PAVE Preflight Checklist

Pilot/Passenger		
IMSAFE	**Illness / Injury**	- Sinus - Middle Ear - Cold - Sore Throat - Disqualifying conditions (ask AME) - Injury that could affect operational capability
	Medication	- Must be approved by FAA AME
	Stress / Emotion	- Are you stressed at work or in your personal life?
	Alcohol	- No alcohol in the last 8 hours - Below 0.04% limit - No hangover, no impairment, no drugs
	Fatigue	- Are you well rested?
	Eating	- Did you eat? Are you hydrated?
Scuba Diving	**Recent scuba?**	- For non-controlled ascent wait 12 hours to 8000 ft - For controlled ascent or flights above 8000 ft wait at least 24 hours
Currency	**Check your logbook**	- Flight review? - Endorsements and training? - Required ratings? - 3 takeoffs / landings in the last 90 days to take passengers? - Night flying? 3 takeoffs / full stop landings in the last 90 days? - Tail dragger? 3 takeoffs / full stop landings in the last 90 days? - Wings program credits
Documents	**Must be on board:**	- Pilot certificate - Valid medical certificate - Valid government photo ID
Privileges and Limitation		- What can I fly? - Can I receive money or compensation of any kind?

Aircraft/Airworthiness		
ARROW	**A**irworthiness	Does not expire if all required maintenance, inspections and Airworthiness Directives are complied with and logged
	Registration	Renewed every 7 years
	Radio Station License	International flights only
	Operating Limitations	AFM/POH, placards, instrument markings
	Weight & Balance	Current data
AV1ATES	**A**nnual	Preceding 12 calendar months
	VOR check	Preceding 30 days (IFR)
	100-hour Inspection	Aircraft operated for hire or airplane provided by flight instructor or school
	AD Compliance	One-Time and Recurring
	Transponder	Preceding 24 calendar months
	ELT	Preceding 12 calendar months function test. Additionally, replace / recharge battery when half the useful battery life used or more than 1 hour of cumulative use.
	Static System	Preceding 24 calendar months (IFR)

ATOMATO FFLAMES	Day VFR	**A**irspeed indicator
		Tachometer
		Oil Pressure Gauge
		Manifold Pressure Gauge for Altitude Engines
		Altimeter
		Temperature Gauge (liquid cooled engines)
		Oil Temperature Gauge
		Fuel Gauges for each tank
		Flotation Devices (for hire, needed if beyond power off glide distance from shore)
		Landing Gear Position Indicator (if retractable)
		Anti-Collision Lights (if aircraft certificated after 3/11/96)
		Magnetic Direction Indicator
		ELT
		Seat Belts/Shoulder harnesses
FLAPS	Night VFR	**F**uses (one spare set or 3 of each kind)
		Landing Light (for hire)
		Anti-Collision Light
		Position Lights
		Source of Power (alternator/generator)
Aircraft Systems	**Fuel, oil and hydraulics**	
	Electrical	
	Pitot-Static, Vacuum/Pressure and associated flight instruments	
	All systems that your aircraft has required by ACS	
	Possible failures and what to do for each system	
Emergencies	**Engine failure after takeoff**	
	Loss of oil pressure during flight	
Inoperative Equipment	**Is it required by...**	**MEL**
		Equipment List / Kinds of Operations List
		Type Certificate Data Sheet
		Airworthiness Directives
		Regulation – 91.205, 91.209?
		Safety? Even if it's legal, is it safe?
		Legality? Even if it's safe, is it legal?

EnVironment		
Density Altitude		How to determine Effects of temp & pressure on aircraft performance
Oxygen	**Aeromedical Factors**	Hypoxia - causes and symptoms
	Regulation	Above 12,500 for more than 30 min for pilots Above 14,000 all the time for pilots and crew Above 15,000 for passengers
Heater	**Aeromedical Factors**	**Carbon Monoxide poisoning symptoms** - Light-headed - Loss of muscle power - Headache - Drowsiness - Tingling in fingers and toes - Blue fingernails and lips
Night Flying	**Night Vision**	- 30-60 min for eyes to get used to the dark - Avoid looking into bright light - Use peripheral vision and don't look at a fixed object - Rods = black and white only - Cones = blind spot at night - Night illusions
CFIT	**Controlled Flight Into Terrain**	- Accidental flight into IMC conditions - Mountain obscurations - False horizons/No horizon/illusions - Over high terrain check altitude and keep altimeter updated. - TAA: Technically Advanced Aircraft - Over-reliance on technology
Airport Concerns	**Runway Incursion**	How do we avoid runway incursion?
	Hotspots	What are hot spots? Where do we find them? Where do we find their explanations of what to avoid?
	LAHSO	Land And Hold Short Operations (see KAPC)
	Runway signs and markings	Know them!
	Light gun signals	Keep on kneeboard
	Wake turbulence	How do we avoid wake turbulence? - Don't fly below the flight path - Wait for heavy aircraft's wake to dissipate.
	Weight & Balance	- Are we close to the weight limit? - Do we need to move bags around? - What is the best way to load CG? - How much fuel can we carry? - Concerns with: • Over gross • Aft CG / Forward CG
	Crosswind factor	- Within or close to limits? - Best runway to use - Crosswind takeoff and landing procedure
Airspace	**Types**	What type of airspace are we flying through? Know your cloud clearances, procedures, and special use airspace.
	Procedures	- Clearance before entering Class B - Establish communication before entering Class C, D - Stay out if flying close! - Required equipment on board?

	Restrictions	- Restricted areas - Warning areas - Alert areas - Prohibited areas
	MOAs	- Times and frequencies
Weather	**AIRMETS**	**Tango –** moderate turbulence, sustained surface winds above 30 kts, low level wind shear **Sierra –** IFR, mountain obscuration **Zulu –** Icing, freezing levels
	SIGMETS	**Convective SIGMETS** (Thunderstorm related weather) - Severe icing - Severe turbulence - Winds at the surface more than 50 kts - Tornadoes - Hail **SIGMETS** (Not thunderstorm related) - Severe icing - Severe turbulence - Winds at the surface more than 50 kts - Sand storms, dust storms, volcanic ash
	Weather Charts	**Surface Analysis Chart** - High/Low pressure - Cold/Warm fronts - Stationary/Occluded Fronts - Squall Line - Ridge - Trough **Weather Depiction Chart** **Radar Summary Charts** - Precipitation - Direction and Speed - Does not show clouds **Satellite Pictures** - Clouds **Low Level Significant Weather prognostic chart** **Winds and Temperatures Aloft** **Severe Weather Outlook Charts**
	Special VFR conditions	What are the minimums? Hazards: Wire-strike, tower strike, scud running, CFIT
TFRs	**Any TFR's en route?**	Where can you find altitudes and active times? What happens if you fly through a TFR?
Stalls & Spins	**Spin Recovery**	**P –** Power to Idle **A –** Ailerons to neutral **R –** Rudder full opposite the direction of rotation **E –** Elevator briskly forward to break stall When spin stops – rudder neutral Easy pull to straight and level

External Pressures		
Purpose of the Flight	**Deadlines**	- Have you given yourself an allowance for delays? - How critical is it to maintain the schedule
	Promise to friends/family	- Have you briefed your friends/family that a diversion or cancellation may be necessary? - Is the trip worth the risks?
Trip Planning	**Diversions or Cancellations**	- Have you given yourself a window of time? - Have you arranged for alternate transportation?
	Unplanned Weather	- Have you factored in headwinds that may delay you?
Alternate Plans	**Personal Equipment**	- Do you have funds for alternate plans or transportation? - In the event of an unexpected stay do you have extra clothing and an overnight kit?

A	Aircraft	MEL Items MTOW PERF Limited	APU TCAS EGPWS
W	Weather	Hi X-Winds MVFR / IFR LLWS	SVR WX FRZ PRECIP ++ PRECIP
A	Airports and Approaches	Terrain Class G Non-Prec Approach ODP	Mountainous ELEV > 5000’ No Approach
R	Runway and Route	Wet Runway 75’ Wide Runway TURB En-Route	Field Limited Contaminated Runways SVR TURB
E	External Pressures	Crew Day/Rest Int’l Ops Night Ops	Circadian Low Crew Currency Crew Fatigue

A	Refer to MEL Use AFM Brief Contingencies	QRH / AOM / AFM Consult MAINT / Ops Detailed Crew BRF Required for Abnormal Condition
W	Crosswind Limitation Chart Precision Approach Available Brief WS Escape Procedure	Delay Departure Hold Prior to Landing / Divert De-ice / Anti-ice
A	Terrain Awareness Uncontrolled Procedures GPS Overlay with LNAV/VNAV AFM	Review High Altitude Ops Brief Terrain Photo Recon
R	AFM Crosswind Limitations Brief FA / PAX	AFM OIS Avoid All Severe Weather
E	Manage Crew Time Effectively Plan for the Worst Prepare Contingencies	Allow for Adequate Rest Don’t Push Fatigue Mitigate Risks

More than **1 RED** or **3 YELLOW** risk items should be cause for completion of the Flight Risk Analysis Tool (FRAT).

Flight Risk Assessment Tool (FRAT)

Before each flight, assess each of the following conditions and assign a numerical rating of 1 to 5 in the right-hand (Rating) column.

Add up the entries in the Rating column to obtain an overall risk estimate, and see where it falls in the Green/Orange/Red Risk Chart.

		1	2	3	4	5	RATING
P	Dual / Solo	Dual		Solo			
	Rating	CFI or ATP	Comm'l	Private with Instrument	Private	Student	
	Rest in last 24 hours	>8 hours	6-7 hours		3-5 hours	<3 hours	
	Hours in Aircraft Type	>200	151-199	100-150	50-99	<50	
	Hours in last 90 days	>20	15-20	10-14	5-9	<5	
	Total Hours	>2,000	501-2,000	251-500	100-250	<100	
A	Equipment Squawks *("0" for no squawks)*	Not req'd for flight or mission		Mx cleared prior to flight		Req'd for flight or mission	
V	Flight Type	VFR	IFR				
	Day / Night	Day		Night			
	Destination Familiarity	Yes		No			
	Visibility *(statute miles)*	>15 sm	10-15 sm	6-9 sm	3-5 sm	<3 sm	
	Ceiling *(AGL)*	>10,000'	5,000' - 9,000'	3,000' - 4,000'	1,000' - 2,000'	<1,000'	
	Departure: Xwind or Gusts	0-5 kts	6-10 kts	11-15 kts	16-20 kts	>20 kts	
	Destination: Xwind or Gusts	0-5 kts	6-10 kts	11-15 kts	16-20 kts	>20 kts	
	Weather Stability	Stable		Slow Deterioration		Rapid Deterioration	
E	External Pressures *(choose one)*	Training	Check Ride	Personal	Work	Family	
						TOTAL RISK SCORE ===>	

Low	No unusual hazards. Use normal flight planning, established personal minimums, and operating procedures.	14-30
Med	Somewhat riskier than usual. Conduct flight planning with extra care. Review personal minimums and operating procedures to ensure that all standards are being met. Consider alternatives to reduce risk.	31-47, **or a 5 in any row**
High	Conditions present much higher than normal risk. Conduct flight planning with extra care and review all elements to identify those that could be modified to reduce risk. If available, consult with more experienced pilot or instructor for guidance before flight. Develop contingency plans before flight to deal with high risk items. Decide beforehand on alternates and brief passengers and other crewmembers on special precautions to be taken during the flight. Consider delaying flight until conditions improve and risk is reduced.	48-63, **or a 5 in any 2 rows**