Carenado's Cessna C182 RG II for FS2004

by Claudio "Cloudy" Di Veroli, published in PC FLIGHT,
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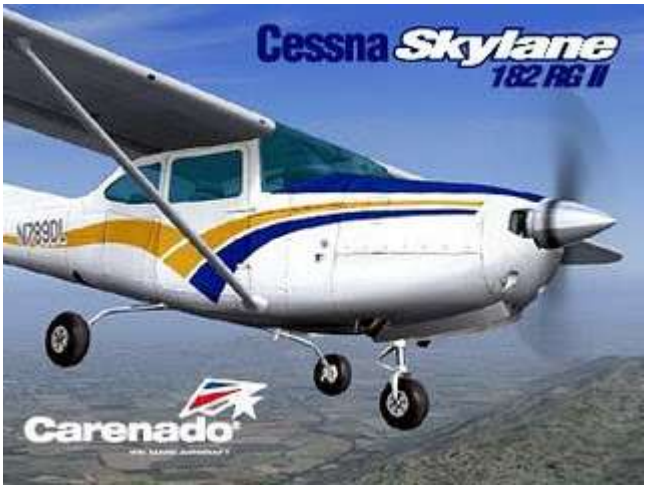


Ever since the old times of Bruce Artwick and until quite recent versions of Flight Simulator, programmers and testers centred their efforts in the Cessna 182. In Flight Simulator 2004 however, it can be shown that none of the default aircraft (and none of the add-on ones I have tried either) are fully up to the potential of this piece of software. That said, Carenado's 182RGII is by far the best one I have ever seen or tried. "It's not perfect, but all in all it delivers an excellent representation of the feel of the aircraft type", says an interesting online review by John Dow (http://www.simfiles.org/modules.php?name=News&file=article&sid=6895). I also hasten to add that, unlike "professional" jet airliner simulators for FS2004 - too complex for any but the really advanced user - this package is really accessible to the novice, being as easy to fly as the default C172 or C182.

NAME, PACKAGE AND INSTALLATION

RG stands for retractable gear, as opposed to other C182 models such as the *S*. In the real world, the "II" is almost always written after "RG" as in "*Cessna 182 Skylane RG II"*, implying a second version of the retractable-gear model. However for some reason Carenado names its product "*Cessna 182 Skylane II RG"*.

Carenado's C182RG is not provided in CD form, and can only be purchased and downloaded directly from Carenado's web site. The direct link for this model is

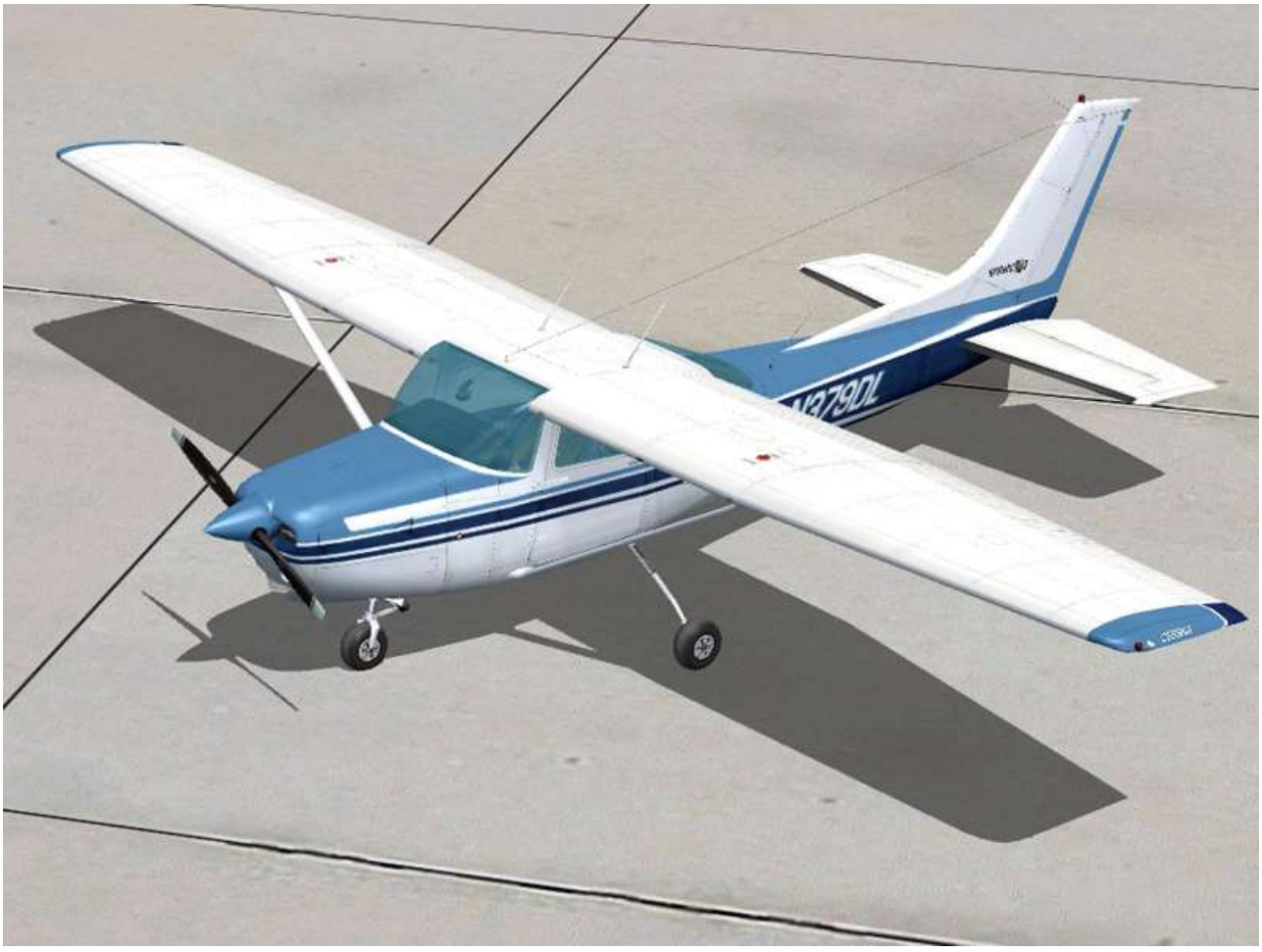
http://www.carenado.com/ecommerce/buscador.php3?id_producto=38

There you may click the Buy button and enter a page where you can specify your credit card and will be charged US$19.95. They will send you a code allowing you a maximum of three downloads, with no expiry date. The download is a zip file which contains an installer exe file. The latter requires no password and no online connection, therefore if you re-install FS2004 or migrate to a new PC you can re-run the install as many times as you wish.

The install is automatic, which I personally dislike as you do not know exactly what is installed in your PC. This one is however well written and allows you to specify an alternative destination folder: that way you can have the whole thing installed separately for your inspection. You can then delete it and re-install it, this time in your FS2004 folder.

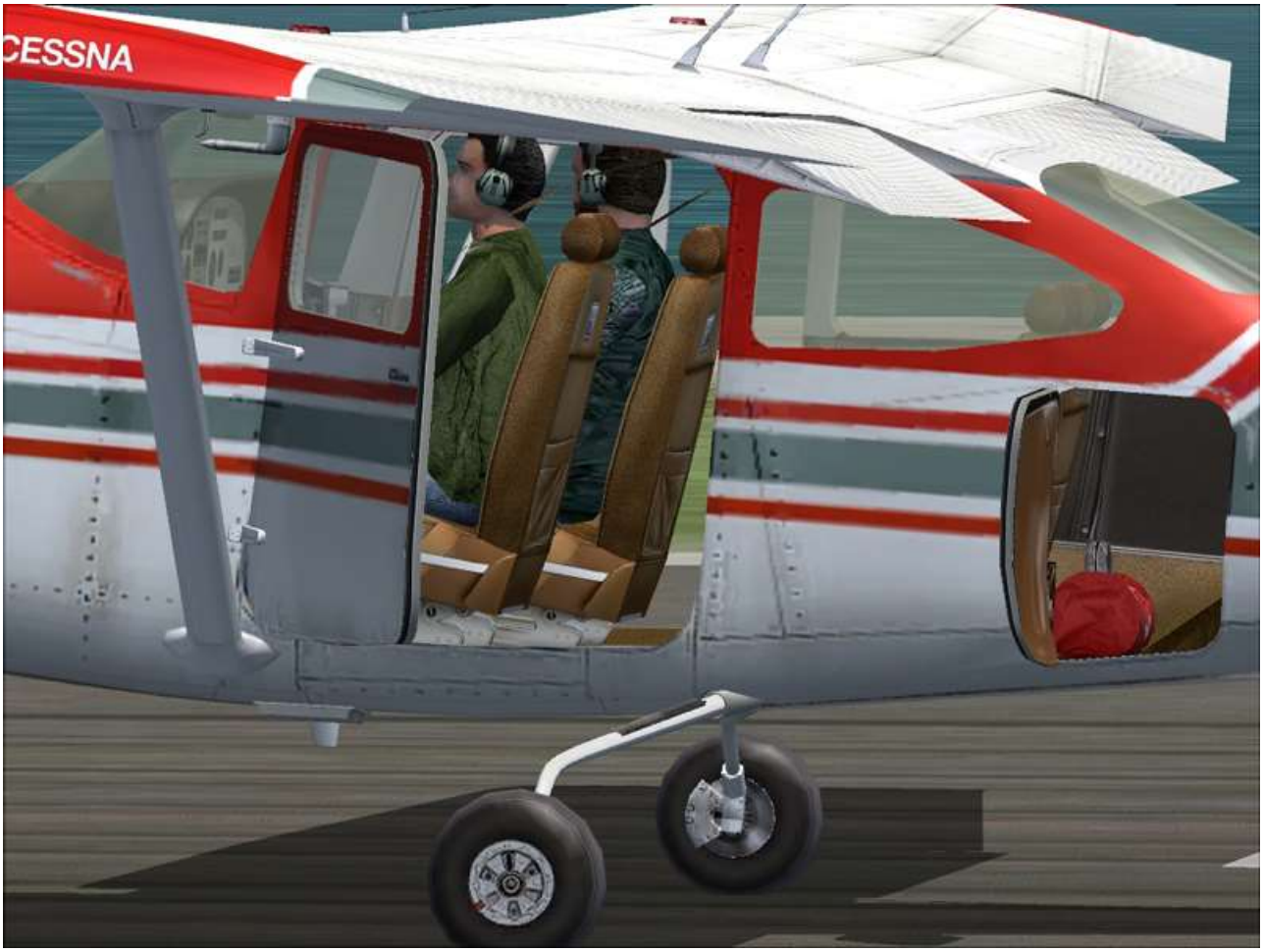
The current version is dated June 2005. There are no updates available for download at present. [You will find a SP1 update in Carenado's site, and also a Sound upgrade in www.avsim.com, but both are for previous versions of the package and do not add anything to the present version].

See below the White Blue & Blue Sky model.



THE EXTERNAL MODEL

Now this is the thing! At long last, it is now really difficult to tell a FS2004 screenshot from a photo of a real aircraft! Gone are the fuselage's polygonal "bulkheads" of yesteryear: everything is here as rounded as it should, with all sorts of small realistic details, many of them in 3-D parts, with shadows and reflections. As advertised by Carenado, the careful visual detail has indeed been achieved with no discernible on loading time or frame rates.

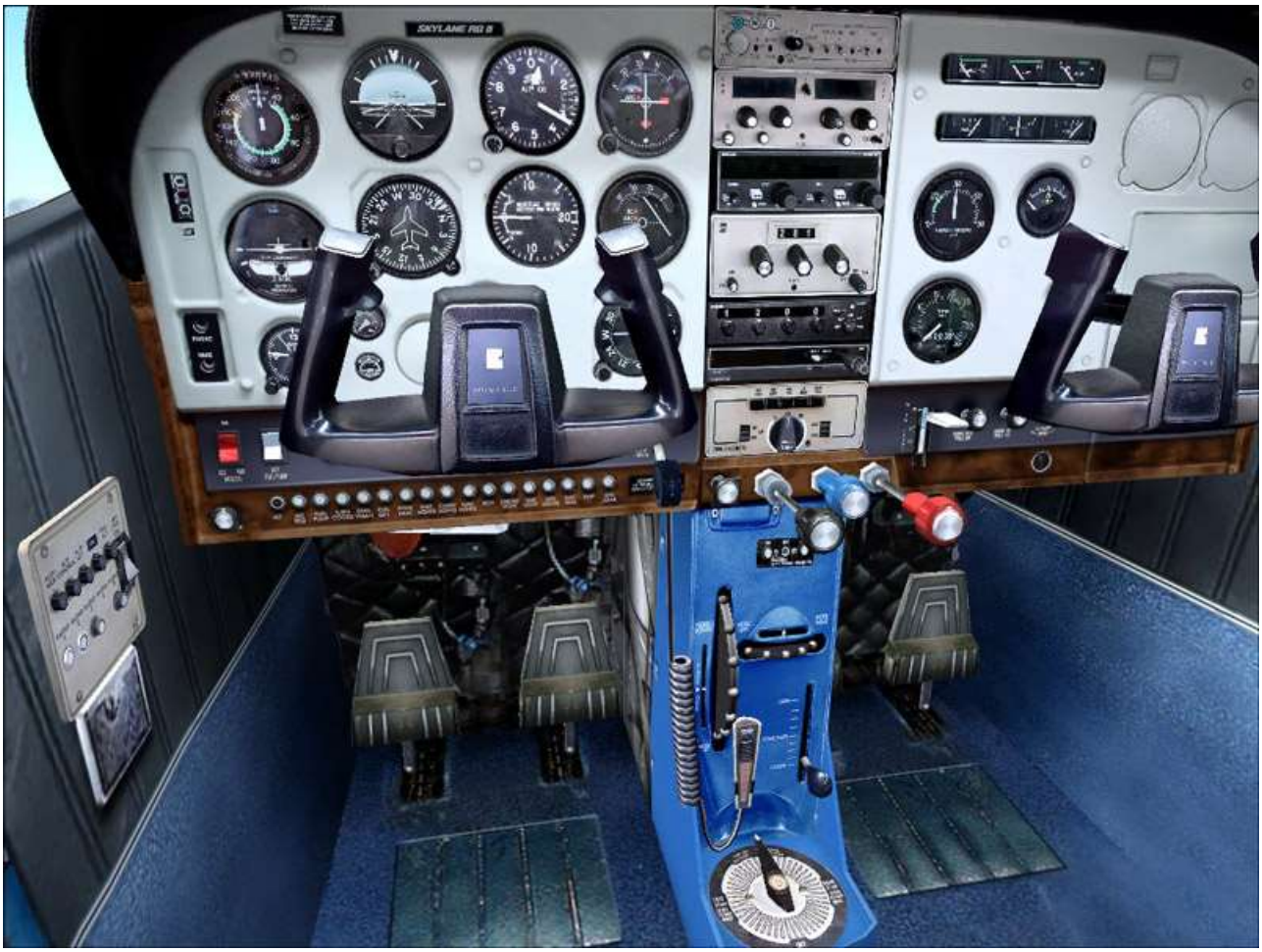


The C182RGII comes in two models. Model 1 (with two different paints) shows only the pilot in the cabin. Model 2 (with another two paints) shows both a pilot and a co-pilot. The user should however remember that, with only one installation folder and one AIRCRAFT.CFG file, the default payload for the flight dynamics is the same for both Models: two pilots plus two passengers. So if you wish something different, you should "Change Payload" as needed before flying.

Pilots are very well crafted, moving their limbs and heads in accordance with how the handle the flight controls, even turning the head to check for traffic! "All the usual animations are included, wheels, suspension, accurate flaps and gear movement, ailerons elevators and rudder, trim tabs, and some goodies such as the pitot cover and chocks." (John Dow). To see the latter, with the aircraft landed and stopped, you have to turn off the engine, the Battery Switch and finally set the Parking Brakes. Hey, the red pitot cover moves with the wind! (… and … uhm … somebody should tell the pilots that they can relax now, no need to keep moving their heads around as if they were still flying!)

THE VIRTUAL COCKPIT

The full cabin interior has been rendered down to the minutiae of the upholstery. And as expected this model boasts a gorgeous, very realistic and detailed Virtual Cockpit. My only objection (in common to the 2D panel) is to the Autopilot: however realistic for the original aircraft that Carenado used a model, and unlike lots of 182's nowadays, this early Autopilot has no altitude control. Also the On/Off and Nav/Gps switches are poorly designed and it is very difficult to discern whether they are in their up or down position. See below a screenshot of the Virtual Cockpit (VC).



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Nowadays more and more users prefer the VC to the neat but static 2D cockpit. I share however the concern of many experts in their reviews of FS2004 aircraft: no matter how good the design and programming of a VC is, there are important restrictions to what can be achieved with a limited number of pixels on a flat screen. VC gauges are hardly readable unless the user spends most of his time moving and zooming around, or has a monitor with a horizontal resolution of 1600 pixels minimum. That is indeed the photographic and flightsim standard resolution of the future, but nowadays most of us fly at resolutions from 1024 to 1280, whereby the VC gauges are very far from the readability and sharpness they have in the 2D cockpit. No wonder then that many flightsimmers—like myself—prefer the latter, especially for such a relatively simple aircraft.

THE 2D PANEL

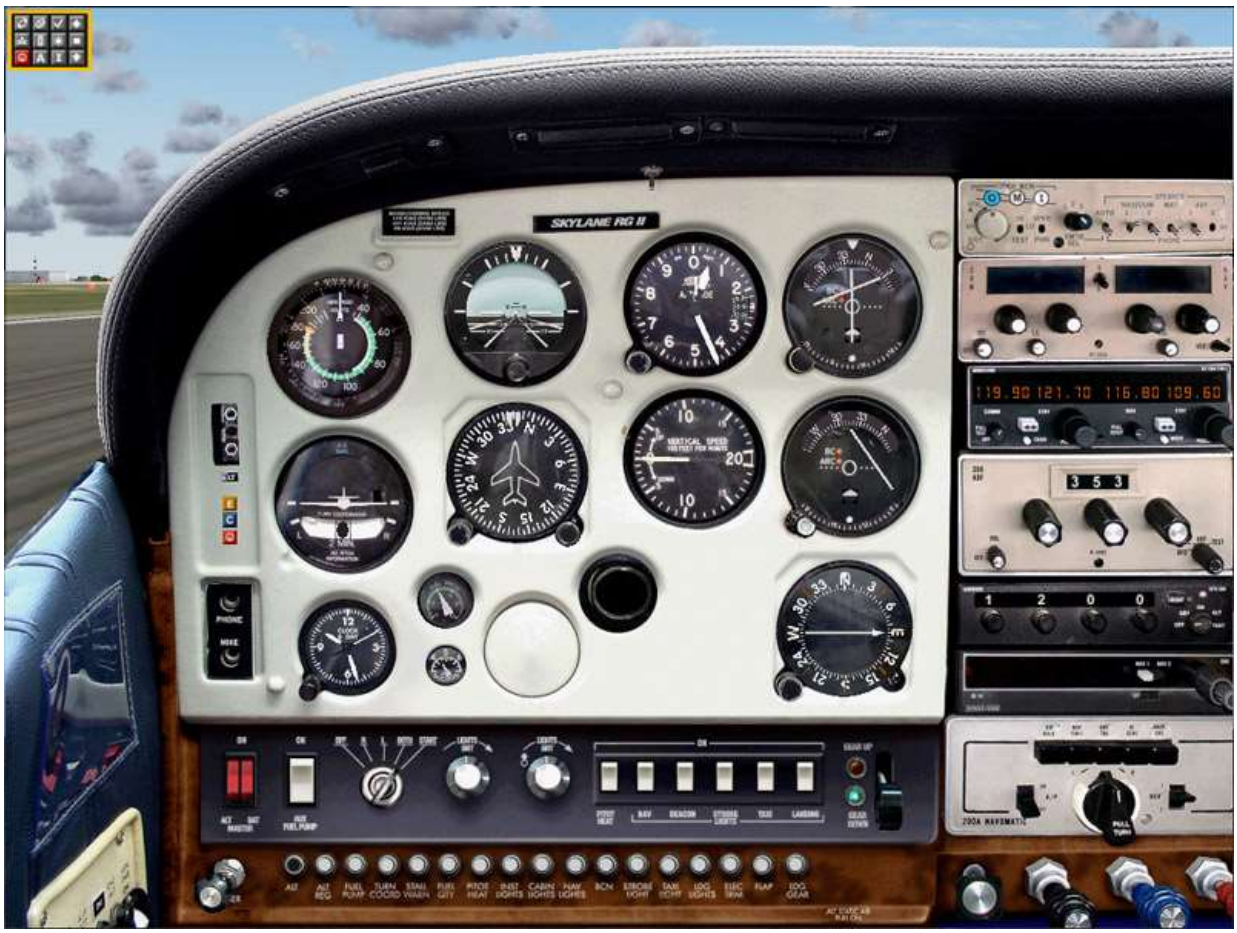
Obviously aware of the above issues with Virtual Cockpits, Carenado has also devoted careful attention to the 2D panel: in its preparation they have gone to lengths I have never seen elsewhere. To begin with they have departed from Microsoft's bitmaps optimised for a horizontal resolution of 1024 ("gone the way of the dodo these days" according to PCPlus April 2006 p.39): this panel is optimised for the 1280 typical of the present crop of TFTs. Though each of the 4 repaints carries its own 2D panel, the layout is the same: only a few background bitmaps are different for consistency with the main colour in the each livery.

Pros:

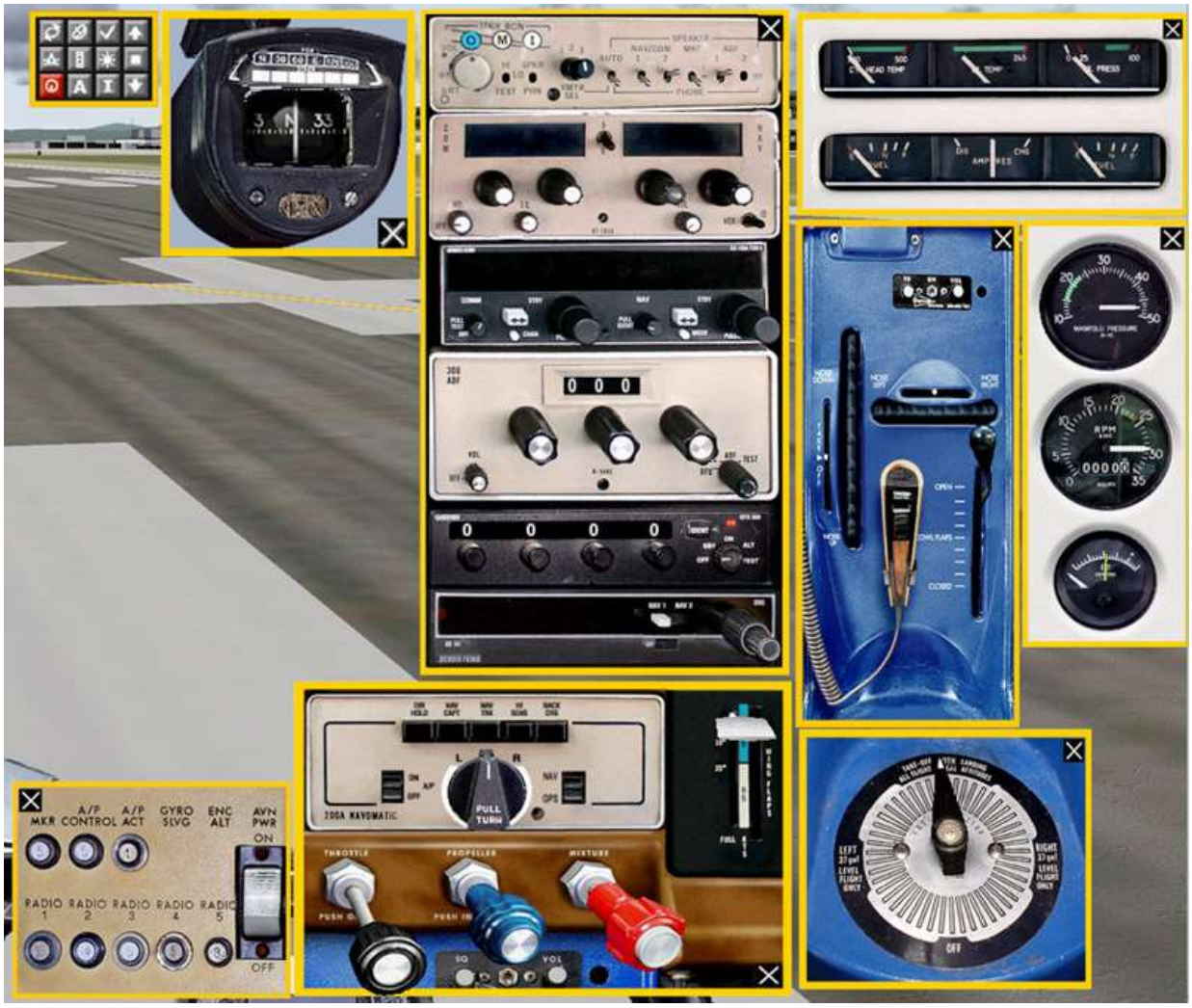
- The 2D cockpit manages to keep the photographic look of the Virtual Cockpit
- The gauges are realistic, consistent and – mostly - precise
- Gauges and background bitmaps are mostly of very good quality Gauges are as expected sharper than in the VC

Cons:

- Park Brake and OAT, visible in VC, are missing from the 2D. There is no ATC ID gauge.
- The Cowl Flaps gauge is nice but limited to three positions: up, centre, down. The default MS gauge with its 13 positions is a better match for both the simulation and the real aircraft.
- The "IFR panel" covers the whole screen, as shown below.



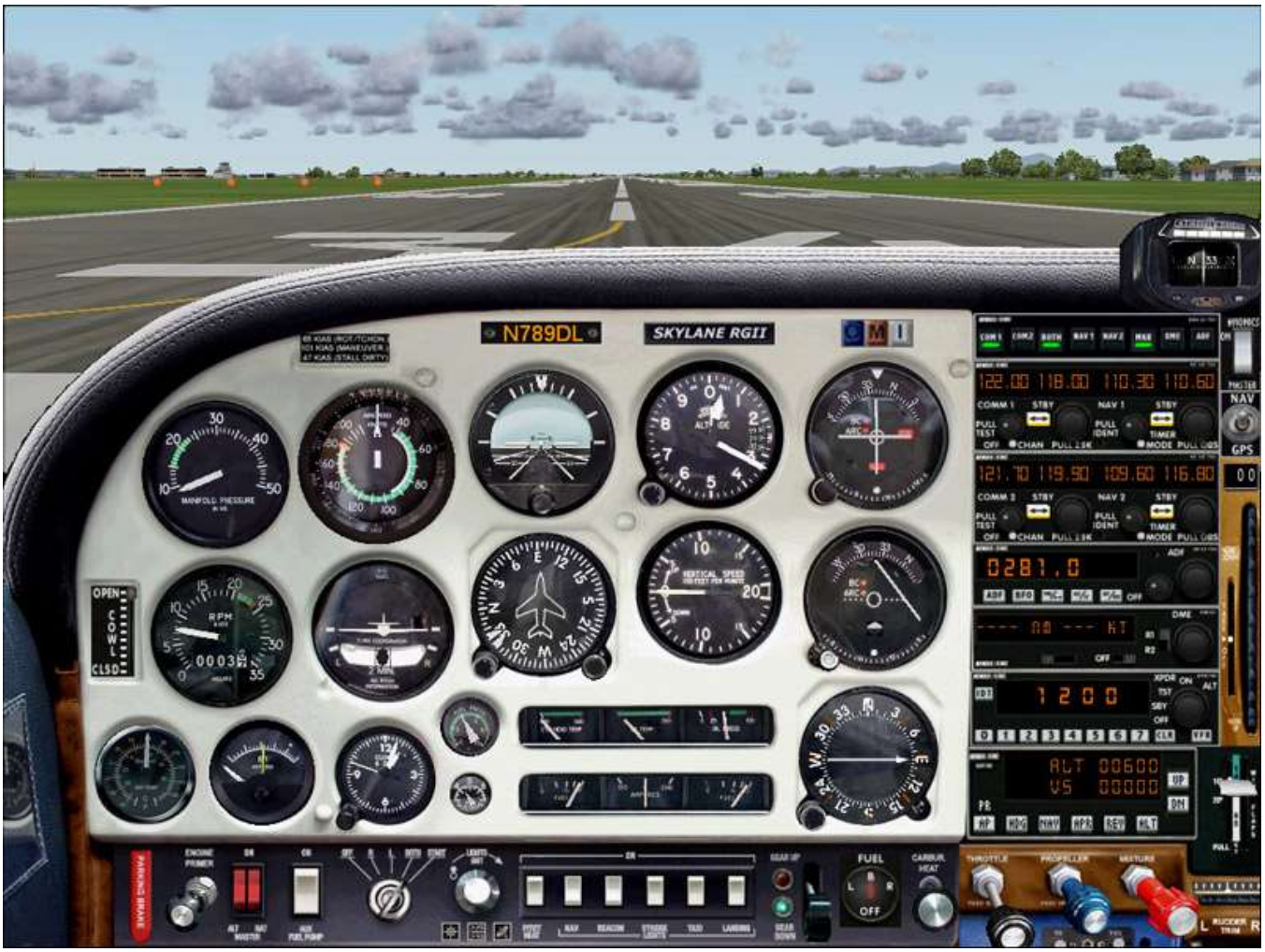
- Even with the "IFR panel" – covering the whole screen and sporting 34 aircraft gauges – a further 14 gauges are needed and have been placed in 7 additional large windows (not counting the GPS).
- Quite confusingly, there is no standard way of activating all those additional sub-panels. You get some by clicking in specific areas of the main panel, others by clicking on a vertical row of three buttons in the main panel, still others in a mini-switchboard with 12 icons (!) in the upper left corner.



- Some add-on panels show a very inefficient use of valuable screen real estate. One of them has only the Avionics general switch, but also devotes significant space to show a further 8 inactive buttons which are just features in a background bitmap photo.
- If you move and resize all those windows around the main panel, you may get some usable layout, which you will wish to save as a "flight". Unfortunately, due to a limitation in FS2004, only the size and position of two or three of the additional panels will be saved: when you restart the flight, the other ones will not show, and when activated they will appear in their default position and (large) size. Very frustrating.

- Even worse, all the above fuss is not really needed for a one-engine propeller aircraft. With a modicum of departure from photographic realism, they could have fitted all those gauges into the Main panel, as successfully done by other designers.

I find the design of Carenado's 2D panel flawed. I decided to fully redo it in order to fly comfortably this marvellous model, and after only 18 hours of work I got my panel sporting a good external scenery view, all the original IFR gauges included without reducing their size, plus all the add-on gauges and also the 3 missing ones mentioned above: a total of 55 gauges, with none of the shortcomings mentioned above. (The "Missing Panel" picture shows it sporting the default Bendix stack, clearer to read and using less space on screen: clicking above it optionally shows the beautiful but impractical Carenado's photographic radio stack).



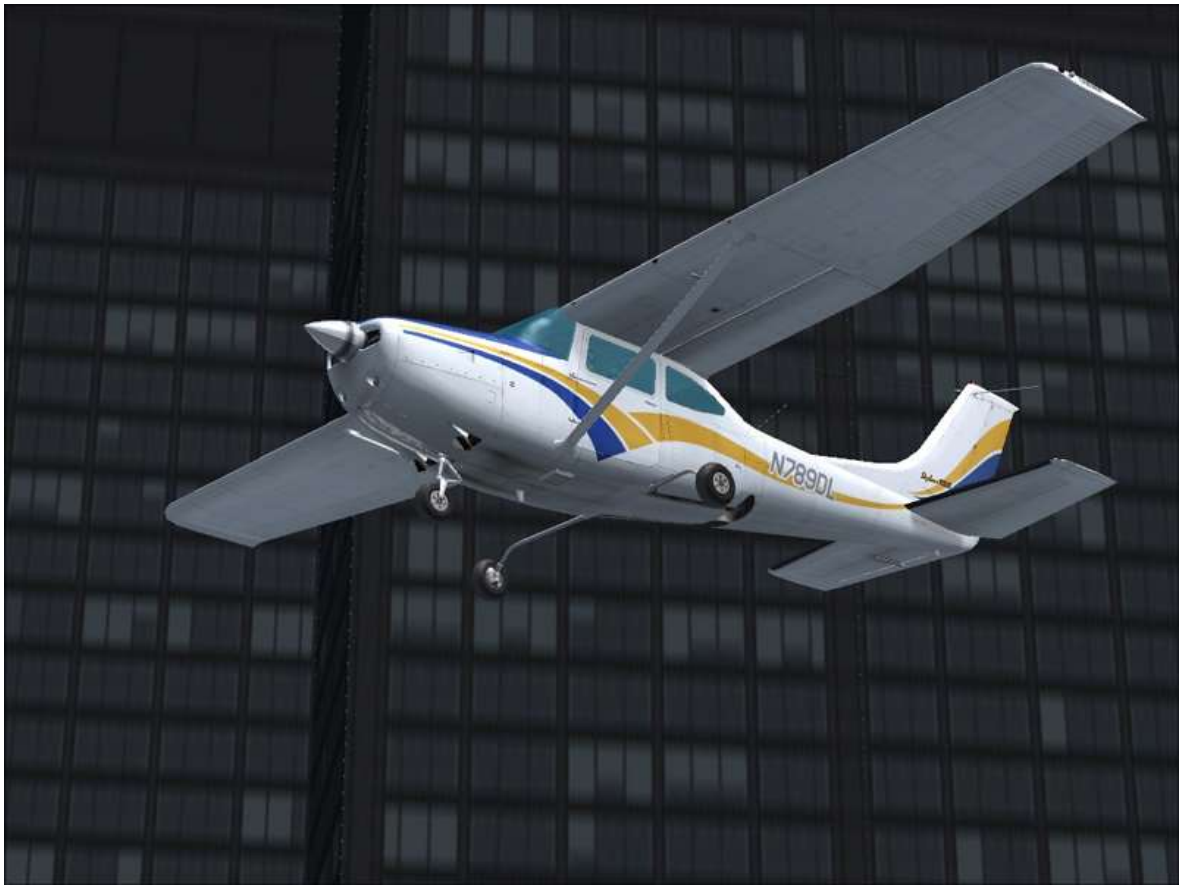
It is a pity that Carenado, like many others, has fallen into the Procrustean bed of the "absolutely photographic panel" rather than giving us something really useful which – as shown - could have been achieved at a fraction of the effort they devoted to their unwieldy 2D panel.

THE FLIGHT DYNAMICS

This model sports excellent flight dynamics, which Carenado had developed and checked by real C182 pilots, and as expected the model follows very closely the real-life performance numbers. Not being an aircraft pilot, I can only say that it feels very realistic and that, unlike the default C182 model, it performs without a hitch full spins, stalls and slide slips.

In normal flight the aircraft is easy to handle for beginners. It requires however some careful handling on approach, where, says John Dow, "entering too high and too fast will often mean you won't get the speed down enough, deploying full flaps at too high a speed will result in ballooning and some difficulty in getting down, and yet if you extend the flaps fully too early you'll have to use a reasonable amount of power to avoid sinking too fast and hitting the fence short of the threshold, just like the real aircraft."

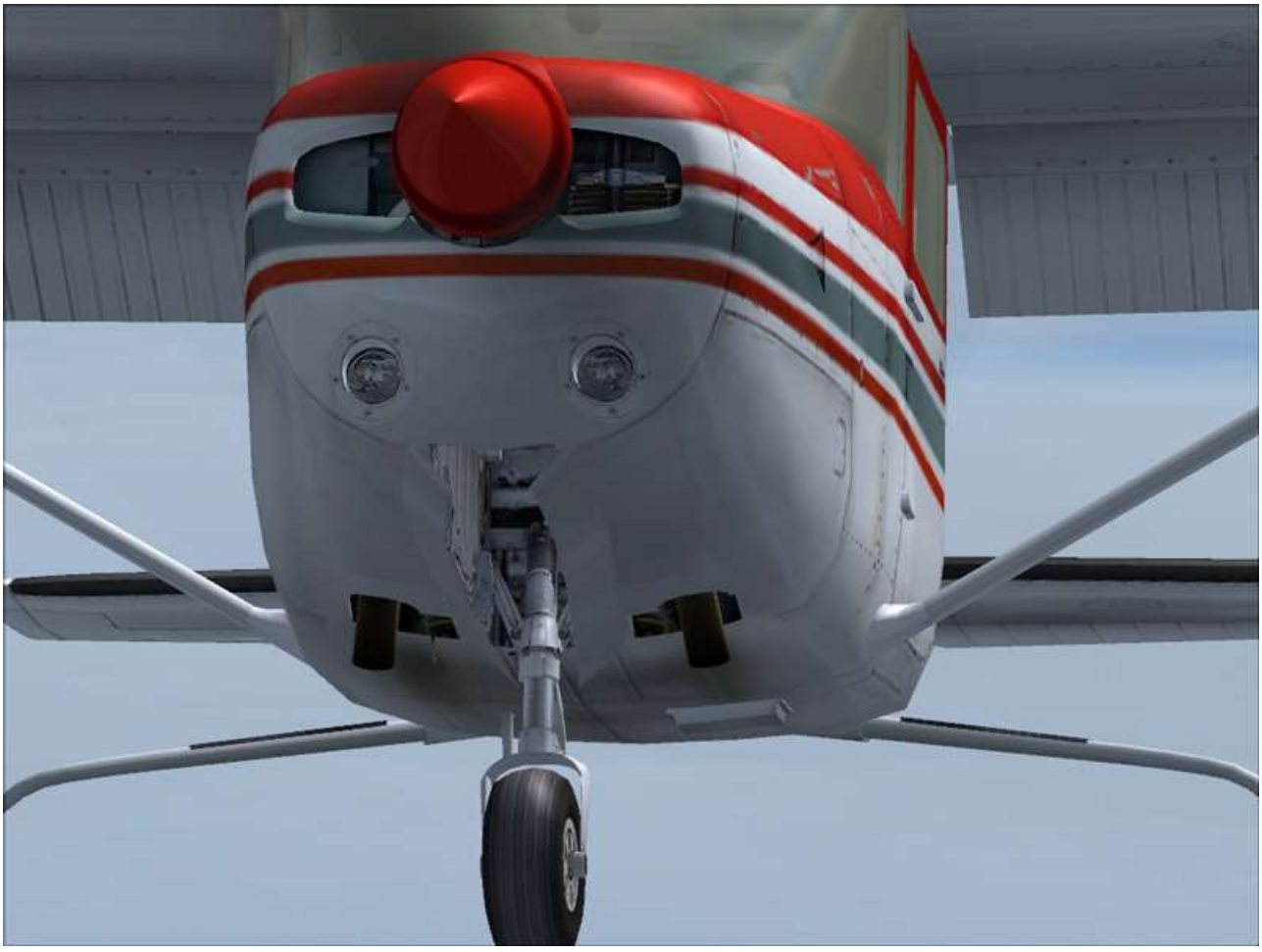
See below the aircraft flying against Chicago Sears Tower:



My only objection to the flight dynamics is that this model flies with an average attitude more "nose down" than most other FS2004 aircraft. There is no issue during taxi or take-off , where on the contrary the tall front gear produces a "nose up" attitude. Two problems are however apparent during approach and landing. One is that – especially with the 2D cockpit - the view is way too low, with no horizon in sight, sometimes not even the runway until you are quite near to it.

Luckily you can improve this significantly by simply editing in the file PANEL.CFG the line VIEW_FORWARD_DIR=13.000, 0.000, 0.500. The value 13 is certainly excessive, I suggest to use 7 instead (4 is the maximum used by default FS2004 aircraft).

As said above the front gear has a remarkably long strut. As a consequence, the other problem caused by the low-nose attitude is a tendency to touch down on the three wheels at the same time. The solution is to flare decidedly, which requires landing at the lower limit of suggested airspeeds. My suggested touchdown speed (with full flaps, 4 persons on board and 1/3rd of fuel in the tanks) is 60-63 KIAS which is quite slow but safely above the stall speed of 47 KIAS for that configuration.



Once on the ground, another visual goodie: the detailed front gear suspension follows very closely what is expected from the amount of brakes applied (no longer front tyres awfully disappearing into the ground!). If you have pedals, just for fun, try editing the file AIRCRAFT.CFG and set *toe_brakes_scale=4.0*, then load the C182RGII in FS2004 and taxi at 30 kts: you will find that sudden braking produces amazing ground acrobatics, showing how realistically the model behaves even on the ground (remember afterwards to restore the parameter to its default value 0.5). I actually found that the brake is way too gentle, and prefer a value of 0.8.

THE CHECKLISTS AND OTHER INFO

There is plenty of information provided, much of it from the real aircraft documents, and perhaps too much for the average user. Conversely, in some respects the Checklists provided are not as detailed as the very thorough yet easy to use ones by Werner Schott, available as free downloads from different Flight Sim sites. Unfortunately, Schott's checklists are only provided for the default C182S, so they show significant differences in performance parameters and cannot be used for this model. Solution: I wrote my own Checklists, based on Schott's general scheme but with all the numbers and some details changed to fit the C182RG.

CONCLUSION

In spite of the caveats and shortcomings that we have pinpointed above, Carenado has produced an incredibly realistic model which fills an important lacuna in the aircraft fleet of FS2004, showing also the capabilities of the latter as a first-class simulator and training tool. An amazing marvel to fly and to watch, Carenado's C182RGII is really a must have for all of us "propeller heads".

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AFTERTHOUGHTS

After the above review was published I scribbled down the following notes.

My review may seem too harsh. It is not. Some facets of this model are possibly worse than reported.

MORE VC AND 2D PANEL DOLDRUMS

There are quite a few issues with individual gauges, which I omitted from the review for brevity's sake. They affect both the Virtual Cockpit and the 2D panel.

Rudder trim: this essential flight control is normally used just a few "steps" near to the centre: so the most important thing in FS is to see whether it is centred or else, and that is precisely what you cannot see in this small gauge, where only considerable (thus very infrequent) trim is shown. Carenado should have set the gauge's scale factor so that it reports every single "step" with a movement on screen (it is easy to do it in .cab trim gauges even if you are not a programmer).

OAT: this VC-only gauge is virtually illegible, and it is still so if you add it to the 2D panel, no matter the gauge size, the zoom or the screen resolution. Also, the Celsius scale has several wrong markings. The problem is in the background bitmap which is fundamentally flawed.

ATCID: this is something very good to have for flightsimmers. It is not a "gauge" in the "real" aircraft taken as a model, but let us just imagine that the pilot glued a piece of paper with the ID printed on it! Another miss by Carenado.

OMI markers: only the O marker shows. The M and I markers instead when activated change so little, and are so similar to the background color, that you just cannot see them (except at night of course).

AUTOPILOT WITHOUT ALTITUDE: just because they were "copying" a real aircraft with a very old AP, Carenado have given us a beautiful model, but with an Autopilot that cannot be set to a fixed Altitude and cannot follow a ILS Glideslope. How many C182RGII are are in existence with such a limitation?

THE FLIGHT DYNAMICS

The contrast between the nose-up attitude [while taxiing and taking off] and the nose-down attitude [during approach, landing and while braking after touchdown] is extreme compared to, say, the professionally-improved aussie RAFE Kangman-Batman Cessna C172S. If the real-life C182RG was like that it would really be very difficult to handle.