

AIT AVIATION

BlackBox 2[®] Manual

v2.5 Edition

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INTRODUCTION TO BLACKBOX 2

What is "BlackBox 2"?

AIT Aviation simulates a fictional Israeli airline, which operates general aviation aircrafts. Our software, "BlackBox 2", is a unique and revolutionary way for our pilots to fly and report their flights to our VA.

A little bit of background...

We've opened a department in our VA called "AIT Aviation's offices", which simulates our airline's offices, located in Herzelia airport (LLHZ). The offices answer calls from our virtual clients (Business men, fun flights, etc...) so our pilots can choose a client and take care of his flight (ex. A pilot can choose to fly a business man and his children from Ben Gurion airport to Herzelia).

Furthermore, we have simulated an entire virtual fleet of aircrafts, which are parked in many different airports in Israel. Our virtual fleet includes 3 Cessna 172 airplanes, 2 Beech Baron 58 airplanes and many many more! Our pilots can rent an aircraft (see rental prices in page 5) and get a paycheck from the passenger at the end of the flight, using the virtual money (VM) system, which is being used in our website. The pilot can also gain (or lose) prestige (see more details at page 13) in the flight.

How does it work?

Each time you open "BlackBox 2", the software automatically checks for software updates, database updates, etc... - and downloads the most up-to-date database. When a pilot choose an aircraft from the list, the software "knows" the **EXACT POSITION** of the aircraft in the world - the pilot will start the flight from the exact position where the last pilot who flew the same aircraft parked!

Furthermore, the software "knows" **how much fuel** was left in the aircraft's tanks from its last flight, and (if necessary) the pilot pays some virtual money for refueling the aircraft (see more details at page 9).

At the end of the flight, the flight's data (time, prestige, profit...) is sent to our website automatically, along with the parking position and the amount of fuel in the plane's tanks.

SOFTWARE REQUIREMENTS

In order to run BlackBox 2, you must make sure you have the following:

Minimum system requirements:

- Microsoft Windows XP®.
- 256 MB RAM.

Software Required

- Microsoft Flight Simulator 2004.
- FSUIPC software (Version 3.71 or later).
- SquawkBox v3.0 (or later) or FSInn v1.2 (or later).
- AIT Aviation's fleet installed.
<http://www.ait-air.org/fleet.asp>

Other Requirements

- AIT Aviation pilot number and password

AIRCRAFT RENTAL PRICES

Like in the real world, if a pilot wants to fly, he should rent an aircraft. BlackBox 2 is no different. The software measures engine running time and then calculates the rental price, according to the following table (Notice: all prices are for 1 hour of engine running time).

Aircraft	Rental Price (VM)
Cessna 172	60
Socata TB20	66
Cessna 182	66
Bonanza V35	72
Zlin Z43	75
Piper Comanche	84
Beech Baron 58	90
Twin Bonanza	102
Cirrus SR20	120

More information

Like in the real world aircrafts, the time counter on BlackBox 2 measures time in divisions of 6 minutes (6 min, 12 min, ..., 54 min, 60 min). To help you understand how that works, here's a table that might help you: (Notice: RP is the Rental Price taken from the above table).

Time (minutes)	Rental Price Calculation (VM)
0-6	RP X 0.1
6-12	RP X 0.2
12-18	RP X 0.3
18-24	RP X 0.4
24-30	RP X 0.5
30-36	RP X 0.6
36-42	RP X 0.7
42-48	RP X 0.8
48-54	RP X 0.9
54-60	RP X 1

For example...

If you'd rent a Beech Baron 58 for 29 minutes and 59 seconds, it will cost you 45 VM, but 1 seconds later (when it becomes exactly 30 minutes) the price will be 54 VM.

AIT AVIATION'S OFFICES

Introduction to AIT Aviation's offices

As we mentioned in the "Introduction to BlackBox 2" page, AIT Aviation VA has a virtual office located in Herzelia airport (LLHZ). The offices' job is to answer calls from our virtual clients (Business men, romantic flights, etc...) so our pilots can choose a client and take care of his flight (ex. A pilot can choose to fly a business man and his children from Ben Gurion airport to Herzelia).

Start using BlackBox 2

Well, now it's the moment we've waited for:

- Run BlackBox 2.

After the splash screen and opening music are over, you will enter AIT Aviation's office. If it's your first time in BlackBox 2, you'll be asked to configure the software.

Welcome to AIT Aviation's office. You should now hear the phones and computer sounds in the background.

This is the place where our system will find the best client for you. All you have to do is to fill in a form which contains your required flight time (you don't have to be precise), required destination or origin airport, preferred type of flight (CVFR or IFR), requested type of aircraft, etc...

Once you're done with the form:

- Click "Continue".

Our offices system will now search for a suitable client for your kind of requests. This process takes only a few seconds, which afterwards you will proceed to your final step in the offices - your flight's details page.

Flight details page

In this page you can see your flight's details, including:

- Your passenger's identity and the purpose of the flight (ex. Fun flight).
- Estimated flight time.
- Length of the flight (nm).
- Flight map button.
- SquawkBox flight plan file creation button (more details in the next page).
- METAR reports (if available) for your origin and destination airports.
- Flight plan (departure and arrival airports, flight's altitude, route, etc...).

SquawkBox flight plan creator

As mentioned in the previous page, the flight details page includes a button labeled "Create SB3 FP". This button allows you to export your flight plan (route, aircraft, altitude, etc...) into SquawkBox 3. The process is very simple:

- Click on the "Create SB3 FP" button.
- Choose the folder you want the file to be exported to.
- Click SAVE.

Now the software will create the file directly to the specified folder.

METAR reports

The METAR reports for the departure and arrival airports are located on the bottom left. If a METAR report is available, you can move your cursor over the METAR report in order to see the decoded report. The decoded report allows you to see a friendlier version of the METAR report.

Now what?

Now you should decide whether or not to fly that client.

If you don't want to fly that client:

- Click the "Go Back" button.

If you DO want to fly that client:

- Click "Continue".

Aircrafts available screen

You're about to leave the offices and get out to your plane, but first you have to decide which plane will it be. On the "Aircrafts available screen" you will see a list of aircrafts who matches your preferred aircraft model. Aircrafts taken by other pilots will appear gray (and you won't be able to choose them).

This page contains all of the information you need to decide which aircraft to use: Callsign, location, and amount of fuel left in its tanks. All you need to do now is:

- Choose an aircraft from the available aircrafts.
- Click "Continue" to step out of the offices to the fueling station.

Notice:

If you choose an aircraft located in a different airport than your passenger's departure airport, you will first have to fly to your passenger's airport, pick him up (the passenger comes to your parking, wherever it is), and then takeoff to the destination airport. Don't worry, we'll remind you that issue later.

FUELING STATION

You've just left the offices and got into the fueling station. In this screen you can see your airplane's fuel status and decide whether to refuel it or not.

If you think you already have enough fuel:

- Choose "I don't require any fuel".
- Click "Finish".

If you think you DO need to refuel your airplane:

- Choose the amount of fuel you need (Full tank, Half tank, custom...).
- Click "Finish".

Notice:

Refueling your aircraft will cost you virtual money. The price (VM) of 1 liter appears at the bottom of the screen.

FLIGHT SUMMARY PAGE

You're almost done! Now you can see your flight briefing. You should actually hear our briefing manager gives you the briefing, along with the appropriate information (located on the summary page itself).

That's it! You're done! Don't keep the passengers waiting and...

- Start MS FS2004 and wait for the menu to show up
- Click "Let's go flying!".

Notice: It is recommended to start a flight at the airport you are going to start from to shorten the loading time.

FLYING WITH BLACKBOX 2

As you can see, you are now located on the EXACT location and position that the last pilot who flew your plane has parked. Your engines are shut down, and it's time to connect to VATSIM:

- If "Please change aircraft to..." message is received change the aircraft to the one you chose in the offices
- If you don't get the message, you can either switch to a payware/freeware version of the aircraft and then click on the "Start Flight" button
- Open SquawkBox\FSINN.
- Fill in a flight plan (or use the one BB2 has created for you for SB3).

Now there are 2 cases:

If your plane is already in the passenger's departure airport

Well, you're already in your airplane - now wait for the passenger to arrive. **Make sure the plane's doors are open** or else the passengers will have to knock on your doors - and an angry passenger is bad for you, as a pilot, and for us, as an airline.

When the passenger will arrive, you'll hear him coming (along with a message which will appear on your flight simulator). Now:

- Close the doors.
- Start your engines and fly to your destination airport as filed.

Upon arrival, you will be requested to taxi to a parking position in the destination airport, and shut down your engines and apply the parking brakes. After the engines will come to a complete stop, open the doors. Then, the passenger will thank you for the flight and BlackBox 2's in-flight screen will change to the "Finish" page.

Now let's close this flight...

This screen shows you your flight details.

- Click "Finish" to report the flight to AIT Aviation and receive the paycheck.
- Click "View debrief" to get the flight debrief that BlackBox 2 has created.
- You can now close BlackBox 2.

That's it!

You can now check the website to see if the reported flight was received. AIT Aviation thanks you for taking care this flight, and making our clients happy. You are welcomed to step into our offices again for another flight!

If your plane IS NOT in the passenger's departure airport

Well, now it's time to pick up your passenger from his departure airport.

- Take off as soon as possible and fly to your passenger's origin airport.
- Taxi to a parking position.
- Shut down your engines.
- Open the doors.
- Wait for the passenger to arrive.

Notice:

If you think you're going to get late to your passenger (meaning you won't make it to the scheduled time):

- Dial to AIT Aviation's offices (default dial key: SHIFT + C).
- Follow the instructions which will appear on the screen.

When the passenger will arrive, you'll hear him coming (along with a message which will appear on your flight simulator). Now:

- From now on, follow the same instructions on page 10.

That's it! You have now finished your basic BlackBox 2 training and can try it on VATSIM. **BUT** before you'll do that, we recommend you to read the rest of the manual - learn about the in-flight interface, the dialing key (to the offices), the options menu and much more!

BLACKBOX 2 IN-FLIGHT INTERFACE

In this part we'll learn more about the features of BlackBox 2.

As mentioned before, once you're done with the briefing you can start the flight by clicking on the "Let's Go Flying!" button. When you'll click that button, the briefing page will close and a new black screen will appear - the BlackBox 2 in-flight interface window.

This window allows you to see your flight's details in real-time, and displays the following information:

- ETA.
- Scheduled time of arrival.
- Engine running time.
- Prestige points so far.
- Rental Price (spent so far).
- Last message log.

ETA

The ETA shows you the **Estimated Time of Arrival** to your airport(s), based on your current flight status (position, speed, etc...).

Scheduled Time Of Arrival

The scheduled time of arrival shows you the time you're supposed to get to your destination. For example, if you need to pick up your passenger from Haifa, this will tell you the time left for the passenger to arrive there.

Rental Price

Shows you the amount of VM spent on renting the aircraft so far. This will be deducted from the costumer's paycheck in the final calculation.

Prestige

The **prestige indicator** shows you your current flight's prestige. The prestige is influenced by many other monitored flight data and costumer reactions. The monitored flight data includes:

- 1) **Passenger's sickness** - too much G-force will make him puke and will reduce his paycheck and the prestige of the flight.
- 2) **Flight Delays** - any flight delay will decrease your flight's prestige, but letting the passenger know about the delay (see page 14) will decrease less prestige points.
- 3) **Doors operating** - opening the doors when the airplane is not fully stopped (with parking brakes set), will decrease your flight's prestige points.
- 4) **Squawk codes** - Israel's CVFR requires squawk 50xx or 51xx (only in Israel).
- 5) **Airplane Lights** - beacon and strobe lights must be ON at takeoff.
- 6) **Stalls** - stalling will cause a decrease in prestige points.
- 7) **Overspeed** - speeding over the Vne (never exceed speed) will reduce your prestige points.
- 8) **CVFR Speed** - speeding over 180 knots will reduce your prestige points (only in Israel).

At the end of each flight, the flight's prestige will be sent to our website (along with all the other flight information) and will be added to your career's prestige (can be seen in the pilot roster page or in your career page). If you'll receive a negative prestige (ex. -6) so prestige points will be deducted from your career.

Last message log

Located in the bottom of the screen, this option allows you to see a log of the messages given to you by the BlackBox 2 system. This way, if you missed something, you can use this option to see the message one more time. All you have to do is:

- Click "Last message log" on the bottom of the screen.
- Scroll through the messages.
- To go back to the main screen, click "Back".

DIALING TO AIT AVIATION'S OFFICES

So, you already know how to fly using BlackBox 2, and you know how to use the BlackBox 2 in-flight screen. Now, it's time to learn about a special feature introduced in BlackBox 2 - the dialing key.

AIT Aviation's offices have a secretary happy to answer you at all time. You can call her any time in order to tell her you'll be late to the passenger, so she will be able to inform him (if it's not too late). Informing the passenger about a flight delay will make him less angry and the decrease of prestige points will be smaller.

Using the dialing key is simple:

- Press the dialing key (The default key is set to Shift + C).
 - see page 15 for details on how to change the dialing key.
- You'll now have the following options:
 - Press 9 to notify the passenger on a delay.
 - Press 0 to hang up.

Notice:

If you think your flight will be delayed for some reason (ATC, slow flying, traffic, etc...), and that you won't make it on time to the passenger - you should announce a delay. This option is available at all times.

OPTIONS SCREEN

BlackBox 2 options screen will automatically load when you run BlackBox 2 for the first time. You can always open it from the menu in the login page at the **top of the screen** or from the shortcut in the start menu. The following options can be changed from the Options screen:

In-Flight Sound Volume

You can set BlackBox's volume (message beeps, passengers, etc..) with the sliding bar (10-100).

Set FS Inner Clock To Real Time

Sets Flight Simulator 2004's clock to real time (Assuming your windows clock is set).

Mute Office Sounds

Mutes the background ambience sounds of the offices.

Make The In-Flight Window Always On Top

Choosing this will make the in-flight screen always appear on top. This option will only work if you're using Flight Simulator 2004 in WINDOW MODE instead of the FULL SCREEN mode.

Changing The Dialing Key

Here you can change the key(s) that will be used in order to call the offices from FS2004. The default key is set to SHIFT + C. In order to change the key:

- Click "SET"
- Choose a key assignment (instructions will appear on the screen).
- After assigning a key, the screen will disappear and the assigned key will appear on the Option Screen, next to the "SET" button.

MAX. Passenger Waiting Time

Defines the maximum time that a pilot will have to wait for his passenger. **Notice**, this only affects the times when your aircraft is **ALREADY** at the passenger's origin airport.

Transparency Percentage

Sets BlackBox 2's window transparency - ranging from 0 to 50 percent.

Active Soundpacks

Shows the active passenger soundpacks for BlackBox 2. You can add more soundpacks on your own by copying Ben's soundpack, renaming it (for ex. "Omri"), and changing the MP3 files inside. Make sure at least **ONE** MP3 file is located in each folder.

Flight Simulator Location

In order to automatically start Flight Simulator 2004, BlackBox 2 needs to know where it is located on your hard drive. In most cases BlackBox 2 will locate it automatically, but you have to make sure it's the right location.

Choosing your VATSIM pilot client software

Here you can choose if you use FSINN or SB3 to connect to VATSIM

Choose Hub

Which hub database should BlackBox use when started

SOFTWARE DEVELOPERS AND SPECIAL THANKS

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