreed to be part of the ground crew. Susan Chlarson will serve as director. Don and Bill will work on Pilots. Ray Bankes will work with flight line volunteers.

Old Business: Projects— Don Basis has finished the wing on Erik Young's Kit Fox. Painting Wing tips and fiberglass repair remain.
- Boyd's Cub is in Don' hangar but work is limited at this time.
- Dave Miller says his Attitude indicator has attitude. He plans to change the vacuum filter and lines.
- Jim Edwards has found a propeller and is having it reconditioned. Engine parts are being ceramic coated and he is still working on wiring.

New Business: Travis Chlarson was approved as Flight Advisor. Jennifer Skoglund and Gorge Aviation would like EAA to have an event at ALW. There are a lot of pilots at ALW who might get involved. Something like a Safety Seminar, Build Project, or Movie Night.

Jeff Fritz is closing down his Light Sport shop and donated his horizontal band saw to the Chapter. Also Don Bais' paint booth is available to the Chapter.

DART: Native American Tribes have received food and medical supplies for distribution. Bill said they are expecting 100 truck loads of stuff, some if it will end up in Walla Walla for distribution. He will keep us informed.

There was no other business so we adjourned for our discussion topic on First Solo.

Respectfully submitted,
Don Gibbard, Secretary

FAA Declines to Renew COVID-19 SFAR

February 4, 2021 – The FAA has declined to renew its Special Federal Aviation Regulation (SFAR) for relief from certain regulations during the COVID-19 pandemic.

The first SFAR went into effect as most parts of the United States went into lockdown in March 2020. It provided for extensions of certain time-limited items such medical certificates, written test expiration dates, some flight reviews, and some flight currency checks. In successive extensions the FAA began removing some of those currency items from relief and began reducing the duration of extensions. The last iteration of the SFAR expired at the end of January.

In denying the industry's request for further relief, the FAA stated its position that sufficient personnel are now available nationwide for normal training and checking activities. EAA, AOPA, and other members of the GA coalition continue to work this issue and are evaluating the next steps they will take. At this point, however, EAA advises members not to assume that any further relief from deadlines is forthcoming.

Do Federal Mask Mandates Affect GA?

January 28, 2021 – EAA is closely monitoring the FAA's and TSA's implementation of a recent White House executive order on mask mandates to ensure that it does not inappropriately impact general aviation operations.

The order, signed on January 21, directs the Departments of Transportation and Homeland Security to enforce a mask mandate on most public modes of interstate travel. The order clearly targets "commercial aircraft," among other forms of public transportation like trains and busses, but also calls for mask mandates at "airports" without offering specificity as to which facilities it is intended to cover.

While "commercial aircraft" can reasonably be taken to mean Part 121 airliners, the open-ended "airports" requirement could spill over to general aviation facilities, even private areas such as hangars, if interpreted overzealously. EAA is working to ensure that the implementation of the order remains limited to public transportation facilities such as airline terminals, and does not create any unreasonable "one size fits all" mandates that cover GA.

Chapter Meeting Online

Our January Chapter meeting will be held as an online Zoom meeting on Monday January 11th starting at 7:00 p.m. You will receive an invitation to join the meeting from Ron Urban. There will be a link to the online meeting you can use with a computer, smartphone, tablet with video capabilities. If you do not have a camera on your computer you can still join online but you will need a microphone in order to join the conversation.

The second option is to dial in with any phone. There is a toll free number with the meeting ID and password in the line. If you can launch the call from your email, the link will in put all the necessary information. If you dial it directly from a phone you will need to follow the prompts for meeting ID and meeting Password.

Keep your email invitation handy as you login since it contains all the information you need to succeed.
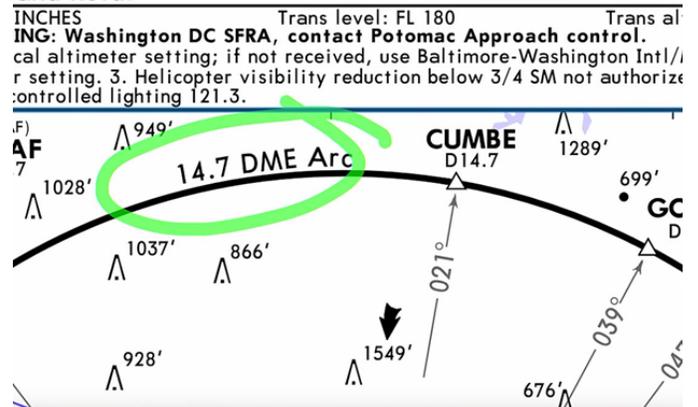
If you have not used Zoom before, the link will prompt you to download the Zoom App. Follow the install directions.

Twin Otter in the Artic

The ice often moved several miles a day, making navigation challenging without GPS.

Easy Mental Math *continued*

Descent Angles

If you know your flight path angle (FPA), which you'll often find in modern flight decks, the 60-1 rule can make mental math descent planning easy.

For every 1 degree of descent angle, you'll descent 100 feet for every 1 mile you fly.

For example, if you're descending at a 3 degree angle for 3 miles, you'll descend 900 feet.

(reprinted from Boldmethod.com 2/2/2021)

Chapter dues for 2021 are being accepted starting now (thanks to all those who've already responded). Please mail a check ($30 individual, $45 family membership) made out to EAA 604 to:

Ron Urban
840 Clay St.
Walla Walla, WA 99362