

Technical Writing Portfolio

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Sample Overview

SOP: String Replacement on an Acoustic Guitar

- **Description:** Outlines a safe, standardized procedure for novice users who want to remove and install strings on a right-handed, six-string acoustic guitar.
- **Skills Demonstrated:** Process Design, Information Architecture, Audience Analysis, Constraint-Driven Writing, Risk Mitigation, User Experience Design.
- **Professional Relevance:** Shows an ability to describe mechanical processes to non-expert users and develop instructional documentation that mitigates injury and prevents user error.

Design Justification: String Replacement on an Acoustic Guitar SOP

- **Description:** Justifies key design decisions behind the String Replacement SOP.
- **Skills Demonstrated:** Process Design, Risk Assessment & Mitigation, Audience Analysis, User Experience Design, Constraint-Driven Writing.
- **Professional Relevance:** Shows an ability to assess processes from a novice user's perspective and make design decisions that mitigate risk and streamline usability.

Translating a Complex Concept Into a Q&A Brief: Hyperreality

- **Description:** Explains the complex concept of Hyperreality by translating it into clear language and concrete examples in a Q&A format.
- **Skills Demonstrated:** Expert-to-User Information Translation, Information Synthesis, Audience Analysis, Constraint-Driven Writing.
- **Professional Relevance:** Shows an ability to understand complex ideas or systems and translate them into stakeholder-focused documentation.

SOP: String Replacement on an Acoustic Guitar

Process Title: SOP-GTR-001	Date: 09/25/2025
Subject: Light Gauge Steel String Replacement on a Right-Handed, Six-String Acoustic Guitar with a 3+3 Tuner Configuration	Version: 3.0
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Purpose

- To outline a safe, standardized procedure for removing and installing strings on a right-handed, six-string acoustic guitar.

Scope

- This document is designed for novice players with no guitar maintenance experience who want to replace the strings on their right-handed, six-string acoustic guitar at home.

Tools and Materials

- Guitar neck rest
- Pack of light gauge acoustic guitar steel strings
- String clippers
- Bridge pin puller
- Pliers
- Disposal bin

Safety Precautions

- Clear the workspace of obstacles to avoid injury or damage to guitar.
- Do not cut guitar strings under tension to prevent snapping or injury.
- Do not bring replacement strings to high tension to prevent snapping.
- Strings have **sharp tips**. Handle them carefully throughout the procedure.

Preparation

1. Familiarize yourself with the terminology, guitar body parts, and string layout in the **Reference Guide** on page 5.
2. Clear a workspace with generous room for the guitar, tools, strings, and the bin.
3. Place the guitar face up on a flat surface.
4. Position the neck rest under the guitar's neck and close to the headstock to provide stability throughout the procedure.
5. Arrange the tools, strings, and the bin around the workspace for easy access throughout the procedure.
6. Open the string pack and follow the manufacturer's instructions on the back to arrange the strings by decreasing thickness.

Reference Guide

Key Terminology

Figure 1

- Headstock
- Tuners
- Nut
- Sound hole
- Bridge pins
- Bridge

Figure 2

- Tuning posts (on headstock, **Figure 2**)
- Strings: E, A, D, G, B, E

Guitar Body Parts

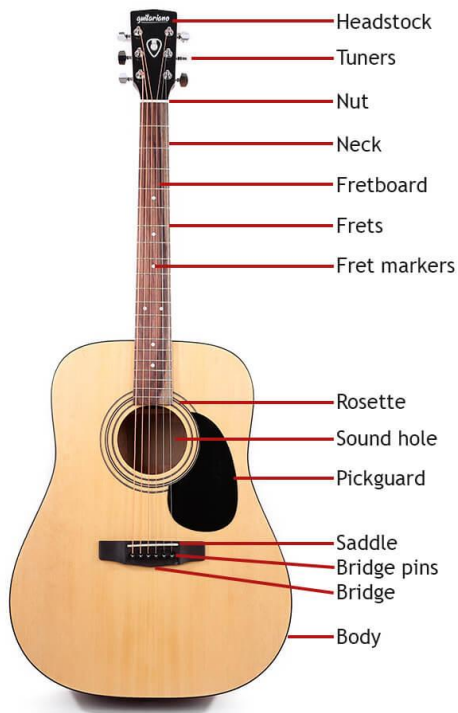


Figure 1: Guitar Overview

Acoustic guitar anatomy



Figure 2: 3+3 Headstock

String Layout

- On a guitar positioned in its correct horizontal orientation, the strings are arranged:
 - (Topmost, lowest pitch) E → A → D → G → B → E (Bottommost, highest pitch).
 - In **Figure 2**, the top 3 strings (E, A, D) are on the left side of the headstock and the bottom 3 (G, B, E) are on the right.

Procedure

- Read all steps, sub-steps, and notes before beginning the procedure.
- Follow the steps below for all strings, replacing one string at a time from the lowest to the highest pitch in the following order:
 - E → A → D → G → B → E



Do not confuse the **low E** string (topmost, thickest) with the **high E** string (bottommost, thinnest). Consult the **Reference Guide** (p. 5) to verify string layout.

A. String Removal

1. Turn the string's tuner slowly while monitoring string tension to unwind the string until it is completely slack.
 - **E, A, D:** Turn the tuner **clockwise** to decrease string tension.
 - **G, B, E:** Turn the tuner **counterclockwise** to decrease string tension.
2. Cut the string with string clippers above the middle of the guitar's sound hole.
3. Unwind the string segment that is wound around the tuning post and use the bin to dispose of it.
 - **Note:** Unwind the string segment carefully to avoid the sharp tips on its sides.
4. Remove the string's bridge pin by applying gradual upward pressure with the bridge pin puller until the pin pops out.
5. Remove the remaining string segment from the bridge pin hole and dispose of it.
6. Place the bridge pin within reach and proceed to the next section.

B. String Installation 1: Bridge

1. Uncoil the replacement string carefully to avoid the string's sharp tip and place it on an accessible work surface.
2. Bend the ball-ended side of the replacement string 45 degrees so that the bent part fills half of the groove on the bridge pin's side.
3. Insert the ball-ended side of the string approximately 2 inches deep into the bridge pin hole with the string pointing towards the headstock.
4. Insert the bridge pin fully into the hole with its groove facing the string's tuning post to pin the string down.
5. Hold the bridge pin down and pull the replacement string firmly to anchor it in place.

C. String Installation 2: Headstock

C.1 String Routing

1. Turn the tuner of the replacement string until the tuning post hole faces the string's bridge pin.
2. Feed the string through the tuning post completely, keeping the string under tension from the bridge side.
3. Pinch the string with your right hand where the string enters the tuning post.
4. Pinch the string with your left hand two-and-a-half inches (approximately 2 tuning post lengths) past the tuning post's exit hole.
 - **Note:** You are now pinching the replacement string from both sides of the tuning post.
5. Pull the replacement string back through the tuning post with both hands until your left hand's pinch reaches the tuning post's exit hole.
6. Maintain your grip on the string with both hands and proceed to the next section.

C.2 String Winding

1. Wrap the string pinched in your right hand around the tuning post once.
 - **E, A, D:** Wrap clockwise, going over the segment pinched in your left hand.
 - **G, B, E:** Wrap counterclockwise, going over the segment pinched in your left hand.
 - **Note:** The wrapped string segment in your right hand is now pointing directly at the bridge.
2. Hold the wrapped string segment in your right hand against the headstock surface with **light** finger pressure to maintain tension.
 - **Note:** You may release the string segment in your left hand since the string is now anchored to the tuning post. Maintain **light** pressure on the string segment with your right finger, which will allow the string to move during winding.
3. Turn the tuner slowly to wind the string around the tuning post until the string runs out of slack and sits securely in its nut slot. **Avoid the string's rotating sharp tail.**
 - **E, A, D:** Turn the tuner **counterclockwise** to increase string tension.
 - **G, B, E:** Turn the tuner **clockwise** to increase string tension.
 - **Note:** If a bridge pin pops out during winding, reinsert it and the string and continue winding procedure.
4. Release the string segment pressed down with your right finger.

D. Finalization

1. Snip the string's sharp tail with the clippers close to the tuning post and dispose of it, handling it carefully.
 2. Bend the remaining clipped edge of the string around the tuning post with pliers to reduce risk of injury.
- ❖ **Post Procedure Note:** The guitar should be tuned before being played. New strings will stretch and may require re-tuning during the first few hours of play.

Design Justification: String Replacement on an Acoustic Guitar SOP

- **SOP Purpose:** To outline a safe, standardized procedure for removing and installing strings on a right-handed, six-string acoustic guitar.
- **SOP Scope:** This document is designed for novice players with no guitar maintenance experience who want to replace the strings on their right-handed, six-string acoustic guitar at home.

Scope Limitation

Decision:

- The SOP is limited to light steel strings and right-handed, six-string acoustic guitars with a 3+3 headstock configuration.

Justification:

- Branching instructions for other guitar configurations and string variations (gauges, types) would make the procedure overwhelming. The procedure targets novice users and is therefore limited to the most common string type and gauge, and the standard headstock configuration of an acoustic guitar.
- Limiting the procedure to right-handed guitars mitigates the risk of injury. The wind direction on left-handed guitars is the reverse of the wind direction on right-handed guitars. Providing instructions for both could lead users to accidentally wind a string in the wrong direction and cause it to snap. The sharp, flying string ends could then injure the user.

Subsection Creation

Decision:

- The SOP separates the headstock string installation procedure into two subsections.

Justification:

- The headstock string installation procedure has the most steps and the most mechanically demanding actions. Including more than six steps in this section would make it too complex and increase the risk of error. To address this, the actions in the section are split into two subsections: routing and winding.
- The split does not affect usability. The two subsections are connected by a simple action (holding a string down) that makes the transition between them easy.

String Replacement Method

Decision:

- The SOP instructs the user to remove and install strings one at a time instead of removing all the strings prior to installation.

Justification:

- The chosen method streamlines the procedure and makes it easier to follow. Removing all strings prior to installation involves repeating the instructions in Section A six times. In this case, the SOP would require additional explanations and reminders not to proceed to the other sections, adding unnecessary complexity.
- The strings should be removed before installation only if the user wants to clean the guitar's fretboard. Fretboard cleaning is outside the scope of this procedure.

String Stabilization Method

Decision:

- The SOP is limited to Method 1: hold the string against the headstock surface with light finger pressure throughout the winding procedure (Section C.2.2).
- The alternative is Method 2: hold the string slightly above the headstock surface while maintaining tension throughout the winding procedure.

Justification:

- Method 1 involves managing two variables: winding and pressing. Method 2 involves managing three: the user needs to control the string's height and tension while winding it.
- In Method 2, the required string distance from the headstock is too small for a novice user to control while managing two other variables. Holding the string too high above the headstock during winding could result in an uneven wind over the tuning post and degrade tuning stability.

Damage Prevention Through Word Choice

Decision:

- The SOP instructions in Section C.2.2 are: “**Hold** the wrapped string segment in your right hand against the headstock surface with **light** finger pressure to maintain tension.”

Justification:

- The wording prevents damage to the guitar. A novice user could press a string against the headstock too hard during winding and degrade the headstock finish.
- To prevent damage, the procedure instructs the user to “**hold**” the string down before specifying they should do it with **light** pressure. Holding does not imply high pressure. The note to the section clarifies that **light** pressure is needed for the string to move during winding.
- The procedure was tested to ensure that reasonable amounts of string pressure would not damage the headstock finish during winding.

Measurement Accessibility

Decision:

- Section C.1.4 includes a physical reference point (“approximately 2 tuning post lengths”) and a standardized measurement (“two and a half inches”).

Justification:

- Two tuning posts provide an immediately accessible physical reference for novice users who are unable to measure two and a half inches or estimate the measurement.

Post-Procedure Note

Decision:

- The SOP includes the following post-procedure note: “The guitar should be tuned before being played. New strings will stretch and may require re-tuning during the first few hours of play.”

Justification:

- The note prevents the novice user from assuming they did not follow the procedure correctly because their guitar sounds out of tune.
- To separate the note from the procedure, its phrasing is non-imperative. The note combines two ideas instead of listing them in bullet point form to prevent the user from mistaking them for procedural steps.

Translating a Complex Concept Into a Q&A Brief:

Hyperreality

Who came up with the concept of “hyperreality”?

- The French philosopher, sociologist, and cultural theorist Jean Baudrillard introduced and developed the concept of **hyperreality** in his book *Simulacra and Simulations* (1981).
- **Hyperreality** has since become a central concept in postmodernism, a 20th-century philosophical movement that argues truth is constructed and depends on perspective.

What is a “simulacrum”? What is a “simulation”?

A **simulacrum** is a representation of reality. Baudrillard describes four types of **simulacra**:

1. **A simulacrum that represents reality faithfully.**

Example: A picture of a real tree.

2. **A simulacrum that distorts reality.**

Example: An inaccurate picture of a real tree.

3. **A simulacrum that hides the absence of reality.**

Example: A picture of a tree that never existed, presented as if it shows a real tree.

4. **A simulacrum that creates a sense of reality but has no relation to reality.**

Example: A picture of a tree that never existed which makes someone believe they are looking at a real tree.

A **simulation** is a type of system. It is a model of reality that prevents us from distinguishing truth from falsehood. **Simulations** consist of many **simulacra**.

- For example, the film *The Matrix* (1999) is about humanity being trapped in a virtual world called The Matrix. The Matrix is a convincing model of reality that makes it impossible for humanity to distinguish virtual falsehood from the truth of the world outside.
- The Matrix consists of many **simulacra**. These can be trees, buildings, roads, or other elements that represent reality but are not actually real.

What does “hyperreality” mean?

The ancient Greek prefix “hyper” means *over* or *above*. It emphasizes that **hyperreality** replaces reality for the observer by covering it up.

- **Hyperreality** is a state where the distinction between reality and falsity is completely erased for the observer by **simulation**. Reality and falsity still exist, but the observer cannot distinguish between them.
- **Hyperreality** produces all of reality’s effects for the observer without being real. For example, a human in a virtual world can experience the effect of driving a car without driving a real car.

Does Baudrillard think we live in a virtual world?

- Baudrillard does not think we live in a virtual world. He argues the reality we experience is **simulated** by a system — but this system is not computerized, like the one we see in *The Matrix*.
- Baudrillard argues that the **simulacra** (representations) produced by modern Western societies represent things that are not real. These **simulacra** include advertising, films, words, and the concepts we create from words.
- The **simulation** in *The Matrix* is digital, but our **simulation** is cultural. We still live in a real physical world with real objects and phenomena, but the way we talk about our experiences and represent our reality does not match up with what is real.

What examples of simulation does Baudrillard give?

Reality TV:

- Reality TV **simulates** our presence at a remote location. The cameras are substitutes for our senses, showing us images that align with our expectations of reality.
- But the cameras do not capture reality. They *create* it. Being filmed for a mass audience changes people's behavior, making it different from what it would have been had the cameras not been there.
- Lives that would have been real had they not been captured on camera become **hyperreal** images (**simulacra**) of life on our TV screens.
- These images do not show reality, since the natural human behavior they are supposed to represent never occurred due to the presence of the cameras.

If we know our culture is a simulation, why do we not reject its hyperreal images and face reality?

- Being aware that we are surrounded by **hyperreal** representations does not reveal reality. If all we experience are false images, we have no way of determining what is real.
- *Example:*
 - Lucy tells Steve that Bob kicked a ball during soccer practice.
 - Steve missed soccer practice and relies on Lucy's **simulacra** (her words) to understand what happened.
 - To verify whether this is true, Steve can speak with other people who attended practice.
- But even if Steve knows everyone who observed the soccer practice is lying, he still cannot access the actual event to verify anything about Lucy's soccer practice story.
- In this situation, absolutely nothing about the event in Lucy's story can be verified as real. Did Bob kick the ball? Was Bob even there? Did soccer practice really occur?