Vertigo Studios

Spad VII CI (150 bhp)

Flight Simulation Manual

Compatible with

Microsoft Flight Simulator X vSP2®
&
**Lockheed Martin Prepare 3D® versions 1.4, and v2.+

**With P3D constantly evolving, we cannot guarantee 100% compatibility of this product with P3D versions 2.+ and higher. Please visit customer support if you have any questions.

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ABOUT

The SPAD S.VII was the first of a series of highly successful biplane fighter aircraft produced by Société Pour L'Aviation et ses Dérivés (SPAD) during the First World War. Like its successors, the S.VII was renowned as a sturdy and rugged aircraft with good climbing and diving characteristics. It was also a stable gun platform, although pilots used to the more manoeuvrable Nieuport fighters found it heavy on the controls. It was flown by a number of the famous aces, such as France's Georges Guynemer, Italy's Francesco Baracca and Australia's Alexander Pentland.

Performance in early aircraft designs was largely dependent on engines. In February 1915, Swiss designer Marc Birkigt had created an overhead cam aviation powerplant based on his Hispano-Suiza V8 automobile engine, resulting in a 330 lb engine capable of producing 140 hp at 1,400 rpm. Further refinement of the engine brought the power to 150 hp by July 1915. Given the engine's potential, French officials ordered that production be set up as soon as possible and called upon aircraft designers to create a new high-performance fighter around the engine, called the Hispano-Suiza 8A.

Louis Béchereau, chief designer of the SPAD company, quickly produced drawings for a prototype fighter equipped with the new engine. The SPAD V was basically a smaller version of the SPAD A.2 two-seat "pulpit fighter", although as a single seater it dispensed with the so-called "pulpit" which carried the observer in front of the propeller.

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FOREIGN SERVICE

Allied air services were also equipped with the new fighter. The Royal Flying Corps was the first foreign service to receive the SPAD VII, although in spite of initial enthusiasm for the type only two squadrons (19 and 23 Squadrons) used it on the Western Front. In addition, fighter schools in the United-Kingdom and 30 Squadron in Mesopotamia also received SPADs. British-built SPADs were generally used in the training units and in the Middle East, while fighting units in France used superior French-built models. The SPAD VII was replaced by the Sopwith Dolphin in 19 Squadron in January 1918 – but No. 23 Squadron kept theirs until they also received Dolphins in April (incidentally becoming perhaps the last squadron to use S.VIIs in France).

Russia received a batch of 43 aircraft in spring 1917 which were successfully used and supplemented by approximately 100 SPAD VII manufactured by the Dux factory under license.

Ironically another early user of the SPAD VII was Germany. Several SPAD VIIs were captured intact by German and Austro-Hungarian forces and were reportedly used both in combat and for training. Rudolph Windisch of Jasta 66 flew a SPAD VII in combat with German markings. That any aerial victories were obtained by German pilots flying SPADs remains unknown.

Belgium equipped the 5e Escadrille (later renamed 10e Escadrille) with the S.VII. Edmond Thieffry was probably the most famous Belgian pilot to fly the type, most other aces preferring the Hanriot HD.1.

Italy began using the SPAD VII in March 1917, nine Squadriglia being equipped with it. As was the case in other air services, pilots accustomed to more manoeuvrable mounts had a difficult time adapting to the new fighter, and again some reverted to the Nieuport 24/27 or the Hanriot HD.1, which eventually became the standard Italian Fighter. Francesco Baracca, Italy's leading ace, was delighted with the new model and his personal aircraft is still preserved today in Italy.

When America entered the war in 1917, an order for 189 SPAD VIIs was placed for the United States Army Air Service of the American Expeditionary Force. The first aircraft were delivered in December 1917. Most were used as advanced trainers to prepare the American pilots for the SPAD XIII.

After the war, surplus SPAD VIIs were used into the late 1920s by numerous countries, including Brazil, Czechoslovakia, Finland, Greece, Japan, the Netherlands, Peru, Poland, Portugal, Romania, Siam, the United States and Yugoslavia

Operators :
Argentina, Belgium, Brazil, Chile, Czechoslovakia, Estonia, Finland, France, Greece, Italy, Japan, Netherlands, Peru, Poland, Romania, Imperial Russia, Serbia, Thailand, Ukraine, Yugoslavia. United-Kingdom and the United States.

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AIRCRAFT SPECIFICATION

Model : SPAD S.VIII

Country of Origin : France

Manufacturer : SPAD / Bleriot, France. Mann, Egerton & Company – UK and Duks, Russia.

Initial Year of Service : 1916

Production : 6,000

Crew : 1

Length : 20.28' (6.18 m)

Width : 25.66' (7.82 m)

Height : 6.99' (2.13 m)

Weight (Empty) : 1, 124lb (512kg)

Weight (MTOW) : 1,632lb (740kg)

Powerplant : 1x Hispano-Suiza 8-Aa water-cooled engine developing 150 horsepower.

Maximum Speed : 119 mph – 191 kmh – 103 kts

Maximum Range : 224 miles – 360km

Service Ceiling : 17,500' – 5,334 m – 3.3 miles

Armament Suite :
1 x Synchronized Vickers Machine Gun, fixed, forward-firing through the spinning Propeller.
Ammo: 500 x .303 armour piercing with Mk. VIIT Tracers. Fires at 480 rounds per minute.

1 x Lewis Machine Gun, fitted to the top wing (field modification).
Ammo: 3 x 97rnd drums of .303 armour piercing with Mk. VIIT Tracers. Fires at 550 rounds per minute.

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Config Panel

SHIFT+1

SPAD VII

Click on the header 'SPAD VII' to RELOAD the aircraft. Settings will initialize in ready to fly configuration.

SET COLD/DARK

This will set-up your cockpit and controls, in a cold/dark state. You will need to manually follow the start-up procedure, to start the engine. Clicking on the 'SPAD VII' header will reload the aircraft.

SET READY TO START

Selecting ready to start follows the check-list for you, and you can simply use CTRL+E for auto-start, or select the starter mag lever, and you're ready to go.

TOGGLE LEWIS GUN

Will toggle the over-head mounted Lewis Machine Gun. Note; if your payload station weight for 'Lewis Gun' is set to 0, the sim over-rides that toggle, and the Lewis gun won't be visible. When the gun is visible/toggled, it is active. See TacPack

TOGGLE PILOT

Selecting this will toggle the display of the Pilot. By default, the pilot is loaded initially.

The aircraft initially loads in a ready-to fly situation, with the pilot visible, and the Lewis gun disabled. If your default flight is saved with engine off, the aircraft will load with the engines off, but ready to start, otherwise the flight will be loaded with the engine running.

It is noted that during multiplayer sessions, some visibility items may not appear correctly on other players aircraft. This is an inherent bug to FS, and not a problem with the Spad product.

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VRS TacPack

The aircraft comes fully equipped with VRS TacPack functionality, for those users who wish to simulate WWI era air combat. We have also included special effects such muzzle flash, tracers, and custom audio files.

Here's how it works:
Requires VRS TacPack for FSX, public release version 1.4.2.1 or greater! Please check your version of TacPack, and ensure that it's up to date! This product does not support the use of TacPack features with Prepare3D®.

For controlling the gunfire, you must map your selection of buttons or keys for the 'Trigger', and 'Pickle' commands, within the TacPack Manager.

Trigger= Vickers Machine Gun
Pickle= Lewis Machine Gun

The guns are only effective, if their payload station weights are correct!
By default, the aircraft loads with these predefined. However, if you need to reference them, the weights are:

"Vickers Gun" = 53lb / 24kg
"Lewis Gun" = 28lb / 13kg
"Vickers Ammo" = 27lb / 12kg
"Lewis Ammo" = 27lb / 12kg

When the gun/ammo weight is not stationed, TacPack weapons are disabled!
When the aircraft initially loads, the Lewis gun is not toggled/visible. To Enable the Lewis Gun for TacPack, the user must toggle the gun via the SHIFT+1 configuration panel.

The Vickers Machine gun has a firing rate of 450 rounds per minute, with a 500 round capacity. This gives a firing duration of about 62.5 seconds. Similarly the Lewis Gun has a firing rate of 550 rounds per minute, with a total 291 round capacity, yielding about 32 seconds of continuous fire.

If the ammo has been depleted in either of the two guns, the aircraft can be reloaded to once again fully equip the payload. This can be done conveniently in game, by pressing SHIFT+1, and clicking on the header 'SPAD VII". Note fuel loads will also be reloaded.

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PILOT OPERATING INSTRUCTIONS

Starting Engine

1. Air Pump Emergency Shut off – OFF (6 o'clock)
2. Fuel Tank Selector – Reserve (9 o'clock)
3. Air Pump Selector – MANUAL (12 o'clock)
4. Magneto Buttons – IN, 1 & 2
5. Mixture -- RICH (Fully aft)
6. Engage Starter – Rotate to start engine

Engine Warm-Up

Immediately after the engine starts...

1. Fuel Tank Selector – MAIN (6 o'clock)
2. Air pump selector – ENGINE (3 o'clock)

Special Instructions

Flight characteristics can be tricky. CG balance is critical to performance, and when the aircraft is fully loaded, extra care should be given during tight manoeuvrings. The aircraft can stall, even above typical stall speed, if the bank angle, combined with too much positive elevator input is applied. The loading of the aircraft, with the Lewis Gun, is high of the CG. The aircraft will perform better without the added weight and balance shifting, of the Lewis Gun.

The Spad VII wing has 0 dihedral. Attention to bank and slip is needed to maintain balanced flight, and manoeuvrability.

Slow speed characteristics can be very unforgiving, particularly under 55kts KIAS. The aircraft, when fully loaded will stall at about 50kts KIAS. When only 50% loaded, stall speed should be around 44kts KIAS. Comfortable landings can be made at higher speeds, and this is advised. We find that keeping the aircraft above 60kts KIAS on final approach is best.

The lack of vertical tail surface area can cause undesirable effects in turbulent, or windy conditions.

The SPAD VII's strong-suit is it's power, which yielded a good power to weight ratio, and rate of climb. Dive performance was also used effectively, with the aircraft's rigid design proving valuable. Range of 224miles is figured for 150hp, and about 105mph. Better range might be obtained with higher cruise altitude, and less power.

Disclaimer :

Please note, trying to obtain an authentic aircraft handbook for the Spad VII is basically impossible or at least in our experiences. Every resource we know of came back with the same results – nothing. With that being said, we had to use a poetic license in some areas of the cockpit that we had no manuals for.

Above all, everyone at Vertigo Studios and Iris Simulations hope you enjoy flying the Spad VII as much as we did by bringing this iconic aircraft to life within Microsoft Flight Simulator X.

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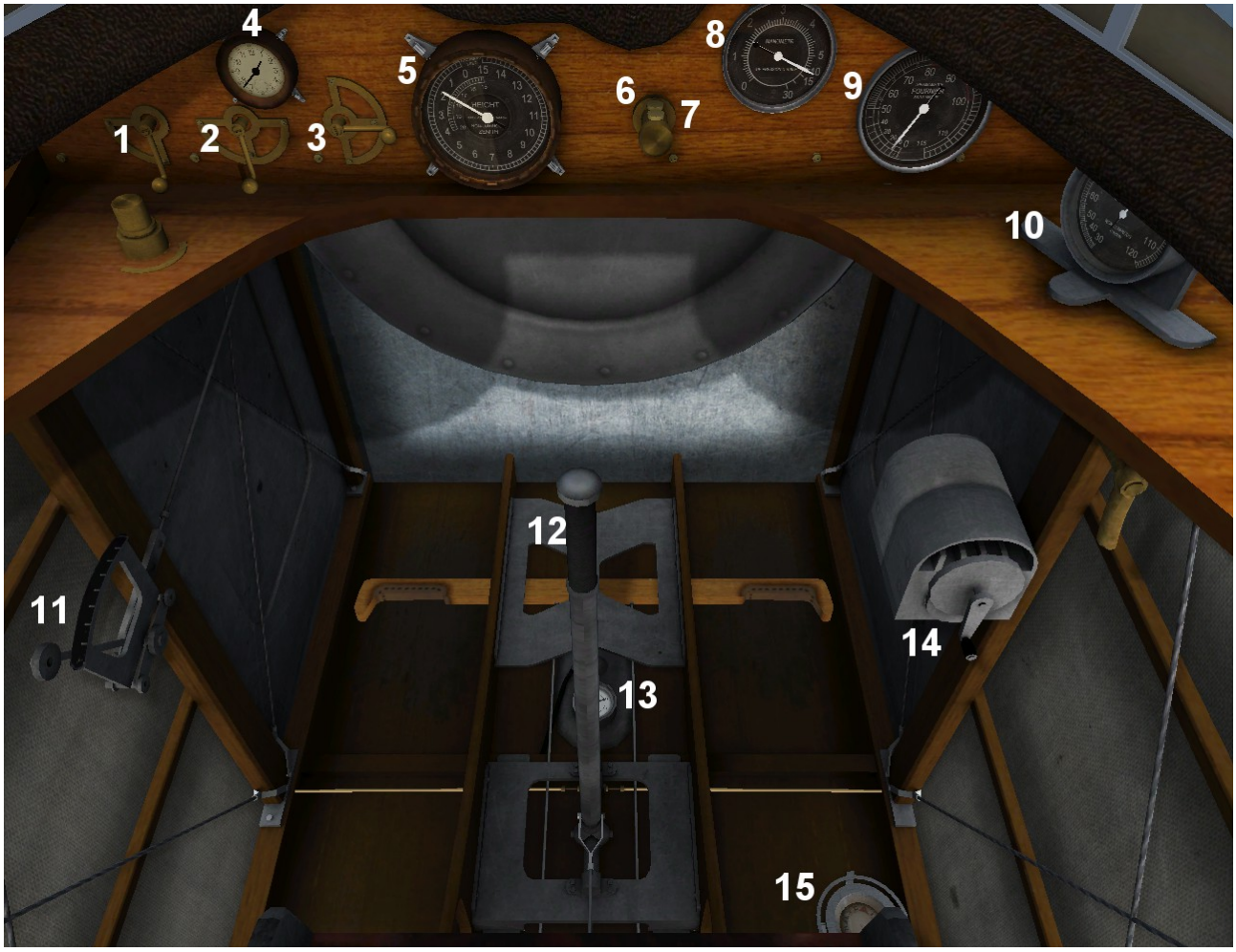
COCKPIT LAYOUT



1. Air Pump Emergency Shut Off
2. Fuel Tank Selector
3. Air Pump Selector
4. Clock
5. ALT Gauge
6. Engine Mag 1
7. Engine Mag 2
8. Pressure Gauge
9. Engine Temp
10. Air Speed Gauge
11. Mixture Lever
12. Throttle (Grip twist)
13. Fuel Gauge
14. Engine Mag Starter

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15 PAINT SCHEMES

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STOW MARIES AERODROME INSTALLATION

Once you have installed the Spad VII, its now time to install the Aerodrome. To Install Stow's please follow these simple guides.

1, Start FSX and then go to “Settings”

2, Once your at the “Settings” page click on “Scenery Library” and then click on “Add Area”

3, Locate the “Stow Maries” scenery folder, open the folder and click on SCENERY folder then click ADD :

Microsoft Flight Simulator X \ vsaddons \ StowMaries

Thats it !

If your having difficulties with the installation, please refer to the following page :

http://aussiex.org/forum/index.php?/topic/6035-how-to-add-scenery-to-fsx-with-windows-7/

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STOW MARIES AERODROME HISTORY

The requirement for an aerodrome at Stow Maries originated in the Government response to German Zeppelin airship and Gotha fixed-wing bomber attacks on the British mainland during the First World War.

The first aircraft to arrive at the new aerodrome in September 1916 belonged to 'B' flight, 37 (Home Defence) Squadron, Royal Flying Corps. The Squadron was charged with the eastern aerial defence of the capital. The Headquarters Flight moved into 'The Grange', Woodham Mortimer. 'A' Flight was despatched to Rochford (now Southend Airport) and 'C' Flight to Gardeners Farm, Goldhanger.

The first commanding officer on the aerodrome was Lieutenant Claude Ridley. Educated at St Paul's School, London, he was only 19 years of age but had already seen service with the Royal Flying Corps on the Western Front winning the Military Cross and Distinguished Service Order (DSO) prior to arriving at Stow Maries.

Following a period of organisation and training at Stow Maries, the first recorded operational flight took place from the aerodrome on the night of 23rd/24th May 1917 when Ridley (now promoted to Captain) and Lieutenant G Keddie were ordered aloft in response to a large Zeppelin raid targeting London.

Both day and night patrols are recorded but it was to be 'C' Flight at Goldhanger that clained the Squadrons first confirmed destruction of an enemy machine, when during the early hours of 17th June 1917, 2nd Lieutenant L. P. Watkins was credited with the downing of Zeppelin L48 at Theberton in Suffolk. This was to be the last Zeppelin brought down in Great Britain during the war.

One of the stations busiest days was 7th July 1917 when aircraft were ordered after a formation of twenty-two Gotha bombers were spotted heading to London.

Stow Maries pilots engaged the enemy aircraft in a running flight and scored several hits. Fire was returned, however, and the ground crews found a number of bullet holes in the returning aircraft.

In the summer of 1917 'A' Flight was posted from Rochford to Stow Maries effectively doubling the size of the station. At the same time the stations first commander Claude Ridley departed to form a new Squadron at Rochford.

Day and night patrols continued but it was the fragility of the aircraft of the period and the inexperience of the young pilots that caused the loss of aircrew from the station. June 1917 saw the loss of 2nd Lieutenant Roy Mouritzen from Western Australia in a flying accident and July of the same year serious injury to Captain E Cotterill through engine failure. Captain B Quinan crashed at Woodham Walter on a training flight and was severely injured. He died in July 1918.

1918 saw continued losses at the aerodrome, Captain A Kynoch in an aerial collision at night, Lieutenant E Nicholls in another flying accident on the aerodrome and finally 2nd Lieutenant C Milburn in an accident near the edge of the flying field. Lieutenant Nicholls and 2nd Lieutenants Mouritzen and Milburn are buried in the churchyard of St Mary and St Margaret, Stow Maries, as is Stow's first commanding officer, Claude Ridley who died as a Wing Commander during the second World War, from natural causes. During the latter half of 1918, building continued and the aerodrome took on the familiar form it still holds today. The Headquarters Flight moved in from Woodham Mortimer and Stow Maries became a very busy place. An RAF survey at this time recorded 219 personnel and 16 aircraft. 'C' Flight moved to Stow Maries from Goldhanger in February 1919 bringing the total staffing levels to around 300 personnel and 24 aircraft, the first time the whole Squadron had been located at one Station. It signaled the end for the Essex aerodrome, however, and the following month the Squadron moved to Biggin Hill in Kent, leaving the site empty.

The site returned to agriculture under the ownership of the Turner family. The following years have seen the buildings used for both agriculture and accommodation. They now find themselves subject of a sympathetic restoration project to restore the aerodrome to its former glory.

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CUSTOMER SUPPORT

Installation can be started by simply double-clicking the packaged .exe file. The Product should be installed to the root directory of FSX.

A paint kit can be obtained by following the links on the **Vertigo Studios** website.

- Spad VII CI Paint Kit

The paint kit requires Adobe PhotoShop to be used correctly.

Support is accessible 24/7 through our support portal.

IMPORTANT NOTICE:

When requesting support on a product, you will need to add the following information to your support ticket.

- Place of Purchase
- Sales Invoice Number
- Product License Key

Unfortunately without the above details we won't be able to fulfil your support requests.

Requesting Support

Please note when sending in a support request that there are a few factors that need to be taken into consideration.

We try to reply to all support tickets within 48 hours, however - please take into consideration of time zones as we are based in the UK and also the volume of customer support at any given time.

Product support hours are as follows:

Open from 0900 to 1700 hrs (GMT) Monday to Friday.

Closed on Saturdays, Sundays and Bank Holidays.

Sales support hours are as follows:

Open from 0900 to 2300 hrs (GMT) 7 days a week.

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SPECIAL THANKS

Vertigo Studios would like to thank the following companies and individuals for there co-operation and efforts in bringing the Spad VII to life. In no particular order..

- Bruce Martin, for his art work on the paint schemes and FDE.
- Trucker17 for the Stow Maries Development and research.
- Amanda Teague for Stow Maries models.
- Iris Simulations for the Sound Pack and cockpit coding.
- Stow Maries for the history behind the Airfield (http://www.stowmaries.org.uk/)
- Larry Zambrano for coding the Balloon so it always turns into the wind.

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