

### Club Meetings

Board Of Trustees:  
7:00 PM 4/4/19  
Club House

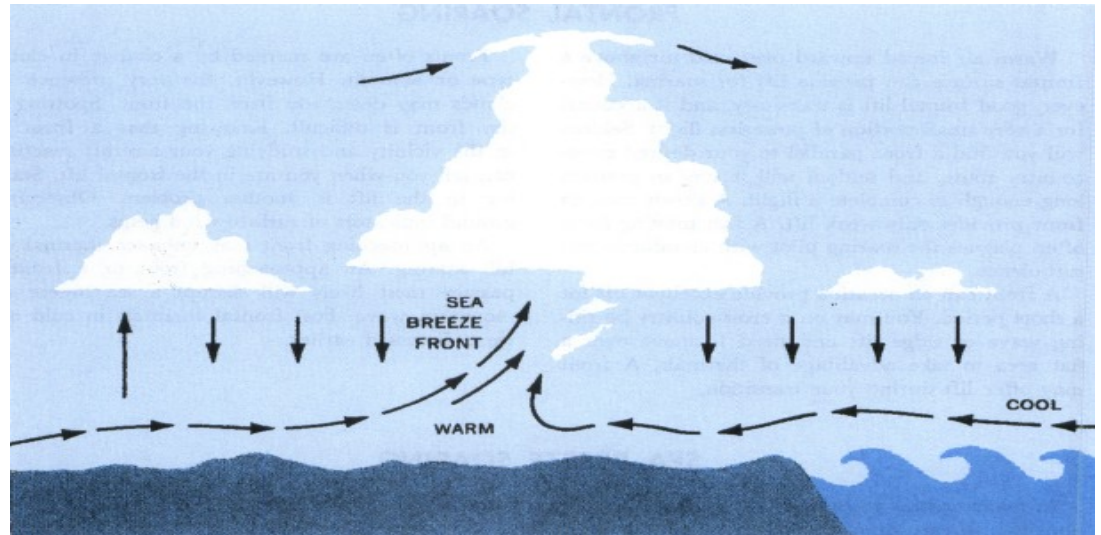
General Meeting:  
9:00 AM 4/20/19  
CAP Building



Editorial Staff: Charles Burke,  
Dave Pathe, Karen Barbagelata

### Onshore Breezes by Dr. Richard Dunk

In many coastal areas such as NJ, a sea breeze will occur almost daily during the sea breeze “season” which is defined to be from Apr through Sep. The sea breeze can occur throughout the year but is most prevalent during the stated season. This local circulation is caused by the temperature difference (gradient) between the warmer land surface and cooler sea surface. Consequently, air will flow from the denser (colder) sea surface area toward the less dense (warmer) land surface area. The NJ sea breeze usually begins anytime during mid-morning to mid-afternoon and subsides during evening hours when the land begins to cool. The leading edge of the cool sea breeze forces warmer air inland to rise as shown in the below figure. The rising air over land returns seaward at higher altitudes to complete the circulation cell.



*Schematic cross section through a sea breeze front. If the air inland is moist, convection will produce an unstable atmosphere with the potential formation of cumulus clouds, which often define the front. Offshore the converse occurs with subsiding air producing stable atmospheric conditions.*

A pilot operating inland near coastal areas can experience lift, turbulence, and wind shear over the area that coincides with the sea breeze front. If convection is strong enough and sufficient moisture is present, cumulus clouds and possible local T-storms can occur. The sea breeze front or transition zone between the cool, moist air from the sea and the warm, drier air inland is often narrow and is somewhat shallow. The front delineates the extent of the inland sea breeze movement, which can vary from near the coast to inland locations as far as Philadelphia and adjacent localities. The sea breeze also has an offshore component, which can extend seaward at distances that can be much greater than the inland penetration. The offshore sea breeze “front” is associated with subsiding air creating downdrafts near and at the front. However, turbulence and shear are minimal because the subsiding air produces near stable conditions. The vertical extent of a well-developed sea breeze can approach altitudes near or exceeding 10,000 ft. while less intense sea breezes could have depths less than 3,000 feet.

Since the sea breeze is a dynamic process, wind patterns along with turbulence/shear characteristics associated with each sea breeze event will vary with time and location over areas affected by this local circulation. As a result of the sea breeze being a local occurrence, strong pressure gradients with a well-developed pressure system can overpower sea breeze development. Winds will follow the direction and speed dictated by the strong pressure gradient. Therefore, sea breeze formation with a developing front are most likely when the synoptic pressure gradient is weak and the resultant wind is light.

### Observations

When a sea breeze develops, visual observations may provide “clues” to the intensity and location of the sea breeze circulation:

#### Inside this issue:

##### Page 1

*Onshore Breezes*

##### Page 2:

*E6B*

*Test*

##### Page 3

*Spotlight On*

*No oily knees*

##### Page 4

*Engine Out!*

*Maintenance Report*

*Worst aircraft*

##### Page 5

*Problem reports*

*IFR Trainer*

##### Page 6

*Test answers*

*ADS-B*

### ➤ Offshore

- Expect little or no convection (rising air with turbulence production) on the seaward side of the sea breeze when the sea air is markedly void of convective clouds or when the sea breeze spreads low stratus inland. This is an indicator of stable air within the sea breeze.
- A difference in visibility between the sea air and the inland air often is a visual clue to the leading edge of the sea breeze. Visibility in the sea air may be restricted by haze while visibility inland is unrestricted. On the other hand, the sea air may be quite clear while visibility inland is restricted by dust or smoke.
- If cumulus clouds are observed offshore, the cumulus bases in the moist sea air often are lower than the cumulus cloud bases that develop along the inland sea breeze front

### ➤ Onshore

- A favorable visual indication of convection along the inland sea breeze front is a line of cumulus clouds marking the front; cumuli between the sea breeze front and the ocean also indicate possible convective "lifting" within the sea breeze cell, especially at higher altitudes within the sea breeze circulation.
- When a sea breeze front is void of cumulus but converging streamers of dust or smoke are observed, expect convection along with turbulence/wind shear along the sea breeze front.

### Summary

From a statistical perspective, the closer you are operating near the coastline, the greater the chances you will have of encountering the atmospheric conditions that have been described in the previous statements. Consequently, several airports in NJ deserve special attention by pilots approaching or leaving the following local facilities that are situated near the coast, which include but are not limited to: 1) Ocean City (26N), 2) Atlantic City (KACY), 3) Eagles Nest (31E), 4) Woodbine (KOB), 5) Ocean County (KMJX), 6) Lakewood (N12), 7) Monmouth Executive (KBLM), and 8) Cape May (KWWD).

### NJ Sea Breeze Studies

The Rutgers University Center for Coastal Ocean Observation Leadership (RU-COOL) has extensive knowledge of NJ's sea breeze features, and RU-COOL's monitoring/modeling capabilities for capturing the dynamics of the sea breeze are well-established. RU-COOL is currently conducting studies that will advance the understanding, identification, and prediction of sea breezes. The resultant information produced by these advanced studies will be combined with associated data acquired from the RU-COOL coastal/offshore monitoring network. This extensive modeling/monitoring data set will be used as a diagnostic "tool" for developing a prediction procedure, which could effectively assist in providing more accurate sea breeze forecasts for those involved in aviation and other endeavors associated with the coastal/offshore environment.

**Test:** What solo restrictions are placed upon student pilots flying MAFC aircraft? See page 6 for answer



### The E6B Aviation Computer by Charles Burke

The E6B aviation computer is a true classic in that while there are no batteries, software downloads or Nigerian Princes asking for help in transferring funds on it, the device is truly amazing. In many ways it is like many of my fellow amateur radio operators who learn and use code to communicate. There is a beauty in the low tech that can never be matched by the wonders of modern devices.

The core of the E6B is that it is simply a circular slide ruler. But this assumes that you know what a slide ruler is. In a nut shell, a slide ruler is an analog computer. It uses a logarithmic scale to multiple and divide but can also be employed for functions such as exponents, roots and trigonometric computations. Interestingly, this is all accomplished by using the natural numbers from 0 to 1. But don't let that limited range fool you, by simply using scientific notation, the device can work with any magnitude because a 1.3 can be a  $1.3 \times 10^2$ ,  $^3$ , or  $^{20000}$ , etc!



Slide Ruler

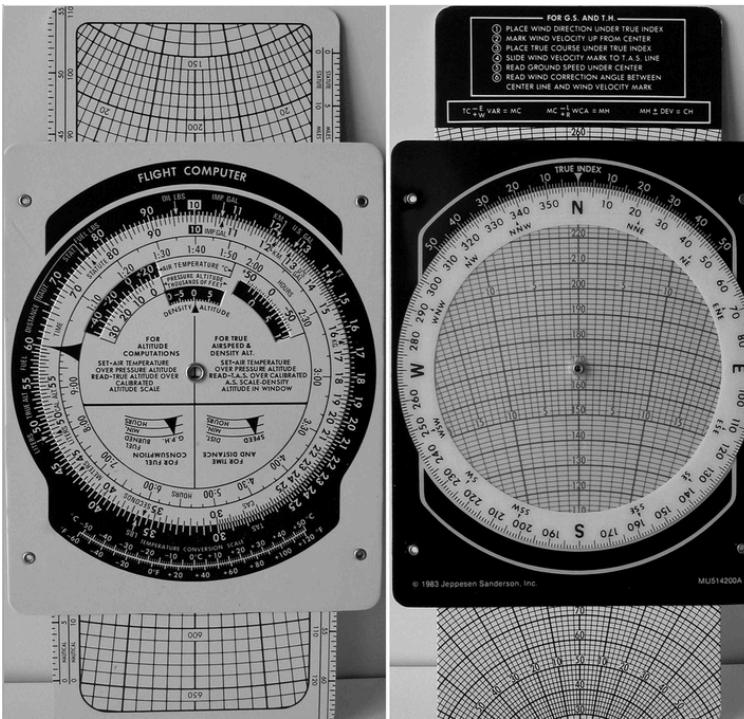
If we stay only on the front face of the E6B, there have been special markers added that allow you to compute basic problems such as time intervals, speed and distances. But the scale has some added marking that make it extremely easy to computer fuel consumption, conversions of weights and distance units, altitude / speed corrections, units of time measure and solve off-course problems.

*Continued*



Front

Back



The back of the slide ruler is devoted to one thing, the wind. With the graphs that are found on the back, you can calculate ground speed, winds aloft and wind correction angles that determine your heading for any given course.

One suggestion, if this information raises even a passing interest, why not consider picking up one on E-Bay and learning how to use it! In fact, they are still being sold by many of the firms that supply aviation equipment to pilots. It is a no-lose proposition in that you will be learning something of historical significance plus, obtaining a review of basic computational process associated with flying.



This link takes you to an instructional video for the E6B  
<https://www.youtube.com/watch?v=Qhjb9Y7Zlq>

**Spotlight on: James Komsa**



I initially became interested in flying in 2011 after my brother took my father and me up on a flight in a Cessna. At that time, my brother had just earned his private pilot certificate and he was very eager to take us flying. Prior to that time, I had never been up in a small plane before and, quite frankly, I was very uneasy about it. That flight is where it all began for me as I was immediately bit by the aviation bug.

I began taking flight lessons at Ocean Aire (KMJX) and I later received my Private Pilot Certificate in December of 2012. Since that time, I have completed my Instrument Rating and I recently became a Commercial Pilot (ASEL) in February of 2019. I have logged approximately 350 hours to date flying the Cessna 172, 182, Diamond DA-40, Piper Warrior and Archer. My future plan is to begin working on CFI training and learning as much as I possibly can.

I have a Master's Degree in Administrative Science from Fairleigh Dickinson University and a Bachelor's Degree in Criminal Justice from Stockton University. I am in my 20<sup>th</sup> year as a police officer and I am a Patrol Lieutenant within my agency. Throughout my career, I have worked as a Patrolman, Detective, Patrol Sergeant, Narcotics Sergeant and now a Lieutenant where I oversee the Patrol Bureau. Additionally, I own and operate Advanced Drone Consultants, and my company works exclusively with public safety agencies to build drone programs for police and fire departments across the Country.

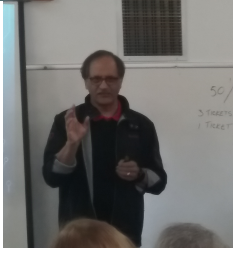
I moved to Manchester Township from Passaic NJ when I was 10 years old and I graduated from Manchester Township High School in 1995. My wife Trish and I have been married for 17 years and we have two children, James (age 15) and Emily (age 13). We live in Brick Township, approximately 6 miles from N12.

I look forward to meeting more members of the Monmouth Area Flying Club and learning as much as I can from everyone in the club.

**No More Oily Knees!!!**

Accessing the sumps on the low wing Pipers or the new Cessna requires crawling on the blacktop and can result in soiling or damaging your clothing. To help alleviate this problem, small car mats were donated and one has been placed in these three aircraft. This will also make it easier to check tires and tire pressure on the Arrow and Archer.





At the May 2019 General Membership meeting, the guest speaker slot featured Dr. Parvez Dara speaking on the topic titled, Engine Out. During the hour+ program, a wide range of subtopics were covered and expanded upon. The presentation was enhanced by a series of very informative Power Point slides. In addition, the dialog was punctuated with important points being elaborated upon along with frequent interactions with the attendees, It would be an understatement to classify the program as a success. The icing on the cake was the fact that those who registered received Wings credit.

**Maintenance Report by Dan Coles**



**N66977-C152** :The left strobe that was out has been repaired. It was apparently loose in the socket.

**N67818 C152:** It was reported that communication with ATC was intermittent. This has not been verified. This is the last aircraft that will need an ADS B transponder. We already have the the GTX 335 transponder and GAE12 encoder and these will be installed at Three Crown Avionics.

**N4287Q-C172-L** The #2 nav/com is unable to change frequencies. Ocean Aire avionics shop said there are no parts available to repair this. We will have to replace the radio. We have looked into a TKM slide in replacement for it. The aircraft has returned from Three Crown Avionics where the GTX 335 and new GAE12 encoder were installed.

**N93KK C172 M** : I received a squawk about the glide slope was not working on the number one radio. The number two nav/com that was removed to repair the display is back in the aircraft. When I was at the airport to install number 2 nav/com, I noticed that fuel was dripping from the left wing by the fuel sump drain. This was checked with the fuel tester and the leak stopped. It has been flown quite a few times since without any further leaking. The number 2 nav/com display is now as bright as a new radio.

**N268BG-PA28-181** This aircraft was taken to Ocean Aire to have the annual inspection. The D.G. was removed and sent out to be overhauled. The annual inspection was completed. A few items that need to be addressed are the steel brackets attaching the wing are corroded and need to be removed to determine the extent of the corrosion. The propeller is bent by a half inch. The crank shaft seal is leaking and needs to be replaced. The copilot's seatbelt has to be sent out to be overhauled. It is not returning properly.

**N55804-PA28-200 R:** The top latch on the cabin door could not be opened from outside. One of our more slender members crawled in through the baggage compartment so he could unlock it from inside. The aircraft was taken to Ocean Aire where Tom Rae removed a small piece of metal that was hindering the free movement of the latch. Dean's upholstery shop at Doylestown airport has been contracted to recover the two front seats and replace the carpet on the floor. We had an appointment set to have the work done the week of March 24th.

**N61WT:** A flat nose wheel tire that was replaced at N12 is the only squawk reported for this aircraft. This is the next aircraft in our fleet to go to the maintenance shop for an annual inspection. The current annual inspection expires at the end of June.

**General Aviation Worst Aircraft by Art Templeton**



While we usually hear about the great planes that have graced the skies, there are some that have been total duds. In this video you will learn about ten of them. But don't let the fact that they were failures lead you to think that they were not airworthy. Most came to an end for financial reasons or bad market timing.

<https://www.youtube.com/watch?v=NikGBYZPDIU>


**Report A Problem and Parking Space Guide** by Charles Burke

An updated set of the Report A Problem have been printed and, this year, include the parking space chart. The cards should be in all the aircraft by this point in time. However, if it is missing our there appears to be an error, please let me know and the situation will be corrected

## N61WT

V1.5

### REPORT A PROBLEM & PARKING LOCATION



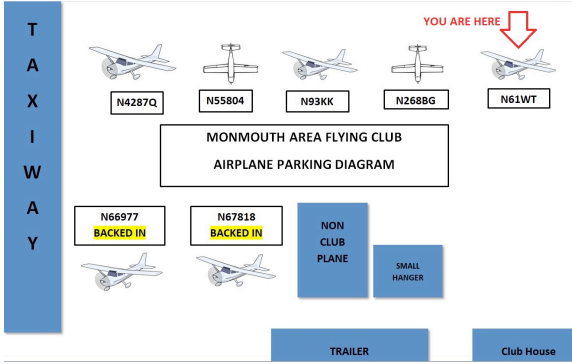
**If you discover a problem that requires attention, contact the Crew Chief.**

Crew Chief: **John Pereira**  
732-496-0597

Assistant Crew Chief: **Bill Butler**  
732-772-3777

**DO NOT CALL DAN COLES!**

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**IFR Trainer**

Don't forget that we have a fully function IFR trained in the trailer and it is yours to borrow. If you wish to borrow it, there is a sign-out sheet that should be with the unit.

You can find the original operators manual on the club's web [www.flymafmc.com](http://www.flymafmc.com). Just look for DOCUMENTS in the upper right corner and click on it. Then look down under the title Aviation Manuals. The ATC-610 is there in a PDF format.







**Answers to the test:**

- a. No solo night flights
- b. No solo when wind exceeds 15 knots or a crosswind component of 10 knots.
- c. No overnight flights
- d. No solo without a working com radio. No cross-country solo without a working nav radio and transponder.
- d. No landing or takeoff from unpaved fields.

**ADS-B (In) for \$200!**

Steve Fox is offering club members a fully functional ADS-B (in) system. This unit comes with a fully plug and play unit with battery and mount.

In most areas an ADS-B signal can be had at or just above pattern altitude where you will begin receiving NEXRAD radar, METARs, TAFs, NOTAMS, TFRs, and other Flight Information Service – Broadcast (FIS-B) products. Some apps will explicitly note that these products are being received via ADS-B.

Applications that the receiver will work on is IPAD Foreflight and Android AVARE and others. Other than Garmin Pilot, which exclusively uses a proprietary Garmin device, have been reported to be compatible with this device.

This small device measuring approx. 3" x 6" costs and will provide ADS-B in for better visibility outside the cockpit. Below is an assembled unit that has been flight tested and great results.

Several members have purchased this package from Steve and are very satisfied with the results. For more information, contact Steve, he is listed in the membership directory on Flight Circle



**Of Special Note!**



FYI, The Airport Diner at Sussex Airport (KFWN) has a new owner and a new menu! You might want to think about adding this stop to the next \$100 Hamburger run.

**Takeoffs are optional but landings are mandatory**



"See that little cabin? My ex and her scuzzball new boyfriend live there! Mind if we do a quick fly-by and empty the latrines?"

