Flying and Air Fighting in the

F.E.2b

Over Flander's Fields

By
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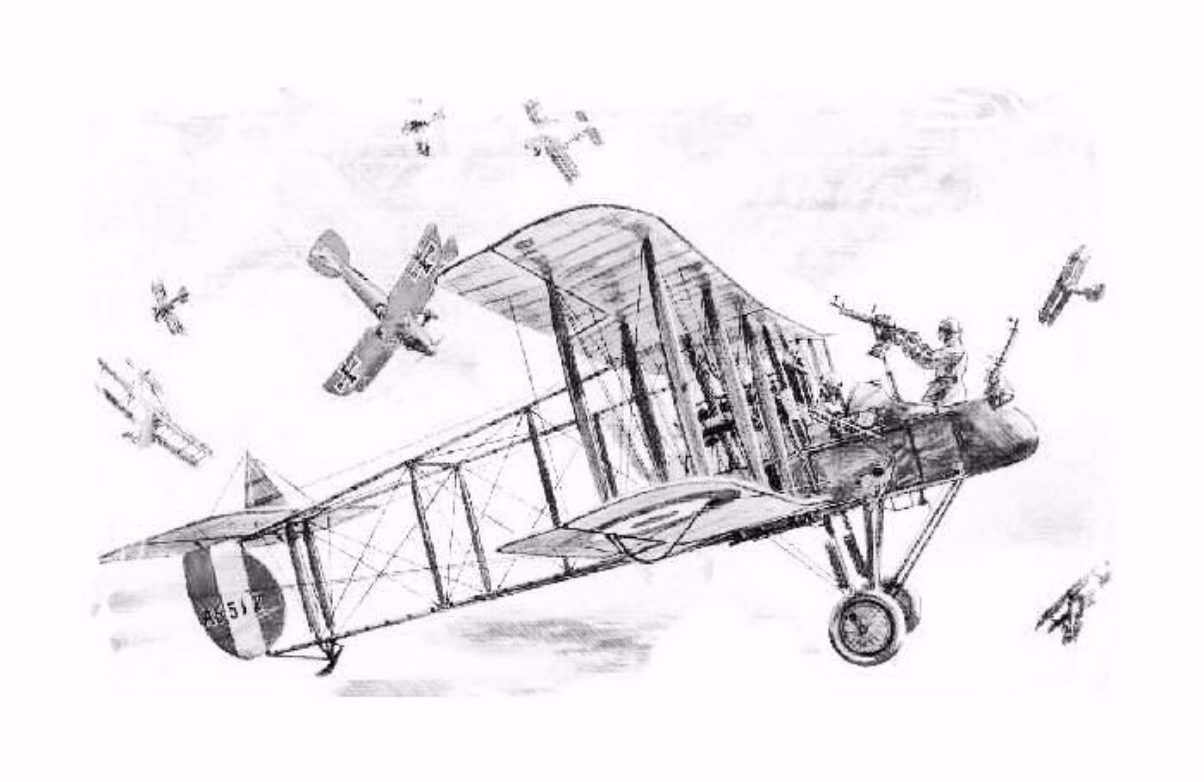

Quick Rating to Fly: Moderate to Suicidal (depends on timeframe and role)

Introduction

The purpose of this guide is to familiarise pilots with the peculiarities of the F.E.2b (hereinafter 'Fee') prior to embarking on a campaign in it.

First off, a word to the wise: ALWAYS fly the Fee in a fighter squadron, NEVER in a bomber squadron. 'F.E' officially meant 'Farman Experimental' but semi-officially meant 'Fighter Experimental'. The Fee is MUCH more survivable as a fighter than as a bomber due to the different wingman AIs associated with each role. That said, you might want to do some minor hacking to make the Fee perform in a believable manner as a fighter, as follows:

Find the **FE2b_sqd.xdp file in the OBDSoftware\CFSWWI Over Flanders Fields\aircraft\FE2b_Sqd** folder. This is SQD without any number on the end. It should be the last FE2b subfolder in **\aircraft**, after AC1-5 and SQ1-4. In this file,

find the 3rd line from the top (starts with **<General Allegience="0"**). Go to the end of this line and you'll see **Category="tactical_bomber"**. Change the **"tactical_bomber"** to **"fighter_bomber"**. This will give your AI wingmen a slight semblance of survival instinct, which makes a huge difference in the enjoyment„ frustration index.

Without this change, all AI Fees act like conventional tractor 2-seaters, which means they fly along straight and level; thus they are easy meat. With this change, AI Fees in your squadron ONLY will rely less on a rear defence that isn't really there, although they will still be quite sluggish so won't chase down Huns for you. They will, however, respond better to wingman commands in a dogfight and do a better job simulating the 'Lufbery Circle' that Fees performed as a matter of course in real life.

The Fee's flight characteristics are not particularly susceptible to reality settings. It's slow and stable at all times. However, with the reality settings maxed out, it's possible to stall 1 wing and flip over. If this happens, it's usually not fatal because you don't lose much altitude. Just roll INTO the spin and you'll regain control as soon as your nose points down. IOW, you do a snap roll and keep on truckin'. Expect to lose about 100 feet of altitude in the process, however.

Where reality settings really affect the Fee is in gunnery. The Fee has no fixed gun for the pilot so depends entirely on gunners to attack the enemy. Thus, gunner settings have a very significant effect on combat performance. I recommend flying with whatever you normally use for gunners, but do this in the knowledge that this affects your own forward firepower, too.

When first introduced, the Fee was a formidable machine. It was in large part responsible for ending the so-called 'Fokker Scourge'. However, this success was its biggest failure because, in the absence of more formidable opposition, it was kept in large-scale production under the assumption that the Germans would never improve. In 1917, when the Huns had not only the Albatros but also large groups of them, the Fee was severely outclassed. However, at this point it was not so easy to replace. As a result, the Fee had to soldier on well into the year, through Bloody April and far beyond. Thus, as time advances, the Fee switches from being a dominant ride to a short life but a merry.

General Characteristics

As to be expected of a Royal Aircraft Factory product, the Fee is VERY stable and largely free of nasty habits. Its worst habit is that in the default condition at the start of a mission, it has a strong tendency to roll right. This is completely against the historical practice of test-flying a machine and rigging it to fly correctly, so do not hesitate to use the trim commands to get the Fee to fly level hands-off, at least in roll and yaw. Pitch trim is to taste. Once trimmed, the Fee can be left to fly itself while you go get another beer. That said, however, the Fee

makes beaucoup leeway in crosswinds because it has no fuselage to speak of to help weathervane it into the wind. Thus, if the wind changes after you've trimmed immediately after takeoff, expect to have to compensate with a lot of rudder input or trim, depending on your realism taste.

The Fee is very slow (top level speed at low altitude is about 75 knots) and has the roll rate of a dreadnought. It's so stable that you have to hold in aileron to maintain a bank instead of centring that control once you've established the desired bank angle. The rudder and elevator, however, are always very authoritative so use them for your large-scale direction changes.

One peculiarity of the Fee is that despite its sluggish roll rate and general stability about that axis, it somehow retains angular momentum about the roll axis for a long time after it should all be gone. IOW, you're banked, you turn, you come to the desired heading, you roll back level and let go. About 1 second later, the Fee will try to roll in the last direction you moved the stick (IOW, in the opposite direction of the bank during the turn), but you can bring it back level with opposite aileron. About 1 second after this, you'll have to repeat the process, and usually at least once more before the Fee will settle down on the new heading.

The Fee can do a loop but only from the high speed (for it) of 75-80 knots. This being at or above the Fee's max level speed for all but low altitudes, loops are usually only possible after a dive to gain speed, and then only at fairly low altitudes. This of course means that vertical manoeuvres in dogfights are completely out of the question. There's also the realism issue (not modelled in OFF) that the Beardmore engine couldn't survive being pitched up or down more than about 20 degrees for more than a few seconds, due to its oil system. Of course, if you're pulling positive G the whole time (like in a loop), then no problem. But then there's the fact that the observer (who does all your shooting) didn't have a seat, let alone a seatbelt, although he was tied down with long straps from his jacket. So depending on your realism tastes, you might want voluntarily to limit the manoeuvres you do to take these things into account.

Pre-flight and Take-off

Before opening the throttle, move the stick in a circle and kick the rudder both ways while watching the control surfaces to make sure they're responding and not at some weird angle. Once you're happy, firewall the throttle and leave it there until you're on your landing approach (assuming you live that long). Historically, the Beardmore engine had practically no difference in output between idle and full throttle and the Fee is so slow that you won't want to slow down in combat anyway.

As mentioned above, beware of the Fee's tendency to roll right on takeoff. This is easy to counter with aileron input to start with and aileron trim once airborne. It will probably need some up elevator trim to settle into its best low-altitude

climb rate of about 500fpm, but not much. (*Trim is observed using the [Z] key and then activated using your keyboard numbers when the [NumLock] key is deactivated).*

The Fee will fly itself off the ground if you leave it alone, but you CAN force it up sooner if you're on a short airfield with tall trees at the end. Left to itself, the Fee takes a lot of runway to build up even its low flying speed due to sitting nearly level to begin with and therefore dragging the tailskid a long way. If you want to speed things up, be very careful pushing the stick forward to lift the tail, because the Fee has a nose wheel which contacts the ground at a very slight nose-down attitude. If that happens, you're likely to somersault.

Therefore, on takeoff, the best bet is to let the Fee get off the ground by itself, then turn right (to avoid wingmen behind you) to clear any tall trees ahead. Bank about 30-40 degrees and use a lot of rudder and/or elevator, and it should be no problem. The Fee is rather hard to stall even in a dogfight so have no fears of making a major turn at low altitude and slow speed.

Normal Flight

As with all OFF planes, the maximum rate of climb for any altitude is achieved at about 80-90 of max level speed for that altitude. In the case of the Fee, the best ROC is about 500fpm at low altitude. The Fee holds this to about 5000 feet, after which the ROC decreases steadily. Expect about 250fpm at 7000 feet. Practical ceiling is about 9000-10000 feet, by which time the Fee is doing about 65 knots and its ROC is too small to notice, although it's possible, if you have nothing better to do for an hour and don't have much fuel aboard, to reach about 13000 feet.

Given the slow climb, expect to cross the Lines at well less than 10000 feet if you stick to the waypoint route. Also expect the enemy to be considerably higher than you are when combat begins, which brings us to our next topic.

Combat (Air)

The Fee is too slow to chase down any Huns except 2-seaters loaded with bombs, and usually not even them because they're too high. Thus, apart from exceptional circumstances, you will only get in a fight if the Huns want to play, and the only Huns who want to play are fighters. And being fighters, they will almost always have a significant altitude advantage on you. IOW, most of your fights will consist of being bounced by Albatri. If you're a real man and fly the Fee in Bloody April, then the Hun will also outnumber you by about 2:1 on average, plus of course is faster, more manoeuvrable, and has considerably better fire power. Fortunately, he's not immortal.

Because of its low performance, the primary tactic of the Fee is turning on the level. And the best way of doing this is the 'Lufbery Circle', so each Fee in your flight can help cover the others. Sadly, there is no wingman command to do this. (*You can approximate it fairly well by using the Help command repeatedly while*

yourself turning in a fairly gentle circle. This works MUCH better if, as mentioned above, you hack the **FE2b_SQD.xpd** *file so your wingmen are* **"fighter_bombers"**). You won't get the classic 'Lufbery Circle', but your wingmen will at least stay mostly together and circle about you, which keeps them safer from Huns.

Dogfights in Fees have 2 distinct stages. The first stage is when the Albatri bounce you with a huge energy advantage. Your sole objective in this phase is merely to stay alive by turning constantly and hitting the Help wingman command repeatedly. If you do this correctly, you'll live long enough to see the Huns blow their energy and try to turn with you. At this point, order your wingmen to attack, pick a target, and go on the offensive.

The Fee can't roll very fast but has a good turn rate and a small turn radius. Use rudder extensively and stay as level as you can, and you can easily cut inside the turns of the Albatri, especially if they're still trying to do high yoyos. Remember, your front gun is on a pivot so you don't have to get lined up exactly with the target. In fact, it's best to be on the target's low 4 or 8 o'clock, so you can hit his cockpit and engine better.

The Fee loses altitude in turns but not as much as the Albatri, and isn't nearly as helpless when low and slow, because that's its normal state. If you've done everything correctly up to this point, you should be on the tail of an Albatros that's too low and slow to fight, and you can perforate him at your leisure.

(Under AI control, the front gun's arc of fire is about 70 degrees to either side, about 20 degrees down, and about 45 degrees up. If you take the front gun yourself, you can elevate to about 80 degrees, but you do NOT want to do this because it's hard enough keeping the Fee out of the trees and out of Abaltri sights with you at the controls).

With full realism settings, the AI gunner will open fire at about 200 yards. For your purposes, you want to be MUCH closer or your gunner will scatter many hits all over him but not concentrated in vital areas. Your gunner also will NOT fire if the plane is turning hard or not within about 30 degrees of a level attitude. With a single Lewis, accuracy less deadly than for fighters, and limited ammo, he's not going to get many kills unless you're very close and not directly astern of your target. Given all these factors, you have enough ammo in the front gun to kill 1 enemy or maim 2 who might not make it home if you follow them long enough. But in general, don't expect to average more than about 0.5 kills per sortie.

The Fee also has a rear gun which is mounted in front of the cockpit so you can see what it's doing. This gun, although in real life worked by the same guy as the front gun, works independently in OFF. As with the front gun, it will track targets within about 250-300 yards, but won't fire until it's within about 200 yards and nearly level. The main purpose of the rear gun is to act as your rear view mirror because, even with TIR, your view to the rear is extremely limited. In a

dogfight, you'll see the rear gun periodically tracking a target (especially early on, when the enemy is overshooting you frequently), and it will occasionally fire a few shots. But for the most part, it should be at its rest position pointing rearwards. If it ever settles down on a different angle and shoots several bursts in succession, you're in bad trouble, and your best bet is to turn towards the side it's pointing towards. If you take this gun yourself, it has an arc of about 45 degrees to either side and from level to about 45 degrees upwards. This is about the same as the AI has for it. But you do NOT want to do this, because having an enemy behind you is very bad in a Fee.

(*In OFF, ammo for the rear gun is separate from the front gun. In real life, they drew from the same pool. But regardless, limit your combat to the ammo of the front gun, because it's the only one you can fire without being shot at in return.*)

The Fee doesn't burn easily and can take a lot of punishment in the wings and tail while remaining controllable. However, the engine goes away quickly. As a result, expect to make many forced landings. Fortunately, if you fly in Bloody April, most times this will be on your side of the Lines.

Combat (Ground)

The Fee lacks a bombsight (*[F7] gives you a blank gray square*) so its only recourse is to drop bombs from a low-altitude glide or by guess from its 'high' altitudes. Neither is recommended because the Fee is so slow that it's a sitting duck for ground fire. This is why you should always fly the Fee as a fighter, which is what it did in real life. Besides, if you live long enough, you'll get to fly the Brisfit (Bristol Fighter).

If you don't have bombs aboard (which you won't if you're in a fighter squadron), ordering wingmen to attack ground targets does nothing except make them flak fodder. Even your own gunner won't even strafe ground targets. This includes balloon-busting. So to kill a balloon, you'll have to take the gun yourself.

Landing

On those rare sorties when you return to home 'drome, keep the throttle fully on until the landing approach. In fact, keep it fully on until you turn final, and then only throttle back a little until you're sure you'll clear the trees. The Fee's wings-level stall speed is very low, but not much slower than it goes at full power, especially with the inevitable battle damage. Also, the Fee slows quickly at idle, so don't worry about your speed very much and just get the beast lined up with the runway and over the trees, then throttle back to about half power, with idle saved to the very end. In most cases, however, you'll be landing starting from treetop level in any field right under you with an engine that will hardly keep you in the air. In such cases, pick the best approach angle within about 30 degrees of your current heading, use rudder to dodge any trees or stumps, and don't be afraid to keep full power on the whole way down.

The main thing to watch on landing, under whatever circumstances, is that the Fee likes to land at a nearly level attitude, due to its tall tailskid in the back and somersault-happy nose wheel in the front. If the nose is too high, the tail will catch and slam the nose down, then the nose wheel will catch, and then you'll somersault. If the nose is too low, it will somersault right off from the nose wheel hitting first. The Fee isn't so sensitive to yaw or roll on touchdown, however, although you can break wingtips and even the whole landing gear if you try hard enough, but you can usually walk away from such misfortunes.

Statistics

From the official stats in the \manuals\MOW.pdf file:

Type: Fighter - Bomber
First Introduced: 1915
Engine: Inline rotary, Beardmore 160 hp
Wing Span: 47 ft 9 in
Length: 32 ft 3 in
Height: 12 ft 7½ in
Empty Weight: 2061lb
Gross Weight: 3,037 lb
Max Speed: 91½ mph
Ceiling: 11,000 ft
Endurance: 2 hr 30 min
Crew: 2
Armament: 2 or 3 (*only 2 in OFF) .303in Lewis machine guns