Aerosoft

Dangerous Airports 1

aerosoft™

Contents

Introduction

We love airports that pose a challenge to the pilot. And let's not kid ourselves, not try to be politically correct, let's call them dangerous airport. Because they are. All the airports in this package have their own challenges and their own dangers.

Barra Eoligarry Airport (EGPR) is just weird, it's a beach, the only airport we know of that is open or closed depending on the tide. You land on sand that might be hard or soft, there might be tidal pool or washed up debris.

Matekane Air Strip is located on a mountain top, pretty high and most of the year pretty hot so density altitude is a major factor. But when you run out of runway there is a few thousand feet of valley you can fall into before crashing.

Mountain Air, Burnsville, NC (2NC0) is also a mountain airport, but where Matekane has miles of nothing around it. Mountain Air is cramped and you park almost on the runway. It also got a sloped runway and rather nasty gusts of wind most of the time.

System requirements

- Microsoft Flight Simulator FSX SP2 (or Acceleration)
- Windows XP/Vista/Windows 7 (fully updated)
- 2.0 GHz processor (Intel Core 2 Duo highly recommended)
- 2 GB RAM internal memory
- 256 MB graphic card (512 Mb highly recommended)
- PDF reader for manual

Credits

Concept:	Mathijs Kok (Aerosoft), Mat Dalton
Programming:	Mat Dalton
Project Management:	Mat Dalton, Mathijs Kok (Aerosoft)
Manual, documentation:	Mathijs Kok
Installer:	Andreas Mügge
Testing:	Several good folks who will all be getting a free copy
Aircraft repaint:	Holger Sobl

Copyrights

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Contact support

Support for this product is offered by Aerosoft. We prefer to have a support forum for the simple reason that it is fast and efficient because customers help customers when we are sleeping:

http://www.forum.aerosoft.com

and we advise the **Customer Support > Scenery Discussions & Support** section for any questions on this product. This should be your first stop for any support.

If you prefer support by email do accept that this could take a bit longer as it might be send from persons to person and that email support in the weekends is always slow: support@aerosoft.com. We feel strongly about support. Buying one of our products gives you the right to waste our time with questions you feel might be silly. They are not.

Installing and removing

This product uses the Aerosoft Installer and Launcher. Appendix A has a step by step guide if you are not familiar with this system. Please note that the installer will watermark the product so if it shared with other people we can find the original owner.

Never remove the product manually, always used the control panel applet to do so. Failing to do so could create serious problems.

Airports

There are three airports in this first package. You can find the airports in FSX using the following information. There is also a Google Earth file included that shows you were the airports are located.

- Matekane Airstrip, Lesotho (ICAO code **FXME**)
- Barra Eoligarry Airport, Outer Hebrides, Scotland (ICAO code **EGPR**)
- Mountain Air, Burnsville, NC, USA (ICAO code **2NC0**)

Appendix C includes the official charts for Barra and a document created by the pilots of Mountain Air that explains how to use this airport safely. There is also a fine video available at this link: http://www.mapilots.org/first_time_pilots.html

Matekane Air Strip

Matekane Air Strip has been called the 'scariest runway in the world' in some publications for good reasons. Located at 7,500 feet the short 1,310 feet runway end in a massive cliff that ends 4,000 feet lower in the Ohohbeng river. Not that that's bad. The high altitude and often very high temperatures combine to create density altitudes that make it hard for non turbo powered aircraft to operate from this field. Often they just drop over the edge of the cliff and gather speed that way.
The airport is mainly used by the Flying Doctors services that assist the local population in this remote area, but because it has become well known it is now also visited by GA pilots looking for a special landing. Do not that high winds and freezing temperatures are normal in winter.

Barra Eoligarry Airport (EGPR)

Barra Eoligarry is the only airport where regular scheduled flights land on a beach. Scheduled is a releative term because the three runways are underwater at high tide. It's located in the bay of Traigh Mhòr at the north tip of the island of Barra in the Outer Hebrides, Scotland. The airport is operated by Highlands and Islands Airports Limited.

The three runways are marked with wooden structures on the sea side and runway signs on the beach. The airport is only used at night for emergency (medical) flights. Although the sand is normally smooth and compacted it can be disturbed by storms.

Mountain Air, Burnsville, NC (2NC0)

Mountain Air is a community like there are many in the USA. Not really a city but a community started and operated by project developers. Mountain Air is one special because it is located on a forested mountain. Like many such places it has it's own small private airfield. The 2,875 feet runway (located at 4,400 feet) has unfortunate been the scene of a few incidents and one major accident. Small problems can grow into major problems on this runway. The runway is sloped, surrounded by forests and the location (a mountain top) almost guarantees strong winds. The parking and runway are adjacent without separation because of the limited available terrain.

Compatibility with DX10 Preview mode

Because the scenery uses high resultion taxiways there are problems with the DX10 Preview Mode. This cannot be solved without an update for FSX, something we do not expect.

Mountain flying

While Barra is obviously located at sea level, Mountain Air and Matekane are located at higher altitudes. So high that you got to keep in mind what that means for your density altitude. See appendix B for a complete explanation about high altititude operations

FAQ

Some issues you might encounter and that we like to explain.

Q: Volume shadows flicker heavily, especially at midday when sun is standing high:
A: There are some video cards having problems displaying volume shadows. This is usually caused by installing the latest driver for your video card. If nothing helps, your video card is just unable to display them properly and the option “scenery casts shadows” (see settings chapter in this manual) should be deactivated.

Q: In many areas I sink into the ground.
A: This scenery uses terrain that is created as an ‘object’ and not mesh. This means it can be more detailed but it also creates some problems. As long as you stay where aircraft is supposed to be all should be fine.

Q: There are some strange ripple effects on the sand of Barra.
A: We used a deep bump effect to make the sand look more realistic, this can have this side effect.

Q: At Mountain Air the trees behave very strange.
A: In slew mode you will see them pop up and disappear, in normal flight this will not be an issue.

Q: Aircraft shadows are not always seen.
A: When the terrain is not fully flat the aircraft shadows can be underneath the terrain. This is an FSX limitation.

Q: Is Barra compatible with Horizon VFR volume 4?
A: Barra is compatible with "VFR Photo Scenery 4 NEW - Scotland & Western Isles" by Horizon with a few small file changes. No textures need changing. If the user desires VFR volume 4 compatibility, RENAME the following default Barra files from the /scenery directory:

Barra3.BGL to Barra3.OFF
BarraAPOnly.BGL to BarraAPOnly.OFF
BarraFence.BGL to BarraFence.OFF
BarraWindsock.BGL to BarraWindsock.OFF

and RENAME the following files

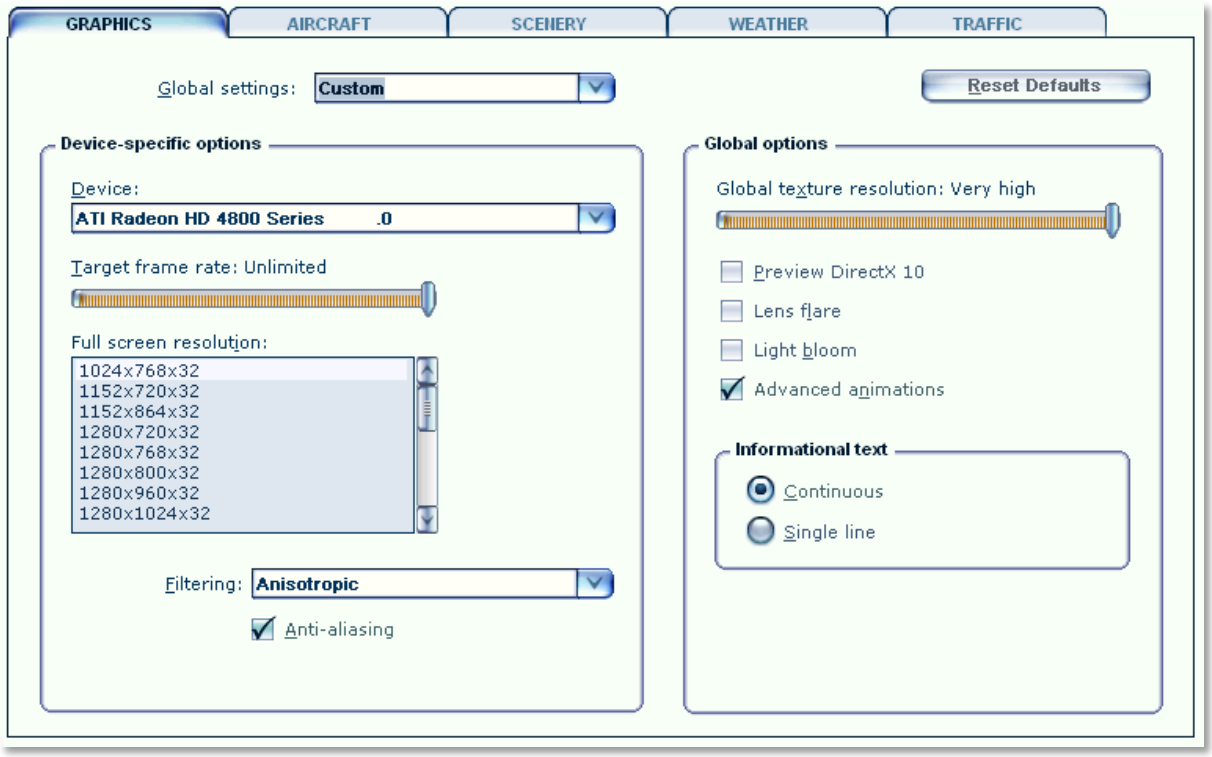
BarraAPOnlyVFR.OUT to BarraAPOnlyVFR.BGL
BarraFenceVFR.OUT to BarraFenceVFR.BGL
BarraWindsockVFR.OUT to BarraWindsockVFR.BGL

Barra should also be above VFR volume 4 in the scenery library.

Settings & Frame rates

We advice these setting for the best combination of looks and framerates. Do note that the settings are a bit different then for most scenery projects. We advice you to stay in Summer season as Microsoft has a strange idea of winter in many areas.

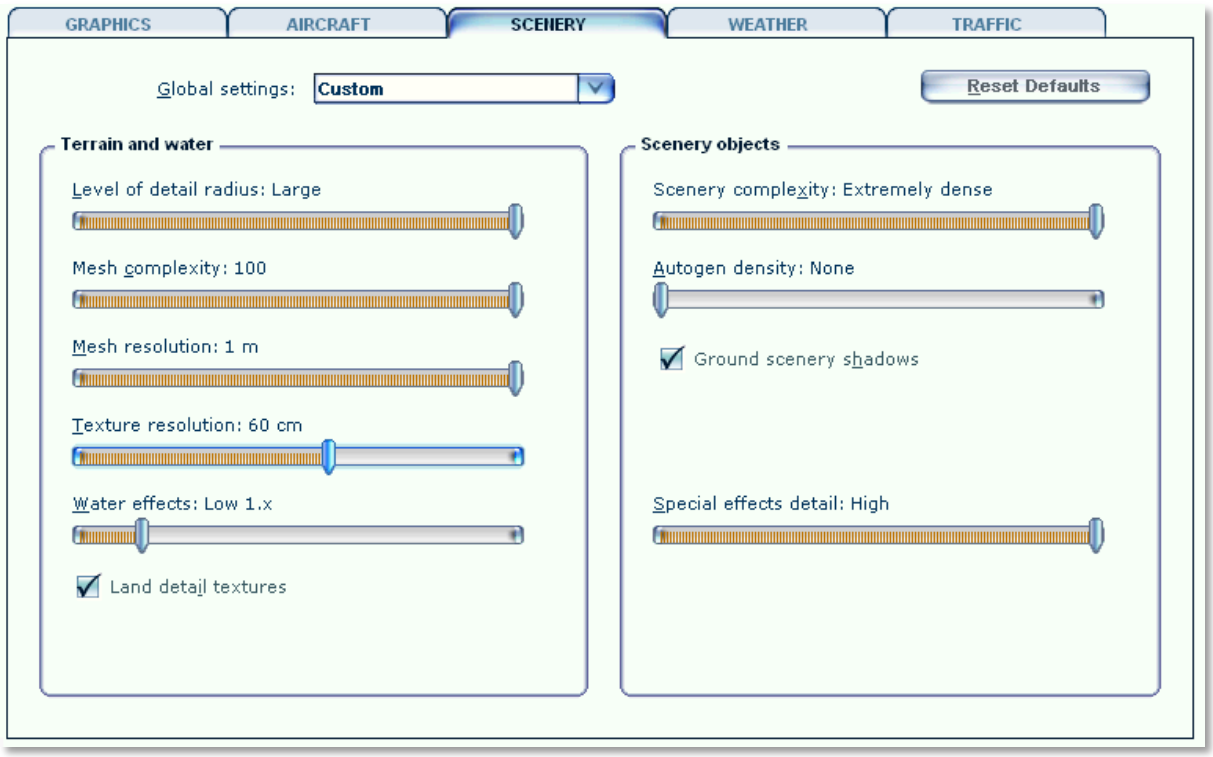
Display Settings



Important settings:

- Global texture setting needs to be on Very high
- When you see your framerate fluctuate wildly but always above 40 fps we advise you to set a Target frame rate of 30 fps, in all other occasions you will get far better fps with the Unlimited setting

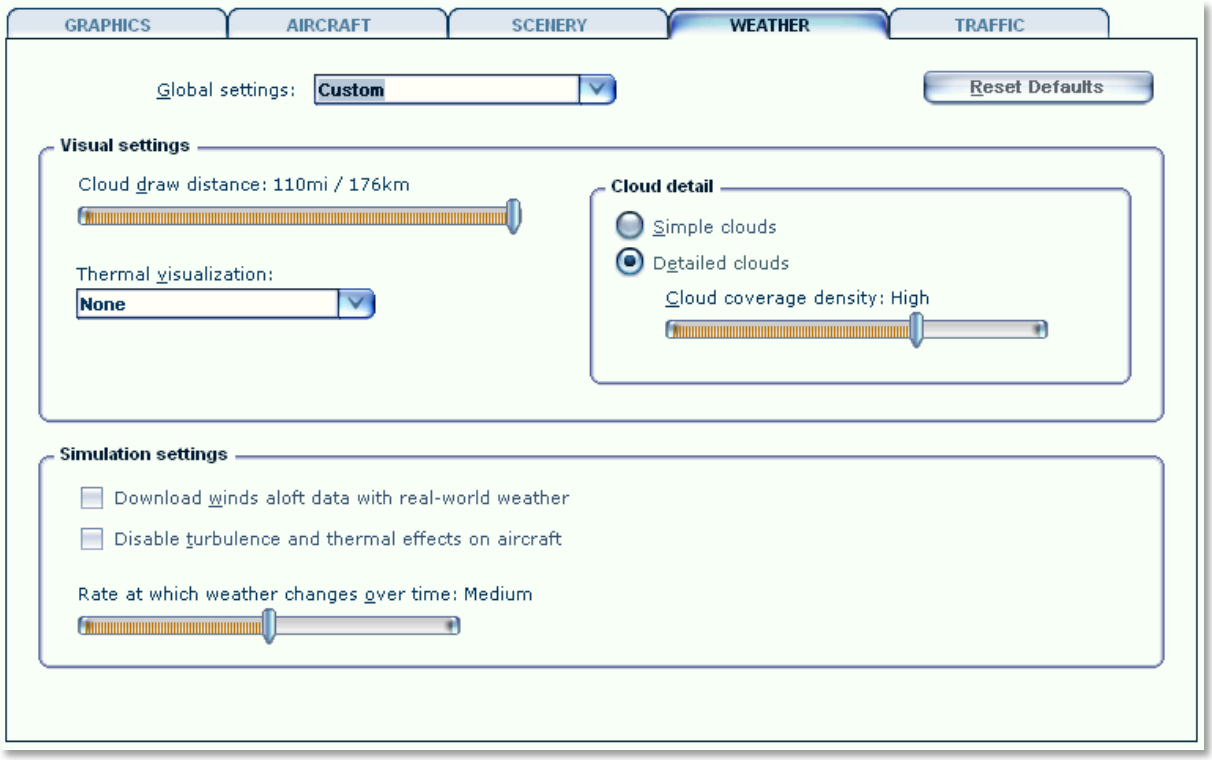
Scenery settings



Important settings:

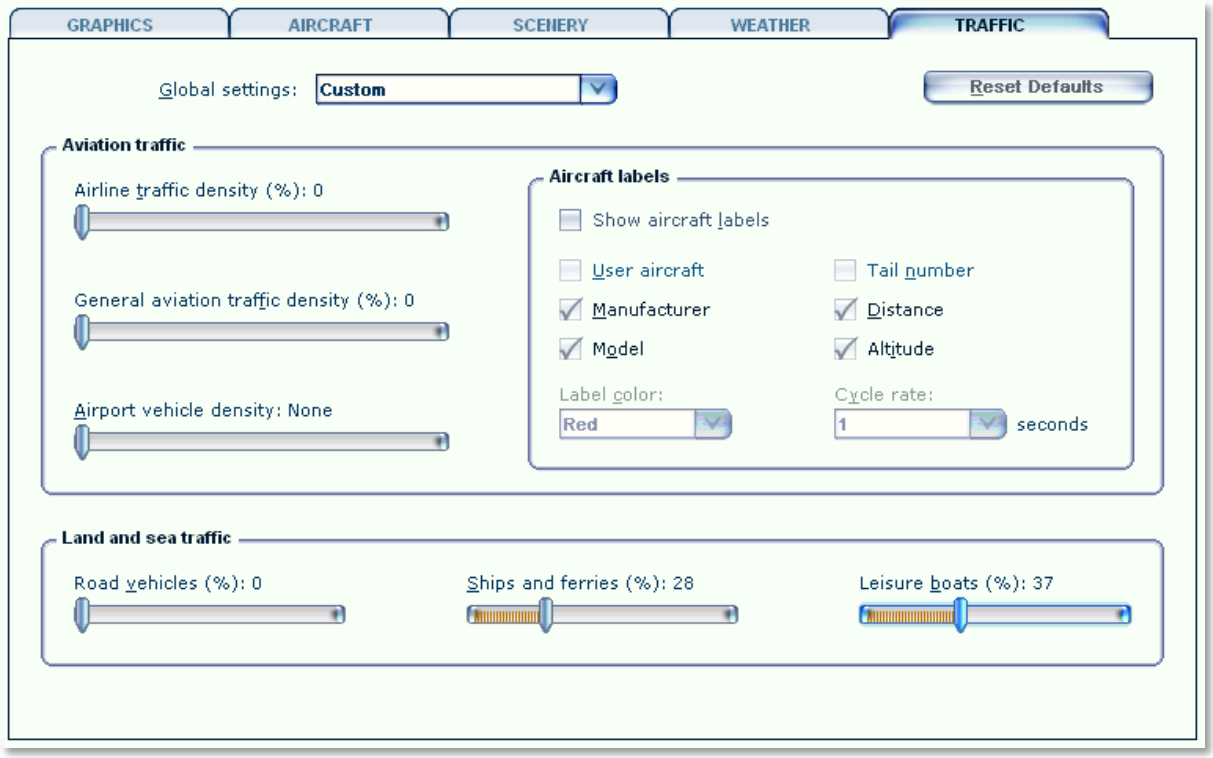
- Mesh complexity set to 100%
- Mesh resolution set to 1 meter
- Texture resolution set to 60 centimeter
- Water effects:
    - At Matekane there is no water
    - At Mountain Air a medium setting looks best (makes the pool light up)
    - At Barra the shown Low 1.x setting looks most realistic as it avoid the azure blue sea that is so dominant at higher settings
- Scenery complexity set to Extremely dense
- Autogen density:
    - At Matekane a low setting works best
    - At Mountain Air a high setting works best
    - At Barra the shown None setting is most realistic

Weather settings



Weather settings are fully up to your liking but you most likely have enough frame rates to use a good looking high definition setting. On most machines a max setting will be possible and at all these airports the sky environment is very important.

Traffic settings



None of the included airports has AI traffic (technically impossible), so a low setting makes sense. Barra does include some boat traffic.

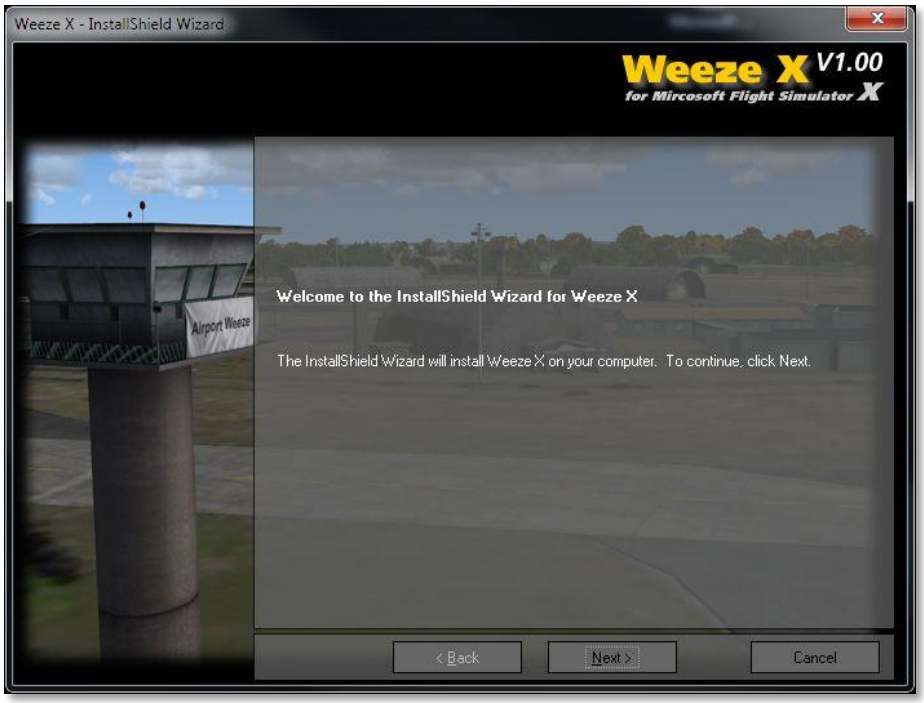
Appendix A

The new Aerosoft installer and launcher

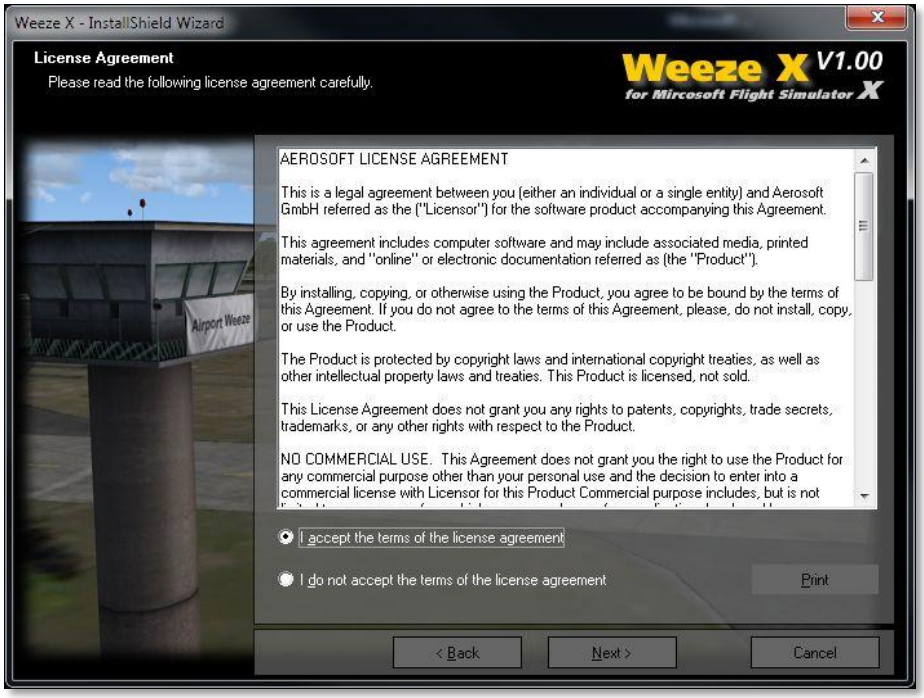
The new installer and launcher system has advantages for Aerosoft (it protects our copyrights better) and for the customers (makes it easier to see what is installed and what updates are available. Using the new system is simple and only adds a few steps to what was used before. There are however four things that you got to keep in mind.

- You need to be connected to the Internet while the installing and activation takes place (there is an offline option via email, more on that later).
- You need to be logged on as Administrator on your system.
- You need to understand that the product need to be activated before it can be used
- You need to know the installed files are customized to your order. Multiple files of the product will be marked so if they ever ended up on the Internet we know where they came from.

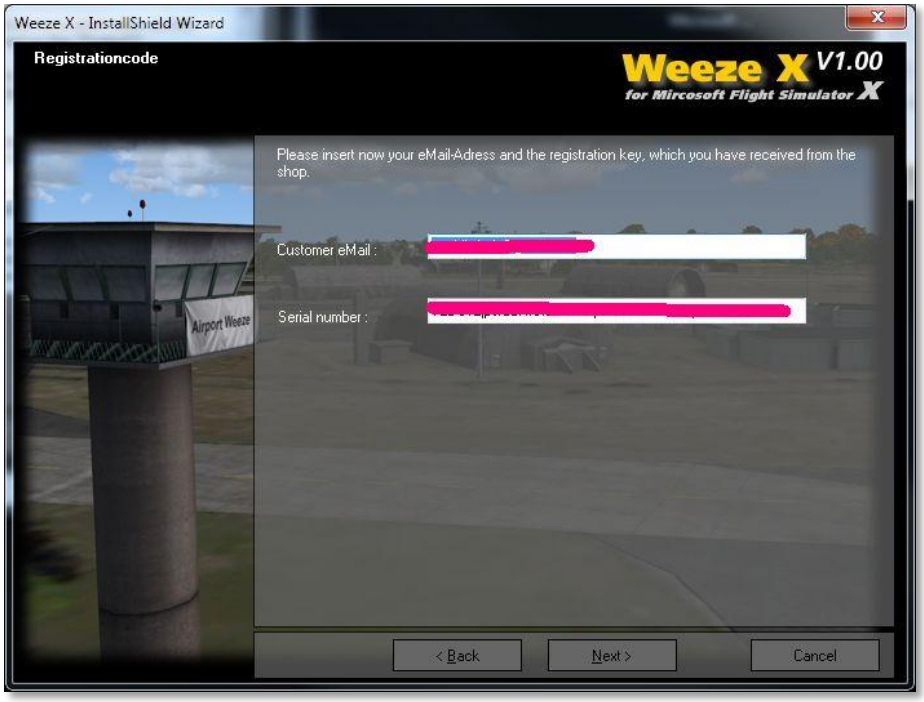
After the SETUP.EXE is started you will see this screen:



Click [Next] to continue, you expected that right?



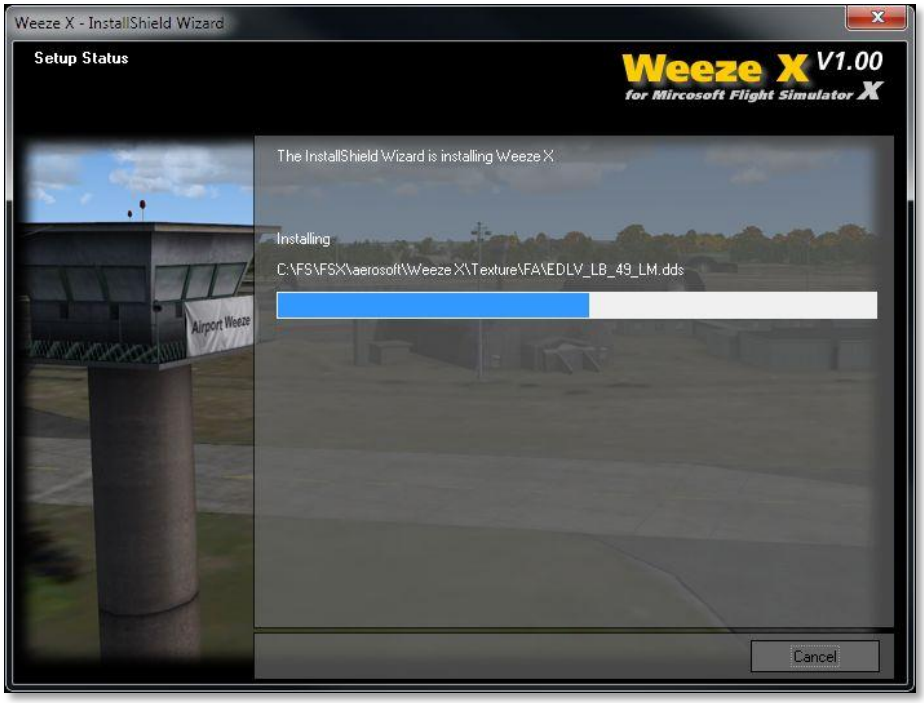
Now you got to accept the license agreement. Easy to click [I accept....] but you might like to read the text at least one time, okay?



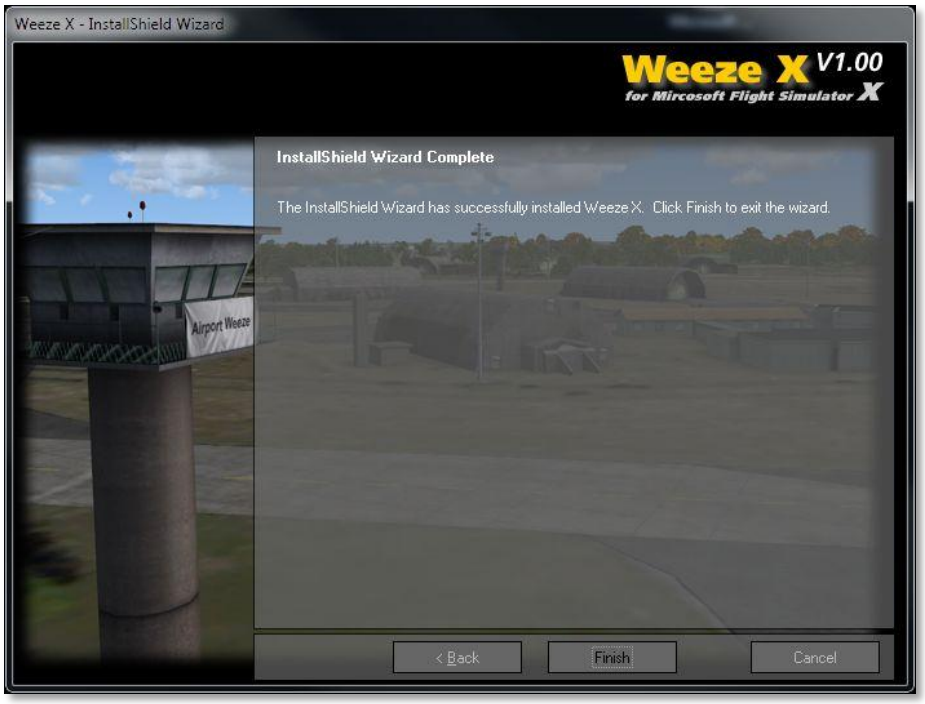
Enter your email address and the serial code we have sent you.

A few screens that tell you what will happen. Click [Next] unless you see an obvious issue.

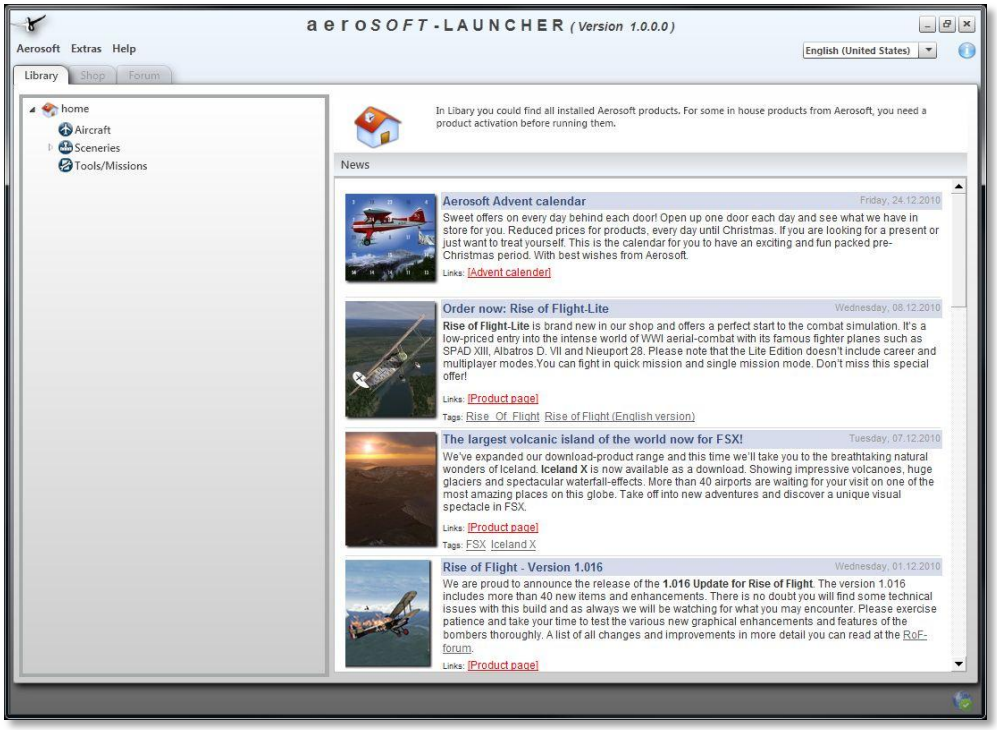
One more...



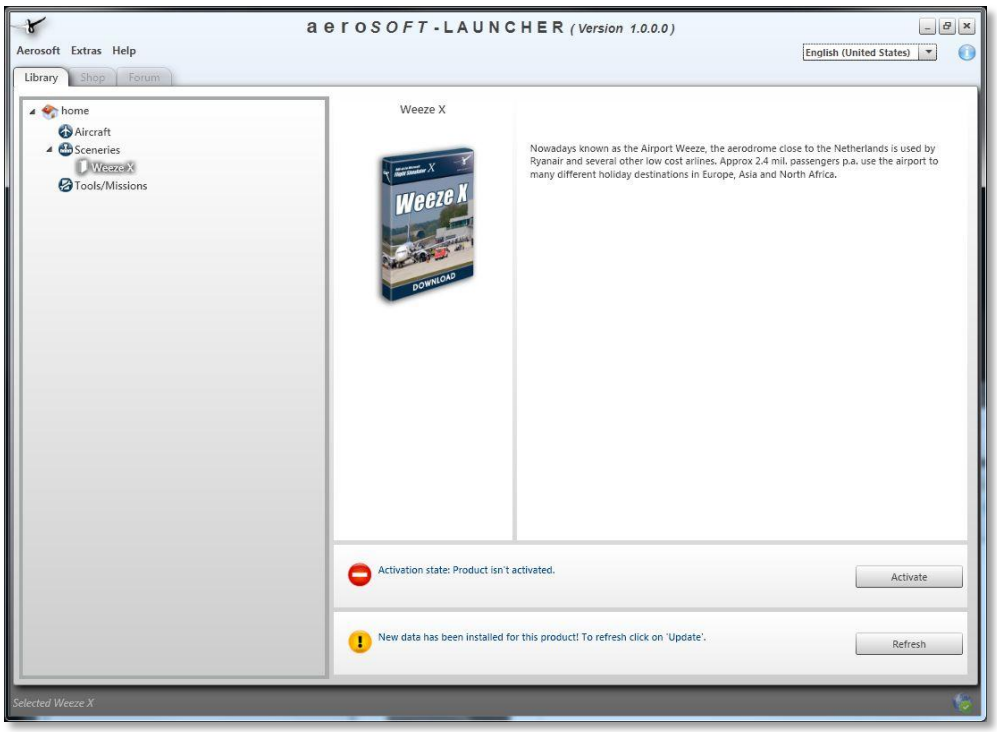
The files are now installed. Will take a few seconds.



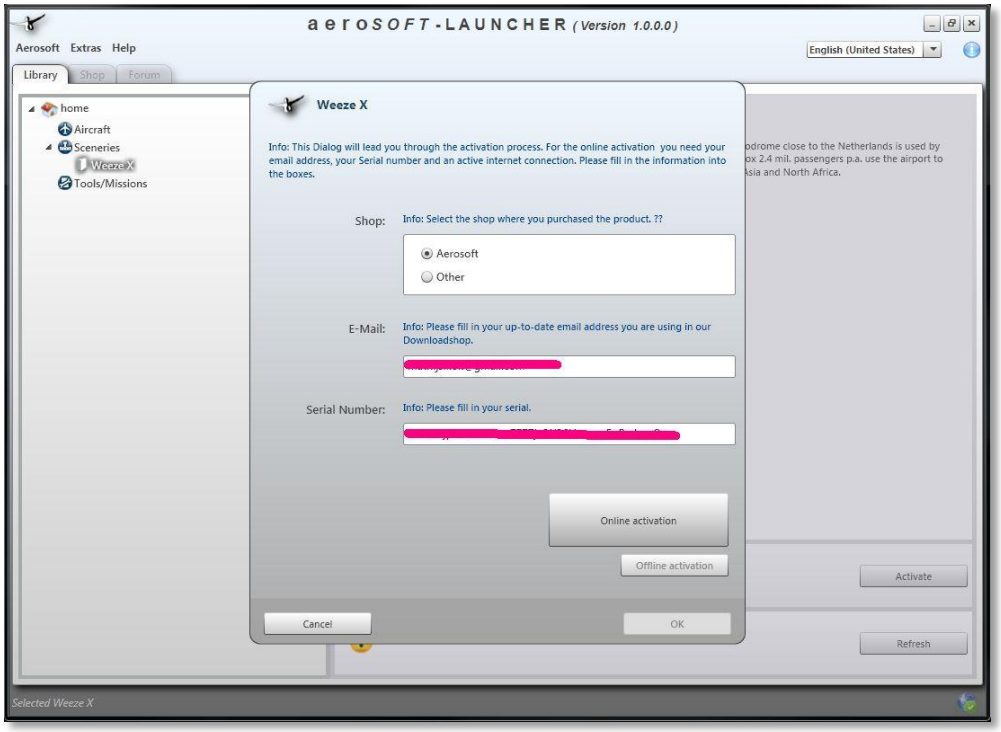
And you're done. Click [Finish] to close the installation part of getting the software in FSX.
Now Aerosoft Launcher will start and you will see this.



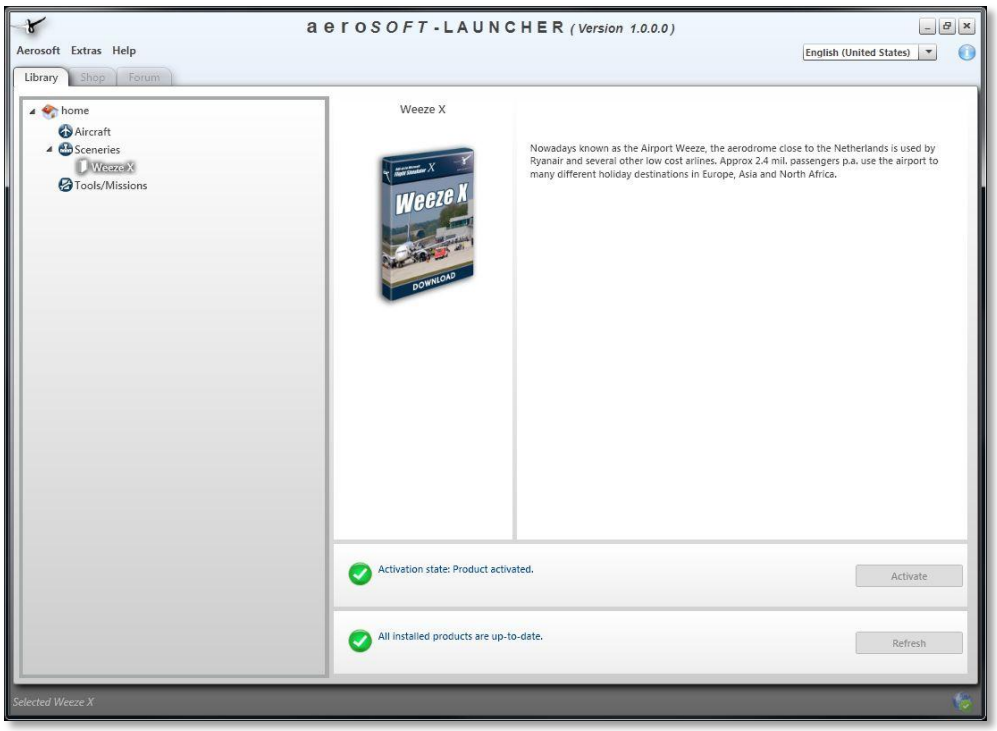
Click on the [Sceneries] to open that section of the product tree.



And there is the product we have just installed. By clicking on the [Activate] button the launcher will activate the software.



Select the download shop you used, enter the email address used when buying and the serial code and click [Online activation]. You will see the program contact the server and do it work. Note that only appropriate information is send. Product code, email address etc.



Eh voila, the product shows in green and you can now start FS to start enjoying the scenery.

Appendix B

High Altitude operations

If there is one thing that makes this product special it is the high altitude of the airport. It is our experience that many sim pilots do not fully understand the effects of the resulting lower air pressure, so a full chapter on flying in these conditions is in order.

High Density Altitude

In this chapter we are going to use the Cessna 182RG as our base model, for all other aircraft the principle is the same, only the figures change. There is one complete factor that should be used when dealing with Density Altitude that we will not mention, humidity. It is not a major factor and in FS it is not used. In case you're interested: high humidity will RAISE the Density Altitude.

> IMPORTANT: The ACTUAL altitude of an airport is of little or no consequence, the only aspect that matters is the DENSITY ALTITUDE of the airport. The only thing that is of relevance is the AMOUNT of air molecules!

Air is needed for many things (we will use the word 'air' to describe the mixture of gases we experience);

- to create lift
- to create a forward pushing force for jets or pulling force for propeller planes (props)
- to assist the combustion of the fuel
- to cool the propulsion system
- and of course, the pilot also needs something to breathe.

If there is less air all of these aspects will not be as efficient as under optimal conditions. So what is the effect on the performance of the aircraft? And in particular on takeoff and landing? Well how does a takeoff run of 1,800 ft. sound to you? For a Cessna that is not loaded very heavy? Is that impressive or not? Look at the following table that shows the relation between altitude, temperature and pressure. The data for takeoff and landing are for a moderately loaded Cessna 182 RG.

Altitude in-ft.	*Temperature in degrees F*	*Altimeter Setting in Inch Hg*	***Resulting Density Altitude***	***Required Runway Takeoff***	***Required Runway Landing***
0	*59*	*29.291*	***0 ft.***	***640 ft.***	***600 ft.***
4,000	*59*	*29.291*	***4,924 ft.***	***950 ft.***	***720 ft.***
8,000	*59*	*29.291*	***9,816 ft.***	***1,350 ft.***	***900 ft.***
8,000	*100*	*29.00*	***13,255 ft***	***1,850 ft. ?***	***1,200 ft. ?***

The question marks appear because the Cessna manual does not supply these numbers and they have been extrapolated from the other numbers. Keep in mind that a turbo-charged aircraft like the 182 is built to operate at higher altitudes and that it will perform much better than a non turbo-charged aircraft. If you try to take off with a Piper Cub meant for a Density Altitude of 1,300' you'll probably never reach takeoff speed before running out of runway and landings will have to be done at speeds ABOVE cruise speed. In the last row of the example the aircraft is located at 8,000' feet but for all logical and practical purposes it is 5,000' higher.

Density Altitude is the altitude that the aircraft THINKS it is at.

Also it is not only performance that suffers; your engine will also overheat MUCH faster because there is less air to cool the engine. And when winter comes and Density Altitude becomes less of an issue you run into another problem. It's very easy to run into very cold layers of air only minutes after takeoff and icing is a real danger. One thing to keep in mind… your air speed indicator is always corrected for the density altitude, it shows what it feels.

High (Density) Altitude Operations

Flying from high altitude airports is something that is inherently more dangerous than flying from airports located nearer to sea level. But the major issue is that it is different and that the problems escalate much faster into real dangers.

Preparation

Reduce your load; kick out those six-packs and your mother-in-law. Better leave them behind than scatter them all over the last few feet of the runway. Don't fly with more fuel than is needed. Rule of thumb, for every 10% under max gross weight, performance increases 20%. Keep in mind that an aircraft like a Cessna 175 only delivers 50% of its rated power at 8,000 ft. Above all, make sure your aircraft CAN fly in the current conditions. A Piper Cub with a ceiling of 11,500 feet simply will not fly if the density altitude is 12,000 feet. It simply will not be able to take off even if the runway is 20 miles long. If the ceiling of your aircraft and the Density Altitude come close together your margins of safety decrease. You might need to wait for cooler conditions to fly!

Starting

Depending on the aircraft starting procedures will be different. In the Cessna 182 you will need to pre-lean the engine and give a bit of throttle to get the engine started. Do not run at high power settings for a long time because the engine might overheat. However, it is a very good idea to briefly try high power settings just before entering the runway to make sure the engine will rev up without problems. Under these marginal conditions you do not want to have an engine that does not spool up fast and smoothly. But keep an eye on the temperature!

For some aircraft the FSX "Auto Start" function ([CONTROL]-[E]) will NOT work to start the engine at this altitude! You will have to start the engine manually with the mixture leaned and a bit of throttle set.

Takeoff

The first thing to remember is to trust your instruments and above all your airspeed indicator. Visual impressions might be misleading and the point where you normally take off might not be the point where you have enough airspeed in a high Density Altitude situation! Do not use Short Field flap settings as this most likely increases your takeoff run. Always lean your engine for max performance before starting your takeoff.

Make sure you understand that not only your takeoff run will be longer as Density Altitude increases but also that your climb performance will be affected.

Landing

Again, do NOT rely on your eyes but on your airspeed indicator. The INDICATED airspeed is the only thing that keeps you aloft. But in the end it is only the groundspeed that is different. The landing itself is actually surprisingly normal -- as long as you use your engine to keep the correct speed. The only real surprise might be the lack of any ground effect as that seems to drop off over 5,000'. Be prepared to see everything go a LOT faster than you might be used to and be prepared to use a lot more ground than normal. That is not a major issue most of the time as mountain runways are often rather long.

The real problems start when things go wrong. At a normal landing you have almost all of your power to get you out of a problem, but at high Density Altitudes you might not have much to use, and in the thin air there is little difference between max speed and stall speed .

If you've never flown at a high altitude airport before, you run a major risk when you do so for the first time because on your standard checklist there will be the item [Full Rich Mixture]. Now if you do that at 8,000' you run a high risk of the engine stalling on you. If you are lucky this will not happen before the engine slows down on the rollout, but if you are not it will die on you before you hit the next item on your checklist. Make sure you keep high rpm on the prop but it is easy to over-rev the prop shaft so keep the needle just below the red line.

How do I estimate the Density Altitude?

Actually the correct calculation is very complex and involves tables and many variables, but as always in aviation there is a rule of thumb that is close enough for almost any purpose.

- Set your altimeter to 29.92 (1013).
- Read the altitude indicated. This is your Pressure Altitude (pa)
- Now find the closest figure in the first column.
- In the correct temperature column you can read a good approximation of the current Density Altitude.

	41°F / 5°C	**50°F / 10°C**	**59°F/ 15°C**	**68°F/20°C**	**77 °F/25°C**	**85°F/30°C**	**94°F/34°C**	**104°F/40°C**
4000	*3,750*	4,350	4,900	5,450	6,000	6,550	7,100	7,650
4500	*4,400*	5,000	5,500	6,050	6,600	7,150	7,700	8,250
5000	*4,990*	5,550	6,100	6,650	7,200	7,750	8,300	8,850
5500	5,600	6,200	6,700	7,250	7,800	8,350	8,900	9,450
6000	6,200	6,800	7,300	7,850	8,400	8,950	9,500	10,050
6500	6,850	7,400	7,950	8,500	9,050	9,600	10,150	10,700
7000	7,500	8,000	8,550	9,100	9,650	10,200	10,750	11,300
7500	8,100	8,650	9,150	9,700	10,250	10,800	11,350	11,900
8000	8,700	9,250	9,750	10,300	10,850	11,400	11,950	12,500
8500	9,300	9,900	10,350	10,900	11,450	12,000	12,550	13,000

Note the italic numbers actually give a Density Altitude BELOW your actual altitude.

If the temperature is below 50° you can almost always assume Density Altitude will not be an issue, just as it will almost never be at an airport near sea level.

A much better way to find the Density Altitude is to use a flight calculator. Aerosoft sells a very useful one that connects to FSX!

Appendix C

The following sections include charts for Barra and a document created by the Mountain Air Pilots Association. Please note these are included for simulation use only and that they should NEVER be used for real navigation.

AERODROME CHART - ICAO

ARP 570122N 0072635W

AD ELEV 5FT

BARRA
EGPR

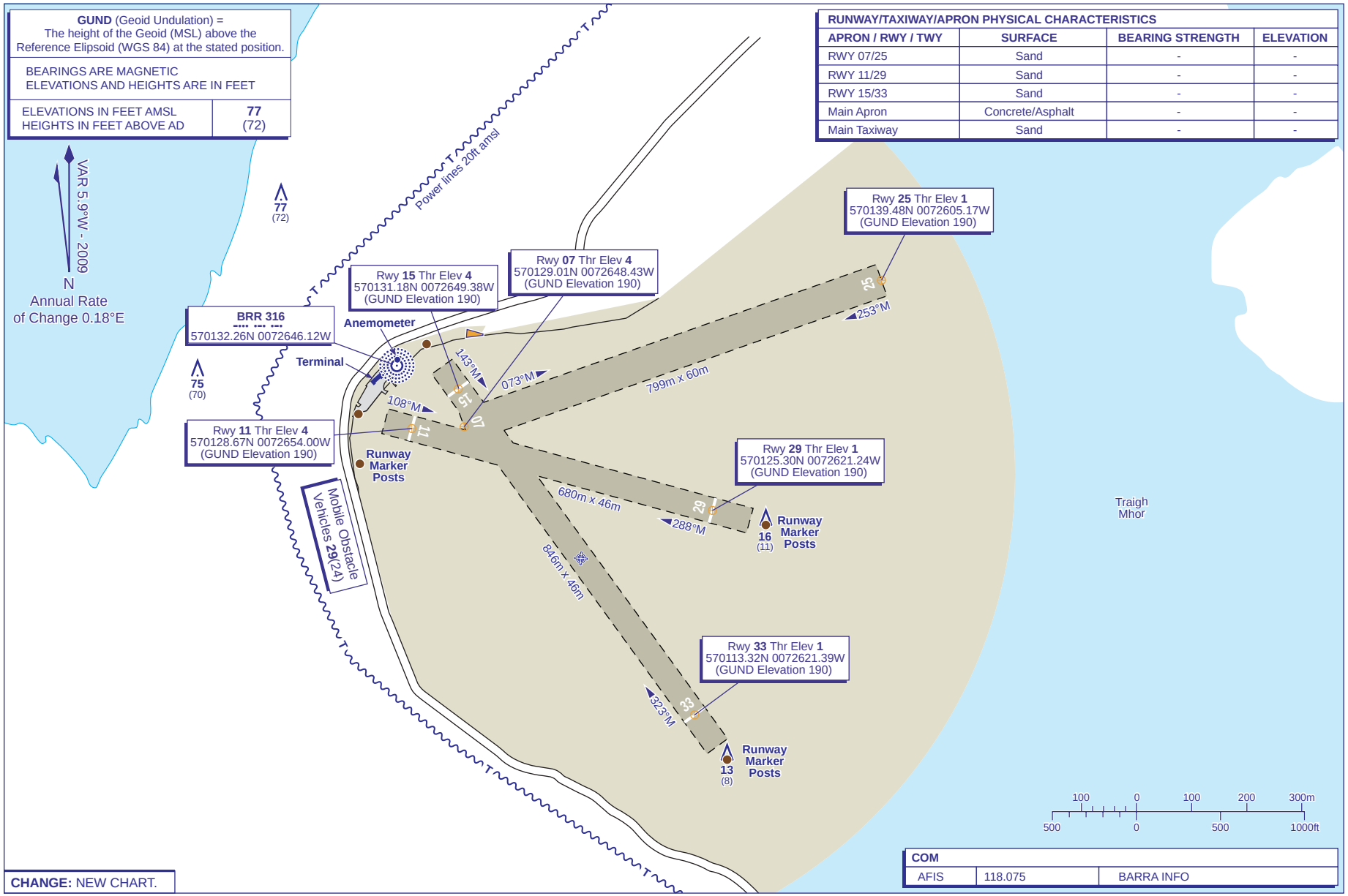
AERO INFO DATE 16 JUL 09

GUND (Geoid Undulation) = The height of the Geoid (MSL) above the Reference Elipsoid (WGS 84) at the stated position.

BEARINGS ARE MAGNETIC
ELEVATIONS AND HEIGHTS ARE IN FEET

ELEVATIONS IN FEET AMSL HEIGHTS IN FEET ABOVE AD	**77** (72)

RUNWAY/TAXIWAY/APRON PHYSICAL CHARACTERISTICS			
APRON / RWY / TWY	SURFACE	BEARING STRENGTH	ELEVATION
RWY 07/25	Sand	-	-
RWY 11/29	Sand	-	-
RWY 15/33	Sand	-	-
Main Apron	Concrete/Asphalt	-	-
Main Taxiway	Sand	-	-



COM		
AFIS	118.075	BARRA INFO

CHANGE: NEW CHART.

BARRA

EGPR AD 2.1 - BARRA

EGPR AD 2.2 — AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	**ARP co-ordinates and site at Aerodrome**:	**Lat:** 570122N **Long:** 0072635W Mid point of Runway 15/33
2	**Direction and distance from the city:**	4.3 nm NE of Castle Bay.
3	**Elevation/Reference temperature:**	5 ft – °C
4	**Geoid undulation at AD ELEV PSN:**	190 ft.
5	**MAG VAR/Annual change:**	W5.9° (2009) – 0.18° decreasing
6	**AD Administration:**	HIAL.
	Address:	Barra Aerodrome, North Bay, Isle of Barra, Western Isles, HS9 5YD.
	Telephone:	01871-890212.
	Fax:	01871-890220.
7	**Types of traffic permitted (IFR/VFR):**	VFR
8	**Remarks:**	

EGPR AD 2.3 — OPERATIONAL HOURS

1	**AD Administration:**	**Winter:** † Mon-Fri 0945-1215 or 1400-1630; Sat 1215-1330; and by arrangement with AD operator (HIAL). **Summer:** † Mon, Thu, Fri 0845-1410; Tue/Wed 0845-1115 or Mon, Thu, Fri 1015-1530; Tue/Wed 1300-1530; Sat 1015-1410; and by arrangement with AD operator (HIAL).
2	**Customs and Immigration**:	
3	**Health and Sanitation:**	
4	**AIS Briefing Office:**	
5	**ATS Reporting Office (ARO):**	
6	**MET Briefing Office:**	
7	**ATS:**	**Winter:** # § Mon-Fri 0945-1215 or 1400-1630: Sat 1215-1330. **Summer:** # § Mon, Thu, Fri 0845-1410; Tue/Wed 0845-1115 or Mon, Thu, Fri 1015-1530; Tue/Wed 1300-1530; Sat 1015-1410;.
8	**Fuelling:**	
9	**Handling:**	
10	**Security:**	
11	**De-icing:**	
12	**Remarks:**	This aerodrome is strictly 24 hours **PPR** due to tidal variation. † AD availability subject to tidal variation. § ATZ/AFIS Mon-Fri hours of service regularly change due to tidal variation, consult FIS Barra for information. # ATS Additional hours also available by arrangement. Aircraft movements at Barra prohibited outside AD/ATS hours except in emergency.

EGPR AD 2.4 — HANDLING SERVICES AND FACILITIES

Not applicable.

EGPR AD 2.5 — PASSENGER FACILITIES

Not applicable.

EGPR AD 2.6 — RESCUE AND FIRE FIGHTING SERVICES

1	**AD category for fire fighting:**	RFF Category 3
2	**Rescue equipment**	
3	**Capability for removal of disabled aircraft:**	
4	**Remarks:**	

EGPR AD 2.7 — SEASONAL AVAILABILITY - CLEARING

Not applicable.

EGPR AD 2.8 — APRONS, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA

Not applicable

EGPR AD 2.9 — SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

Not applicable

EGPR AD 2.10 — AERODROME OBSTACLES

In Approach/Take-off Areas				In circling area and at aerodrome		
1				2		
Runway/Area affected	**Obstacle type Elevation Markings/Lighting**		**Co-ordinates**	**Obstacle type Elevation Markings/Lighting**		**Co-ordinates**
a	**b**		**c**	**a**		**b**
		ft amsl			**ft amsl**	
11/Approach 29/Take-off	High Ground	75	570130.86N 0072717.25W	High Ground	1257	565757.75N 0072805.43W
	Road	29	570129.06N 0072700.41W			
	Marker Post	16	570129.27N 0072659.82W			
15/Approach 33/Take-off	High Ground	77	570141.46N 0072709.84W			
	Road	27	570133.72N 0072653.50W			
	Marker Post	13	570133.65N 0072653.15W			
3	**Remarks:** High ground rising to 338 ft amsl 0.75 nm to the north. High ground rising to 294 ft amsl 2.2 nm to the northeast. High ground rising to 680 ft amsl within 1.5 nm to the south. Telegraph wires 20 ft amsl, adjacent to the western boundary of the landing area. Obstacle protected surfaces are infringed by high ground up to 700 ft amsl between the south and west, and to a lesser extent by high ground up to 340 ft amsl to the north of the aerodrome. The minima of 3km visibility and cloud base of 1000 ft aal must therefore be strictly adhered to. Pilots must be able to see and avoid obstacles on take-off and landing.					

EGPR AD 2.11 — METEOROLOGICAL INFORMATION PROVIDED

Not applicable

EGPR AD 2.12 — RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY Number	True bearing	Dimensions of RWY (m)	Strength (PCN) and surface of RWY and Stopway	Threshold co-ordinates RWY end co-ordinates THR Geoid undulation	THR elevation and highest elevation of TDZ of precision APP RWY
1	2	3	4	5	6
07	066.06°	799 x 60	— Sand	570129.01N 0072648.43W — GUND 190 ft	THR 4 ft
25	246.07°	799 x 60	— Sand	570139.48N 0072605.17W — GUND 190 ft	THR 1 ft
11	100.68°	680 x 46	— Sand	570128.67N 0072654.00W — GUND 190 ft	THR 4 ft
29	280.69°	680 x 46	— Sand	570125.30N 0072621.24W — GUND 190 ft	THR 1 ft
15	139.48°	846 x46	— Sand	570131.18N 0072649.38W — GUND 190 ft	THR 4 ft
33	319.48°	846 x 46	— Sand	570113.32N 0072621.39W — GUND 190 ft	THR 1 ft

Slope of RWY-SWY	Stopway dimensions (m)	Clearway dimensions (m)	Strip dimensions (m)	OFZ
7	8	9	10	11
12	**Remarks:** Runway 11 threshold displaced by 50 m to allow 1:20 over marker post. Runway 29 threshold displaced by 70 m to allow 1:20 over marker post. Runway 15 threshold displaced by 50 m to clear marker post and dunes. Runway 33 threshold displaced by 70 m to clear marker post.			

EGPR AD 2.13 — DECLARED DISTANCES

RWY Designator	TORA (m)	TODA (m)	ASDA (m)	LDA (m)	Remarks:
1	2	3	4	5	6
07	799	799	799	799	
25	799	799	799	799	
11	667	667	667	617	
29	667	667	667	597	
15	799	799	799	796	
33	799	799	799	776	

EGPR AD 2.14 — APPROACH AND RUNWAY LIGHTING

Not applicable

EGPR AD 2.15 — OTHER LIGHTING, SECONDARY POWER SUPPLY

Not applicable

EGPR AD 2.16 — HELICOPTER LANDING AREA

Not applicable

EGPR AD 2.17 — ATS AIRSPACE

Designation and lateral limits	Vertical limits	Airspace Classification
1	2	3
Barra Aerodrome Traffic Zone (ATZ) Circle radius 2 nm centred on longest notified runway (15/33) 570122N 0072635W	2000 ft aal/ SFC	G †

4	**ATS unit call sign:** **Language(s):**	Barra Information. English
5	**Transition altitude:**	
6	**Remarks:**	Hours: See AD 2.18 † Refer to Section ENR 1.4 for Notifications.

EGPR AD 2.18 — ATS COMMUNICATION FACILITIES

Service Designation	Callsign	Channel MHz	Hours of Operation		Remarks
			Winter	Summer	
1	2	3	4		5
AFIS	Barra Information	118.075	Mon-Fri 0945-1215 or 1400-1630 Sat 1215-1330	Mon, Thu, Fri 0845-1410 Tue/Wed 0845-1115 or Mon, Thu, Fri 1015-1530 Tue/Wed 1300-1530 Sat 1015-1410	ATZ hours coincident with AFIS hours, but **not** by arrangement. ATZ/AFIS Mon-Fri hours of service regularly change due to tidal variation, consult FIS Barra for information. DOC 25 nm/4000 ft.

EGPR AD 2.19 — RADIO NAVIGATION AND LANDING AIDS

Type of Aid MAG VAR Type of supported OP *(VOR/ILS/MLS declination)*	IDENT	Frequency	Hours of Operation		Position of transmitting antenna co-ordinates	Elevation of DME transmitting antenna	Remarks
			Winter	Summer			
			# and by arrangement				
1	2	3	4		5	6	7
NDB	BRR	316 kHz	Mon-Fri 0945-1215 or 1400-1630; Sat 1215-1330 and by arrangement	Mon, Thu, Fri 0845-1410 Tue/Wed 0845-1115 or Mon, Thu, Fri 1015-1530 Tue/Wed 1300-1530 Sat 1015-1410	570132.26N 0072656.12W		On AD. Range 15 nm.

EGPR AD 2.20 — LOCAL TRAFFIC REGULATIONS

1. Airport Regulations

a. Use of Barra aerodrome is subject to standard Terms and Conditions of Use, which can be requested from the aerodrome.

2. Ground Movement

a. Marshalling is not available and aircraft have to self park.

3. CAT II/III Operations

Not applicable

4. Warnings

a. The landing and take-off areas may be considerably ridged by hard sand and contain pools of standing water. These are potential hazards to aircraft.

b. The bearing strength, braking action and contamination of the beach is unknown, variable and unpredictable.

c. Some downdraughts may be experienced at the western end of Runway 07/25 in strong wind from the west through south.

d. Pilots should be aware that cockling activities frequently take place between the runway markers and the tide-line. Both pedestrian and vehicular activity may occur and from the air may appear to infringe the runway thresholds during published aerodrome opening hours. This activity is closely monitored by FIS. A flashing white light on top of the Control Tower advises the local Cocklers that an aircraft movement is imminent and is in no way to be used as a navigational aid by aircrew.

5. Helicopter Operations

Not applicable

6. Use of Runways

a. Runway departure restriction for aircraft requiring the use of a licensed aerodrome:

i. Runways 07/25, 11/29 and 15/33. Except where an AOC holder has a less restrictive State authorised take-off minima, departures when the reported MET visibility is 800 m or less are not permitted.

7. Training

Not applicable

EGPR AD 2.21 — NOISE ABATEMENT PROCEDURES

Not applicable

EGPR AD 2.22 — FLIGHT PROCEDURES

Not applicable

EGPR AD 2.23 — ADDITIONAL INFORMATION

Not applicable

EGPR AD 2.24 — CHARTS RELATED TO THE AERODROME

Chart Name	Page
Aerodrome Chart - ICAO	AD 2-EGPR-2-1

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Mountain Air Country Club Pilot's Manual

Version 1.07
Mountain Air Pilots Association

John M. Cuckler, Editor

Educational Committee:
John Ransom, Eddie Franco, Doug Pilkington, Clark Jernigan, Lionel Kuhn

DISCLAIMER: This manual was prepared by voluntary members of MAPA without any compensation. While we have used our best efforts to make this a valuable informational tool, we are not responsible for any misstatements, errors or omissions in this manual. We make no representations that the advice given herein is accurate or adequate to prepare you to use the runway at Mountain Air. You should not rely on this manual as your sole source of instruction when planning to use the Mountain Air runway and ultimately must rely on your own skills and judgment, considering local weather, your aircraft and other factors.

Introduction

Landing your aircraft at Mountain Air is one of the most satisfying (and convenient!) experiences a pilot can experience. However, mountain flying is substantially different than the usual experience of landing at a conventional "flatland" field. This manual is meant to review the process for landing and take off in the mountain environment – in particular, at Mountain Air. A variety of exceptionally experienced pilots have contributed to this manual. The editor thanks them for their contributions. ***As pilot in command, you are responsible for the operation of your aircraft. These comments are for informational purposes only; please refer to above disclaimer.***

Summary

Runway 32 is the preferred runway for landing and runway 14 is the preferred runway for take off.

- Expect potentially significant changes in wind direction and velocity over the approach end of runway 32.
- A slightly higher approach angle is suggested to compensate for the “burble” at the end of runway 32, which may cause rapid loss of altitude during the last few hundred feet on approach.
- Maintain strict alignment with the centerline! Remember, runway width is only 50 feet, and the existence of hills and trees on either side of the end of runway 32 allows for little deviation from the centerline.
- Be prepared, and never hesitate to execute a go-around if the final approach is destabilized due to any factor.
- Always plan an alternate landing – AVL or TRI – if local weather conditions make landing at Mountain Air difficult or inadvisable.
- Due to the slope of the runway, landing on 14 and departures on 32, are rarely recommended.
- Consider carefully the effects of density altitude on the performance of your aircraft, both for landing and departure. Remember, density altitudes of over 6000 feet are not unusual during summer months!

Flight Planning

Mountain Air Country Club is located approximately 30 nm NNE of Asheville, North Carolina. The runway is located at N 35° 52’ 07.4, W 82° 20’ 30.5 on the 354 radial from the Sugarloaf (SUG -112.2) VOR at 29 nautical miles DME, and on the 085 radial from the Snowbird (SOT-108.8) VOR at 35 nautical miles DME.

The runway is day-VFR only, is 2875 x 50 feet, and is at 4400 feet MSL. No fuel is available at Mountain Air.

Figure 1. View of MACC approaching from the SW, 5500 MSL.

Asheville Approach is the controlling air space to the south and west of the field on 124.65, while Atlanta Center controls the airspace to the north and east on 125.15. The minimum vectoring altitude for aircraft approaching from the west and south is 7100 feet, while aircraft from the north and east have a minimum vectoring altitude of 8100 feet. Both KAVL and KTRI offer excellent alternate sites for landing, with excellent ILS approaches. Both fields are about one hour's drive from Mountain Air Country Club; rental cars are readily available. Never hesitate to divert to one of these airports if weather conditions at Mountain Air Country Club are not within your limits!

If you are INEXPERIENCED in flying in a mountain environment, please reserve your first landing at Mountain Air with winds less than 10 knots and wind direction within 10 degrees of either side of the runway centerline.

PRIOR TO LANDING AT 2NC0

Pre-flight should include the following:

- Watch the MAPA video for information and a detailed explanation of Landing Procedures for 2NC0.

- Check the MAPA web site at http://wx.mtnair.org for current weather data including wind direction and velocity, density altitude, and use the runway cameras to assess visibility and cloud cover. Weather is also available via cell phone at http://wx.mtnair.org/cellphone.htm.

- Contact a MAPA pilot. Many pilots are happy to discuss landing and take-off procedures with pilots who are new to 2NC0. There are also some who are willing to fly in with pilots who are new to the airport and/or mountain flying. The editor may be contacted for further information at Cuckler@Charter.net or at 205-936-9119 (cell phone).

- Reference your Pilot Operating Handbook (POH) to familiarize yourself with the appropriate operating procedures for your aircraft for short field landings, short field take-offs, downwind landings, downwind takeoffs, balked landings ("go-arounds"), crosswind landings and airspeed and descent rates for landing.

- Pay extra attention to calculating weight and balance. Remember, density altitudes during summer months may exceed 6000 feet or higher – a careful review of the POH for your aircraft should allow calculation of expected landing distance.

- It is strongly recommended that the pilot practice short-field landings, flight at minimum controllable airspeed and balked landings before attempting to land at 2NC0. Practice slow flight, stalls, and maneuvering and balked landings at 5000 MSL to simulate the landing environment.

Figure 2. View of runway prior to initial turn to downwind leg 5500 MSL.

- Practice downwind take-offs and landings with at least 10 knots of tail wind – the more familiar you are with the procedures, the calmer you will stay under all conditions (consult your POH for the amount of runway your aircraft requires for these types of take-offs and landings, and consider the effect of density altitude and aircraft weight on performance in these conditions).

- Familiarize yourself with procedures for handling wind shear. It is not unusual to encounter wind shear or downdrafts on short final approach to runway 32.

- Pay close attention to wind direction. It is predominantly WNW, which sets up well for landing runway 32. However, winds out of the SSE can create hazardous landing conditions such as wind shear, turbulence, and mountain wave. Many pilots at Mountain Air will not consider landing with SSE winds, and will simply divert to AVL or TRI.

- Look at the sectional for this area to familiarize your self with the terrain, including mountain heights and landmarks. Within 10 NM there are multiple mountains that are 1500 feet or higher than the runway altitude at Mountain Air.

- A recommended ceiling of 2000 feet AGL or higher is suggested prior to landing at Mountain Air on you first fly-in visit.

- Be sure to make the appropriate calculations to account for density altitude for landings, including balked landings, as this will affect the aircraft's performance. Density altitude is also an issue for take-off on warm summer days.

NOTE: Plans to fly in or out of 2NC0 should include contingencies for all types of emergencies, engine failure, and/or loss of power in particular.

The Approach

The CTAF for Mountain Air is 122.725. Conventional transmissions should be made starting at 10 miles out, stating direction of approach and altitude. The Mountain Air Golf Shop monitors this frequency, and can provide traffic advisories and wind conditions (terrain may prevent the Golf Shop from hearing your call, depending on altitude); however, the anemometer and wind direction sensor at the end of runway 14 may not accurately reflect conditions at the end of runway 32! An automated ASOS can be activated by 5 discrete clicks of the microphone button on 122.725.

NOTE: If significant gusting conditions exist, the pilot is strongly encouraged to consider diverting to AVL or TRI.

Radio Position Reports on Mountain Air Unicom 122.725

1. Outside of 5 NM state altitude, bearing and distance from Mountain Air.
2. Approaching downwind
3. Established on downwind
4. Turning onto base including gear down and locked call
5. Turning final
6. Clear of the runway

It is extremely important that you make all position reports.

The call on final and clear of the runway allows the Golf Shop to activate warning lights around the golf course for protection of those on the ground when you about to land and to turn off the lights when you are clear of the runway!

The Mountain Air runway has a 48-foot elevation change from the TDZE of runway 32 to the parking area. The up-sloping runway will be appreciated as you decelerate after touchdown, as your ground speed will be higher than landing at lower altitudes. It is for this reason that landing on runway 32 is highly preferred over landing on runway 14. It is not unusual for wind direction to differ by 180° at opposite ends of the runway! Thus, prior to landing on runway 32 strong winds may result in the pilot sensing a wind direction change or shear on final approach prior to the numbers. A slightly steeper approach is suggested to compensate for the "burble" typically present at the end of the runway.

The pattern altitude for the approach is 5500 feet, with a right base to final on runway 32. On the downwind leg, the end of the runway will be temporarily obscured by the hill on the northeast side of 32. There is a valley 1800 feet below the end of runway 32, with a highway (Rt. 197 or the "Pensacola Highway") running through it which can serve as a useful visual clue to the turn to base leg. Follow the valley to the west – the Black Mountain range (highest peak Mount Mitchell, 6684') will be about 5 miles off your left wing. The end of runway 32 will soon come into sight, initially with the wind sock located at the end of the runway. A gentle turn to the final leg and commencement of the descent will be facilitated by the VSL located on the left side of the runway. The VSL will show a flashing white light when above a 3.5^{o} degree glide slope, a steady white light on glide slope, and a steady red light when below glide slope.

Figure 3. Right downwind view of runway 32 from 1 ¼ miles, ~5500 MSL.

The new Mountain Air pilot is encouraged to perform a "low fly-by" at 5000 MSL on the first approach, in order to become familiar with the visual clues and wind conditions over the runway. As the pilot rolls out on final from the right base turn, the "sight picture" is unlike that customarily associated with approaches to conventional air fields. This is due to the sharp drop off at the end of the runway (1800 feet at the end of runway 32), the hills on either side of the approach end, and the up sloping runway. These factors will combine to produce the optical illusion of being too steep an approach path – but a steeper approach is necessary because of the potential for a down draft and/or crosswind at the end of the runway.

If this is your first time at Mountain Air it is suggested that you fly down the runway at an altitude of 5000' MSL to look over the environment and judge wind conditions.

LANDING AT 2NC0

- **Runway 32 is the recommended runway for landings.** Pilots, ***especially*** pilots new to the airport, are discouraged from landing on Runway 14. SE winds create extra hazards which combined with the downhill slope of Runway 14 can make landings exceptionally difficult.

- Runway 32 is the recommended runway for two main reasons: (1) the uphill slope of the runway extends its functional length, and (2) there are fewer obstructions at the arrival end of the runway.

- It is best to arrive to land at Mountain Air from the west as Mount Mitchell is to the south-south-east of Runway 32.

- Arrival Traffic for Runway 32 must fly a **right pattern at 5500 feet MSL**. Trim aircraft for level flight and on speed.

- At the 90 degree position attempt to be at 5000 feet MSL on speed and aircraft trimmed for landing.

- As mentioned in Pre-Flight section, consult your POH with regard to the expected landing distance for the density altitude and aircraft weight. Once you have made the commitment to land and have "made" the runway, you should put the aircraft on the ground as soon as possible. Do not be concerned with making a "pretty" landing or "greasing" it on the runway as that tends to make you high and fast and will result in a float down the runway. There are no style points!

- Focus on flying the proper pattern paying close attention to air speed and descent rates for your particular aircraft. A good rule of thumb is to turn final at approximately 200 feet above touch-down ½ mile on final, power, airspeed, and descent rate should all be stabilized.

- Consider flying a steeper approach to compensate for the “burble” downdraft typically present at the end of the runway.

- Pilots flying in just prior to and at sunset should be cautious as the sun can severely limit visibility when making the turn to base and onto final.

- You should prepare for a Balked Landing until you are positive that the aircraft is stabilized and that you have the runway made. Only at that time do you make the commitment to land!

- **If you have not touched down in the first 1000 feet, under no circumstances should you try to land. *You <u>must</u> Go Around!***

Figure 5. Short final to 32, a little higher than normal to allow for wind shear at the end of the runway. The building to the left of the runway is a good visual marker for the touch down point.

Remember, leave your ego behind. Asheville is only 50 minutes away by car – if it is not safe to land, don't!

NOTE: Remember, Ground Speed, not Air Speed determines runway usage on a Short Field Landing.

Landing "on-the-numbers" is not recommended at Mountain Air – there is not displaced threshold to forgive a short landing!

The VSL will show a flashing white sequence when above the 3.5^{o} glideslope; steady white indicates on glideslope, while steady red indicates below glideslope. Many pilots prefer a slightly higher than normal glideslope to compensate for the expected "burble" or wind shear at the end of the runway

Given the higher groundspeed over the numbers resulting from the altitude and density altitude effects, **touch down before the 2000' marker is *essential* – execute a go-around if you have not touched down prior to the 2000 foot marker!** Remember, although your airspeed over the numbers will read the same (or perhaps slightly higher) as at your home field, your ground speed at landing will be higher, which will require a little more aggressive braking after touchdown.

NOTE: Do not over apply braking pressure and lock up your brakes. This may result in a blown tire.

Most aircraft will want to use full flaps on landing, in order to minimize ground speed at touchdown. However, on touchdown, raising the flaps as soon as practicable will increase the load on the main gear tires, thus increasing braking efficiency. Consider the Mountain Air landing a short-field technique! The pilot new to Mountain Air is encouraged to practice such techniques at his or her home field; if possible and safe, consider practicing downwind landings and take off to simulate some of the varied wind conditions which may be encountered at Mountain Air.

NOTE: If it is your habit not to touch anything in the cockpit until clear of the runway, do not change your habit pattern at Mountain Air!

Parking

In general, from 8 am to 5 pm someone from the Golf Shop will be available to assist you with tie down in the parking area. Please call Mountain Air Unicom on 122.725 when you are clear of the runway, so that the warning lights can be turned off and golfers can resume their play! Tie-down ropes are provided on the parking ramp. If you wish, you may want to bring a pair of wheel chocks for additional security of your aircraft.

Departure

TAKE-OFFS AT 2NC0

- As mentioned in Pre-Flight section, all take-offs should be conducted under Short-Field Take-Off guidelines. Consult your POH for the effects of weight and density altitude on expected take off roll distance. In addition, consider the effects of a tailwind (if any) on take off roll.

- You are strongly advised to use Runway 14 for Take-Offs for two main reasons: (1) the downhill slope of the runway is of help in achieving proper air speed for rotation, and (2) there are fewer obstructions at the departure end.

- **For piston powered aircraft, remember to lean the mixture to maximum power setting, as the density altitude will significantly affect engine power.**

- Departures from runway 32 must take extreme care to not deviate from the center line of the runway. To the right is aircraft parking and to the left is a large hill – very little margin for error.

- Most departing traffic will fly a left pattern upon departure from runway 32.

- Before taxi, monitor 122.725 for incoming traffic. Five clicks of the microphone button (approximately 1 second intervals) will activate the ASOS system for barometric pressure, wind, and temperature conditions. Call Mountain Air Unicom on 122.725 for traffic advisories, and announce intentions when taking the active runway for departure.

- Call Mountain Air Unicom declaring you are taking off from Mountain Air and which runway you are departing.

- **Emergency Landings:**
    - Departures from runway 14. In the valley, there is the Pensacola Road as well as some fields that may be suitable in an emergency. **Be aware of power lines crossing the road.**
    - Departures from runway 32: Straight ahead and slightly to the south there are tobacco fields and rural roads that may be used in an emergency.

Useful Phone Numbers

Mountain Air Golf Shop: 828-682-4600

The Golf Shop Staff can offer observations regarding visibility and wind conditions. Arriving pilots are requested to inform the Golf Shop of expected arrival time, and first time pilots should provide the landing authorization number.

AVL Tower: 828-684-7259

The Asheville Tower is open from 6:30 am until 11 pm daily. Tower controllers are extremely helpful with regard to local weather and information on the arrival of aircraft into Mountain Air.

Contributors to this Manual

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Eddie Franco, H. Evan Zeiger, Ken Durkee, Howell Hammond, Beverly Hammond, John Ransom and Clark Jernigan