

Making Part?

Eliminating The Confusion!

By Don Dodge



The Grass Roots Program

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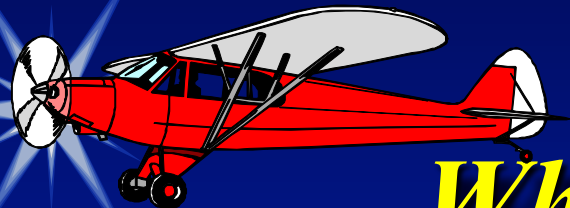
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Making Parts

Why Take On That Liability?

FACTS

- ◆ The average age of GA piston single-engine aircraft is 32 years old.
- ◆ The average age of GA piston multi-engine aircraft is 27 years old.
- ◆ The average age of GA turbine powered twin engine aircraft is 19 years old.



Making Parts

Why Do We Do It?

- ◆ The aircraft is old, or an orphan.
- ◆ No product support. (Or)
- ◆ Parts are available, in about 6 months.
- ◆ We are not going to talk about the price.

I can make the part, right?

What does the rule say?



What does the rule say about me manufacturing parts?

FAR 65.81, The privileges and limitations sections of the rule governing mechanics and FAR 145.51, privileges and limitations of repair stations do not permit the manufacture of parts.

Mechanic Airframe
FAR 65.85

Mechanic Powerplant
FAR 65.87

IA
FAR 65.95

Repair Station
FAR 145.51

An A&P Technician can maintain, repair and modify parts. But an A&P cannot make a brand new part and call it a repair.



If I Can't Make A Approved Part, Who Can?

There are ten ways that
an approved part can be
made.

- ① PMA
- ② TSO
- ③ TC or STC
- ④ TC with an APIS
- ⑤ PC
- ⑥ Bilateral Agreement
- ⑦ Acceptable to the Administrator
- ⑧ Standard parts
- ⑨ Parts Produced Per STC Instructions
- ⑩ Owner Produced

Parts may also be made as part of a
repair per FAR 43. (Patch Plate)

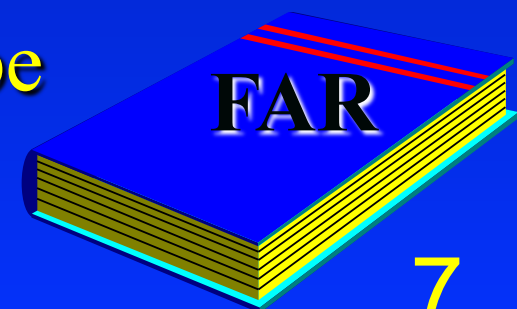


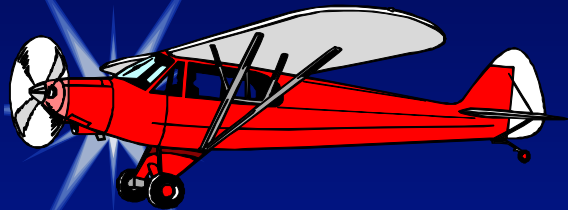
Owner Produced Parts

FAR 21.303 (b) 2

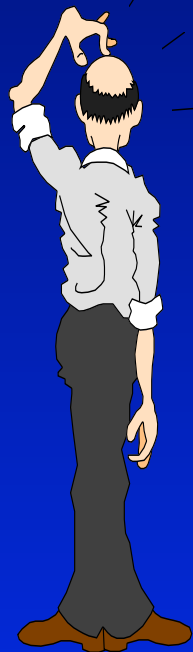
Replacement And Modification Parts

- ◆ FAR 21.303 (b) 2, permits an aircraft owner or operator to produce parts for maintaining or altering his own product.
- ◆ An Owner Produced Part can only be installed in the aircraft owned or operated by that person.
- ◆ An Owner Produced Part cannot be produced for sale to others.





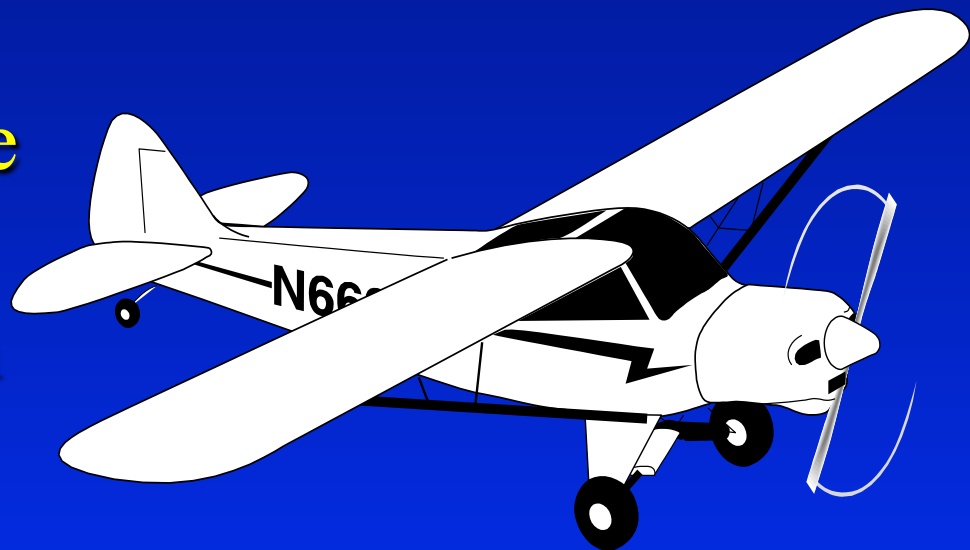
Owner Produced Parts?



How is it that the rule allows an aircraft owner or operator to produce parts for his aircraft, but not an A&P?

(Simple)

The responsibility follows the money!





How Does This “Owner Produced Parts” Rule Work?

**The Assistant Chief Counsel for Regulation
Memorandum dated August 5, 1993.**

- ◆ This memorandum states that a part does not have to be solely produced by the owner to be considered an owner produced part.
- ◆ The owner must **participate** in at least **one** **of five** ways for it to be considered an owner produced part.



The Five Ways to Participate

- 1 The owner provides the manufacture with design or performance data.**
- 2 The owner provides the manufacture with materials.**
- 3 The owner provides the manufacture with fabrication processes or assembly methods.**



The Five Ways to Participate

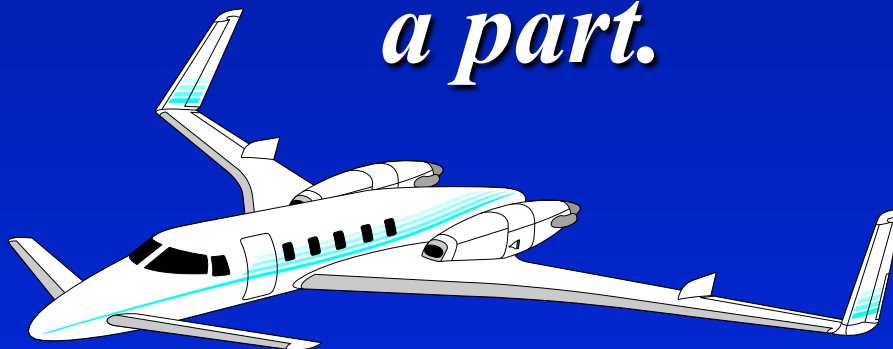
- 4 The owner provides the manufacture with quality control procedures.
- 5 The owner personally supervises the manufacture of the part.





The Five Ways to Participate

The memorandum also states that the FAA would not construe the ordering of a part, standing alone, as participating in controlling the design, manufacture or quality of a part.

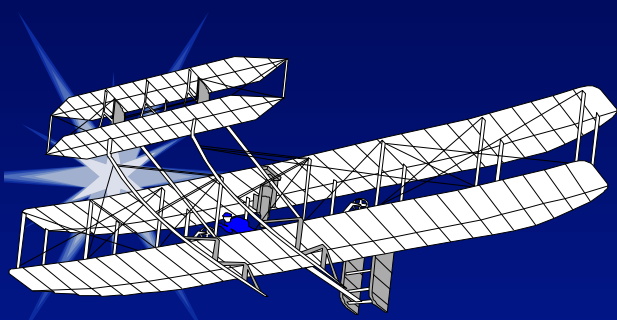




The Five Ways to Participate

Summary:

The owner does not need to be the sole producer of the part, but the owner must participate in its manufacture.



Owner Produced Parts? Approved Parts? Questions?

- ◆ The part is an “Owner Produced Part.” Is it also a FAA approved or airworthy part?
- ◆ Can I install it in the owner’s aircraft?

The Answer:


If an “Owner Produced Part” meets all the requirements of an Approved Part than it is considered a FAA Approved Part.

Lets look at the four characteristics of an approved part.

The Four Characteristics of an Approved Part.

- 1 Properly designed
- 2 Properly produced to conform to the design
- 3 Properly documented
- 4 Properly maintained for as long as it is in service






The Four Characteristics of an Approved Part.

1. Properly Designed


A properly designed part means that the parts design is FAA approved.



The Four Characteristics of an Approved Part.

2. Properly Produced


Properly produced, means the part is produced in accordance with a FAA approved design and **conforms** to that design.



The Four Characteristics of an Approved Part.

3. Properly Documented

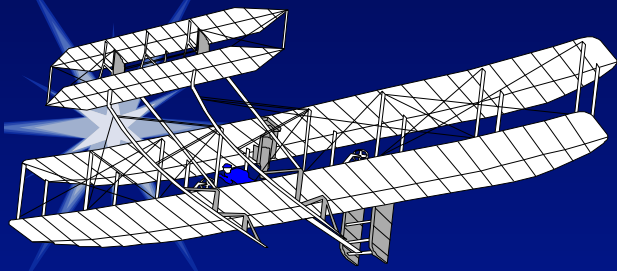
Properly documented means that there is a statement of conformity by the part producer memorializing the parts production.



The Four Characteristics of an Approved Part.

4. Properly Maintained

Properly maintained means that the part is maintained in accordance with FAR 43 .

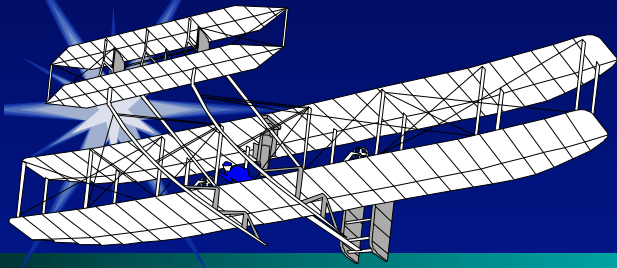


Approved Parts?

Owner Produced Parts

- ◆ There are 10 ways that a new part can be produced.
- ◆ Remember it does not matter if the part is produced under the authorization of a PC, PMA, TC, or Owner Produced, the part must have all 4 elements of an approved part before it qualifies for installation.





Approved Parts?

Owner Produced Parts

“Summary”

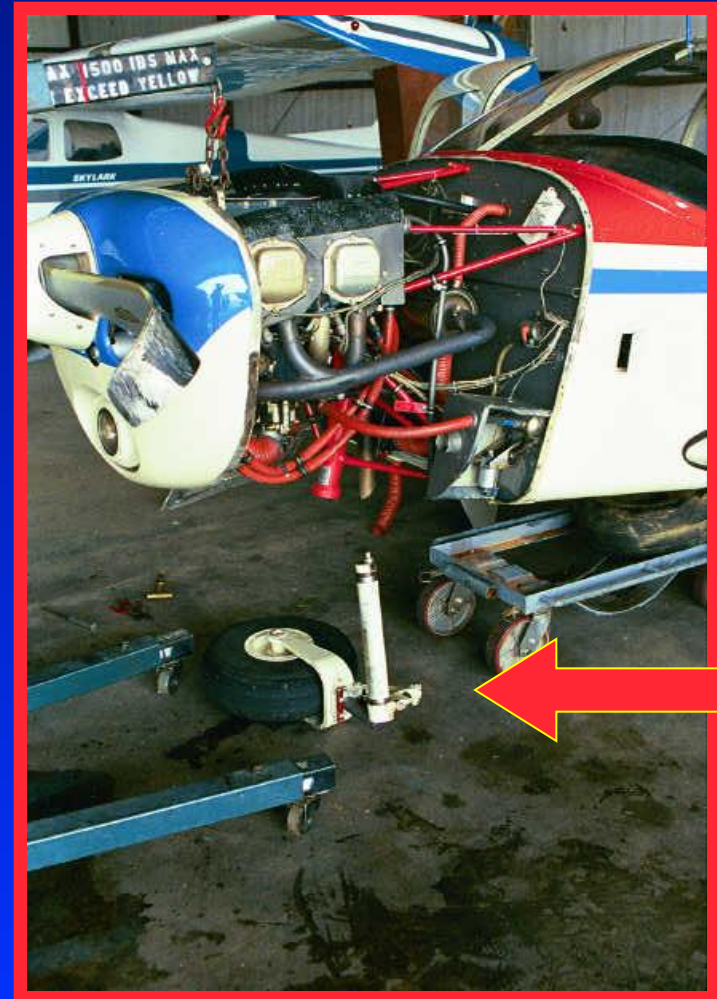
The part may meet the criteria of an owner produced part, but if any of the four elements of an approved part are missing than the part will not be a FAA approved part and cannot be installed in the owners aircraft.



Case History

Owner Produced? Approved?

- ◆ Aircraft nose strut was pitted.
- ◆ New strut available for \$750, used \$350.
- ◆ Owner had strut locally manufactured.
- ◆ Result: strut folded during first operation \$7500 + damage.



Was This A Owner Produced Part?

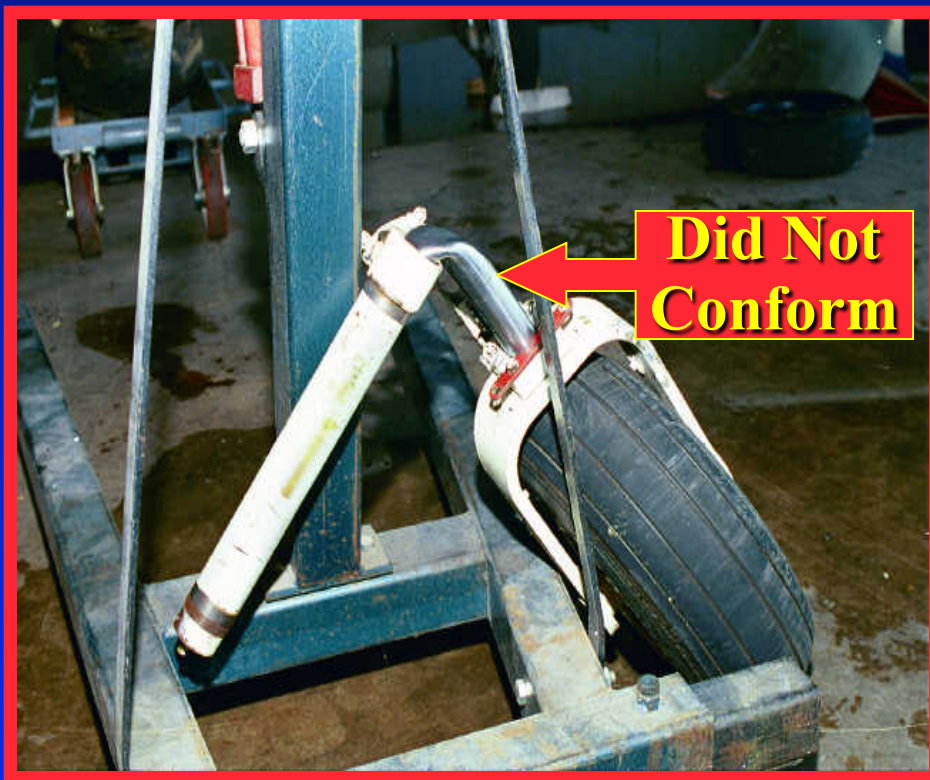
Yes this was a owner produced part.

- ◆ The owner did participate in the manufacture.
- ◆ The owner supplied the design for the part.

He gave the manufacture the old part and told him to duplicate it.



Was This a FAA Approved Part?



NO! And for the following reasons:

- ① The owner did not provide the manufacture a FAA approved design
- ② The part did not conform to the FAA approved design.

Was This a FAA Approved Part?



- ③ The owner did not document the parts production in the maintenance records.

The part did not last long enough to worry about maintenance!



Was The Owner, Or The Technician Held Accountable?

The Answer, Both!

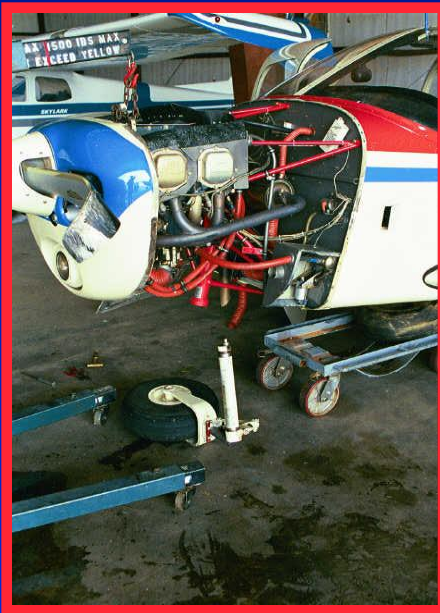
Owner and part's producer

- ◆ Far 91.403 Owner is primarily responsible.
- ◆ 91.407 No person may operate unless maintenance record required by 43.9 has been made.

Installing Technician

- ◆ There was no documentation with the part. (SUPS)
- ◆ FAR 43.13 Was not equal to its original condition.
- ◆ FAR 43.15 Aircraft did not meet all applicable airworthiness requirements. (Annual Inspection)

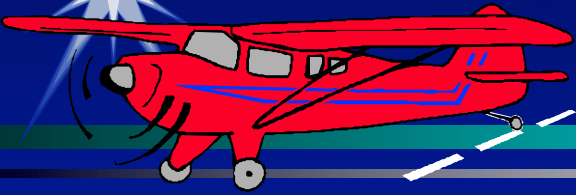
Wasteful, Tragic, Dangerous!



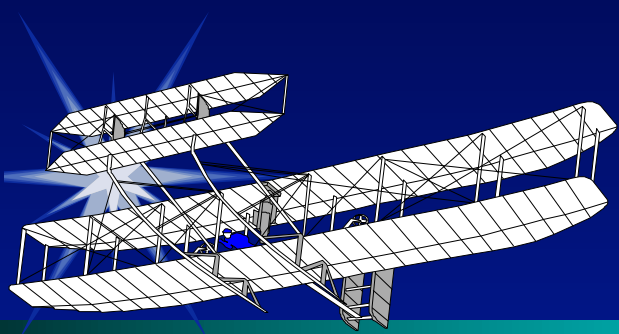
How could this have been avoided?

What would have been the right thing to do?

Owner Produced Parts It Can Be Done



- 1 Use the manufacture's design, it will save you time, money and maybe someone's life.
- 2 Reverse engineer if you must, but do your research, and submit your reversed engineered design to the FAA for approval before producing the part.

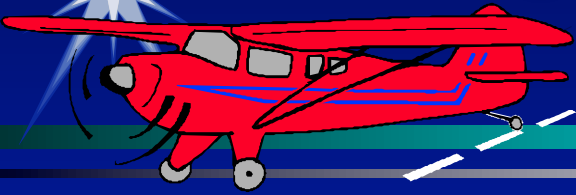


NOTE!

When a design is developed by reverse engineering from an old or damaged part, the resulting owner's design is not automatically FAA approved.

Many factors enter into this determination. You should always consult the local FSDO for guidance.

Owner Produced Parts It Can Be Done



- 3 Produce the part to conform to the FAA approved design. No more, no less.
- 4 Memorialize the production of the part with a record entry. The parts Producer (aircraft owner) should make an entry indicating that the part was produced in accordance with 21.303 and that it conforms to the original manufacture's approved design.



The Owner Can Produce A Part A Maintenance Technician Can't

Owner Produced Part Documentation

Date	Total Time	Work Accomplished
01-01-02	9899.9 hrs.	Manufactured new lower nose strut tube PN# 65280-00. The part was produced per FAR 21.303 (b) 2, (Owner Produced) and the part conforms to the original manufacture's design.

Ima B. Good PP 123456789
Aircraft Owner

The Owner Operator and Maintenance Technician Responsibilities

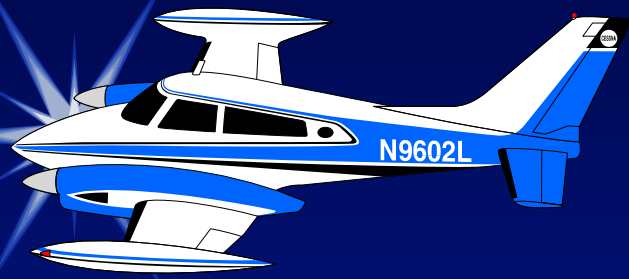
The aircraft owner or operator can produce parts for maintaining or altering his own product.



But!



The aircraft owner or operator usually cannot install the part. The maintenance technician must do that and The maintenance records must reflect this.



“Responsibility”

YOU ARE THE GATEKEEPER!

The responsibility for making the final determination whether an “Owner Produced Part” has all four elements of a FAA approved part and qualifies for installation rests firmly on the shoulders of the maintenance technician.

THE RESPONSIBILITY IS YOURS!

New Part? Repaired Part?

Sometimes the distinction between producing a new part and a repair is hard to determine.



The circumstances, complexity of the part and the availability of data are all determining factors.

“THE TEST OF REASONABLENESS”

The Test Of Reasonableness?



Scenario

An aircraft wing is damaged. The damaged parts include a rib, stringer and wing skin. The maintenance manual specifies the materials that the stringer and wing skin are made of. The maintenance technician purchases a new rib from the aircraft manufacture, and fabricates a stringer and wing skin using the damaged parts as a template and repairs the wing in accordance with the maintenance manual.

The Test Of Reasonableness?



Is this a repair or did the technician produce a new part? The stringer and wing skin had a manufacture's part number.

- ◆ **The parts were simple, the processes required to fabricate the parts involved common tools, skills and practices.**
- ◆ **Material specifications and data were published and available.**



The Test Of Reasonableness?

- ◆ **Template for the reliable reproduction of the part was available. (Design)**
- ◆ **Parts were incorporated into a repair in accordance with the manufacture's manual.**

“THE TEST OF REASONABLENESS”

In this case it would be considered a repair.



Summary For Making Parts

- ◆ Under rule, aircraft owners can produce new parts for their aircraft, maintenance technicians and repair stations can't.
- ◆ The aircraft owner must participate in at least (1) of the five ways for a part's manufacture to be considered "Owner Produced".



Summary For Making Parts

- ◆ **An Owner Produced part must have all (4) characteristics of an approved part before it is considered a FAA approved part and eligible for installation.**
- ◆ **The part producer (aircraft owner) should document in the aircraft records that he produced the part.
(Conformity Statement)**



Summary For Making Parts

- ◆ **The aircraft owner(part producer) and the installing agent (maintenance technician) each have their areas of responsibility under rule.**
- ◆ **Sometimes the distinction between producing a new part and making a repair is hard to determine. When in doubt call the FSDO.**

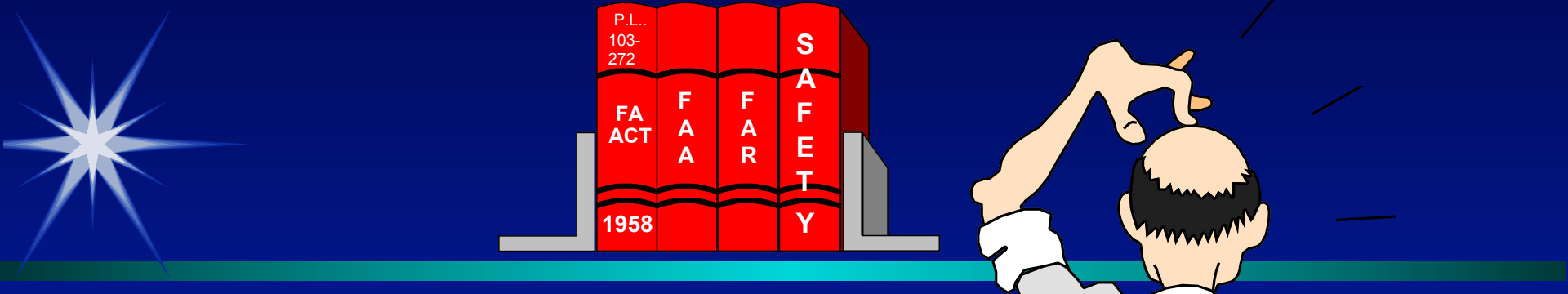


Summary For Making Parts

YOU ARE THE GATEKEEPER!

Under the rule, **YOU** are responsible for determining if a “Owner Produced Part” has all the characteristics of an approved part before installing it in the owner’s aircraft.

It is up to us to keep unapproved parts out of the system!



Any

Questions???

**Don't be shy, I know
you have some!**



**Thanks
for Having Me!!!**



Don Dodge

