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![Important Notes]

Navigational Database
If you have manually updated any previous feelThere database, before the Citation X installation, please make sure to backup your navigational database (fs9/feelthere/nd/nd.mdb or fsx/feelthere/nd/nd.mdb) as the installer will install the 0610 Airaccycle.

Windows Vista Users
If Windows Vista crashes to desktop when you select the aircraft, please follow the procedure below. Select the directory where your FS is (default : Program files\microsoft games\), right-click and select the SECURITY tab. Click on your username (not on Administrator) and then on Edit. Allow full rights and click OK to exit.

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WELCOME ABOARD!

Installation
Installation is automatic. Insert the CD (or double-click on the downloaded file) and Autorun will take you to the start-up screen. If Autorun is disabled on your system, open Windows Explorer or My Computer, browse to your CD Rom drive and double click “WSetup.exe”.

Once setup is running, follow the on-screen prompts and ensure that the installation points directly to the Microsoft Flight Simulator folder (usually C:\Program Files\Microsoft Games\FlightSimulator...).

4. Select the Aircraft Model of your choice.
5. Select the livery of your choice

2. Engines Start Up
Use CTRL+E to start the engines.
To start up engines from a Cold & Dark Cockpit, please refer to the next pages for complete procedures.

2D & 3D Cockpits
2D Panel Views
The following 2D panel views are available using the following key combinations:
SHIFT+1 = Main Panel
SHIFT+2 = Systems Panel
SHIFT+3 = FMC
SHIFT+4 = Pedestal
SHIFT+5 = PFD1
SHIFT+6 = MFD1
SHIFT+7 = Eicas

3D Virtual Cockpit Views
Display the different Cockpit views using the normal Flight Simulator keystroke, “S” under FS 2004 and “A” under FS X. All controls found on the main 2D panels are functional within the virtual cockpit. Mouse clicking on the FMC opens the 2D FMC in a separate window.

Mouse clicking on some specific screens open a 2D window : FMS, EADI...

Cabin & Doors
The Cabin
Under Flight Simulator 2004, to move and walk inside the cabin, we have included a utility on the CD-Rom (directory : EXTRA ... this utility is not needed under Flight Simulator X as you can access cabin view through a right-click sub-menu option.

Virtual Cockpit
• Wheel forward moves you forward and wheel backward moves you back.
• CTRL+forward moves right and CTRL + backward moves left.
• SHIFT+forward moves up and SHIFT + backward moves down.
• CTRL+SHIFT+forward zooms out and CTRL+SHIFT+backward zooms in.

While in Pan Mode (mouse wheel pressed and held down) inside the Virtual Cockpit :
• Moving the mouse to the left rotates the view to the left.
• Moving the mouse to the right rotates the view to the right.
• Moving the mouse forward, away from the user, rotates the view up.
• Moving the mouse backward, towards the user, rotates the view down.

Please refer to the manual for other features.

The Doors
To open the external doors :
SHIFT + E for the passengers door.
SHIFT + E + 2 for the cargo door (from external view).

Your Flight Attendant
Wilco Publishing’s Cessna Citation X, as the Legacy from the same collection, offers a charming stewardess who welcomes you. In flight, she takes care of her daily duties:

1. Door opened, parking brakes ON, your flight attendant welcomes you.
2. Door closed and airspeed below 20 knots, she works in the kitchen area.
3. Closed door, taxing and take-off, your flight attendant is seated just as in actual operation. She stays seated when your are below 10000 ft and airspeed higher than 20 Knots.
4. Above 10.000 feet, your flight attendant takes care of her day-to-day duties.

Parking Position
While parked (parking brakes ON and engines OFF), engine covers, safety cones and gear chokes are added around the aircraft and pitot covers are placed where they normally are.

Citation X Setup Utility
The Citation X setup utility is located into your Windows Start menu. To access it, press START button of your Windows -> All programs -> Wilco Publishing Citation X.

Any change in the aircraft configuration has to be done outside of Microsoft Flight Simulator. If you change the configuration while the aircraft is being used in Flight Simulator, you need to unload the Citation X in FS (by loading another aircraft) and reload it to have the changes taken into account.

Weather Radar
The latest FSUIPC (free or payware version) must be installed prior to use the Weather Radar. Link : http://www.schiratti.com/dowson.html.

The weather radar included is based on the real Collins WXR2100. The most important is to locate hazardous weather areas, and avoid them. This system is able to show the pilot where dense precipitation is located and turbulence is expected.

In an aviation based weather radar, only water and wet hail produces reflections. Only the clouds located at the aircraft level can be displayed.

Colors code :
Green => Light precipitations
Yellow => Moderate precipitations
Red => Severe precipitations

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WILCO PUBLISHING WEBSITE :
http://www.wilcopub.com
YOU WILL FIND INFORMATION, NEWS, AND FREQUENTLY ASKED QUESTIONS.

Extra (for CD-Rom version only)
We have included a full set of files and videos on your CD-Rom. Use your Windows Explorer to locate them into the EXTRA WILCO directory.

To fully enjoy the 3D Virtual Cockpit, the Track IR lets you control your field of view in flight simulators by simply looking around by few degrees.

Track IR is available from Wilco Publishing http://www.wilcopub.com.

Quick Start
1. To Pilot the Citation X
   1. Start Flight Simulator
   2. From the menus, select AIRCRAFT
   3. Choose Cessna - feelThere/Wilco
   4. Select the Aircraft Model of your choice.
   5. Select the livery of your choice

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Author's Note

What This Manual Is

This manual is written for the average Flight Sim pilot, who perhaps is taking first steps into the realm of "serious" simming. This Citation X is not a default craft by any means. She is a complex simulation that will take some effort to master. I've tried to provide the reader with the tools necessary to accomplish a flight from cold and dark to shutdown, without going into the esoterica that may be found in other manuals. While that information may be good to know, and provides the user with a more complete and "real world" background on the X, it is superfluous to the fundamental piloting of the sim. My effort is geared towards getting as many of you up and flying as soon as possible, while keeping the effort required doing so at a level commensurate with that which most of you are willing to make.

What This Manual Is Not

This manual is not a treatise of the Citation X and her systems. We are not delving into fuel/hydraulic pressures, voltages and the like. This information is available to those who are interested in "getting greasy" with this bird from a variety of sources. I'll leave it up to your ingenuity to ferret out this information.

What I Am Not

I am not any kind of pilot. I am not a teacher. I hold no aviation license whatsoever.

What I Am

I am, basically, you. I'm a sim pilot. I love this hobby. As I've been working at it for a while, I've acquired a basic set of skills that through practice I am able to apply to most simulated birds and situations. It is the challenge of acquiring new birds and mastering them that I find attractive. It is also picking up old favorites, perhaps ones that have been over my head in years past, and coming to realize they were not so difficult after all. Again, this is my draw to our hobby. Yours may be different.

Either way, I've written this manual for those who wish to progress in their development and enjoyment of our hobby. This manual is far from perfect. I am certain there are errors or mis-statements. I am also sure that I'll hear about every one of them. That's fine, as it is through such criticism that we grow and hone our skills.

I hope you are able to get something from this manual, at the very least a bit of self-satisfaction at having mastered (perhaps "mastered" is too strong. How about "practiced," or "practiced?"") your Citation X. After all, this is supposed to be fun.

Three Green!

Chip Barber
Introduction
Greetings Pilot, and congratulations on your selection to fly the Citation X! Your entrance into this select group of flyers marks you as an aviation professional of exceptional prowess. Now, before you take the flight deck, let’s go over a few things you’ll need to know, without which you’ll be back to flying the 152’s before you can say “Where’s the choke?”

Being the rookie on the team, you’ve inherited the first flight of the day. Not only are you getting up with the worms, you’re presented with a cold and dark flight deck. At least you’re not rock bottom in the pecking order; your First Officer is outside in the rain doing the preflight walk around.

Flying Your Bird
Let’s take it from the top. On the side panel, (SHIFT 2) find the DC POWER panel.

Click on BATT 1 & 2 (1) and then the EICAS switch (3) located under AVIONICS. Sort of livens up the panel. Of course, this light show comes at a price, and if you don’t give your bird an alternate power source, it won’t be too long until you’re looking for those jumper cables.

Just to the right of the BATT 2 switch, you’ll find the EXT PWR button (2). If it is lit with “AVAIL”, push it. The green “ON” will light, and you’re attached to the GPU and have ample time to complete your preflight.

Leave BATT 1 & 2 on. If External Power is unavailable, put down the magazine and get busy. It’s time to start the APU.

Let’s take a look, and see where the switches are:

1. Master Switch
2. Test
3. Start (click upwards twice)
4. Generator Enable
5. APU Bleed Air
6. APU Disengage

The Auxiliary Power Unit is a small gas powered turbine engine in the rear of your bird, responsible for providing you with bleed air for engine start, initial air conditioning and cabin pressurization. With the upper panel still open, look to the right side to the APU SYSTEM panel. Flip up the MASTER switch (1), and press the TEST button (2). You should hear the warning tone, the APU FIRE PUSH, APU RELAY ENGAGED and APU FAIL lights on the panel will glow, and you should see APU FIRE (red) and FIRE BOTTLE LOW APU on the EICAS. All things that are good to know when your APU decides to go south while you’re going north.

Our test done, ensure the APU DISENGAGE (6) switch is in the NORMAL position, and click the APU START (3) switch upwards twice. Nothing like the sound of a turbine spooling up and igniting. On the center EICAS, push the RTN button, and then the ECAS SYSTEM button. Finally, press the APU button, and monitor the startup of your APU. Confirm the numbers (Max RPM and EGT, listed on the face of the panel, and IRPM and EGT on the EICAS), and DC Volts. Once the unit has settled in (by the book, you should wait at least one minute before engaging the bleed air. This prevents jet exhaust from entering the cabin, ruining the day of all aboard), the READY TO LOAD light on top of the panel will light, and you’re ready to make your bird self-sustaining. To do this, click upwards the BLEED AIR MAX COOL (5). The BLEED VAL OPEN light ignites. Now, enable the GPU generator by moving the GENERATOR (4) upwards to the ON position. Under the DC POWER panel, press the EXT PWR button. The ON light will extinguish, and you’re on your own. The APU AMPS should show just under 100.

Our umbilical cut, we’re now going to fire our engines. Be certain you’ve enabled the APU Bleed switch (5), otherwise unless you’re facing into a very stiff wind, you’ve got nothing to turn your turbine blades for startup. Follow the Before and Pre Start Checklist. Note your duct pressure is about 30 psi. As you see, the APU is providing air and power for the start:

Ensure the PAC Isolation Valve (2) is closed.

Engage the RH Ignition switch (4), then press the RH Engine Start button (5). The start button will light, and the sequence proceeds automatically.
For Microsoft Flight Simulator use only. Not for use in real aviation.

Open the engine bleeds (1) to HP/LP, and we're ready to enter our flight and numbers into the FMC.

You did remember to turn on the Beacon before starting your engines, right?

Now, let's talk a little bit about the FMC. Sure, you can hand fly the X. As a matter of fact, she's a kitten under your hands. She purrs, handles playfully and has some claws and teeth when necessary. But, let's face it. You can hand fly the 172, and use the GPS to find your way. Heck, you can do that with the X. But honestly, did you pick up this bird just to have a thoroughbred to fly around just like its little brother 172? I think not.

No, this bird is a pro's bird. Like a commercial liner, you've got all you'll need right at hand to navigate all over the globe. The FMC is the heart of this aircraft. With it you'll set origin/destination, waypoints, runways, temperature, weight, fuel load... All important information that allows your X to figure out optimum settings for your trip. It will permit you to enter crossing restrictions of altitude and/or speed, will tell you more than you'd care to know about your TOD and TOD (Top Of Climb/Top Of Descent), and a host of other information that, while not critical to the Sim Pilot, certainly adds to our immersion in the sim, and general appreciation of the "Real World" flyboys/gals who make a living in the X.

Sounds intimidating and complicated, doesn't it? Well, it isn't. Ok, it is. A little bit. But stick with me, and we'll get you up to speed and to the point where you'll be doing your Preflight data entry without much thought. And really, the point behind these "SuperSims" is learning to take your SimPilot experience beyond the default birds.

We'll take a quick peek at the ATIS for our weather update and likely departure runway, perhaps ensure we've gotten the SID charts close to hand, and address our navigation. Today we're doing a relocation flight, so it'll be just you and your (soggy) copilot. We'll be flying from Long Island's Islip-McArthur airport (KISP) to Albany International (KALB). It is a short hop of about 130 miles. I've used the default flight planner, and augmented it with a few manually entered waypoints. Our plan looks like this: KISP FR CMK PWL PFH DELMY KALB. Nothing fancy, no SID or STAR. Our anticipated cruise will be at FL190. I happen to like the default "Building Storms" weather, but the choice is yours.

Now, before we do anything else, we'd best tell the FMC where we happen to be sitting. Getting from point A to point D, while hitting all the intervening letters along the way, is difficult enough as it is. It is magnitudes more challenging when one isn't quite certain where Point A is. So, let's align the IRS and give the FMC a starting point, or this will be a very quick circle to land.

Shift 4 opens the pedestal, and second group from the bottom you will find the IRS instruments. Click them both to ALIGN, and after a short time, the display will announce NAV READY. Now, move the switch to NAV, and we've told the FMC where we are.

Open the FMC (SHIFT 3). I will assume a certain level of familiarity with this gauge. But, let's review some basics.

The 4 keys on the left side of the FMC we'll call 1L, 2L, 3L and 4L. On the right side, we'll call them 1R, 2R, 3R, and 4R. The scratchpad is the area at the bottom of the FMC information window, and is where we'll use the keypads to enter information. As we click on letters/numbers, we'll see them appear there. If, like me, you occasionally enter the wrong number/letter, use the CLR key. A whole line may be removed by pressing and holding CLR. The DEL key is used for deleting entries with the L/R keys.

Using 4R, press POS INIT. Load your current position with 2R, KISP. You are presented with FLT PLAN, so press 4R again, and open the
The ACTIVE FLT PLAN page now opens automatically, and as you see, RW06 is entered, along with speed and altitude entries. The speed/altitude values are automatically calculated for you.

On page 5 we’ll enter our fuel with LSK 2. Using the F5 FUEL AND PAYLOAD screen, I have placed 50% in each wing and center tank, and according to the FMC, my gauge is reading 6500. Good enough for me, and I enter it with the number pad on the FMC, and press 2L: I figure 55 lbs. of cargo, and 2 passengers @ 245 lbs. I did this by entering 2/245 (standard is a weight of 170, but for yours truly, 245 is much closer to reality!) and pressing 1R. 4R now brings the PERF DATA pages. There is nothing to alter here for our basic flight. I get the message CHECK RESERVE FUEL, which I Ignore, and note the left MFD where MSG is flashing in yellow, drawing attention to the FMC scratchpad. A press of R4 now brings up the 4 PERF DATA screens.

We’ll bypass these, and press R4 to access the DEPARTURE page. Here we have 2 pages of all available departure runways for KISP. Today, we’ll be assigned runway 06 (I’ve flown from here before), and I press L2 to enter it. You are now presented with the ability to ACTIVATE your flight plan, with R4.

Flight plan is in; now let’s continue by pressing 4R for PERF INIT. You’ll see 5 pages, reachable with the NEXT button. Each page has entries that are variable. For our purpose, we’ll just deal with pages 4 and 5. Note on page 4, there is an entry at L4 entities INIT CRZ ALT. The default entry is OPTIMUM. In our case, we’ll change that to our flight plan level of 19,000. In the event that ATC messes with our plan and assigns us an alternate flight level, replace FL190 with the new assigned FL.

With our flight and performance entries now loaded, we’ll close the FMC, set our V speeds and get our ATC clearances.

At the time of the writing of this manual, our V speeds are not calculated for us, and we’ll have to consult our chart for the proper values. Use the chart below.

*For use in an emergency landing. Maximum design landing weight is 31,800 lbs. Landing at weights above 30,000 lbs may exceed Landing Brake Energy limits, and ruin an otherwise lovely flight.

V1: Decision speed. If you’re going to abort takeoff, do it before this speed.
VR: Rotation speed. The copilot will alert you of this speed, at which time you’ll begin to pull back on the stick.
V2: Minimum single engine climb out speed.
VREF: Touchdown speed.
VAPP: Approach speed.

SPEEDS IN KIAS

<table>
<thead>
<tr>
<th>Weight Range/Pounds</th>
<th>23,000-27,000</th>
<th>27,001-30,000</th>
<th>30,001-33,000</th>
<th>33,001 - 35,700</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1</td>
<td>114</td>
<td>116</td>
<td>125</td>
<td>133</td>
</tr>
<tr>
<td>VR</td>
<td>116</td>
<td>119</td>
<td>128</td>
<td>134</td>
</tr>
<tr>
<td>V2</td>
<td>127</td>
<td>129</td>
<td>132</td>
<td>137</td>
</tr>
<tr>
<td>RWY Length (Feet min)</td>
<td>4500</td>
<td>5000</td>
<td>6000</td>
<td>7500</td>
</tr>
<tr>
<td>VREF (Full Flaps)</td>
<td>118</td>
<td>126</td>
<td>*136</td>
<td>*142</td>
</tr>
<tr>
<td>VAPP</td>
<td>124</td>
<td>131</td>
<td>*142</td>
<td>*147</td>
</tr>
</tbody>
</table>

For you purists, you may certainly enter your route manually. As we are addressing our fellow sim pilots who wish to fly this bird correctly but expeditiously, we’ll leave that description alone. You manual-enter types know how to do this already.

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For this flight, we've been cleared to an initial altitude of 8,000 feet. Let's enter this into the autopilot. First, open the pedestal. The next instrument bay below the throttles you'll find the knobs used to enter CRS, HDG and ALT SEL. Placing the cursor on either side of these knobs enables you to change the values, up or down. Again, the right mouse click increases the values in larger degrees than the left. You'll also see the PUSH SYNC and PUSH DIR on the center of the Course and Heading knobs. This is a nifty little feature that will set the course or heading to your current orientation. It makes it quite easy to set your runway heading once you're ready to take off by just pressing the center of the Heading knob.

Now, check the MFD. The top of the altitude speed tape shows 000. This is the altitude currently entered into the autopilot. As you increase the value with the ALT SEL knob, here is where you'll see your entry. As our initial clearance is 8,000 feet, we'll put the mouse cursor over the right side of the ALT SEL knob (you should see the little + sign), and click the Right mouse button 8 times.

For future reference, you'll also note below the altitude tape is our altimeter reading, and to the left of that is our decision height value, also known as Minimums. This number is adjustable by the knob on the lower left of the pilot's MFD, and odd enough is entitled "Minimums". Go figure. Minimums refer to the altitude at which the pilot must be able to see the runway and continue with the landing or go around if he cannot. Unless of course his bird is outfitted with CAT II or III Autoland which, unfortunately, we are not.

With our altitude entered, we'll taxi to runway 6, going through our checklists as we go.

In the event that you have managed to set your aircraft on a wing during taxi because you had no idea you were doing 60 kts or so, take a look at the lower left of ... but your Total Air Speed ... Wait for it... Groundspeed! Ignore the speed tape for now, and rely on this little fellow.

Once there and we are cleared, we'll enter the active, align with the centerline, and apply our parking brakes. Now we'll use the HDG SYNC to align our autopilot heading with the runway heading, and turn on the TCAS. The management at any airport will take issue with your turning on your TCAS radar and frying anyone in front of your aircraft with the radar energy emitted from your bird. The same thing applies to weather radar, too. Seriously poor form, so do refrain until you're ready to go.

All lined up? Let's just check to ensure we're really ready to cut our X loose. Be certain you've adjusted the trim, and that you're at flaps 5.

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Here our rate of climb is 4,400 feet/minute. Getting a little steep, and it won't be long until you hear retching from the cabin, so I'll put her nose down a little.

For our take off roll, we'll push those babies to the firewall. The engine FADEC's will monitor the engine performance, and adjust automatically to prevent damage.

As we accelerate down the runway, recall your V speeds, and ease back the yoke. The idea here is to keep your climb angle below 15 degrees or so, so that your airspeed continues to increase. Once you have a positive rate of climb, retract your landing gear. At 1,500 feet, bring in the flaps/slats. Now follow the bars on your MFD, as they will keep you on an appropriate angle for acceleration. There is nothing worse than stalling with not a lot of space between you and terra firma, so stay alert to a decrease of airspeed during your climb out.

Above 2,500, you will also now reduce your thrust from the firewall (MAX) to climb (CLB). If you look at the EICAS, you’ll notice on takeoff, the little green T/O. This will change to CLB when you back off the throttle to the next detent. For the real pilot, this is actually a “stop” in the throttle, and it sort of clicks in.

I'm given instructions to turn left to 280 and resume own navigation. No problem. On the pedestal, I left click and watch on the MFD as the heading bug goes to the left. I'll stop it on heading 280. As the autopilot is engaged and heading is enabled, the bird follows my command and turns left and will straighten out to the heading of 280. I've also got the altitude (ALT) enabled (the little light glows next to the title of the button - can’t miss it), so we'll level off at 8,000. Keep an eye on your airspeed and your rate of climb.

Now, before we take off, let's spend a moment on the throttles. In your X, the throttles are something of a hybrid between Boeing and Airbus. The first thing you'll notice is that like Airbus, there are detents: CRU, CLB, TO/MC, and MAX. Like Boeing, below CRU, there is an area of free play. Here you will manipulate the throttles to obtain your taxi speed, and your climb, cruise and descent speeds. Cool, huh?

For Microsoft Flight Simulator use only. Not for use in real aviation.
Now that we’re set for the moment, now is a good time to check all our gauges. Pay particular attention for any disparity between the engine numbers. This is where you may find early indications of malfunctions.

Let’s have a peek at the way my panel looks, now that we’re established in cruise, shall we?

As you see, we are just a hair above our assigned altitude, and the aircraft is compensating with a slow descent. Our speed is close to what we’ve dialed in. The Middle MFD shows us just before LDT1, and we’re about to turn to our next waypoint. The pilot’s MFD indicates LNAV (Lateral Navigation), so we know the turn will be done for us. The autopilot panel is set just how we want it. The throttles are in the CRU detent.

With our numbers looking good, let’s go back to the FMC, and open the Landing page. You’ll find it by pressing FPL and then L4, ARRIVAL. It won’t be long until ATC...when you’ve got your runway and have entered it, click on R4, ACTIVATE. Now, the FMC knows where you wish to go, and will adjust your speed/altitude numbers accordingly.

Here we’ve entered the ILS Approach to Runway 01, with no STAR, and we’re ready to tell the FMC that we really, really mean it by hitting R4 to ACTIVATE.

As ATC has just informed me to turn right to heading 250, using the Heading knob on the pedestal I’ve turned the heading bug on the Pilot’s MFD to 250, and on the autopilot panel, hit HDG. I can’t wait to see why they’ve turned me away from my destination and doing donuts in the air, but that’s why we carry extra gas in the tanks. Note the NAV light extinguishes and your bird dutifully turns to heading 250. You will often find that ATC, particularly the default ATC, has an annoying habit of tossing your flightplan in favor of their vectors to final. These are often whimsical directions that are seemingly designed for you to burn as much avgas as possible. I’ve been thinking someone’s got a ton of stock holdings in that business. Don’t panic, just do what they tell you to do, otherwise they’ll cancel your IFR flight and you’ll have to change your squawk and find your own way to your destination.
Now, this is really important! Change your navigation source from FMS to NAV! If you fail to do this, you'll be waving to the nice folks at KALB as you fly by, wondering why your navigation failed to pick up the localizer and glide slope. I've also changed the knobs to VOR 1 & 2.

Ok, we're below 10,000 feet. A couple of things to recall. We need to turn on the landing lights (having remembered to turn them off when climbing above 10K. I often forget.), and we must ensure our speed remains below 250.

You know you're getting close when ATC directs you to contact Approach! Normally, Approach will turn you onto your base leg of the approach, and then downwind. ... slope (from below, but you already knew that). You will eventually see your pilot MFD localizer and glide slope appear.

This is your typical ATC instruction for turning on final. At this point, you should be quite comfortable adjusting your heading (knob on pedestal, right?) and altitude as per request by ATC.

I can't stress this point enough. Watch your speed! Once you've dialed in your new altitude (2,500), click on the VS button on your AP panel, then click on the NOSE DN portion of the AP panel wheel. I find about 1000 feet/minute works. But, now with your nose down, your X will begin to accelerate. Do not try to play catch up with your airspeed! Stay on top, use small adjustments to your throttle, and maintain your airspeed.

ATC turned me to final about 21 miles out. Once established on the assigned downwind heading, the localizer and glide slope indicators come alive on your MFD.

Glide slope (GS) is to the left of the altitude tape, and the localizer is just above the 200 decision height indicator. Green arrows. These will move in relation to your orientation to the centerline of the runway (localizer) and your approach (from below) to the glide slope. You can watch as your bird flies towards the arrows.

Once your localizer arrow begins to move (comes “alive”), press the APP (approach) button on the autopilot panel.
The triangle is beginning to creep towards center, indicating our approach to the centerline of the runway. Time to press APP.

You should now swing onto the centerline heading. Now would be a good time to begin backing off on the throttles. Follow the speed settings for deployment of the flaps.

**Flaps Position**

<table>
<thead>
<tr>
<th>WEIGHT (LBS)</th>
<th>FULL</th>
<th>15°</th>
<th>5°</th>
<th>UP</th>
</tr>
</thead>
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For maneuvering prior to approach, minimum airspeed should be maintained to provide an adequate safety margin above stall:

- **Clean**
  - VREF + 30
- **Flaps 15°**
  - VREF + 20
- **Full**
  - VREF + 10

It’s called drag, and as usual, you’ve got to monitor your speed closely. You can easily find yourself digging a hole short of the runway, or flying right through the glide slope and find yourself calling a missed approach. The idea here is to cross the threshold of the runway at just about your landing speed.

Once your wheels touch down, pull the throttles to idle, and deploy your reversers. You’ve used the registered version of FSUIPC to assign a button on my yoke. Pressed, it deploys the reversers. Released, it stows them. Nothing like being a child with toys, I always say.

Once below 60 kts, disable the reversers and use your brakes to slow down enough for you to turn off the runway. You will be directed by ATC to contact Ground. It is always a good idea, at this point, to turn off your landing lights and strobes. Nothing worse than a bunch of ground personnel temporarily blinded by your landing lights! Makes them cranky and very unlikely to service your bird at top speed and efficiency.

Ok, you’re at the gate. We made it! Now it’s a simple matter of following the shutdown checklist, and go grab something cold and wet.

**Systems**

**Auxiliary Power Unit (APU)**

In order to fire up the Citation X, you’ve got a couple of options. Ground power may be applied, or you may engage the APU (push starting is not recommended). The X uses a tail mounted Garrett APU which provides bleed air and 28.5 volts for ground starts and in flight use. Restricted to 31,000 feet, the APU will burn somewhere between 120 to 150 pounds of fuel per hour of operation.

In addition to its engine start responsibilities, the APU will also provide environmental control, including pressurization and air conditioning. The pressurization system is capable of holding the cabin altitude to 8,000 feet while flying at FL 510. Sea level cabin pressure altitude can be maintained up to approximately FL 250. The air conditioning system directs the flow of heated, cooled and/or fresh air to the cabin and flight deck.

The most important part that you’ve got to remember is, if you haven’t got the GPU powering the bird, without the APU, you’ll be sitting on the flight deck with the starter engaged wondering why it’s so quiet!

Just a couple of things to recall about the APU. It will abort the start or shutdown for the following reasons:

- Overspeed - Above 108% rpm
- Overtemperature - Above 718 degrees C
- Overcurrent - Above 400 Amps
- Low oil pressure - Below 31 psi
- High oil temperature - Above 260 degrees C
- No acceleration.
- After start sequence initiated
- No EGT
- Loss of EGT indication
- Loss of turbine indication
- APU fire

An APU fire detection system will illuminate the APU fire annunciator switch and shut down the APU. If the EICAS is on, the APU FIRE red CAS message and Master Warning lights will illuminate. Pressing the APU fire switch will discharge the APU fire extinguisher and, if not already shut down, will shut down the APU.

Here’s an important safety tip: The fire extinguisher will not discharge automatically.

**Fuel**

The fuel system is fed from three main tanks: two wing and one center. Fuel to the center tank may come from the right or left wing. The fuel is permanent magnet alternator driven (PMA). The FADECs may also be powered by main or emergency DC power. The ignition is only powered by the PMA.

A separate DC generator is attached to the APU. All aircraft systems and avionics use DC power except for windshield anti-ice (powered by the engine driven alternator) and FADEC/ignition systems (powered by the engine driven PMA). The FADECs may also be powered by main or emergency DC power. The ignition is only powered by the PMA.

Two 44 amp/hour NiCad or lead acid batteries provide limited power to the aircraft for both normal and emergency operation. A small 28 volt lead acid battery pack is in the nose compartment, as a backup power source to standby instruments. Two additional NiCad battery packs provide power for the emergency exit lights.

**Hydraulics**

Hydraulic power is produced by two engine driven hydraulic pumps. Each is independent,
Flight Controls
Not to belittle the flight control system, but for crying out loud, stop reading and go fly the aircraft!

The ailerons, elevator, lower rudder and roll spoilers are all hydraulically powered. Your knowledge of this is critical for using your new X. Were it not, I imagine you'd be well on your way to FL390. Power Control Units (PCU) are small, self-contained hydraulic variable position actuators, which have been known, in certain Southern regions, to suddenly deplane and go skinny dipping. Inputs from the flight controls causes a pitifully small valve within the PCU to move, which then directs hydraulic fluid to an even smaller actuator within the PCU which moves the control surface. Isn't that neat? The PCUs are mounted in pairs on the ailerons, elevators and lower rudder while a single PCU (the lonely one) is mounted to each of the speedbrakes and roll spoilers. Go fly!

Rudders
Pedal inputs are transmitted to both the upper and lower rudder systems. The upper rudder will only respond to the rudder pedal inputs if the flaps are extended. The lower rudder is hydraulically controlled by two PCUs (remember them?). If one PCU should fail, the rudder will still operate normally. If both should fail, the rudder standby system will provide power to the "B" system PCU using trapped "B" system fluid (Note: I have no idea what that means, so I just copied it...). The upper rudder is electric and receives input from the yaw stability augmentation system. The lower rudder receives input from the Flight Guidance System.

Environmental
Two pressurization air conditioning units (PACs) are to be found, should one be sufficiently motivated to search for them, hiding within the tail cone. They route hot and cold air into the cabin and flight deck to ensure a constant source of air pressure and temperature control needs. There are three methods for controlling pressurization: NORM, ALT SEL and MANUAL.

Pressurization and environmental control bleed air is engine-supplied low pressure (LP), high pressure4 (HP), or onboard APU bleed air (or external ground cart air on the ground - along with the alarms going off?) to eliminate the possibility of a bleed-air leak, the illuminated ENG FIRE PUSH switchlight cover is lifted and the switch is pushed. This powers the fuel and hydraulic firewall shutoff valves closed, commands the FADEC to shut down the engine, the associated generator goes off line, the selected thrust reverser is disabled, and both fire extinguishing bottles are armed and directed toward the selected engine. As the fire bottles are armed, the two light switches. Either BOTTLE ARM switch may be pressed to discharge the applicable fire bottle. If the fire indication is still present after 30 seconds, the other

Ice and Rain Protection
The anti-ice systems are designed to prevent ice formation on the pitot tubes, static ports, angle-of-attack probes, ram air temperature probes, engines, wings (almost done), wing roots, horizontal stabilizer leading edges, windshields, landing lights and overboard water drain lines. The vertical stabilizer does not require anti-icing. The various anti-ice systems use either electrical heating elements or hot engine bleed air, and are activated by switches on the cockpit instrument panel.

Ice accumulations will significantly alter the shape of the airfoil, and to a lesser extent the added weight of the ice, will increase the stall speed and possibly change the normal handling characteristics and performance of the plane. During periods of high angle-of-attack (low airspeed) flight conditions, an increase in drag (unless you’re a guy named Priscilla) may be experienced due to a buildup of ice on the undersurface of the wing aft of those areas which are protected by the leading edge anti-ice system. To keep the angle-of-attack low, the minimum airspeed for sustained flight in icing conditions (except approach and landing) is 200 KIAS.

Fire Extinguishing
This system consists of itty bitty fire trucks. Actually, it consists of two extinguishing agent (noncorrosive Brom Tri-floromethane) bottles, deployment tubes/nozzles for each engine, firewall fuel and hydraulic shutoff valves for each engine, ENG FIRE PUSH switchlights for each engine and a white BOTTLE ARM switchlight for each fire bottle.

In the event of an engine fire, the applicable ENG FIRE PUSH switchlight would illuminate along with the applicable CAS message. After first bringing the naughty engine to idle for 15 seconds (if the engine is still running or attached) you imagine counting to 15 with the alarms going off?) to eliminate the possibility of a bleed-air leak, the illuminated ENG FIRE PUSH switchlight cover is lifted and the switch is pushed. This powers the fuel and hydraulic firewall shutoff valves closed, commands the FADEC to shut down the engine, the associated generator goes off line, the selected thrust reverser is disabled, and both fire extinguishing bottles are armed and directed toward the selected engine. As the fire bottles are armed, the two light switches. Either BOTTLE ARM switch may be pressed to discharge the applicable fire bottle. If the fire indication is still present after 30 seconds, the other
Secondary Flight Controls

Flaps

The flaps are powered electrically by a flap motor, flexible shaft drive units and gear boxes. When the flap/flight position lever is moved to a detent, a signal is sent to the flap controller. One flex-shaft drive train is provided for the left wing flap actuators and another flex-shaft drive train is provided for the right actuators. Each flap on each wing is moved up or down by two actuators.

Slets

Slat movement is electrically controlled and hydraulically operated using the slat-flap handle. Four slat actuators are mounted on each wing leading edge. Two actuators on each wing are powered by the A-system and two are powered by the B-system. If either A or B system pressure is lost, the slats may be operated normally using the hydraulic power form the remaining system. The slat actuators are kept pressurized, whether the slats are up or down, to hold the slats in the commanded position.

Auto Slats

Auto slat positions are provided to each of the angle-of-attack (AOA) computers. If either of the AOA systems detect the normalized angle of attack exceeds .83 AOA, the computer will issue an autoslat extend command. The slats will automatically restow when the AOA is reduced.

Speed Brakes

There are three speed-brake panels on each wing. You really must stop reading this stuff and take your bird for a spin. The outboard panel on each wing is powered by the A0hydraulic system. The two inboard panels on each wing are powered by the B-hydraulic system. Each speed-brake panel is hydraulically actuated by a single PCU. The middle left and outboard right panels are monitored for speed-brake position. When both panels indicate deployment, a white message is displayed on ECAS. The message changes to an amber message if radio altitude is less than 500 feet. If both A and B hydraulic system pressures are lost, the speed brakes will not operate. Of course, at that point, you’ve got problems that far exceed your concern about the speed brakes.

Thrust Reverser

One thrust reverser (TR) lever is mounted piggyback on each throttle lever. To deploy reversers, the levers are pulled up and aft (‘back’ for you neophytes). To stow the reversers, the levers are pushed forward and down. Each thrust reverser is equipped with two hydraulically-powered primary actuators. These act on push rods to drive the TR open or closed. Two hood actuators, one on each side of the reverser, hydraulically un latch the reverse locking hooks in preparation for deployment. I highly suggest assigning a button push to this function in Flight Simulator, perhaps using the ubiquitous FSUIPC (registered version, sorry) to assign the release of said button with the stowing of the reversers. Man that is tres cool!

Checklists

Cockpit Preparation
1. Preflight Inspection - COMPLETE
2. Cockpit Switches - VERIFY SET
   a. EMERG LT Switch - ARM
   b. DAY/NITE DIM Switch - AS REQUIRED
   c. LH and RH GEN Switches - GEN
   d. LH/RH FUEL BOOST Switches - NORM
   e. LH/RH FADEC Switches - NORM
   f. LH/RH IGNITION Switches - NORM
   g. STBY Gyro - CAGED
   h. STBY PWR Switch - ON
   i. Exterior Lights - AS REQUIRED
   j. Pressurization Control Switches - AS REQUIRED
   k. Bled/Environmental Control Knob - SET
   l. All Other Switches - AS REQUIRED

   3. BATT 1 & 2 Switches - ON
   4. DC Power BUS 1 & 2 Switches - ON
   5. DC Power XTIE Switch - VERIFY CLOSED
   6. Avionics Switch - ON
   7. Parking Brake - SET
   8. APU - START or GPU - CONNECTED
   9. DC Battery Ammeters (if APU generator ON or external power ON) - VERIFY BOTH ARE CHARGING
   10. IRS - ALIGN/NAV
   11. FMS - INSERT PRESENT POSITION
   12. Fuel Transfer/Crossfeed - CHECK/OFF
   13. FLT CONTROL SHUTOFF Switch Annunciators - ALL EXTINGUISHED
   14. Warning Systems - CHECK/OFF
   15. Cockpit Voice Recorder - TEST
   16. Aileron and Rudder Trim - CHECK/SET

Before Start
1. Parking Brake - VERIFY SET
2. Wheel Chocks - REMOVED
3. Cabin Door - CLOSE/LOCK
4. Passenger Briefing - COMPLETED
5. Seats/Belts/Harnesses/Pedals - ADJUST/SECURE
6. Cockpit Side Windows - CLOSED/LATCHED
7. External Lights - AS REQUIRED
8. ECAS - CHECK
9. ATIS/Clearance/FMS - AS REQUIRED
10. Flight Instruments/Avionics - CHECK/SET
11. Fuel Quantity/Balance - CHECK
12. CTR WING XFER Switches - NORM/AS REQUIRED
13. V-Speeds - SET

Engine Start
1. APU (or Ground Air Service) BLEED AIR Switch - ON (check start duct pressure - 30 psi)
2. PAC ISOL VALVE Knob - CLOSED
3. Right Engine - START

Notes
• The throttle lever may be moved out of cut-off after engine N2 rotation begins. Start sequence will begin at 10% N2.
• The FADEC will turn on ignition at approximately 14% N2 RPM and initiate start fuel at 33% N2 RPM or 10 seconds after ignition is turned on.

   a. ENGINE START BUTTON - PRESS (confirm START button and DISENGAGE button (illuminate)
   b. Throttle - IDLE (by 10% N2 RPM)
   c. N1 Rotation - CONFIRM
   d. Oil Pressure - CHECK
   e. ITT - MONITOR
   f. Start Termination - CONFIRM BY 57% N2 (START and DISENGAGE lights extinguished)

4. Hydraulic Pressure - VERIFY
5. Left Engine - START (same as Right)
6. Hydraulic Pressure - VERIFY
7. Generators - CHECK DC AMPS/VOLTS
8. DC Power XTIE Switch - CHECK OPEN
9. Ground Air Service/GPU (if used) - DISCONNECT
10. APU Bleed Air Switch - OFF (check bleed sources)

b. Select ECAS SYS, ENG on the MFD (duct pressure is from right engine)
c. R ENG BLD AIR Knob - OFF (pressure should be zero)
d. PAC ISOL VALVE Knob - OPEN (press ure from left engine)
e. L ENG BLD AIR Knob - OFF (pressure should be zero)
f. L ENG BLD AIR Knob - HP/LP (check pressure)
g. PAC ISOL VALVE Knob - CLOSED (pressure...
Before Taxi
1. Flight Controls - FREE/CORRECT EICAS INDICATIONS
2. Flaps/Slats Lever - UP
3. Flaps/Slats - SET FOR TAKEOFF/CHECK EICAS INDICATION
4. Speed Brakes - CHECK/STOWED/EICAS INDICATION
5. AHRS or IRS - ALIGNED/NO FLAGS
6. EICAS - CHECK (all messages normal or resolved)
7. Anti-Ice Systems - AS REQUIRED
8. Pressurization - CHECK (to takeoff or landing field elevation)
9. Passenger Advisory Lights - PASS SAFETY

Taxi
1. Exterior Lights - AS REQUIRED
2. Brakes - APPLY and HOLD
3. Parking Brake - RELEASE
4. Thrust Reversers - STOW
5. Nose Wheel Steering - CHECK
6. Throttles - CRU detent or AS REQUIRED
7. Pressurization - CHECK (to takeoff or landing field elevation)
8. Oxygen Mask (when required) - DON/NORM
9. Fuel Transfer - VERIFY
10. APU - AS DESIRED

Before Takeoff
1. Anti-Ice Systems (if required) - CHECK
2. Seats/Seat Belts/Shoulder Harnesses/Aft Divider Sliding Doors - CHECK/SECURE/LATCHED OPEN
3. Flaps/Slats - SET FOR TAKEOFF
4. Speed Brakes - RETRACTED (0%)
5. Yaw Damper and Mach Trim - CHECK
6. Crew Briefing - COMPLETE

Taketoff
1. Throttles - TO/MC DETENT (FADEC mode indicator - green T/O)
2. Brakes - RELEASE
3. EICAS - CHECK NORMAL INDICATIONS
4. Elevator Control - ROTATE AT V1 TO ACHIEVE 13 DEGREE PITCH

Notes
- The brakes may be released prior to setting TO thrust on rolling takeoffs. The runway length required will be longer than the published distance.
- Use of the flight director TO command is recommended for initial attitude reference.

After Takeoff/CLimb
1. Landing Gear - UP

Notes
- When taking off in conditions of weather related runway contamination, it is suggested to delay retracting the gear in order to clear the crud from the brakes and wheel assemblies.
- Use of Climb Thrust (CLB Detent) during normal operations beyond 5 minutes after reaching cruise altitude will significantly decrease engine life and increase operator costs, and seriously annoy your boss.
- Use of Climb Thrust (CLB Detent) during normal operations beyond 5 minutes after reaching cruise altitude will significantly decrease engine life and increase operator costs, and seriously annoy your boss.

Cruise
1. Throttles - CRU detent or AS REQUIRED

Notes
- It is recommended that throttles be reduced to the CRU detent or below within 10 minutes after reaching desired altitude.
- Use of Climb Thrust (CLB Detent) during normal operations beyond 5 minutes after reaching cruise altitude will significantly decrease engine life and increase operator costs, and seriously annoy your boss.

Descent
1. LH and RH WINDSHIELD ANTI-ICE Switches - BOTH ON
2. Side Window Vent Knobs - CLOSED
3. Pressurization - CHECK/SET LANDING ELEVATION
4. ANTI-ICE Switches - AS REQUIRED

Notes
- The center-to-wing transfer system, CTR WING XFER switches in NORM, will automatically start center tank to wing transfer at approximately 3250 to 3500 pounds of fuel in each wing and maintain approximately that level in the wings until the center tank is empty. Exact wing fuel level will vary with pitch altitude.
- Cabin pressure may not be maintained at high altitude while at idle with all anti-ice on. Adjust throttles as required to maintain cabin pressure.
- Cabin pressure may not be maintained at high altitude while at idle with all anti-ice on. Adjust throttles as required to maintain cabin pressure.
NOTE
When landing/taxiing in slush/ice, leave flaps at 15 until post flight inspection of slats, flaps and wing trailing edge.

4. Radar - OFF.
5. Transponder - STANDBY.
6. PITOT/STATIC Anti-Ice Switches - OFF.
7. Anti-Ice Systems - ENGINE - AS REQUIRED; SLAT and STABILIZER - OFF.
8. Exterior Lights - AS REQUIRED.
9. APU - AS DESIRED.

SHUTDOWN
1. Parking Brakes - SET.
2. Anti-Ice Systems - OFF.
3. Throttles - CUTOFF.

NOTE
The ENGINE FAIL and GEN FAIL red CAS message may be momentarily displayed during normal engine shutdown if both engines are shut down in rapid succession.

4. IRS Mode Control Knobs (if installed) - OFF.
5. Passenger Advisory Lights - OFF.
6. Standby Gyro - CAGED.
7. STBY PWR - OFF.
8. Avionics Switch - OFF.
9. EMRG LT Switch - OFF.
10. GRVTY XFLOW Switch - OFF.
11. APU - OFF.
12. BATT 1 and BATT 2 Switches - OFF.

General Stuff To Know
Your X is a pressurized, swept-wing Transport Category aircraft approved for day/night, IFR/VFR and for flight into icing (provided you’ve thought ahead and asked for the dealer installed anti-ice systems). It is approved for over water operations, with the appropriate equipment installed.

All flights require two pilots. The maximum number of passenger seats permitted is twelve. Suffice it to say you will not be shuttling most, if not all, professional sports teams at one time. You might be able, however, to manage the support staff for some of the more popular professional athletes.

The wings are swept at 40 degrees. They have a bunch of stuff installed, including speed brakes, roll spoiler panels, slats, ailerons, fuel tanks and flaps. Anti-ice is provided by hot engine bleed air for the fixed leading edge and slate, and electrical current to the wing root.

The engines are twin Rolls-Royce AE3007C/AE3007C1 planted on either side of the fuselage, and are rated at 6,442/6,764 lbs of thrust at sea level. Bleed air is extracted from the 8th and 14th stage to meet environmental and bleed air requirements. The fuel system is comprised of three main fuel tanks, two wing and one center tank. Fuel to the center tank may come from the right wing via a gravity flow system. There are also two hopper tanks (also called engine feed bays) that contain electric and motive flow pumps providing positive fuel pressure. Total fuel capacity is 13,000 lbs. A crossfeed system allows each individual hopper tank to feed both engines. Each wing tank holds a maximum of 3,500 lbs, the center 6,000 lbs.

Each engine has three electrical generation units, including a DC generator, an AC alternator and a permanent magnet alternator. A separate DC generator is attached to the APU. Hydraulic power is produced by two engine-driven pumps. Each is an independent system that does not share fluid, and each is linked for energy transfer purposes through a power transfer unit.

There are two pressurization air conditioning units (PAC’s) located in the tail cone. These route hot and cold air into the cabin and
flight deck to ensure a constant source of air for pressurization and temperature control. There are three methods for controlling pressurization: NORM, ALT SEL and MANUAL.

Crew Alerting System

The EICAS screen contains a section which will alert the crew of situations that may require particular attention. The CAS messages fall into one of four levels:

• Level 0 - Status messages appearing in white
• Level 1 - Advisory messages appearing in cyan
• Level 2 - Caution messages appearing in amber
• Level 3 - Warning messages appearing in red.

Up to twelve messages of various levels may be displayed at one time. A scroll knob in the lower right corner of the display unit is used to scroll through the messages on and off the screen. Should there be messages not appearing on the screen, the crew will be alerted to their presence, and they may be viewed by rotating the scroll knob. The messages are self-explanatory. Suffice it to say, the more red messages there are, the deeper in it you will be, and is a pretty strong indication to begin looking for alternate landing locations.

Weight Restrictions

Maximum Ramp Weight 36,000 lbs
Maximum Takeoff Weight 35,700 lbs
Maximum Landing Weight 31,800 lbs
Maximum Zero Fuel Weight 24,400 lbs

Speed and Altitude Limitations

Maximum Operation < 8,000 feet 270 KIAS
Maximum 8,000 to 24,000 350 KIAS
Maximum 24,000 to 35,000 275 KIAS
Maximum 35,000 to 41,000 240 KIAS
Maximum 41,000 to 51,000 190 KIAS

Maximum Flap Extended Speed

Flaps 5 250 KIAS
Flaps 15 210 KIAS
Flaps FULL 180 KIAS

Max. Altitude for Flaps/Gear 18,000 feet
Max. Operational Altitude 51,000 feet

V.I.P. WELCOME

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Frankfurt Main (Deutschland) - EDDF
Beyond normal experience, feel real excitement!

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- Adjustable difficulty levels, from beginner to Advanced level.
- Detailed interior with superb details, including seats, screens, catering...
- High development quality ensured by feelthere.com team and Rob Young (flight dynamics).

For Experts & Pilots:
- Complete simulation: FMGC, MCDU, IRS, Fadec, ...
- Complete and ultra realistic digital "FLY-BY-WIRE" technology.
- All EFIS screens available with all the system pages simulated.

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