

TOTAL PERFORMANCE
VAN'S AIRCRAFT

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REVISION DESCRIPTION:

Page 01-01 REV 7: Section 55 "COMMON FUSE HARNESS" was "FUSE BASIC HARNESS". Added New Avionics Option Section 60 "CTRL STICK HARNESS".



FUSELAGE KIT

- | | |
|--------------------------------------|---------------------------------|
| 25 FWD MID FUSELAGE BULKHEADS | 26 MID FUSELAGE LOWER STRUCTURE |
| 27 FIREWALL | 28 FWD FUSELAGE LOWER STRUCTURE |
| 29 FWD-MID FUSELAGE SIDE STRUCTURE | 30 AFT FUSELAGE ATTACHMENT |
| 31 FUEL SYSTEM | 32 BAGGAGE AREA |
| 33 RUDDER & BRAKE SYSTEMS | 34 FLAP ACTUATION SYSTEM |
| 35 UPPER FWD FUSELAGE | 36 AILERON & ELEVATOR SYSTEMS |
| QBF QUICKBUILD FUSELAGE INSTRUCTIONS | 37 ROLL OVER STRUCTURE |

FINISH KIT

- | | |
|--|--|
| 39 SEATBACKS | 38 CANOPY & WINDOW |
| 40B TAIL DRAGGER LANDING GEAR & ENGINE MOUNT | 40A TRICYCLE LANDING GEAR & ENGINE MOUNT |
| 42 MISCELLANEA | 41 WING ATTACHMENT |
| 45 COWLING | |
| 46A TRICYCLE GEAR LEG & WHEEL FAIRINGS | 46B TAIL DRAGGER GEAR LEG & WHEEL FAIRINGS |

FIREWALL FORWARD KIT

- | | |
|------------------------|------------------------|
| 44 SPINNER & PROPELLER | 43 ENGINE INSTALLATION |
| 48 EXHAUST SYSTEM | 47 COWL BAFFLE |
| 50 CONTROL CABLES | 49 FUEL & OIL SYSTEM |
| | 51 FIREWALL FWD. MISC. |

AVIONICS OPTIONS

- | | |
|-------------------------|-------------------------|
| 52 ANTENNA INSTALLATION | 53 ACK ELT |
| 54 FLAP POSITION SENSOR | 55 COMMON FUSE HARNESS |
| 56 GARMIN AP SERVOS | 57 DYNON AP SERVOS |
| 58 AP YAW SERVOS | 59 POWER MODULE INSTALL |
| 60 CTRL STICK HARNESS | |

GETTING STARTED

- | | |
|--|---------------------|
| 1 INTRODUCTION | 2 DESIGN PHILOSOPHY |
| 3 TOOLS AND WORKSPACE | 4 PARTS INDEX |
| 5 CONSTRUCTION MATERIALS, PROCESSES & USEFUL INFORMATION | |

EMPENNAGE / AFT FUSELAGE KIT

- | | |
|-------------------|-------------------------|
| 10 AFT FUSELAGE | 6 VERTICAL STABILIZER |
| 11 EMP ATTACHMENT | 7 RUDDER |
| 12 EMP FAIRINGS | 8 HORIZONTAL STABILIZER |
| | 9 ELEVATOR |

OPTIONAL KIT

OP-56 TAIL LIGHTING

WING KIT

- | | |
|----------------------------------|----------------------|
| 13 MAIN SPAR | 14 WING RIBS |
| 15 REAR SPAR | 16 TOP WING SKINS |
| 17 OUTBD LEADING EDGE | 18 FUEL TANK |
| 19 WING SYSTEMS ROUTING | 20 BOTTOM WING SKINS |
| 21 FLAP | 22 AILERON |
| 23 AILERON ACTUATION | 24 WING TIP |
| QBW QUICKBUILD WING INSTRUCTIONS | |

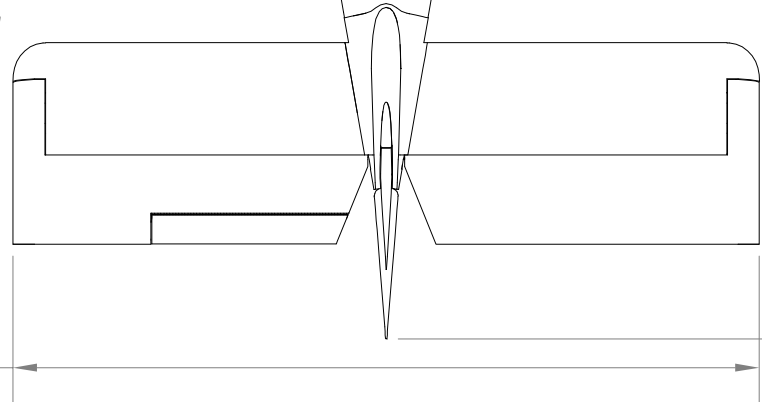
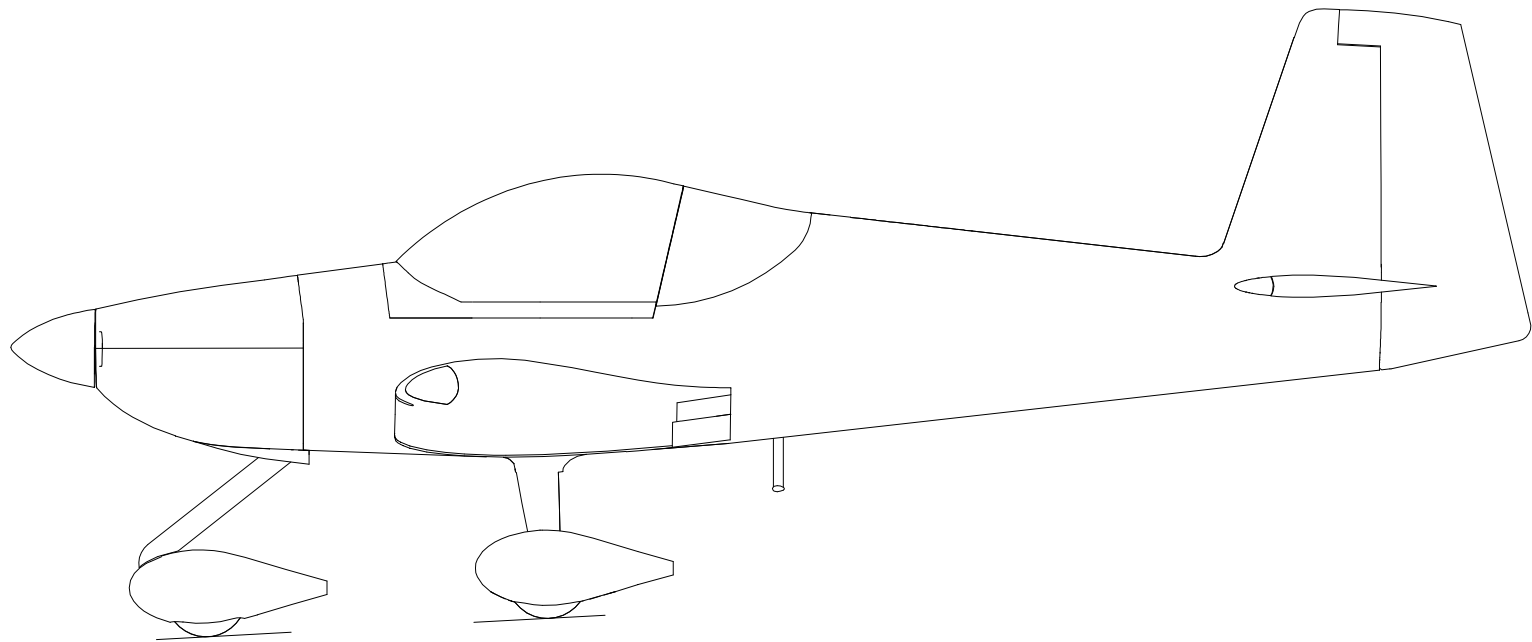
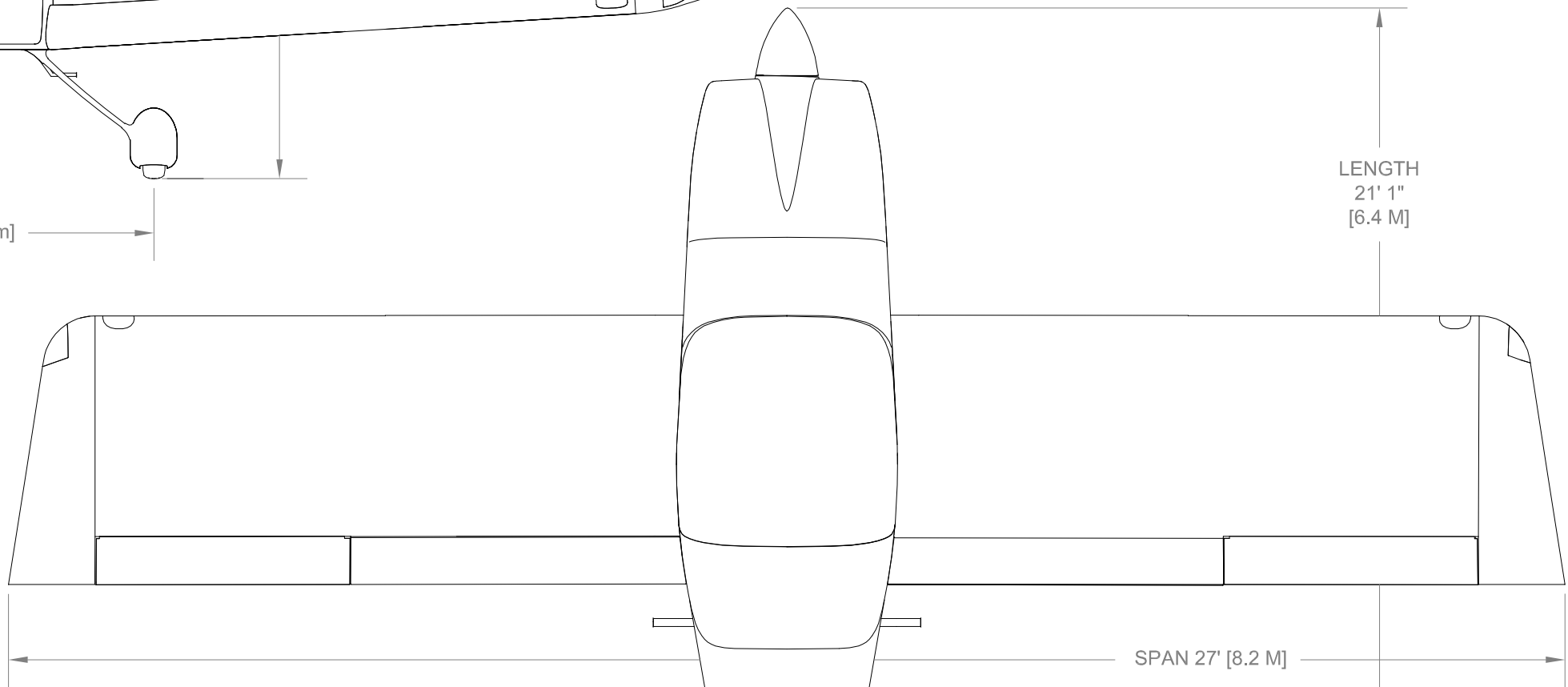
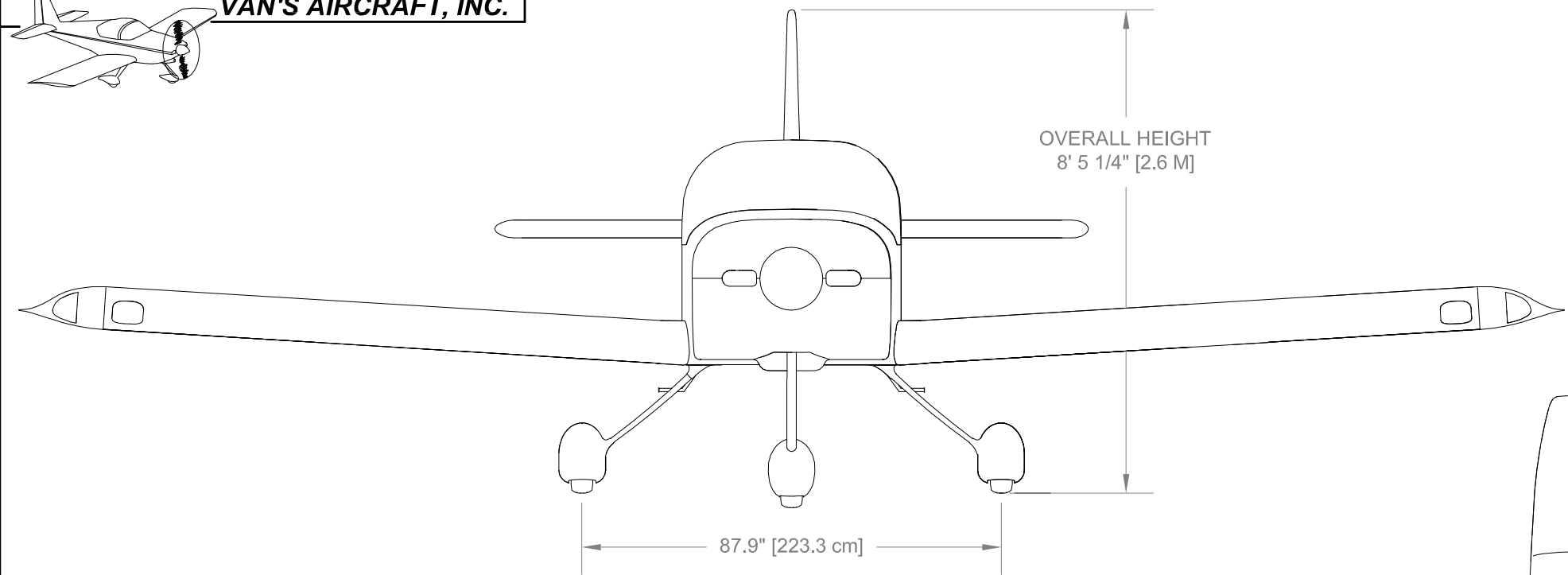
OPTIONAL KITS

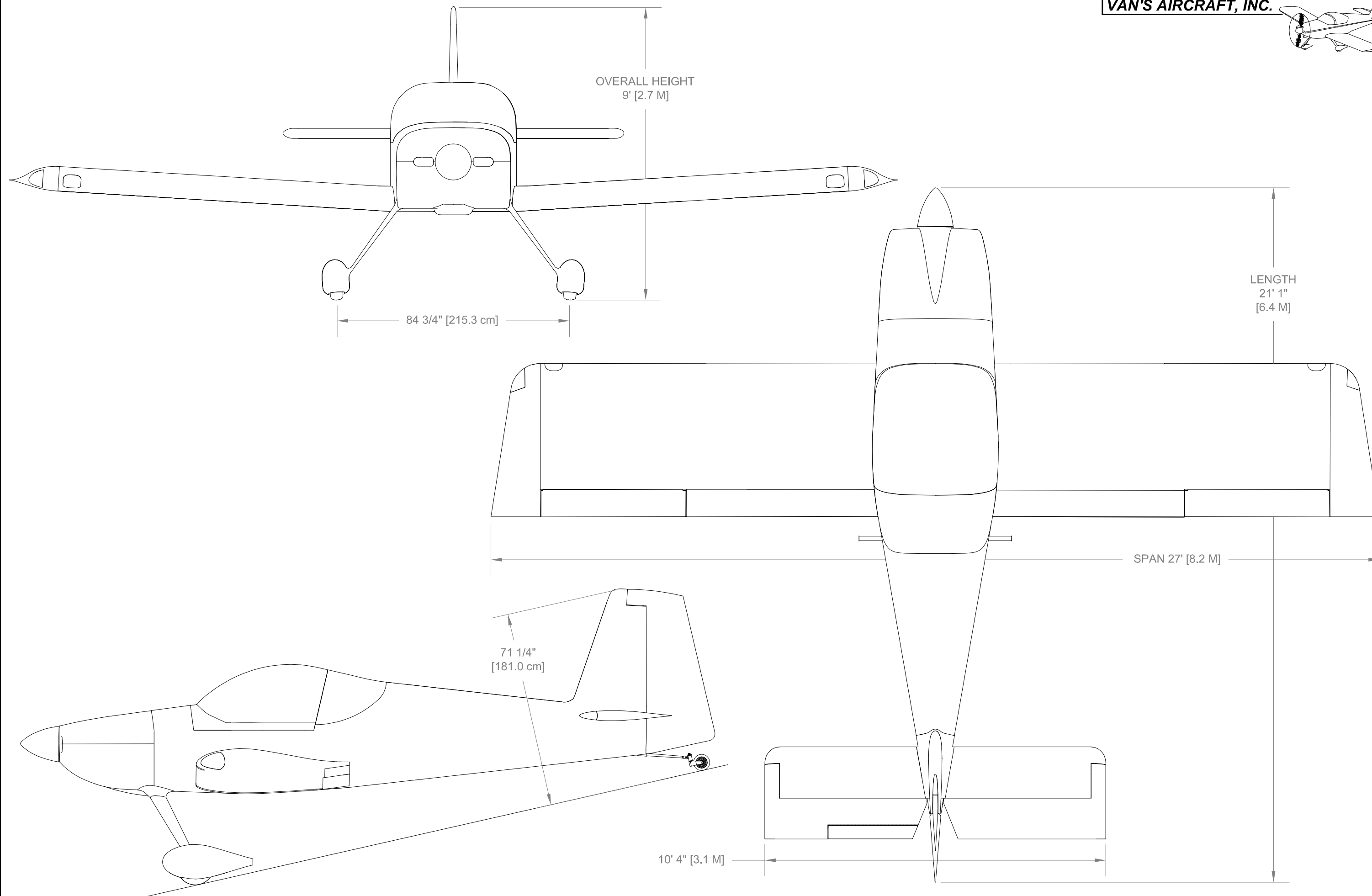
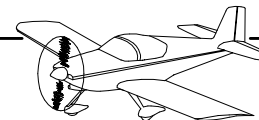
OP-38 AILERON TRIM

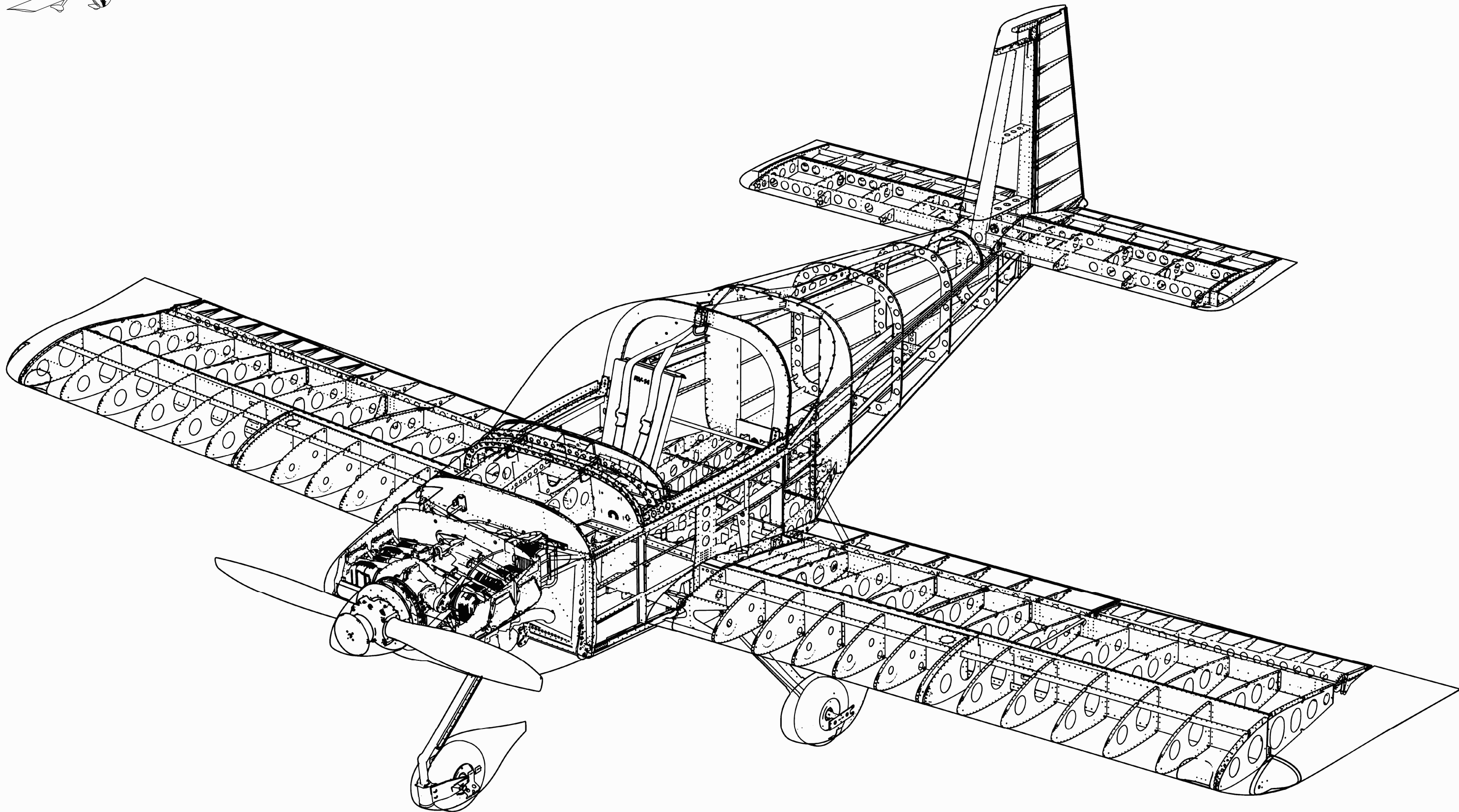
OP-52 LANDING LIGHT

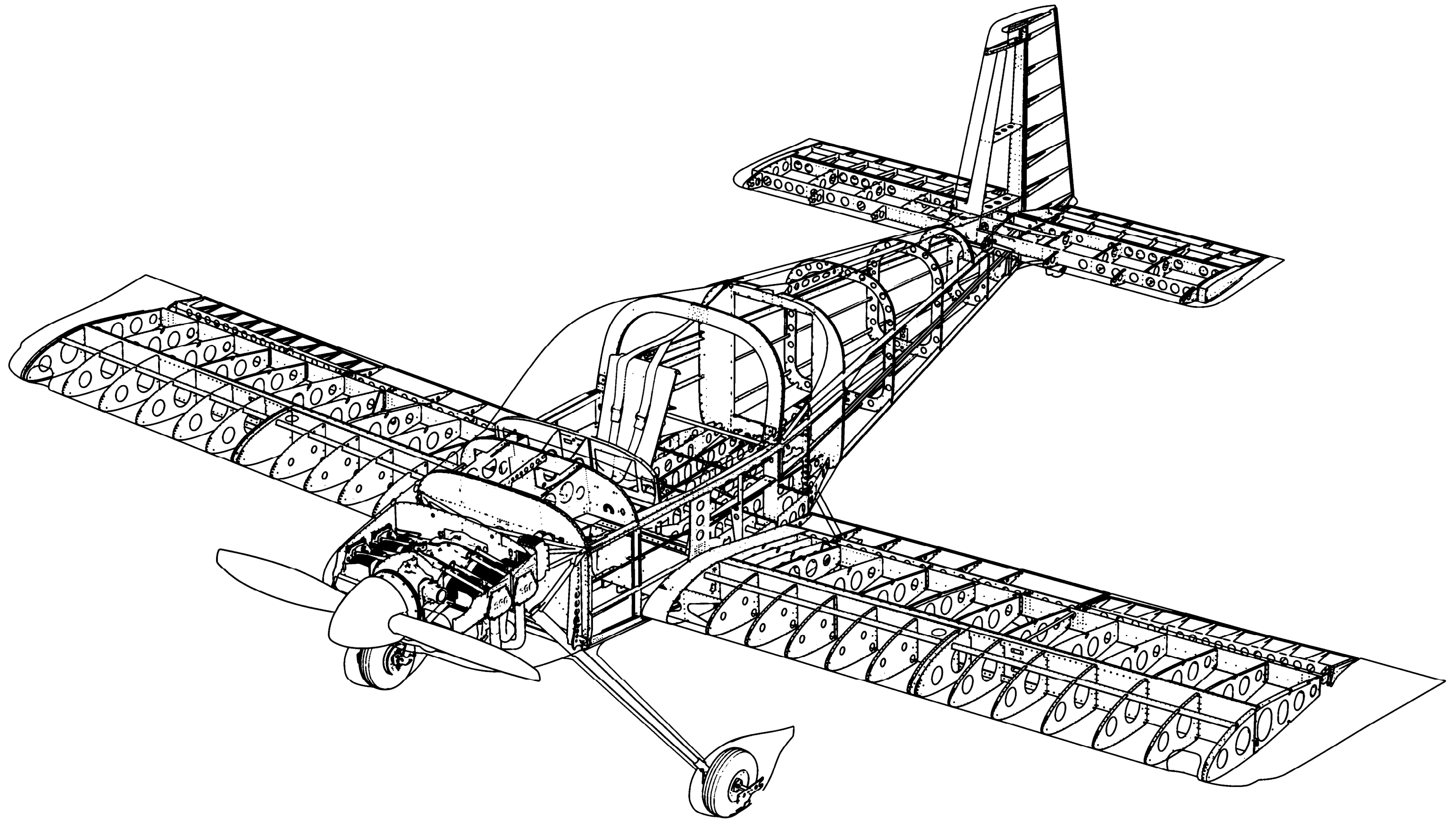
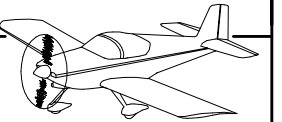
OP-55 WINGTIP NAV LIGHTING

XX SHADED BACKGROUND INDICATES SECTION TO BE COMPLETED PARTIALLY OR IN FULL BY QUICKBUILDER











SECTION 1: INTRODUCTION

INTRODUCTION

Welcome to the wonderful world of homebuilt aircraft. The project you are about to undertake (assuming that this is your first homebuilt airplane) will probably be the most frustrating, time-consuming, enjoyable, fulfilling, and rewarding that you have ever experienced. The ultimate success of this project is determined by many factors, the most important of which only you control. These include your skills, patience, willingness to learn, willingness to seek help when necessary, and a firm desire to create for yourself a very special personal airplane.

The Federal Aviation Administration (FAA) allows us to build and fly experimental aircraft for the purpose of education and recreation. The education part is up to you. This builder's manual has been compiled to help you achieve your goal. Though we have made it as detailed and instructive as we feel is practical it does not supply everything you need to know to complete an RV-14. These instructions tell you specifically how to build an RV-14 and presuppose that you already know (or will learn) the basics of aluminum aircraft construction. To assist your education we have included a copy of the *Standard Aircraft Handbook* in your kit. Additionally we have listed several other books and manuals that are helpful in this regard.

Additional help during construction can be had by becoming a member of the Experimental Aircraft Association (EAA), reading their *Sport Aviation* and *Sport Pilot* magazines and most of all by being an active member of one of their 600 plus chapters. Associating with other homebuilders, particularly RV builders, can be extremely helpful and can even make the difference between success and failure of your project. It can provide actual building assistance, technical knowledge, and moral support.

In many places RV builders have formed their own organizations, often modeled on EAA chapters. They publish newsletters, hold regular meetings, and exchange techniques, information and tools. We have been highly impressed by the craftsmanship and camaraderie demonstrated by these Builders Groups and encourage any RV builder to join or form one whenever possible. (A list of Builders Groups and contact persons is available by contacting Van's Aircraft or by visiting <http://www.vansaircraft.com/public/builders-groups.htm>) Building an airplane is a big undertaking and a builder should never be too proud or individualistic to take advantage of what others have to offer. It is a rare person who is so skilled that he/she cannot benefit from others.

VAN'S BUILDER ASSISTANCE

Van's offers builders assistance on the telephone between the hours of 7:00 am to 9:00 am and 3:30 pm to 4:30 pm Pacific Time. You can also e-mail us at support@vansaircraft.com. Please, for speedier answers when you call, have your builders manual with you and be ready with your 6-digit customer/builder number. When e-mailing questions please be sure to say you are building an RV-14 and specify the manual page(s) you are referencing.

A WORD ABOUT THE BUILDERS MANUAL

When the kits are shipped, they include the latest revision of the builders manual. The builders manual matches the parts as shipped. Over time, we make changes, corrections and improvements to the builders manual. There is no need to request newer versions. New drawings may not match the parts that you have.

Van's has decided that our website (www.vansaircraft.com) will be the mechanism for putting necessary revisions into the hands of builders, therefore it is essential that all RV-14 builders have access to a computer with an internet connection and an email account. The cost to builders should be minimal as public access computers in libraries may be used with a free gmail or hotmail account. These are essential for downloading manual revisions and are the primary means (with the Van's website) for us to stay in contact with RV-14 builders. Paper manual revisions will not be mailed out in order to reduce costs and maintain kit affordability. Most builders will also want a computer/internet access to become part of the online RV community.

Here's how our revision system works:

Change Memos: note changes to the build process or insignificant spelling/wording changes that do not in any way alter the configuration of the finished aircraft. Memo changes will NOT show a revision level change in the title block of the manual page but will show a change to the revision date.

Change Notices: note dimensional changes, change of parts/hardware, or any additional instructions or changes to the build process which result in a change in the configuration of the finished aircraft. Change Notices *WILL* show a revision level change in the title block as well as a date change.

As the builder it is your responsibility to check our website frequently for changes to the builders manual.

When you find a builders manual page with a later date or higher revision number than the one you have...

IF it shows a portion of construction you have not reached...
THEN simply print-out the new page and destroy the old one.

IF it shows a portion of construction you have already accomplished...
THEN there is NO NEED to re-do any step of construction to conform with a revision.

In any situation, there is NO NEED to keep track of exactly what changed.

Service Bulletins: will be issued if, for some reason, an already accomplished step must be re-done. The service bulletin will detail the steps that must be re-done along with any parts or hardware necessary to accomplish the required change. If/when a service bulletin is issued, we will contact all affected builders as well as post the service bulletin on our website and publish it in the *RVator* (available as a free download at vansaircraft.com). Given the potential need for us to contact you, the builder, it is important to keep Van's Aircraft informed as to your current e-mail address and mailing address.

The builders manual not only guides you through the assembly process but also defines the exact configuration of your particular aircraft. For this reason the builders manual is considered a part of the aircraft documentation package and should remain with the aircraft if/when ownership changes.

HELPFUL BOOKS AND MANUALS

AIRCRAFT SHEET METAL CONSTRUCTION AND REPAIR

SHEET METAL, Vol. #1

THE SPORTPLANE BUILDER

FIREWALL FORWARD

SPORTPLANE CONSTRUCTION TECHNIQUES

THE AEROELECTRIC CONNECTION (A great source for wiring information)

BUILDING THE METAL AIRPLANE

LIGHT AIRPLANE CONSTRUCTION

FAA ADVISORY CIRCULAR 43.13

Robert L. Nuckolls III (The Aeroelectric Connection)
6936 Bainbridge Rd
Wichita, KS 67226
316-685-8671
www.aeroelectric.com

Builder's Bookstore
PO Box 270
Tabernash, CO 80489
970-887-2207
www.buildersbooks.com

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