



# UNIVERSITY OF MARYLAND EASTERN SHORE

## UMES AVIATION SCIENCE NORMAL FLIGHT PROCEDURES

Version 1.6: March 1, 2023

# UMES Aviation Science Normal Flight Procedures

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## As soon as destination or flight plan is defined

- Plan for airports of intended landing
  - Takeoff and landing distances, route, checkpoints, Airport and airspace information.
- Complete weight and balance
- Review maneuvers to be completed if appropriate
- Plan for meals, class work etc... ensure adequate preflight planning and preparation time prior to the scheduled flight time

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## Day before flight

- Complete flight plan with forecast winds

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## Night before flight

- Check weather
- Complete IMSAFE checklist
- Update flight plan and provide a copy to your instructor

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## Morning of flight

- Check weather, file flight plan and update timings with current forecast winds
- Complete IMSAFE checklist
- Plan to arrive at the airport at least 15 minutes prior to your planned flight time for local flights; for cross country arrive 45 minutes prior

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## Arriving at the airport

- Check winds, weather, NOTAMs and TFRs
- Complete flight data sheet as necessary for current flight
- Provide completed flight data sheet from previous flight to your flight instructor

- Discuss any changes in flight plan and weight and balance as necessary
- Make go/no go decision (PAVE) (IMSAFE)

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## Preflight

- When approaching the aircraft take a broad view and look for any obvious damage, flat tires, leaking fluid
- Enter the aircraft, and check that all required documents and safety equipment are on board
- Remove aircraft from hanger.
  - 2 person minimum is required, 1 to pull the airplane out and 1 to watch that the wings are clear of obstacles.
- Complete the preflight checklist procedure
- Log start times in notebook

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## Before Start

- Organize cockpit, ensure all needed charts and other items are in order
- Brief passengers on seatbelt usage, use of exits and any other important safety information - i.e. if the seat slips don't grab the yoke
- Complete the Before Start Checklist

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## Starting

- Complete the Engine start checklist
  - Clearing prop area requires loud call out "clear prop" and visual scan of area with verbal statement that the area is clear
- Confirm rise in engine oil pressure immediately after engine start
- Complete the After Start checklist

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## Before Taxi

- Retrieve and copy weather

- Set altimeter and heading indicator
- Complete appropriate checklist
- Request taxi clearance
  - Copy taxi clearance and read back
  - Check Airport diagram for taxi route
  - Confirm direction of turn out from parking and clear area before taxiing
- Complete a brake check as soon as the aircraft starts rolling - if another pilot is in the aircraft ask them to check their brakes. Use positive transfer of control procedures.

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## Taxi

- All lights on
- Taxi at the pace of a brisk walk remaining on taxiway centerline at all times
- Use crosswind control corrections and confirm correct control position after each turn using heading indicator and windsock
- Comply with taxi clearance and ensure hold short or crossing instructions are read back and complied with
  - Verbally confirm each taxiway turn - i.e. slight right on Delta
- Upon reaching any runway hold short line, confirm cleared to cross verbally and look each direction and confirm clear. Verbally call out clear in each direction before entering runway
- Maintain vigilance for aircraft, pedestrians, vehicles or debris that may be in your path

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## Run up

- Maneuver the airplane into the run up area to face into the wind while ensuring you are not in the way of other aircraft. Ensure that your prop wash will not affect others
- Complete the run up checklist
  - While using the parking brake or holding the brakes continuously visually monitor the aircraft position to ensure the brakes hold and the aircraft does not move forward.

- Complete the before takeoff checklist
- Ensure final cockpit organization is complete and radio frequencies are set
- During the takeoff briefing ensure you have defined takeoff type, direction of flight and altitudes and any special considerations (i.e. crosswinds, gusts, traffic, emergencies)
- Ensure the area is clear and consider other aircraft before moving to the hold short line.
- All of the aircraft must remain behind the hold short line
- Discuss aborted takeoff plans of action

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## Hold short

- Call for takeoff clearance, reporting intentions to the tower controller (pattern work or direction of departure)
  - (Flight instructor only) For SVFR, conditions must be improving, there must be 4 SM visibility and ceilings no lower than 800 AGL broken and clear skies in the vicinity of the airfield. (clearance required). You must have 1 SM visibility and remain clear of clouds .
- Read back all clearance or hold short instructions
- Complete the final items on the before takeoff checklist
- Start timer or note takeoff time - actual time of departure (ATD)
- Clear runway each direction and verbally call clear before entering the runway

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## Takeoff

- Unless completing a short field takeoff, taxi onto the runway using yellow entry line, line up and smoothly apply power while the aircraft is rolling
- Use appropriate crosswind control technique
- Check and verbally confirm engine power, engine instruments are normal
- Verbally call out airspeed alive
- Maintain directional control and rotate at  $V_r$
- Establish pitch for  $V_y$  and apply rudder for coordination

- Maintain runway centerline during departure climb unless otherwise requested by air traffic control or instructor
- Guard the throttle with your right hand until 500' AGL

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## Climb

- Maintain  $V_y$  until 500' AGL, then climb at 80 knots indicated.
- Climb to 500' AGL before making a turn on course unless otherwise directed by ATC or instructor
- Climb to 700' AGL before turning crosswind if staying in the pattern
- Maintain coordination and appropriate headings/ground track
- Complete the After Takeoff checklist

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## Departure

- Comply with ATC clearance for turns on course
- At non-towered field, depart straight out or 45 degrees in the direction of pattern turns after reaching pattern altitude per AFM and AIM
- Climb to assigned or flight plan altitude pitching for an 80 knot climb, unless otherwise instructed
- Monitor ground track, maintaining heading to produce desired track
- Scan for traffic
- Report to ATC when leaving their airspace
- Contact FSS to open flight plan and approach control for flight following
- Level off at cruise altitude with pitch, adjusting power to planned setting as aircraft accelerates to cruise speed
- Complete cruise checklist

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## Cruise

- Monitor ground track and checkpoint timings, adjusting heading as necessary to maintain planned track
- Continuously evaluate possible diversion locations along the route of flight
  - Nearest airport, relative location, distance
- Scan engine instruments, ammeter and annunciators regularly
- Switch fuel tanks as needed, check every 30 min
- Scan for traffic continuously

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## Maneuvers

- Complete the Pre-maneuver checklist
- Maneuvers should be completed per the AFH and the Private Pilot ACS
- Complete the Post-maneuver checklist
- Air-to-air frequency is 122.85

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## Approach

- 20 miles from destination: get weather, plan pattern entry and plan for descent
- Complete Approach checklist prior to descending from cruise altitude
- 10 miles from destination: contact ATC or make initial calls at non-towered airport
  - (Flight instructor only) For SVFR, conditions must be improving, there must be 4 SM visibility and ceilings no lower than 800 AGL broken and clear skies in the vicinity of the airfield. (clearance required). You must have 1 SM visibility and remain clear of clouds
- Begin descent at planned distance with goal of reaching pattern altitude 1-2 miles before entering pattern
- Enter pattern as directed by ATC or per Airplane Flying Handbook (AFH) chapter 7 for non-towered fields
- Make required calls, read back all clearances and scan for traffic

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## Traffic Pattern

- Traffic patterns should be entered and flown per the AFH chapter 7
- Level off at pattern altitude and establish appropriate power setting
- Complete before landing check on downwind with verbal call outs and touch verification
- Communicate with ATC and receive traffic and landing clearance or make non-towered calls as appropriate
- Configure aircraft for landing and complete landing procedure as prescribed
- On base visually confirm and verbally call out final approach clear before turning final
- Establish stabilized approach by 500' AGL (65kts and normal descent to land) (If high and fast, go-around)
- Monitor runway area and aircraft or vehicles holding short. Be prepared to go around.

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## After landing

- Clear the runway as soon as can be safely done at taxi speed, on taxi-ways or as directed by ATC
- Bring the aircraft to a stop after fully passing the hold short line
- Complete the After Landing checklist
- Contact ground control or taxi as instructed to parking

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## Parking

- Park the aircraft in the location directed
- Complete the Shutdown checklist
- Record ending times in the notebook
- Complete flight data sheet
- Exit the aircraft, removing all personal items and trash
- Complete a post flight walk around the aircraft

- Chock wheels if there are more flights; if no more flights, chock wheels, tiedown, and lock all doors
  - When hangaring 2 person minimum is required, 1 to push the airplane in and 1 to watch that the wings are clear of obstacles.
- Close your VFR flight plan

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## Checklist usage

- Checklist usage is mandatory for all phases
- Fire checklists must be memorized
- Engine failure checklist should be committed to memory
- Checklist items should be verbally called out with touch confirmation
  - For example - Mixture Rich - Touch the mixture control confirming it is full rich and state “mixture rich”

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# Electronic Flight Bag Policy

## **Purpose**

The purpose of this policy is to communicate guidelines for the use of Electronic Flight Bags (EFBs) by students, instructors, and staff in the UMES flight program and is intended to provide for the safe and effective use of EFBs. When used properly, EFBs used in the cockpit will enhance situational awareness, improve efficiency, and reduce workload. Instructors and students should familiarize themselves with these guidelines and follow them to ensure that EFBs are used safely and responsibly. Flight instructors will brief all students on the appropriate use of EFBs including their limitations and their use per the policy outlined below.

## **General guidelines for EFB use**

The use of EFBs is subject to the guidelines of the Federal Aviation Administration established in AC 120-76D. Students, instructors, and staff must ensure that their EFBs comply with all applicable regulations and procedures before use.

EFBs must be handled with care and undergo checks before flight to ensure that they are functioning properly. Instructors and students must ensure that all data stored on EFBs is current, relevant, and accurate. Operating system software updates should be performed regularly or as directed by Foreflight. Any unauthorized modification or manipulation of data on EFBs is prohibited. Any issues or malfunctions must be reported immediately.

## **Use of EFBs during Flight**

EFBs used during flight operations must be secured in a mounting device approved for flight operations or appropriately stored to not interfere with the operation of any aircraft systems. EFBs must not distract the pilot from their primary responsibilities.

## **Battery Management**

EFBs must have sufficient battery power to last the duration of the flight operation. Pilots should carry a backup power source or charger for their EFBs in case of unexpected power loss or depletion. Instructors and students should ensure that EFBs are not left on when not in use to conserve battery life. Auto sleep should be used to conserve battery. Passcodes should not be applied to wake functions.

## **Dispatch with EFBs**

For flights under IFR or solo cross-country flights, an EFB must have no less than an 80% charge at the start of the flight. All pilots should familiarize themselves with accessing alternate sources of information such as frequencies and airport information in case of unexpected EFB battery depletion. Whenever possible, pilots should have a backup to their primary EFB. For example, an iPad and an iPhone may both be used on a single Foreflight account.

## **Enforcement and Sanctions**

Violation of this policy may result in disciplinary action, including but not limited to suspension or termination of EFB privileges. Any incidents related to the use of EFBs must be immediately reported to UMES flight program personnel for investigation and review. Failure to return a borrowed EFB will result in a charge of \$1000 to the responsible student's account.

**Change log:**

**Version 1.1, July 1, 2018:** Original

**Version 1.2, June 8, 2021:** Add flight data sheet, aborted takeoff plans, air-to-air frequency

**Version 1.3, June 29, 2021:** Adds hanger procedure for aircraft removal and storage

**Version 1.4 February 11, 2022:** Added - Make go/no go decision (PAVE) (IMSAFE), - Establish stabilized approach by 500 feet (65kts and normal descent to land) (If high and fast, go-around), Clear the runway as soon as can be safely done, at taxi speed, on taxiways or as directed by ATC,

**Version 1.5 April 18, 2022:** Cruise climb @ 80kts at 500' AGL'

**Version 1.6, March 1, 2023:** Adds EFB Policy, Changes logo