J/80 Class Rules Interpretation: Rudder pin and rudder bushings

Rudder Pin

Question

There are J80's using two pins and not a single one, see Figure 1. The class rules appear somewhat unclear, as they refer to "2 pintles with 'pin'." Are a pintle and a pin not the same component? Furthermore, is the rudder "strap" considered a pintle? Finally, is the configuration shown in the attached photograph permissible under the rules?

Figure 1: Two-pin rudder configuration

Answer

J/80 NACA Technical Committee Official Interpretation

1. Response

The J/80 is required to use a two-point attachment system for the rudder, which may correspond to the use of one or two pins.

- J/80 Class Rules (E.2.5 FITTINGS): "The rudder shall be attached to the transom by means of (2) pintles on the rudder and (2) gudgeon fittings, with pin, on the transom."
- Standard Building Specifications (Item 34): Confirms the standard components are "Stainless rudder gudgeons and pins."

This confirms that the "2-pin rudder configuration" (Figure 1) is consistent with the permitted two-pintle/two-gudgeon setup. Of note, new boats from the builder have the 2-pin rudder configuration, thereby also confirming the class legality of the configuration.

2. Clarifications

The Class Rules and Specifications define these as distinct but complementary parts:

- **Pintle:** As defined by the Class Rules, this is the fitting on the rudder blade. This should properly be referred to as a rudder gudgeon, although this is not the term the CR uses.
- **Gudgeon:** The fitting on the transom.
- **Pin:** The component that secures the gudgeon and the pintle (rudder gudgeon) together. The Class Rules specifically mention "gudgeon fittings, **with pin**."
- **Rudder Strap:** The Standard Building Specifications (Item 32) mention "stainless rudder straps" in the context of the tiller assembly. The term "straps" refers to the flat metal plates that extend from the pintle/gudgeon base to provide a secure mounting surface to the rudder. This also refers to the flat metal plates that extend from the tiller to provide a secure mounting surface to the rudder.

3. Legality and Replacement

The legality of the specific fittings (including Figure 1) is ultimately determined by compliance with the official design standards:

- Compliance with Drawings (Class Rules E.2.5): The fittings "shall comply with official drawings."
- Replacement (Standard Building Specifications Item 34): Although the fittings are "Builder supplied," they "may be replaced with like or heavier."

In summary, the "2-pin" configuration is permitted. For any particular fitting to be legal, it must either be the builder-supplied part or a non-standard replacement that is of like function and dimensions, or heavier, and must comply with the official class drawings.

Rudder Bushings

Question

Are owners permitted to install or replace bushings at the rudder pin/gudgeon interface?

Answer

J/80 NACA Technical Committee Official Interpretation

Rudder bushings installed at the pin/gudgeon interface are **permitted**.

Applicable Rules and Specifications

- **J/80 Class Rules (E.2.5 FITTINGS):** "The rudder shall be attached to the transom by means of (2) pintles on the rudder and (2) gudgeon fittings, with pin, on the transom. These fittings shall comply with official drawings."
- **Standard Building Specifications (Item 34):** "Stainless rudder gudgeons and pins... Builder supplied, but may be replaced with like or heavier."

Rationale

1. **Compliance with Official Drawings and Builder Practice:** Historical builder practice, particularly in European production, included the factory installation of rudder bushings at the pin/gudgeon interface. These boats were issued Class Certificates. Therefore, the use of such bushings is deemed to be in compliance with the "official drawings" and the standard specifications referenced in Class Rule E.2.5.
2. **Building specifications context**: While the official class rules and building specifications are focused on one-design adherence and material types, they implicitly rely on standard marine hardware practices, which for a boat of this size may involve using low-friction, replaceable bushings within the metal gudgeon and pintle fittings to manage wear and load.
3. **No Change to Design:** A bushing is a non-structural wear item that facilitates the function of the standard pintle/gudgeon/pin system. Its presence does not alter the fundamental two-point attachment design mandated by Class Rule E.2.5.
4. **Maintenance and Replacement:** Bushings are classified as an essential wear item for rudder attachment systems. Their replacement or installation is consistent with the general allowance for routine maintenance and the allowance in the Standard Building Specifications (Item 34) to replace standard components with an item that is "like or heavier," as the bushing preserves or enhances the durability of the original, class-legal fitting.

   N.B: Wear and tear over time often leads to excessive play between the rudder pin (pintle) and gudgeon. **This common issue, if not corrected, can cause serious problems, including failure of the steering system and loss of steering.** Bushings are sacrificial, low-friction materials designed to wear out before the more expensive, structural metal parts (the gudgeon and pintle) are damaged by the excessive play.