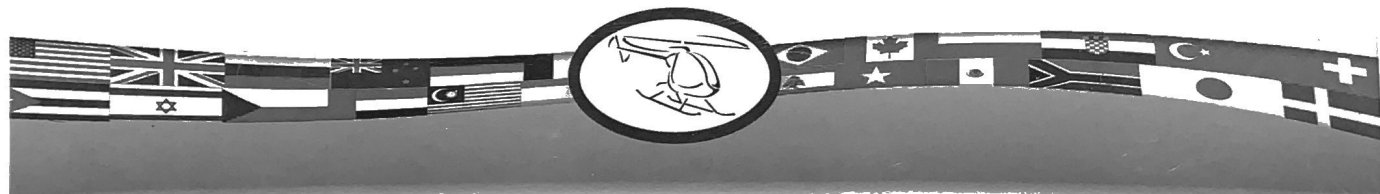


Composite FX

XE - XEL - XE 285 Helicopter

ASSEMBLY & OPERATING/MAINTENANCE MANUAL



WELCOME

Congratulations on the purchase of your new Composite FX Helicopter, one of the lightest manned helicopters in the world and welcome to our flying family.

We want your experience to be the most enjoyable possible. With that in mind we have made every effort to provide you with the highest quality components available and this assembly and flight manual.

You should read this manual carefully and completely before you begin assembling the kit or flying your helicopter. The assembly portion of the manual is carefully written to be easy to understand and provide you with a step by step process for building your aircraft. Make sure to follow the instructions in the order they are written and read them carefully. It is equally important that you read and completely understand the flight and operating section of this manual before flying your helicopter. If you have any questions regarding the assembly or operation of your helicopter, we encourage you to contact Composite FX, (352) 538-1624.

Once the kit is completed, the finished Composite FX helicopter should be inspected by a certified aircraft mechanic to ensure proper construction techniques and procedures have been followed and that the aircraft is airworthy.

The flight and operation section is intended as a general guide for the operation and maintenance of the helicopter. The information is intended as a guide and cannot cover every question you may have about your helicopter and flying in general. Additionally, it is not intended to replace training by a certified flight instructor in any way, nor is it intended to replace the knowledge and skills of a properly trained aircraft mechanic.

Although it is light and small, the Composite FX aircraft is a real helicopter in every sense, with controls, drive, rotor systems and capabilities all similar to its bigger companions. It therefore requires the same amount of respect and consideration for safety and integrity required of a larger helicopter. In order to fly the Composite FX helicopter, potential pilots must receive proper training. It is strongly recommended that pilots be fully trained to private pilot status in a small training helicopter such as a Robinson R22. Training to student pilots status is considered the minimum acceptable amount of training required.

Remember that the airworthiness of the helicopter, pilot competency and flight safety rest solely with the owner/operator. The owner/operator also assumes all risk and responsibility for the operation of the Composite FX Helicopter. Additionally, as the pilot in command, it is your responsibility to know the FAA rules, legal air space, radio procedures, required maintenance schedules and the safe operating parameters for your aircraft.

We hope you enjoy your new helicopter and always remember to practice safe operating procedures for your protection as well as those around you.

Sincerely,

Composite FX

SAFETY INFORMATION



WARNING



THE FEDERAL AVIATION ADMINISTRATION CODE OF FEDERAL REGULATIONS (CFR) TITLE 14 APPLIES SPECIFIC RULES AND REQUIREMENTS FOR ULTRALIGHT AND EXPERIMENTAL AIRCRAFT. YOU MUST KNOW THE CLASSIFICATION OF YOUR AIRCRAFT AND FOLLOW THE RULES AND REQUIREMENTS AT ALL TIMES.

SOME COMPOSITE FX HELICOPTER MODELS ARE CLASSIFIED EXPERIMENTAL AIR VEHICLES AND SOME MODELS ARE CLASSIFIED ULTRALIGHT AIR VEHICLES.

IF YOUR AIRCRAFT HAS A DRY WEIGHT OF 254 POUNDS OR LESS, IT IS CLASSIFIED AS AN ULTRALIGHT AIRCRAFT AND THE RULES AND REQUIREMENTS IN CFR 103 APPLY.

IF THE DRY WEIGHT OF YOUR AIRCRAFT EXCEEDS 254 POUNDS, IT IS CLASSIFIED AS AN EXPERIMENTAL AIRCRAFT AND THE RULES AND REQUIREMENTS FOR EXPERIMENTAL AIRCRAFT APPLY.



DANGER



OPERATION OF THE HELICOPTER WHEN IT IS NOT FULLY AIRWORTHY COULD RESULT IN SEVERE INJURY OR DEATH!

THE OWNER MUST BE AWARE AT ALL TIMES THAT THE RESPONSIBILITY FOR AIRWORTHINESS OF THE HELICOPTER, PILOT COMPETENCY AND FLIGHT SAFETY REST SOLELY WITH THE OWNER/OPERATOR. OPERATION OF THE HELICOPTER BY AN INADEQUATELY TRAINED PILOT COULD RESULT IN SEVERE INJURY OR DEATH!

SAFETY INFORMATION

SPECIAL DESIGN & FAA CATEGORY DESIGNATION STATEMENT

The Composite FX helicopter was designed as a day VFR helicopter. It has two basic airframe configurations the Ultra-Light (XEL) and the Experimental (XE, XE 285 and XET). To meet FAA Ultra-Light requirements the XEL was designed to be flown with the floats installed and the fuel system limited to a capacity of five gallons. Any deviation to the design (vertical and horizontal fins, governors, etc.) and or flight profile puts the XEL into the experimental category. To be flown as an experimental aircraft the pilot must possess a private pilot's license. The aircraft must be registered with the FAA ("N" numbered) and pass an airworthiness inspection by a designated Airworthiness Representative, (DAR), prior to the first flight. For further information, go to the FAA web site and download Advisory Circular (AC) 20-27F, Certification And Operation Of Amateur Built Aircraft.

State of California Safety Requirements



WARNING



PROPOSITION 65

OPERATING, SERVICING AND MAINTAINING A RECREATIONAL AIRCRAFT CAN EXPOSE YOU TO CHEMICALS INCLUDING ENGINE EXHAUST, CARBON MONOXIDE, PHTHALATES, AND LEAD, WHICH ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. TO MINIMIZE EXPOSURE, AVOID BREATHING EXHAUST, SERVICE YOUR HELICOPTER IN A WELL-VENTILATED AREA AND WEAR GLOVES OR WASH YOUR HANDS FREQUENTLY WHEN SERVICING THIS AIRCRAFT. FOR MORE INFORMATION GO TO WWW.P65WARNING.CA.GOV/MARINE.

California Health & Safety Code §§ 25249.5-.13

PURCHASE AND ASSEMBLY AGREEMENT

The Purchaser desires to purchase a license to build a Composite FX helicopter and/or purchase certain components used in the construction of that aircraft. In consideration of the mutual promises contained in this agreement, the parties hereby agree as follows:

1. Aircraft design: Composite FX is the owner of the design of the XE series Helicopter aircraft (hereinafter "Aircraft"). Upon the execution of this agreement and the payment of the purchase price set out in the Purchase Order, Composite FX Helicopters shall license the Purchaser to use this design, with accompanying construction plans, to construct a replica of the Aircraft. The design and plans for the Aircraft are the property of Composite FX and the Purchaser agrees to utilize these plans only for use in constructing one aircraft for the Purchaser's personal use. Any other use or reproduction of the plans are strictly prohibited. The Purchaser shall not allow any copies or reproductions of the plans to come into the possession of any other person or entity. Composite FX reserves the right to modify the design or plans of the aircraft in any manner deemed necessary to enhance its performance or safety. Composite FX agrees to make reasonable efforts to notify the Purchaser of any design or plans changes so long as the Purchaser keeps Composite FX apprised of the Purchaser's current address.

2. Air worthiness: The Purchaser agrees to comply fully with all applicable governmental aviation regulations in the construction and operation of the aircraft. When necessary, the Purchaser agrees to obtain inspection and certification by the Federal Aviation Administration, or such other inspection and certification body, in full compliance with applicable aviation regulations. The Purchaser understands and agrees that certification of the completed Aircraft is dependent upon the Purchaser's construction techniques and that airworthiness is beyond the control of Composite FX. Composite FX does not accept responsibility whatsoever for certification of the aircraft or for eligibility for operation of the Aircraft in the ultra light category.

3. Warranty: Composite FX is not responsible and makes no warranty, express or implied whatsoever, regarding the performance, flight characteristics, structural integrity, or safety of the completed Aircraft or its component parts. Specifically, Composite FX makes no warranty that the plans or components comprising the kit Aircraft are fit for any particular purpose or use. The Purchaser understands and agrees that there are many factors that affect the design integrity of the completed Aircraft, including design requirements for engine and rotors and requirements for aerodynamic and center of gravity limits. Composite FX does not warrant the integrity of component parts once they are shipped to the Purchaser.

4. WARNING: READ THIS BEFORE ORDERING.

A) The risks involved in flying an experimental home built or an ultralight Aircraft are greater than those risks associated with everyday life. There are certain dangers involved which cannot be removed, no matter how safe the design, no matter how careful the construction, no matter how accomplished the pilot. These dangers include the possibility of personal injury or even death, just as in other high risk sports such as motorcycle riding, sky diving and skiing. You cannot build or fly this Aircraft unless you knowingly and willingly accept and assume these risks as your own.

B) You must also realize that the construction of any Aircraft, especially a helicopter, is a task which requires critical attention to detail and uncompromising standards of construction. You cannot build this Aircraft unless you are willing to follow exactly all instructions involved in construction. Any unapproved alteration may significantly increase the risks of flights, making you a test pilot for an unproven design.

C) As the builder of a Composite FX helicopter, it is your responsibility to double check the quality of all materials used in construction. Although all materials supplied to you by Composite FX have been quality checked, it is up to you to give each part a careful examination before installing it on your Aircraft. This duty is especially important in connection with composite materials, which may be damaged in shipment, handling or storage. If you encounter any part or building materials which is

PURCHASE AND ASSEMBLY AGREEMENT

not airworthy, then it is up to you to contact Composite FX to arrange for a replacement. Also, if you have any questions about the plans and instructions provided with the aircraft kit, it is up to you to call Composite FX to resolve it. If it appears as though a drawing or instruction can be read in more than one way, it is your responsibility to find out which interpretation is correct. Composite FX is committed to clarifying any and all questions any builder has about the construction of its Aircraft.

D) It is critical that any person flying an Aircraft designed by Composite FX understands certain facts. First, the Aircraft cannot be flown by anyone who is not a duly licensed, qualified and proficient pilot. Although pilots flying Aircraft in the ultralight category are not required to be licensed, they cannot fly the Aircraft without the proper training, qualifications, experience and proficiency. Second, any pilot who wants to fly the Aircraft should first have adequate experience in a similarly configured light helicopter. Finally, by definition, any pilot who flies an experimental or ultralight Aircraft is an experimental pilot. This maxim is especially true for the first flights of the Aircraft. Initial test flights should be approached with extreme caution, following established guidelines. If you do not know these guidelines, the Experimental Aircraft Association (EAA) can help you.

E) By definition, the Composite FX helicopter which is the subject of this Agreement is an experimental Aircraft (or an ultralight aircraft if built to those specifications) and is not certificated to the same standards as manufactured general aviation Aircraft. There are some regimes of flight in which the Aircraft has not been tested. It is possible for a pilot to place the Aircraft into these certain flight regimes which may render the Aircraft uncontrollable or unrecoverable. Operation of the Aircraft under these circumstances could result in serious injury or even death. Therefore, any person flying the Aircraft must accept responsibility for acting as a test pilot. There are no guarantees that the Aircraft constructed by the Purchaser will be the same as, or even similar to, the prototype constructed by Composite FX. The Purchaser is the manufacturer of the Aircraft assembled with components supplied by Composite FX. The Purchaser accepts sole responsibility and liability for construction of the Aircraft. Purchaser also accepts liability and responsibility for the safe and careful operation of the completed Aircraft. In summary, building and flying any experimental or Ultralight aircraft involves certain inherent risks which you assume by ordering, building and flying this aircraft. It is up to you to minimize these risks by exercising extreme care in every activity associated with construction and flight. By developing an attitude of professionalism, safety and attention to detail, you will be a safer pilot enabling you to enjoy your Composite FX helicopter even more.

5. Indemnification and Release: The Purchaser agrees, on behalf of the Purchaser, the Purchaser's heirs, assigns and any subsequent buyers of Purchaser's kit or completed Aircraft, to indemnify Composite FX Helicopters, from any and all claims, demands, suits, causes of action or losses arising out of the construction or operation of the Purchaser's Aircraft. The Purchaser assumes all liability in conjunction with construction, maintenance and operation of the Purchaser's kit or completed Composite FX helicopter. The Purchaser, on behalf of himself/herself and the Purchaser's heirs and assigns, hereby unconditionally releases Composite FX, its officers, directors, shareholders, agents and employees from any and all liability for property loss or injury, up to and including death, resulting from the Purchaser's construction, maintenance or operation of the Purchaser's Composite FX Aircraft.

The Purchaser understands and agrees that Composite FX, is unwilling to enter into this agreement unless induced to do so by the Purchaser agreeing to the indemnification and release provisions included in this agreement.

6. Purchase Order: The terms and conditions of the Composite FX Purchase Order used to order any kit or component are expressly made a part of this Agreement.

7. Governing Law: Composite FX and the Purchaser agree that this agreement shall be governed by the laws of Canada. The parties also agree that if any portion of this agreement is invalidated in any manner, any remaining provisions will continue in full force and effect.

PURCHASE AND ASSEMBLY AGREEMENT

8. Entire Agreement: This instrument constitutes and embodies the entire agreement of the parties.

There are no promises, terms, conditions or obligations other than those contained herein. With respect to the subject matter hereof, this Agreement supersedes all previous communications, representations or agreements oral or written, between the parties. No modification or waiver of the terms of this Agreement shall be made without the express written consent of Composite FX. The undersigned Buyer agrees that he has read the terms, provisions and warnings set out in this Agreement and in the Composite FX Purchase Order, and accepts all provisions as stated herein.

INTRODUCTION AND IMPORTANT INFORMATION

General

The information and precautions listed in this manual are not all inclusive. It may be general in nature in some cases and detailed in others and is designed to provide you a basic understanding of your helicopter and some of the responsibilities that go along with assembling, owning and operating your aircraft.

The engine suppliers provide manuals for their products that are available online at the Composite FX Helicopters web site at www.composite-fx.com. You should read the information in the engine manual for your helicopter completely and have a thorough understanding of all engine systems and their proper operation before operating your helicopter.

REMEMBER - IT IS YOUR RESPONSIBILITY TO ENSURE THAT YOUR AIRCRAFT IS SAFE. ALWAYS READ THE EACH STEP IN THE MANUAL CAREFULLY AND FOLLOW THE INSTRUCTIONS EXACTLY WHEN ASSEMBLING YOUR HELICOPTER. MAKE SURE YOU RECEIVE PROPER TRAINING BEFORE FLYING YOUR HELICOPTER FOR THE FIRST TIME AND ALWAYS EXERCISE GOOD COMMON SENSE WHILE OPERATING YOUR AIRCRAFT.



DANGER



ALTHOUGH IT IS LIGHT AND SMALL, THE COMPOSITE FX AIRCRAFT IS A REAL HELICOPTER IN EVERY SENSE. WITH CONTROLS, DRIVE, ROTOR SYSTEMS AND CAPABILITIES ALL SIMILAR TO ITS BIGGER COMPANIONS. IT THEREFORE REQUIRES THE SAME AMOUNT OF RESPECT AND CONSIDERATION FOR SAFETY AND INTEGRITY REQUIRED OF A LARGER HELICOPTER. IN ORDER TO FLY THE COMPOSITE FX HELICOPTER, POTENTIAL PILOTS MUST RECEIVE PROPER TRAINING. IT IS STRONGLY RECOMMENDED THAT PILOTS BE FULLY TRAINED TO PRIVATE PILOT STATUS IN A SMALL TRAINING HELICOPTER SUCH AS A ROBINSON R22. TRAINING TO STUDENT PILOTS STATUS IS CONSIDERED THE MINIMUM ACCEPTABLE AMOUNT OF TRAINING REQUIRED.

Port and Starboard / Forward & Aft:

The terms port and starboard and forward and aft are used throughout this manual to provide absolute orientation for the location of instruction procedures and the installation of components. These designations are absolute and do not change no matter which end or side of the helicopter is being viewed. For this reason these terms are the standard reference for the aircraft industry.

The following designations apply without exception:

PORT - Always the left side of the helicopter as viewed from the tail end.

STARBOARD - Always the right side of the helicopter as viewed from the tail end.

AFT - Always the tail end or rear of the helicopter.

FORWARD - Always the cockpit end or front of the helicopter.

Product Changes

Composite FX is committed to the continuous improvement of our helicopters. As a result, some of the equipment described in this manual or pictured in the catalog may change or may no longer be available. ***Pictures may not reflect current configuration and are representative, however every attempt has been made to provide accurate drawings, information and specifications in this manual based on the latest product information available at the time of publication. Composite FX reserves the right to make changes at anytime, without notice, in colors, materials, equipment, specifications, and models.***

If you have questions about the equipment on your aircraft, please contact Composite FX.



WARNING



AS A COMPOSITE FX HELICOPTER BUILDER IT IS EXTREMELY IMPORTANT THAT YOU STAY UP TO DATE ON THE LATEST SAFETY UPDATES AND BUILDER'S INFORMATION FROM COMPOSITE FX HELICOPTERS.

THERE IS A SEPARATE FORUM EXCLUSIVELY FOR THE USE OF COMPOSITE FX OWNERS. THIS FORUM PROVIDES ESSENTIAL BUILDERS INFORMATION AND SAFETY UPDATES. TO USE THIS FORUM PLEASE SEND A MESSAGE WITH YOUR NAME, WEB SITE ID, AND E-MAIL ADDRESS TO OFFICE@COMPOSITE-FX.COM AS SOON AS YOU ARE AUTHENTICATED AS A BONIFIDE COMPOSITE FX HELICOPTER OWNER YOU WILL BE GRANTED ACCESS TO THIS IMPORTANT FORUM.

LOG ON TO THE FORUM AT:
WWW.COMPOSITE-FX.COM