

CAPHOLLAND'S

GA TRAFFIC MAKER 1.1



For Microsoft ® Flight Simulator 2002

DISCLAIMER

The *GA Traffic Maker* package [GA_MAKER.ZIP] is distributed as freeware.

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This program is guaranteed to work as per the provided instructions. The author accepts no liability for the loss of data or functionality caused by the misuse of this program or any files created by it.

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GA TRAFFIC MAKER OVERVIEW

GA (General Aviation) Traffic Maker was designed to quickly add artificially intelligent (AI) general aviation traffic into the Microsoft Flight Simulator 2002 world. While you can find many programs, utilities, and flight plans for adding commercial traffic to FS2002, most of these flights only fly to and from the major airports. FS2002 boasts more than 20,000 airports, a majority of which are never visited by AI traffic, default or otherwise.

GA Traffic Maker--in conjunction with Lee Swordy's **TTools** and **AFCAD** utilities--can change that by creating randomized, multi-destination flight plans for any aircraft of your choice to and from any installed FS2002 airport. Select your airport, set a few necessary parameters, and within seconds *GA Traffic Maker* will spit out up to 200 flight plans to bring that airport to life with AI traffic.

Program requirements:

- Microsoft Flight Simulator 2002 [FS2002]
- TTools 1.3.2 or later - by Lee Swordy
- AFCAD 1.3.1 or later - by Lee Swordy
- 1 megabyte free space (GATM11.ZIP)
- 43 megabytes free space (GATM11EX.ZIP)

Recommended utility:

- AIREXTT by Nicki de Wet (for generating installed aircraft entries for use with TTools)

INSTALLING AND UNINSTALLING

GETTING READY - STEP 1

In order to use this program, you need to have Lee Swordy's **TTOOLS** on your computer, and be familiar with how it works. Lee Swordy's **AFCAD** utility is also recommended. If you do not already have these programs, they can be downloaded from <http://www.flightsim.com> or <http://www.avsim.com>.

GETTING READY - STEP 2

If you have not already done so, you will need to run the TTools [TDecompiler.exe](#) to create the required [Airports.txt](#), [Aircraft.txt](#), and [FlightPlans.txt](#), files, or simply run [CollectAirports.exe](#) to make sure both TTools and *GA Traffic Maker* will be using the most recent database of available airports.

INSTALLING GA TRAFFIC MAKER:

- Unzip the contents of [GA_MAKER.ZIP](#) to a folder of your choice. Since you are reading this document, you have likely already done this.
- Copy or move [GA_MAKER.EXE](#) and [GA_CRAFT.TXT](#) to your **TTools folder**

UNINSTALLING GA TRAFFIC MAKER:

- Go to your **Ttools folder**
- Delete the [GA_MAKER.EXE](#) and [GA_CRAFT.TXT](#) files
- Optionally delete any leftover [GA_????.TXT](#) files
- Optionally delete any flightplans from your [FlightPlans.txt](#) file that end with "// GATM 1.1"

INSTALLING THE EXTRA AIRCRAFT PACKAGE (GATM11EX.ZIP ONLY):

- Unzip [GA_EXTRA.ZIP](#) to your [FS2002 Aircraft folder](#) (make sure the "Use Folder Names" option is selected)
- Copy or move the new [GA_CRAFT.TXT](#) file to your [TTools folder](#), overwriting the existing version
- Open the new [GA_CRAFT.TXT](#) file
- Select and copy all entries numbered AC#9901 to AC#9910
- Open your Ttools [Aircraft.txt](#) file
- Paste the copied entries at the end of the [Aircraft.txt](#) file
- Save and close [Aircraft.txt](#)
- Close [GA_CRAFT.TXT](#)

UNINSTALLING THE EXTRA AIRCRAFT:

- Go to your FS2002 [Aircraft folder](#).
- Delete any folders with [_GATM](#) in their name.
- Go to your [TTools folder](#).
- Open your Ttools [Aircraft.txt](#) file.
- Select and delete any entries numbered AC#9901 to AC#9913
- Save and close [Aircraft.txt](#).

USING GA TRAFFIC MAKER

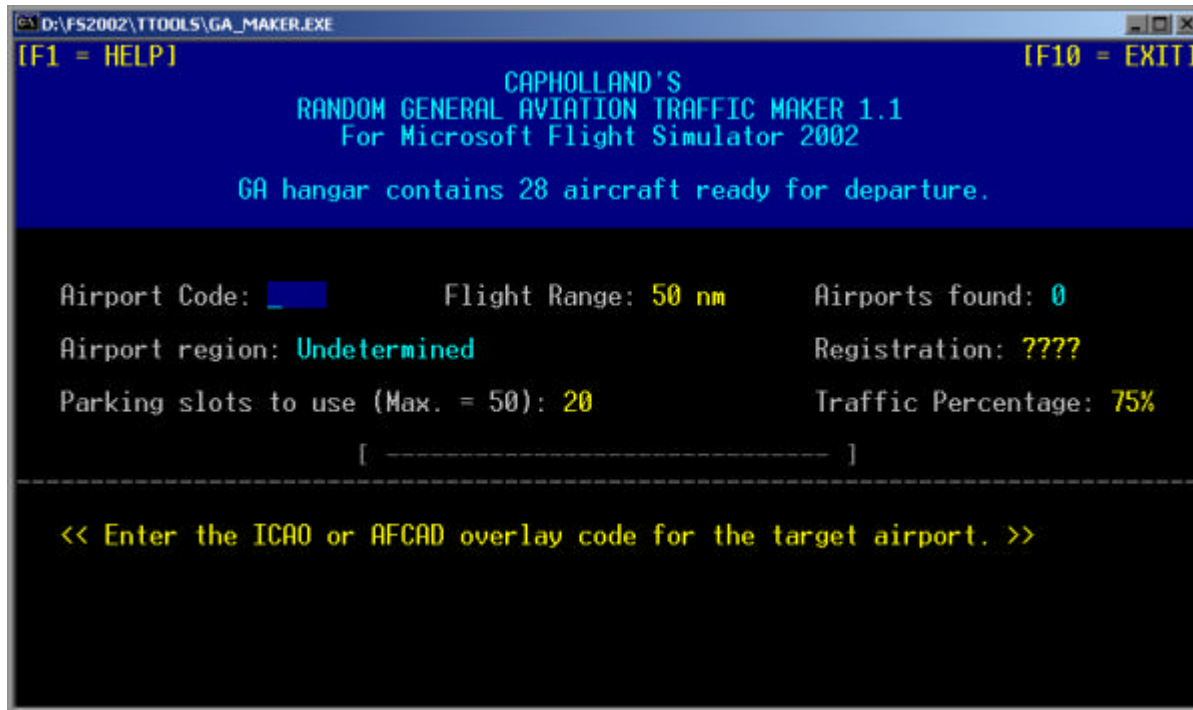


Figure 1 - The opening GA Traffic Maker screen (DOS Window).

The GA Traffic Maker screen is divided into three main parts. The top section contains the title and version number, plus tells you how many aircraft GA Traffic Maker will be working with. By default, GA Traffic Maker will recognize and use 18 default FS2002 Professional aircraft. By installing the Extra Aircraft package, you can boost this total to 28 aircraft, as shown above.

(See the "Advanced User Techniques" section for more information on managing your GA Hangar, and how to customize it for specific uses, such as adding your own military or bush-flying aircraft to a region.)

The middle section is where you enter and select all the options for your flight plan. Yellow items are selectable. Light-blue on blue text is your active selection. Light-blue on black items will be filled in automatically.

The TAB, SHIFT-TAB, LEFT ARROW and RIGHT ARROW will move between the active fields. Pressing ENTER on an active field confirms the value within it, and moves you to the next active field.

The lower section (showing yellow text) is your status / instructions window.

Pressing F10 at any time will exit the program. Pressing F1 brings up a quick help screen.

STEP 1 - SELECTING AN AIRPORT:

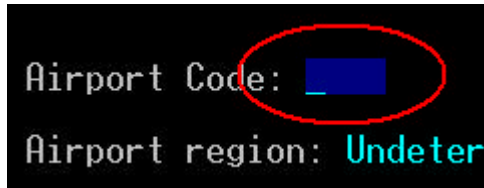


Figure 2 - the Airport Code field.

- GA Traffic Maker starts up ready for you to enter the Airport ID (ICAO code) of your airport. You can also enter the Airport ID for an AFCAD overlay. Simply use the letter and number keys, or backspace when necessary, to enter the code of the airport you'd like to generate traffic for. Hit ENTER when you are done.

- GA Traffic Maker can only read 4-character codes. If your airport code is only 3 characters long (eg. C10) then type an underscore before it, so that the program sees _C10.
- You can enter a partial code. For example, if you enter EH and then press ENTER, you will see a list of several matching airports in your status window. You will have to choose one of these before the program can continue.

```
- CEH2 - CEH3 - CEH4 - CEH5 - CEH6 - EDEH - EGEH - EHAL - EHAM - EHBD - EHBK  
- EHDL - EHDL - EHEH - EHGG - EHGR - EHHO - EHHV - EHKD - EHLE - EHLW - EHMZ  
- EHNP - EHRD - EHSB - EHSE - EHTE - EHTW - EHTX - EHVB - EHVK - EHWO - FLEH  
- KBEH - KDEH - KEHA - KEHO - KEHR - LFEH - MYEH - OEHL - OEHR - OEHW - PAEH  
- _SEH - VEHK << Too many matches. Please use one of the above. >>
```

Figure 3 - Multiple options appear for the partial code EH. Note that the three-letter code "SEH" appears as "_SEH."

- Once you've selected a recognized airport, GA Traffic Maker will, to the best of its ability, determine the region the airport is based in, and create an appropriate aircraft registration number format.

```
Airport Code: EHAM      Flight Range: 20 nm      Airports found: 16  
Airport region: The Netherlands      Registration: PH-ABC  
Parking slots to use (Max. = 50): 20      Traffic Percentage: 75%  
[ READY TO GENERATE FLIGHT PLANS ]
```

Figure 4 - EHAM airport is found, The Netherlands region is recognized, and the Dutch aircraft registration format appears. The ABC will be replaced by random letters in the generated flight plans. See "Step 3 - Modifying the registration number" for further information on the registration number format.

STEP 2 - SETTING THE FLIGHT RANGE:



Figure 5 - the Flight Range field.

- The "Flight Range" determines how far GA Traffic Maker will look for destination airports. Within the US, a range of 50 nautical miles (the default) will often find about 20 neighboring airports within that radius. For an airport in Australia or New Zealand, you will likely need to use a higher flight range, such as 100nm, to find a similar number of destination airports.
- Once you press ENTER, GA Traffic Maker looks for all airports within the selected flight range of your chosen airport--a process that should only take a few seconds.

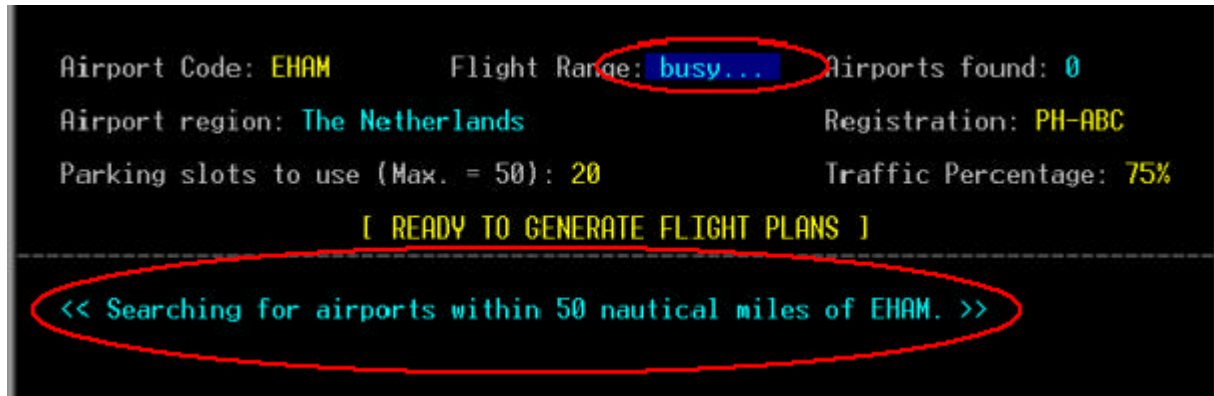
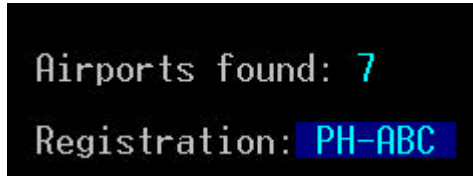


Figure 6 - Searching for airports within the selected Flight Range.

- When this process is over, GA Traffic Maker will tell you how many airports it found, and will use as destinations for the flight plans that will be generated.



```
Airports found: 7
Registration: PH-ABC
```

Figure 7 - GA Traffic Maker found a total of seven airports within 50 nautical miles of EHAM.

STEP 3 - MODIFYING THE REGISTRATION NUMBER

- Where a registration number reads A, AB, or ABC (as in figure 7), those letters will be replaced by random letters in the final flight plan. The registration format in figure 7 will produce registration values such as PH-UXD or PH-ABL.
- Where a registration number reads 123 (as in figure 9), those digits will be replaced by random digits. The registration format in figure 9 will produce registration values such as N484XN or N239KK.
- In the case where a specific airport region is not recognized, it is assumed as being a regional (US) airport, and the standard US registration format (see figure 9) is assigned.
- There are cases where the detected airport region could be in one of two places. For example, an airport beginning with FA could be located in South Africa (FAJS) or Florida (FA05). In such a case of conflict, GA Traffic Maker will automatically choose the international registration format, as shown below.

```

Airport Code: FA02      Flight Range: 50 nm      Airports found: 98
Airport region: South Africa / USA - Florida regionRegistration: ZT-ABC
Parking slots to use (Max. = 50): 20      Traffic Percentage: 75%

[ READY TO GENERATE FLIGHT PLANS ]
-----
<< Use the UP and DOWN arrows to toggle aircraft tail number >>
<< between standard US and displayed format. >>

```

Figure 8 - The above airport could have been in South Africa or Florida. GATM assumes the international (in this case South African) registration format.

- However, if you are generating traffic for a Florida airport, and not one in South Africa, you probably don't want your aircraft flying around the Everglades with a South African registration number (ZT-ITL). So, with the Registration field selected, you can use the UP or DOWN arrow keys to toggle between the displayed format, and the standard US format. In the above case, you would hit the UP or DOWN arrow once to change ZT-ABC to N123AB.

```

Airports found: 98
onRegistration: N123AB

```

Figure 9 - The standard US registration format.

- Because in most cases the "Airport Region" conflict would be caused by a regional US airport, the default toggle is the standard US format. If you wish to use a registration format

different from either of the two options, you will have to manually edit the registration numbers on the generated flight plans once they have been generated.

STEP 4 - HOW MANY PARKING SLOTS DO YOU WANT TO FILL?

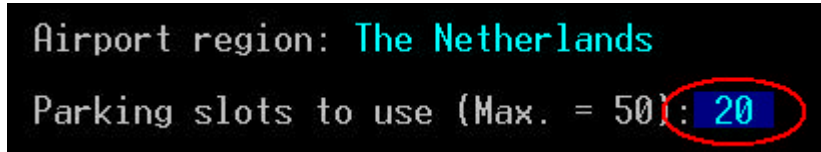


Figure 10 - The Parking Slots field.

- Because the flight plans are based on multiple trips that always return to the base airport, and have random layover times at both the home and destination airport, every flight plan will, on average, keep a parking slot ("starting position") at your base airport filled several hours a day.
- Enter a conservative and/or accurate value in this field to avoid clogging up your airport with too many aircraft. (You can use AFCAD to see, at a glance, how many starting positions a certain airport has, and to add more.)
- The final number of generated flight plans is determined according to the number of parking slots available, and the specified flight range distance. Using the minimum 5 parking slots with the minimum range of 20 nautical miles will produce 5 flight plans. Using the maximum of 50 parking slots, with the maximum range of 500 nautical miles, will produce 200 flight plans.

STEP 5 - SETTING THE TRAFFIC PERCENTAGE

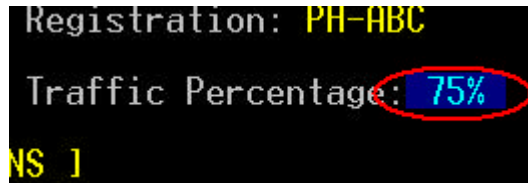


Figure 11 - The Traffic Percentage field.

- The Traffic Percentage is the percentage at which these flight plans become active.
- If you select a higher percentage (such as 85% or 95%) then you can turn off the AI traffic generated by GA Traffic Maker while still keeping most other AI flights in the air. You might prefer this if you mostly fly big jets to major or international airports.
- If you select a lower percentage (such as 5% or 10%) then you can turn off most other AI traffic, while still keeping the GA traffic aircraft flying. You might prefer this if you mostly fly smaller aircraft at smaller airfields, and so prefer most of your traffic to be and do the same.

STEP 6 - GENERATING THE FLIGHT PLANS



Figure 12 - GA Traffic Maker ready to generate flight plans.

- This really is the easy part. Just press ENTER and GA Traffic Maker takes care of the rest. When the process is over, you'll see the following message, which tells you that 20 plans, using a total of 7 airport destinations, were written to a file called [GA_EHAM.TXT](#).

```
[ PRESS ANY KEY TO CONTINUE ]

,09:25:29,00:00:00,20,R,2455,EHAM,11:57:39,00:00:00,40,R,2456,EHSB
,15:13:20,00:00:00,30,R,2457,EHAM,18:49:11,00:00:00,30,R,2458,EHVB
,20:22:30,00:00:00,20,R,2459,EHAM // GATM 1.1 EHAM

<< 20 randomized daily IFR flight plans written to GA_EHAM.TXT >>
<< using 7 available destination(s) if open to traffic. >>
```

Figure 13 - 20 flight plans have been generated, and can be found in your Ttools folder in the file GA_EHAM.TXT. You can press any key to enter another airport, or F10 to exit the program.

MORE ABOUT THE FLIGHT PLANS

- GA Traffic Maker generates flight plans that repeat every 24 hours. Most aircraft will make from two to eight return flights during that time period-from the base airport to a random destination airport and back again-with sequentially random layovers and departure times at both airports after each flight.
- Flight plans use planes chosen at random from the GA hanger contained in the [GA_CRAFT.TXT](#) file. See "Advanced User Techniques" for details on how to use and customize this file for specific results.
- The nature of general aviation flying is much more random and sporadic than commercial aviation. These fully random and sporadic flight plans seek to capture that reality, even to the extent that these GA aircraft, as in real life, more often than not will spend more time on the ground than in the air.

- All flight plans are IFR (since there is no way of knowing whether a randomly generated flight will occur in VFR conditions) and are filed for an appropriate altitude calculated from airport altitude and taking into account the direction of flight-odd thousands for east-bound flight, even thousands for west-bound flight.

STEP 7: ADDING YOUR TRAFFIC TO FS2002

Note: You will need to be familiar with using TTOOLS and AFCAD for this part!

- First of all, you will need to make sure that all the used destination airports support AI traffic. That is, each of the airports used in the generated flight plans will need to have a Tower Control frequency. (If you don't see a "Contact Tower on..." option in the FS2002 ATC window at that airport, then it doesn't!) If an airport doesn't have one, you have to use the **AFCAD** program to add it. It's a pretty quick and simple process, and if you don't know how to do it, open the **AFCAD** [ReadMe.htm](#) file, and click on the "Adding ATC to an Airport" link right near the top of the document.

- To find out which airports were used in the flight plans, view or open the file (GA_EHAM.TXT) and scroll to the end. You'll see a list of airports there. Using AFCAD, check each one to see if it has a Tower Control frequency. If it does not, add one.

- Finally, open the TTOOLS [FlightPlans.txt](#) file and paste the new flight plans at the end of it. Then recompile your FS2002 [Traffic.bgl](#) file using [TCompiler.exe](#).

- All flight plans are identified with a "// GATM 1.1 [airport]" comment at the end. This makes the GATM flight plans easy to spot and delete if you no longer want them as your traffic, or you believe they could be causing problems.

ADVANCED USER TECHNIQUES

CUSTOMIZING THE GA HANGAR:

- GA Traffic Maker selects the aircraft for its flight plans from the [GA_CRAFT.TXT](#) file. The standard install uses 18 default FS2002 Professional aircraft. Installing the Extra Aircraft package ([GA_EXTRA.ZIP](#)) adds an additional 10 aircraft models.

The default install uses 18 aircraft, which are as follows:

- Default Beech Baron 58 (1 livery)
- Default Beech King Air 350 (1 livery)
- Default Cessna Grand Caravan (3 liveries)
- Default Cessna Skyhawk 172SP (3 liveries)
- Default Cessna Skylane 182RG (1 livery)
- Default Cessna Skylane 182S (4 liveries)
- Default Learjet (1 livery)
- Default Mooney Bravo (1 livery)
- Default Piper Cherokee (3 liveries)

The "extra aircraft" package ([GA_EXTRA.ZIP](#)) adds the additional 10 aircraft:

- Aeronca 11AC Chief (2 liveries - courtesy of Mike Stone)
- Beechcraft 1900D (4 liveries - AI only - courtesy of Barry Blaisdell and Premier Aircraft Design)
- Beechcraft 33 Debonair (1 livery - AI only - made for GATM by James Eden and Reality XP - flyable aircraft package available as **B33.ZIP**)
- Dehavilland DHC6 Twin Otter (2 liveries - AI only - courtesy of Barry Blaisdell and Premier Aircraft Design)
- Piper Malibu Meridian (1 livery - courtesy of Mike Stone)

- To add more aircraft to the *GA Traffic Maker* hangar, simply copy any desired entries from your TTools [Aircraft.txt](#) file to the [GA_CRAFT.TXT](#) file.
- To remove an aircraft, simply delete the desired entry from the [GA_CRAFT.TXT](#) file.
- To get *GA Traffic Maker* to ignore certain aircraft for a time, put a **//** in front of the desired entry. *GA Traffic Maker* will then skip that aircraft and not select it for any flight plans until the **//** is removed from that line.
- When adding new aircraft to the *GA Traffic Maker* hanger, you may have to test them to see how they work. **Many add-on aircraft will not function properly as AI models**, a common problem being that incompatible models will crash when trying to land.
- If you do find a General Aviation aircraft that works well as an AI model, is a reasonable download size, and is not included with this package, please recommend it to Capholland@hotmail.com, adding **GA TRAFFIC AIRCRAFT** to your subject line. Please also specify where the aircraft may be found or downloaded from.

GENERATING SPECIFIC TYPES OF TRAFFIC

Using the above method, you can generate specific types of traffic for specific areas. Let's say you install a fleet of bush-planes with the purpose of making them hop to various airports around Alaska.

- First, you would have to add entries for those aircraft to your [Aircraft.txt](#) file, and copy those same entries to the [GA_CRAFT.TXT](#) file.
- Next, open [GA_CRAFT.TXT](#) and put a **//** in front of all the aircraft that you DON'T want to see flying in Alaska.

- Finally, generate flight plans for all the desired “bush-flying” airports.

GENERATING PLANS FOR MILITARY TRAFFIC:

When generating plans for military traffic, you will probably want to restrict your destination airports to specific ones. Otherwise it might look funny to have a fleet of Stealth Bombers landing on a grass strip somewhere simply because they happen to be in the area.

- To do this is, enter all the necessary information in the GA Traffic Maker window.
- Pause when you are told to "Press Enter to Create Plans."
- Now, switching to explorer and your **TTools folder**, open the **GA_DEST.TXT** file. This file contains the destination airports that will be used to create the flight plans.
- Delete all the entries except those belonging to the desired destination airports. Save and close this file.
- Now go back to **GA_MAKER.EXE** and press Enter to create your plans.

CUSTOMIZING YOUR FLIGHT PLANS:

- While the flight plans that are generated will work as they are, you may wish to edit them or look them over before incorporating them into your traffic schedules. For example:
- You could fine-tune the flight plan registration numbers to ones you know are real.
- You could change the flight status from IFR to VFR (in which case, remember to add 5 to the assigned altitude value.)

TROUBLESHOOTING GA TRAFFIC MAKER ALERTS:

- Most trouble will likely come from not following the (installation) instructions closely enough, or from unrelated improper use of your **TTOOLS** [Airports.txt](#), [Aircraft.txt](#), and [FlightPlans.txt](#) files, or the [GA_CRAFT.TXT](#) file.

- If you do run across a bug or anomaly that is not covered by the following list, please write Capholland@hotmail.com with "**GA TRAFFIC BUG REPORT**" in the subject line.

GA_MAKER ALERT: Missing AIRPORTS.TXT or GA_CRAFT.TXT files

CAUSE: This usually means that the [GA_MAKER.EXE](#) file and/or the [GA_CRAFT.TXT](#) file are not in your TTools folder, or else that you have not run [TDecompiler.exe](#) or [CollectAirports.exe](#) yet.

SOLUTION: Hit ESC to exit the program. If both [GA_MAKER.EXE](#) and [GA_CRAFT.TXT](#) are in your TTools folder, then run [TDecompiler.exe](#) or [CollectAirports.exe](#) to create the necessary [Airports.txt](#) file.

GA_MAKER ALERT: Your GA_CRAFT.TXT file does not list any usable aircraft.

CAUSE: Either all aircraft entries were deleted from the [GA_CRAFT.TXT](#) file, or all the aircraft are set to be ignored with the // or ; characters in front of each entry.

SOLUTION: Remove // or ; characters from at least some of the entries so that GA Traffic Maker will have some aircraft to work with. If there are no aircraft listed in [GA_CRAFT.TXT](#), or the file is empty, reinstall the original [GA_CRAFT.TXT](#) from the [GA_MAKER.ZIP](#) or [GA_EXTRA.ZIP](#) files.

GA_MAKER ALERT: Unrecognized entry in GA_CRAFT.TXT. Unable to continue.

CAUSE: One of the aircraft entries in the [GA_CRAFT.TXT](#) file has an error. This is most likely caused by the improper addition of an aircraft entry.

SOLUTION: Hit ESC to exit the program. Open [GA_CRAFT.TXT](#). Identify the offending entry, very likely a recent one. If you can't fix the entry, delete it. Close and save the corrected [GA_CRAFT.TXT](#). Run [GA_MAKER.EXE](#) again.

GA_MAKER ALERT: User error in the GA_DEST.TXT file.

CAUSE: You incorrectly removed, added, or changed entries in the [GA_DEST.TXT](#) file.

SOLUTION: Hit ESC to restart the program. A new [GA_DEST.TXT](#) file will be generated when you enter your airport and flight range values again.

GA_MAKER ALERT: Latitude/Longitude information for [airport] is unrecognizable

CAUSE: The latitude value for [airport] does not appear to be a correct one. Most likely because it is missing the required N, S, E, or W prefix.

NOTE: This problem, and the following solution, directly affects the TTools process.

SOLUTION: Hit ESC to exit the program. Open [Airports.txt](#) and search for the faulty airport entry. Delete or correct the airport's entry. Close and save [Airports.txt](#). Run [GA_MAKER.EXE](#) again.

THANKS AND ACKNOWLEDGMENTS:

- Many thanks to Lee Swordy for the TTools and AFCAD programs.
- Thanks to Nicki de Wet for his AIREXTT utility.
- Thanks to www.avsim.com and www.flightsim.com for hosting the above resources.
- Thanks to Microsoft, for providing such a versatile and adaptable Flight Simulator program, and the venerable QBASIC 4.51 that I used to put GA Traffic Maker together.

DON'T FORGET TO STOP BY AND VISIT

CAPHOLLAND'S VIRTUAL FLIGHT SERVICES STATION

<http://caphollands.fsgateway.com>

Where you'll find

- **Any news and updates regarding GA Traffic Maker.**
- **Printer-friendly versions of the FS2002 PDF manuals** that use half as much paper when you print them. Ideal for transferring to ring-binders. Also available in German and French.
- **Ready-to-print PDF checklists** for all default FS2002 aircraft. Why waste monitor space trying to display checklists or find Vref speeds on screen, when real pilots use their laps?
- **Tips, tricks, and tweaks** for getting the most out of FS2002, and links to much more.

See you there!