

# Paperwork

By Dennis Wolter



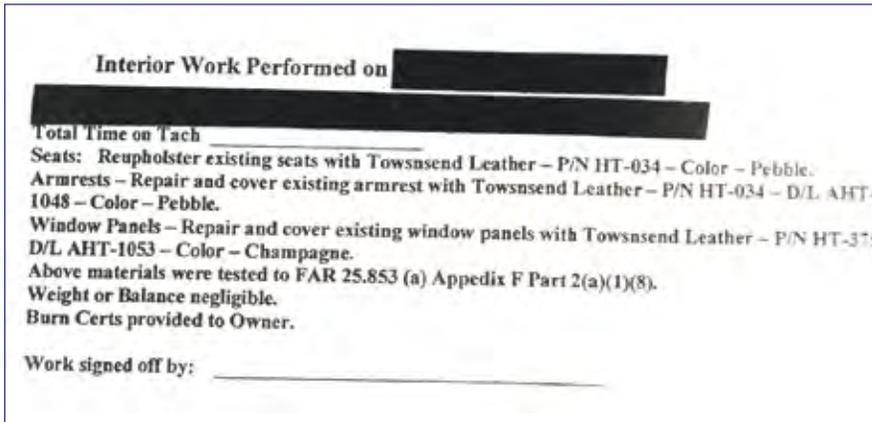
If, at the beginning of my brief writing career, someone would have told me it would take 17 three-to-five page articles to cover the subject of Cessna interior renovation, I would have judged them to be crazy. Well, so much for insanity.

Saving the fun part for last, it's time to present an overview of the required FAA paperwork for an interior renovation. There are two categories to consider here. The first is the paperwork that is required to document an owner-installed interior. There are preventative maintenance provisions in FAR 43 Appendix A, Part C that allow an aircraft owner or operator to perform almost all of the tasks required to install a new interior in a Cessna. The key word here is 'almost'. Since seats and passenger restraints are considered primary structures, I would highly recommend that you team up with your A&P mechanic to inspect and repair these items. This means that a proper logbook entry for your new owner-installed interior would actually require two maintenance record entries – one done by the owner and one done by the licensed mechanic who inspected the seats and passenger restraints.

The second type of paperwork we will discuss involves the maintenance record entries and supporting documents that must be made when a professional shop does an interior in your airplane. Here's the crazy part of this business. It's not uncommon for a person who had a professional interior installed in his or her airplane to get a totally unprofessional incomplete maintenance record entry, or worse, none at all. How do I know that? Well, if Cessna Pilots Association gets a call from a member with a problem involving an interior in-

stallation, they often refer that person to us for help with the problem. It's usually not long until a bogus maintenance entry comes to the surface.

Never take delivery of a any job without reviewing the paperwork. Since I can't show you a copy of a non-existent entry, I'll show you a copy of a very minimal, unsigned entry that I happened to come across in one of my customer's logbooks. The names have been blanked out to protect the not-so-innocent. Later in this article



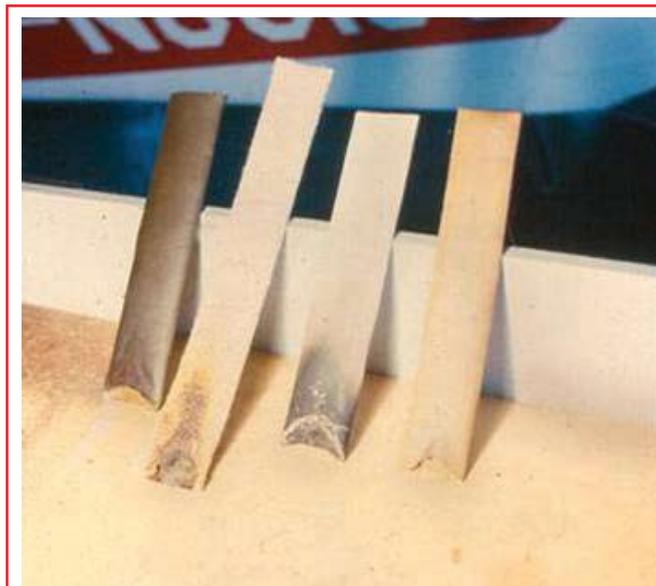
*Minimal unsigned logbook entry. Fails to specify type of foam used, no appropriate weight & balance data is provided, etc.*

we will take a look at a proper logbook entry that will put the sub-standard nature of this example into perspective. It is obvious why an IA who is re-licensing your airplane at annual time cannot rely on a something this sketchy to verify that the interior conforms to current regulations.

Which leads us to a big part of what should concern us in our interiors, and that is flammability. Here's the reality of how the FAA is currently interpreting the regulations regarding flammability of cabin materials.

Most Cessnas were type-certificated under the old regulation of CAR 3. If you read

CAR 3 (or CAM 3), you will see that the flammability standards for cabin materials at that time were so minimal that they offered almost no fire safety at all. A strict interpretation of this regulation would lead one to believe that almost anything goes, that flame retardant materials are not required. That rule actually applied for years. The FAA, however, has seen the light, and through the FSDO (Flight Standards District Office) system has been instructing IAs and A&Ps that the acceptable standard now is that materials must meet FAR 23.853a for any interior



*Test samples showing minimal damage that is caused by testing FAR 25.853a approved materials.*

44470  
INTERNAL LEDGER  
INST. PNL. / MOD

	1	2	3
NEW PNL COMPONENTS	430	14.0	
REMOVE OLD PNL COMPONENTS	- 210	14.0	
CP AIR SPEED & SYSTEM	130	11.0	
CP DG & WIRING	410	11.0	
GO AHD SHUNT	20	1.0	
V X B STICKSCOPE	180	12.0	
" " WIRING	100	63.0	
" " ANTENNA	210	112.0	
INSULATION	180	8.0	
OLD WIRING	- 230	11.0	
VACU. LIT	20	11.0	
REMOVE STOVE	- 330	112.0	

Weight & balance data spreadsheet prepared by the owner-installer as the new interior is being done, helpful input for the later authorized calculation.

really give you the safest cabin possible. It's not just about pacifying a government agency; it's about safety. So you can achieve another level of safety if you use materials that pass FAR 25.853a (a stricter requirement than FAR 23.853a). Materials meeting FAR 25.853a will self-extinguish within 15 seconds of removing the test flame. Using these better materials means that the new interior becomes part of fire suppression rather than fire support. Sounds like a winner to me!

An often overlooked issue in interior renovation is weight & balance. This is an area that belongs to someone with an airframe mechanics license. That said, an owner can prepare the data in the form of a neat and accurate weight and location chart, created in a spreadsheet type format as the interior is being redone. Weigh the old interior components as they are removed, and

materials used in a part 91 airplane. FAR 23.853a basically dictates that the material will burn no more than 4" per minute if exposed to a prescribed test flame.

I personally think meeting this standard is not enough to

again after they are reupholstered and ready for re-installation. Neatly record the weights to the tenth of a pound. Don't try to use ounces. The aviation industry operates on decimal measure; the math is easier and more accurate. When finished with

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BASIC EMPTY WEIGHT AND BALANCE CHANGE

N. 4447Q Model 172M Serial# 17261719 Date 4/15/93

Description of work: Fabricate and install new instrument panel. Install WX8 3M Stormscope. Install co-pilot flight instruments, remove old strobe light.

ITEM	WEIGHT	ARM	MOMENT
Previous Aircraft Empty (BASIC)	1603.0	40.27	64562.0
New panel components	+4.3	14.0	60.2
Remove old panel components	-2.1	14.0	-29.4
C/P airspeed and lines	+1.3	11.0	14.3
C/P D.G. and wiring	+4.1	11.0	45.1
60A. shunt	+ .2	1.0	.2
WX8 Stormscope	+1.8	12.0	21.6
WX8 wiring	+1.0	63.0	63.0
WX8 Antenna	+2.1	112.0	235.2
Insulation	+1.8	8.0	14.4
Old wiring & plumbing	-2.3	11.0	-25.3
Warning lights	+ .2	11.0	2.2
Remove strobe	-3.3	112.0	-369.6
Net change	(+9.1)		
New Aircraft Empty	1612.1	40.07	64593.9

New Empty Weight 1612.1 lbs.

New Useful Load 937.9 lbs.

Max. Allowable Gross Wt. 2550.0 lbs.

2550.0 lbs. Allowable gross check flight manual

C.G. (New) 40.07ins.

AIRCRAFT MODIFICATION & UPHOLSTERY  
 A DIVISION OF PROGRESSIVE CONCEPTS INC.  
 HANGAR No. 3 LUNKEN AIRPORT  
 CINCINNATI, OHIO 45226 513 321 5576

Computed By:

*Dennis Wolter*  
 Dennis Wolter AP2153542

Proper weight & balance as calculated and signed off by a licensed person.

your interior, give this data to your A&P. He or she can then calculate a new weight & balance. Don't forget to include an update of your equipment list if any changes were made that apply. We find that the most significant weight changes we see when doing a new interior in a previously unmodified interior are usually the weight of higher quality new carpet and better insulation.

Let's get down to business and put together a logbook entry for an owner installed interior.

Owner installed interiors come in two basic types. The first and probably more common is a kit interior purchased from a company such as Airtex. Airtex will supply all the required documents to verify conformity to the FARs. All you must do is reference these specs in the maintenance record. If you're sewing the materials yourself, or having an automotive shop sew the components for you, collect these documents from the

supplier and reference each material and supporting document in the maintenance record entry.

An owner performed maintenance record entry for a kit-installed interior requires the same sign-off information as an entry made by a licensed mechanic. Heading your entry should be the aircraft manufacturer and model, registration number, serial number, total airframe time (either tach or Hobbs), and the date. The main body of the entry should include:

1. The manufacturer of the interior component or complete kit
2. A reference to the sales invoice, giving date, items ordered, part numbers, etc
3. A copy of the PMA sticker (parts manufacturing authority)
4. A statement stating that the flame proofing documents for the items listed on the invoice are on file at the suppliers company
5. A statement referencing the fact that these interior trim components were installed per FAR 43 Appendix A Part C, and good practice
6. A statement referencing that a revised weight & balance will follow in the next maintenance record entry
7. A statement that the seats and passenger restraint system were inspected by a licensed person, with a maintenance entry to follow
8. The word 'end' should appear after the last sentence of the maintenance record entry
9. The signature of the owner/pilot who did the work, and that person's airmen certificate (pilots license) number

The second part of the maintenance record entry should be an entry made by your A&P or IA that includes the following:

1. Date and aircraft time
2. Description of any seat frame or airframe repairs
3. Part name and number for any new parts installed
4. An 8110-3 form for any parts installed

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  - Owner/Operator Installation!
    - Clamp On System
  - No Drilling Or Tapping Into Seat
  - Operates With Original Cessna Seat Lever
  - Will Hold Seat Even If Pin Is Not Engaged In Rail



Patent Pending

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871 Highway 100 Phone: (800)-285-7924  
 Summerville, GA 30747 Fax: (706)-857-5685  
 Cell: (706)-859-2642

Invoice No. 12837I

Order No.: CYNTHIA  
 Date: 8/30/07  
 Rep:  
 Freight: UPS—PREPAID  
 Terms:

AIR MOD  
 2025 SPORTY'S DRIVE  
 BATAVIA, OH 45103

Quantity	Description	Unit Price	Total
8.78	STYLE—STRATFORD	\$ 66.99	P.S.Y.
SQ.YDS.	COLOR—WINE		
	SIZE - 6" X 13"		\$ 588.17
	A/C—CESSNA 180, N6WH, S/N—18052492		
1.00	FREIGHT PREPAID—UPS		\$ 27.12
1.00	BURN CERTIFICATE		\$ 35.00
1.00	CUT CHARGE		\$ 35.00

Authorized By:

*Gary Anderson*

Subtotal  
 Shipping  
 Deposit  
 Balance \$ 685.29

11313  
 9.21

Receipt for one of the many upholstery materials required to complete an interior.



ACI flame test  
 912 Lane Drive  
 Birmingham, Alabama 35224  
 Phone (205) 788-8807  
 Fax (205) 786-7578

Customer: Air Mod

Customer P.O. #: 12837

Invoice #: 3016

Location: Row 1

Flame Retardant: N/A

**CONDITIONING ROOM:**

Date/Time In: 09/04/07 2:40 p.m.  
 Average (Min. 24 hours)

Date/Time Out: 09/05/07 2:40 p.m.

Temp: 73

Rel. Hum.: 50

Test Sample Description: Stratford Wine Roll # B059627B

Flame Application (Seconds)	Flame Time (Seconds)		Burn Length (Inches)		Burn Drippings (Seconds)	
	Warp	Fill	Warp	Fill	Warp	Fill
12	0	N/A	.25	N/A	0.0	N/A
12	0	N/A	0	N/A	0.0	N/A
12	0	N/A	.25	N/A	0.0	N/A
<b>AVERAGE</b>	<b>0</b>	<b>N/A</b>	<b>.16</b>	<b>N/A</b>	<b>0.0</b>	<b>N/A</b>

NOTE: Burn test performed in accordance with FAR 25.853(a) Appendix F Part I (a), (i), (ii) which includes floor covering, textiles (including draperies and upholstery), seat cushions, padding, decorative and non-decorative coated fabrics, leather, trays, galley furnishings, acoustical insulation, or liners of Class B through E cargo or baggage compartments.

12 Second vertical burn test must meet the following conditions: Average Self-Extinguish Flame Time may not exceed 15 seconds. Average Burn Length may not exceed 8 inches, and Average Burn or Drippings may not exceed 5 seconds after falling.

COMMENTS: \_\_\_\_\_

Test Results: Passed  Failed

Signed: *Corley Watts* Dated: 9/5/07  
 Corley L. (Corkey) Watts DERT-511227-CE

Flame test results signed by an FAA DER.

5. If crack repair or other structural repairs were made to seats or airframe components, a reference to AC 43-13 chapter and verse showing conformity to the FARs in the processes and materials used to implement these repairs
6. An entry listing installation of the passenger restraints, their part numbers, and the TSO (technical standard order) that they meet
7. A new weight & balance for the renovated interior
8. A signature and technician's certificate number

A maintenance record entry for an interior that was fabricated in the field and installed by an owner or operator will include all the data listed above with the exception of the kit-related description, receipt information, and PMA data. In place of this kit information, the maintenance record entry must include the following for everything used to fabricate the new interior:

1. A receipt describing the material, manufacturer, color (if applicable), and product number for all materials such as insulation, foam, leather, fabric, vinyl, carpet, etc
2. Flame test document describing the materials in item 1, with the test results as to what FAR a material passes (FAR 23.853a or FAR 25.853a), signed by an FAA certified DER (designated engineering representative), and their certificate number
3. An FAA 8110-3 form signed by a DER, a statement of conformity proving that the material and the test mentioned in item 2 meets the FARs
4. A description of all the work performed and non-upholstery materials used such as zinc chromate, paint, adhesive, etc
5. A statement saying that the seats and passenger restraint system were inspected by a licensed person, with a maintenance record entry to follow
6. A statement referencing that a new weight and balance was prepared by a licensed person

with a maintenance record entry to follow

7. The word 'end' after the last sentence of the maintenance record entry
8. The signature of the owner or operator, and his or her airmen certificate number

Again, this maintenance record entry should be followed by one done by the A&P or IA as mentioned earlier.

The maintenance record entry that is appropriate for a professionally fabri-

cated and installed interior follows the same format as that of an owner-performed installation with the exception of having all the work, whether it is seat repair, upholstery, weight & balance calculations or placarding, signed off by one authorized person. That person can hold one or all of the following ratings:

1. A repairman's certificate working in an FAA-approved repair station
2. An airframe mechanics license
3. An airframe & powerplant

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U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION			DATE Sept. 5, 2007
STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS			
AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION			
MAKE Cessna N6WH	MODEL NO. 180 SN # 18052492	TYPE (Airplane, Rotor, Helicopter, etc.) Aircraft	NAME OF APPLICANT Air Mod
LIST OF DATA			
IDENTIFICATION	TITLE		
Workorder # 3016 P.O. # 12837	Stratford Wine Roll # B059627B		
PURPOSE OF DATA     Demonstration of compliance with material flammability requirements.			
APPLICABLE REQUIREMENTS (List specific sections)     FAR 25.853 (a) Appendix F Part I (a) (1) (ii)			
<p>CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above and on attached sheets numbered _____ have been examined in accordance with established procedures and found to comply with applicable requirements of the Federal Aviation Regulations.</p> <p style="text-align: center;"> <input type="checkbox"/> Recommend approval of these data  <input checked="" type="checkbox"/> Approve these data </p>			
SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)		DESIGNATION NUMBER(S)	CLASSIFICATION(S)
Tested By: Beth Tucker Witnessed By: Corkey Watts			
Corkey Watts <i>Corkey Watts</i>		DERT-511227-CE	Structural Flammability
A Form 8110-3 (11-70) SUPERSEDES PREVIOUS EDITION			ELECTRONIC FORMAT (7-00)

FAA 8110-3 form signed by a DER. Note, we keep a sample of the actual material attached to this document.

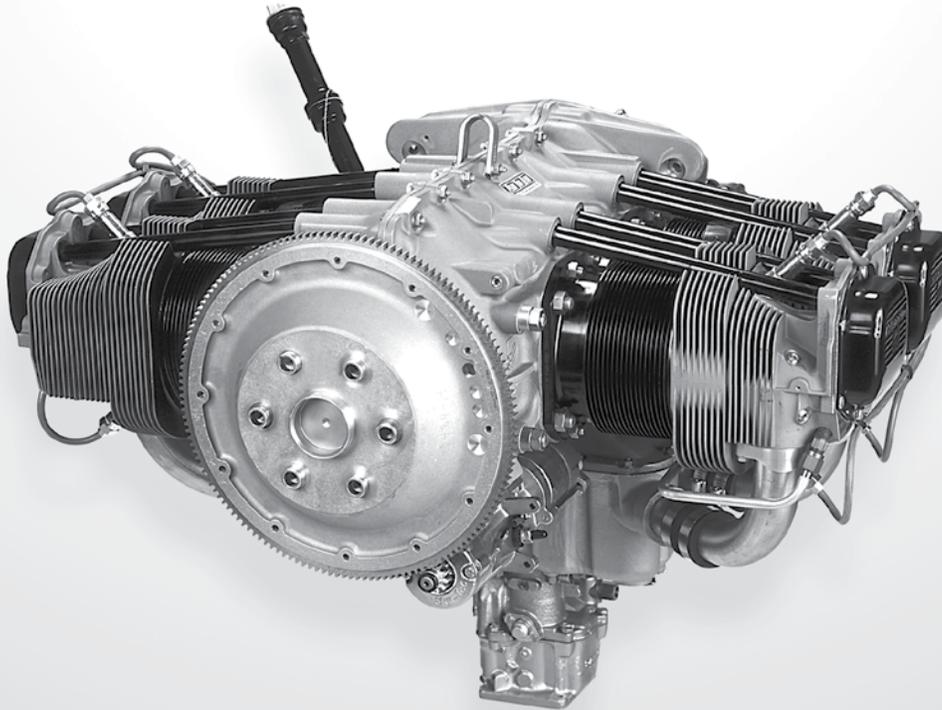
Fabricate and install a new interior using the following approved materials. Leather on seats and side panels: Garrett avion 212 oat, passes FAR 25.853a. Fabric trim on side panels: International Fabrics innsbruck 50/025 parchment, passes FAR 25.853a. Carpet: Aircraft Interior Products design weave sandpiper, passes FAR 25.853a. Headliner vinyl: G Baker Steeves eclipse lighthouse, passes FAR 25.853a. Clean inner cabin skins, floors and belly in preparation for application of zinc chromate; chromate surfaces and insulate with Astraperf and JM fiberglass which passes FAR 25.853a per Skandia test plan S152227, work order 152227-06. Clean, chromate and seal two wingroot fairings. Install 20 #6 nut plates in oversized windshield cuff holes. Install the following new LP Aero FAA-PMA windows: #067SG windshield, two #068SG door windows, two #076SG aft outer windows, two #079CL aft inner windows, #075SG aft windshield; all installed in accordance with LP Aero and Cessna installation instructions. Fabricate two backing panels for center armrest. Install two new door handle assemblies. Repair eight seat skirts and fabricate two new aluminum seat skirts. Repair loose mechanisms in pilot and co-pilot seats. Install 16 MC5155-1 seat thrust washers, 16 MC1714000-22 seat thrust washers, and tree seat stops. Replace all seat and side panel foam with Skandia flame retardant urethane foam that passes FAR 25.853a. Install aluminum hose extensions for six fresh air outlets. Repair and reinforce existing cabin trim components as required. Install the following new trim components: K1215045-16 upper rear window, K1215109-3 left upper doorpost, K1215109-4 right upper doorpost, K1215130-1 pilot door window frame, K1215130-2 co-pilot door window frame, K1215045-19 baggage upper panel, K1215045-15 baggage side panel, K1215109-21 left aft window frame, K1215109-22 right aft window frame, K1215066-1 forward headliner trim, K1215045-17 baggage door trim, 1215144-1 pilot door bracket, 1280119-1 emergency landing gear boot, 0705042-3 pilot door escutcheon, 0705042-4 co-pilot door escutcheon, two 1211527-19 scuffplates, 1215048-1 sill trim. Refinish cabin trim components with Dietzler acrylic lacquer and placard as original. Repair ground for overhead light; install two new #308 bulbs. Install new #AW-9854 rheostat for engine and radio. Remove original light, pitot heat and aux instrument air switches and related circuit breakers. Replace with Potter Brumfield W31X2M1 circuit breaker switches of the same rating; test all related circuits with no discrepancy noted. Install a previously approved #30030 vacuum source low vac switch and a press-to-test #MS25041-4 indicator light warning light, wired to a 1 amp 7277-2 series klixon circuit breaker using #20 astro mil spec wire (MIL-W-22759E). Ground run aircraft to verify that light illuminates at 3.5 PSI of vacuum. Install a press-to-test MS25041-4 landing gear pump running light hooked to the A+ side of the landing gear pump motor with #18 astro mil spec wire (MIL-W-22759E) through a 1 amp inline fuse located at the motor; perform retract test to verify function of the indicator light with no discrepancy noted. For continuing airworthiness, inspect wiring for condition and security behind side panel and in circuit breaker box whenever these areas are accessed, replace bulb with GE #327 or equivalent; electrical work performed per AC 43-13-1B, chapter 11, section 3, paragraphs 11-30, 11-31, 11-32, 11-33, 11-37, section 4, paragraphs 11-47, 11-48, 11-49, 11-50 a, 11-51, section 5, paragraphs 11-66 b, c, d (1), fig 11-2, paragraphs 11-67 a, b, d, 11-68 d (1) (2), b (1) (2) (3) (4) (5) (6) (7), section 6, paragraphs 11-76 a, b, c, d, 11-77 a, b (2), c, d, e, 11-78, section 7, paragraphs 11-85 a, c, 11-86, table 11-11, section 8, paragraphs 11-96 a, b, c, d, e, f, g, h, j, k, l, n, o, q, r, s, w, aa, bb, cc, dd, ee (1) (2) (3) (4), 11-98 c, d, e, f, l, 11-104, 11-107 a, section 9, paragraphs 11-117 b, 11-118 a, b, c, 11-125, section 10, paragraphs 11-135, 11-137, 11-138, 11-139 a, b (1) (2) (3) (4), c, d, section 11, paragraphs 11-146 a, b, c, d, 11-147, fig 11-12, 11-13, 11-14. Install intercom jacks in Avionics West mounts. Install BAS inertia reel shoulder harness/lap belt assemblies for pilot and co-pilot seats, see 337 this date; STC SA00855SE. Install BAS/Amsafe fixed shoulder harnesses and lap belts for center seats, and lap belts for aft seats, TSO C-114. Remove oxygen bottles, have static check performed by Stop-Fire (WO #96947), reinstall bottles, check for function and leaks with no discrepancy noted. Fabricate new mounting plate for aux alt control in headliner. Remove old seals and glue from cabin doors, baggage door and opening windows, install new Cessna seals. Fabricate and install new baggage door sill plate. Revise weight & balance as follows:

New empty weight	2460.61 lbs
New useful load	1339.39 lbs
New EWCG	40.69 ins
New moment	100128.64 in lbs

*Dennis Wolter*

Dennis Wolter, AP21535421A 01-02-03  
AIR MOD, 2025 Sporty's Drive, Batavia, OH 45103

*Proper logbook entry for a typical complete interior and a few extra modifications done in a Cessna 210.*



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**MAJOR REPAIR AND ALTERATION**  
**(Airframe, Powerplant, Propeller, or Appliance)**

Form Approved  
OMB No. 2120-0020  
**For FAA Use Only**  
Office Identification

**INSTRUCTIONS:** Print or type all entries. See FAR 43.9, FAR 43 Appendix B, and AC 43.9-1 (or subsequent revision thereof) for instructions and disposition of this form. This report is required by law (49 U.S.C. 1421). Failure to report can result in a civil penalty not to exceed \$1,000 for each such violation (Section 901 Federal Aviation Act of 1958).

<b>1. Aircraft</b>	Make Cessna	Model 172M
	Serial No. 17261719	Nationality and Registration Mark N44470
<b>2. Owner</b>	Name (As shown on registration certificate) Dennis R. Wolter	Address (As shown on registration certificate) 3804 East Street Cincinnati, Ohio 45227

**3. For FAA Use Only**

The unit identified herein complies with applicable airworthiness requirements and is approved only for the above described alteration, subject to conformity inspection by a person authorized under FAR 43.7.

APPROVING INSPECTOR *Leon A. Cluett*  
DATE JAN 10 1997 CVG - FSDO

4. Unit Identification				5. Type	
Unit	Make	Model	Serial No.	Repair	Alteration
AIRFRAME	~~~~~ (As described in Item 1 above) ~~~~~				X
POWERPLANT					
PROPELLER					
APPLIANCE	Type				
	Manufacturer				

**6. Conformity Statement**

A. Agency's Name and Address Cincinnati Avionics Clermont County Airport Batavia, Ohio 45103	B. Kind of Agency	C. Certificate No.
	<input type="checkbox"/> U.S. Certificated Mechanic	VYTR380B Radio I & II, Limited Airframe, Instrument & Specialized Service
	<input type="checkbox"/> Foreign Certificated Mechanic	
	<input checked="" type="checkbox"/> Certificated Repair Station	
<input type="checkbox"/> Manufacturer		

D. I certify that the repair and/or alteration made to the unit(s) identified in item 4 above and described on the reverse or attachments hereto have been made in accordance with the requirements of Part 43 of the U.S. Federal Aviation Regulations and that the information furnished herein is true and correct to the best of my knowledge.

Date 1-14-97 Signature of Authorized Individual *[Signature]*

**7. Approval for Return To Service**

Pursuant to the authority given persons specified below, the unit identified in item 4 was inspected in the manner prescribed by the Administrator of the Federal Aviation Administration and is  APPROVED  REJECTED

BY	FAA Fit. Standards Inspector	Manufacturer	Inspection Authorization	Other (Specify)
	FAA Designee <input checked="" type="checkbox"/>	Repair Station	Person Approved by Transport Canada Airworthiness Group	
Date of Approval or Rejection <u>1-14-97</u>	Certificate or Designation No. <u>VYTR380B</u>	Signature of Authorized Individual <i>[Signature]</i>		

FAA Form 337 (12-88)

Completed front side of an FAA 337 form for a one-time field approval. Note the FAA stamp and inspectors signature in block 3.



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MODEL 172M	
Nationality and Registration Mark N4447Q	
OWNERS NAME (As shown on registration certificate) L. Wolter	ADDRESS (As shown on registration certificate) 3804 East Street Cincinnati, Ohio 45227
<b>3. For FAA Use Only</b> <small>This aircraft identified herein complies with applicable airworthiness requirements and is approved only for the above described aircraft subject to conformity inspection by a person authorized in FAR 43.7</small> APPROVING INSPECTOR <i>Leon A. Cluett</i> DATE JAN 10 1997 CVG-FSDO	
<b>4. Unit Identification</b>	
Make	Model
Serial No.	Rep
<small>(As described in Item 1 above)</small>	

A close-up of the FAA approval statement in block 3.

mechanics license with inspectors authorization

Since many new custom professional interior installations also include some major modifications, such as taller seat back build-ups and shoulder harness installations, it's important to discuss the paperwork and approvals for these types of mods. The FAA requires approval for any mod that can affect crashworthiness. That means that adding a headrest, building the back of a seat taller, or changing or installing different passenger restraints, among other mods, requires either a field approval or an STC.

Field approvals are issued by the FAA through the FSDO and require the generation and filing of an FAA 337 form. Up until 2002, the FAA issued two types of field approvals. The first and most common is a one-time field approval that applies to only one make, model and serial number. This approval is good for use by the person making the application for one time only on that one specific airplane. There will be an original FAA inspector's stamp, date, and signature in block 3 of the 337 form. I am showing you both sides of a one-time 337 form to illustrate what is typically included in such a document. The owner/operator is the only party to receive the original 337. The FAA and the installer each keep copies. Supporting documents may sometimes be required. In this case, a block will be checked to indicate that additional documents are

part of the approval.

The second type of field approval is known as a duplicatable field approval. In years past, the FAA issued these in order to allow a mechanic or an approved repair station to perform the exact same major mod more than once on the same make and model of aircraft, without requiring an inspection of that mod every time it was done. This type of approval requires a 337, however, block three is left empty. The approval statement is made at the end of the body of copy that describes the modification and what supporting data applies to the specific modification. This statement references the aircraft type, the tail number, serial number, and date of the original approval, as well as the name of the owner of the airplane at the time that original approval was made. The picture of a duplicatable field approval shows it all. Again, the owner gets the one and only original 337 form with the original signature on the front side. Since 2002, unfortunately, the FAA no longer gives out new duplicatable field approvals, but the continued use of existing ones is authorized.

Always check to be sure that all the information on the front side of the 337 is correct. Once these documents are filed with the FAA, changes are quite difficult to implement. Here's a reality check. Some shady stuff goes on regarding field approval paperwork (believe me I've seen evidence). To avoid such a dark cloud, do not accept a 337 un-

**NOTICE**

Weight and balance or operating limitation changes shall be entered in the appropriate aircraft record. An alteration must be compatible with all previous alterations to assure continued conformity with the applicable airworthiness requirements.

**8. Description of Work Accomplished**  
*(If more space is required, attach additional sheets. Identify aircraft nationality and registration mark and date work completed.)*

CESSNA 172M N00000 s/n 00000000 01/02/95

Fabricate and install pilot and co-pilot wingroot fairing fresh air inlet attachment fittings that replace the existing plastic units with aluminum components. This installation is identical to one approved for duplication 01/02/94 in Cessna 172M, N4447Q, s/n 17261719, owned by Dennis Wolter, 3804 East Street, Cincinnati Ohio. Weight & balance is unchanged

--- end ---

Additional Sheets Are Attached

*Typical duplicatable field approval write-up with an appropriate drawing, located in block 8 of the back of a 337; note the reference statement to the airplane that this duplicatable field approval was originally approved for.*

*All the stuff you get in a type-certificated kit (in this case, BAS shoulder harnesses for a Cessna).*



Department of Transportation—Federal Aviation Administration

## Supplemental Type Certificate

**Number SA2067NM**

**IMPORTANT DOCUMENTS**  
KEEP WITH AIRCRAFT RECORDS

This certificate issued to **BAS, Inc.**  
P.O. Box 190  
13319 419<sup>th</sup> Street East  
Eatonville, WA 98328

Tag # AJ 0408E  
AG Ser. # 11/29/2000  
S.A.B. Inc. Ser. # 11/29/2000  
1. 11/29/2000  
2. 11/29/2000

certifies that the change in the type design for the following product with the limitations and conditions described as specified herein meets the airworthiness requirements of Part 21 of the Regulations.

Original Product—Type Certificate Number: \_\_\_\_\_  
Make: \_\_\_\_\_  
Model: \_\_\_\_\_

\*See attached FAA Approved Model List (AML) No. SA2067NM for list of approved airplane models and applicable airworthiness regulations.

Description of the Type Design Change: Installation of BAS, Inc. TSO Shoulder Harness and BAS Inc. Harness System in accordance with the appropriate BAS Report listed on FAA AML SA2067NM, dated November 29, 2000, or later FAA approved revision.

Limitations and Conditions: Approval of this change in type design applies to the above model aircraft only. This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that aircraft. A copy of this certificate and FAA Approved Model List (AML) No. SA2067NM must be maintained as part of the permanent records for the modified aircraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until superseded, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: December 22, 1982  
Date of issuance: June 2, 1983

Date received: April 15, 1986  
Date amended: April 4, 1984, August 18, 1989, November 29, 2000

By [Signature]  
Acting Manager, Seattle Aircraft Certification Office

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

FAA Form 3374-200-40

This certificate may be transferred in accordance with Part 21.97.

At right:  
FAA STC form describing the modification, the STC number, and a stamp indicating the make model and serial number of the airplane that this STC is authorized to be installed in.

At bottom:  
The master applicability list that includes all of the Cessnas that this kit is approved to be installed in by make, model and specific serial numbers.

FAA APPROVED MODEL LIST (AME) NO. SA2067NM

BAS INC.  
FOR  
TSO SHOULDER HARNESS INSTALLATION

ISSUE DATE: APRIL 8, 1984

ITEM	AIRCRAFT MAKE	AIRCRAFT SERIAL	ORIGINAL TYPE CERTIFICATE NUMBER	CERTIFICATION BASIS FOR ALTERATION	FAA APPROVED SHOULDER HARNESS REPORT	REVISION	AMT REVISION DATE
1	Cessna	170 through B	A-795	CAR 03/ CAR 3 (B only)	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
2	Cessna	172 through Q	3A12	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
3	Cessna	172AG	3A17	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
4	Cessna	P172D	5A17	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
5	Cessna	R172E through R172K	3A17	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
6	Cessna	175 through C	3A17	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
7	Cessna	180 through E	5A6	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
8	Cessna	182 through R	3A11	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
9	Cessna	R182, T182	3A11	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
10	Cessna	T182	3A11	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
11	Cessna	185 through E	3A24	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
12	Cessna	A185E, A185F	3A24	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
13	Cessna	210 through 201F	3A21	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
14	Cessna	T210F	3A21	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
15	Cessna	P210N & R	3A21	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
16	Cessna	210-S (20S)	3A21	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
17	Cessna	210-SA (20SA)	3A21	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
18	Cessna	236	A4CE	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
19	Cessna	P206 through E	A4CE	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
20	Cessna	TP206A through E	A4CE	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000

21	Cessna	UX26 through G	A4CE	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
22	Cessna	TU26A through G	A4CE	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
23	Cessna	317 through D	A4CE	FAR 21	1300	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
24	Cessna	317RG	A4CE	FAR 21	1300	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
25	Cessna	Reims/Cessna	A4EU	CAR 10	1300	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
26	Cessna	FR172E through FR172K	A18ED	FAR 21.29 (CAR 3)	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
27	Cessna	P182P, P182Q, FR182	A41EU	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
28	Cessna	P172RG	A36EU	FAA 23	1600	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
29	Cessna	190, 195 through B	A-790	CAR 3	8000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
30	Cessna	336	A2CE	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
31	Cessna	337, 337A, M337B	A4CE	CAR 3	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000
32	Cessna	337B, 337C, 337D, 337E, 337F, 337G, 337H, 337J, T337C, T337D, T337E, T337F, T337G, T337H, P337A, T337H-SF	A4CE	FAR 23	1000	Revision E, dated 11/29/2000, or later FAA Approved Revision	11/29/2000

FAA Approved [Signature]  
Acting Manager, Seattle Aircraft Certification Office

Amended: August 31, 1984, September 7, 1991, June 8, 1996, November 29, 2000

less it contains an original signature and inspector's stamp in block 3.

The other approval system provided by the FARs is the STC (supplemental type certificate). An STC allows for the major modification of an airplane by any licensed entity who purchases and installs the previously approved component or system. Unlike a field approval, no FAA field inspection is required and there is no limit to the number of times that the approved part can be installed.

An STC is usually sold as a complete kit that includes everything necessary for installation such as instructions, bill of materials, all parts, STC copy and a master applicability list. An example would be Rosen sunvisors or BAS shoulder harnesses. On some STCs, only the STC approval and master applicability list is purchased, and the end user must locate all parts required for installation. The important thing is that the aircraft owner clearly understands what paperwork is required and is able to verify that the STC is applicable to his exact model.

The following is a list of documents that must accompany an STC-approved modification to a type certificated airplane:

An original copy of the STC, usually stamped and marked for the specific airplane in which the mod is to be installed; includes all current revisions

1. A master applicability list showing that this STC does apply to the make, model and serial number of the subject airplane
2. A parts list or bill of materials listing every component by part number
3. Installation instructions and related installation drawing with all current revisions
4. A properly filled out original FAA 337 form. Block 3 is left blank because the approval for the installation is the STC number that is referenced in the description in block 8
5. A maintenance record entry describing the mod and listing the STC number
6. A revised weight & balance
7. An appropriate change to the aircraft's equipment list

Did I say never take delivery of an aircraft without reviewing and checking all the paperwork? This stuff is often your only proof that your airplane conforms to its original type certificate, and is LEGAL TO FLY!

If there is anything that makes you feel you are really finished with the job, it's completing the paperwork. I very much enjoyed sharing information with all of you through this series of articles on interior renovation. I hope it has helped enhance your ownership of one of these fine Cessna airplanes. Until next time, fly safe!

*Dennis and Cynthia Wolter own Air Mod, www.airmod.com, at the Clermont County Airport in Batavia, Ohio. Dennis owns and flies a 1973 172 Skyhawk and a 1939 Taylorcraft.*

*CPA would like to thank Dennis and Cynthia for all the work that they have put into this series of articles.*



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