

**NATIONAL RIFLE ASSOCIATION OF AMERICA  
RANGE TECHNICAL TEAM  
RANGE SERVICES DEPARTMENT  
RECREATIONAL PROGRAMS AND RANGES DIVISION**

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**Final Report**

# *Range Evaluation Report*

**Case #: TX-2237-16**

**Subject: Texarkana Gun Club**

**Date: 21 Jan 2017**

## **STATEMENT REGARDING INFORMATION IN THIS REPORT**

Nothing in the information that follows should be considered "requirements" of the NRA. The informational items are "suggestions". The range operator may or may not choose to act upon any or all of these suggestions. It should not be interpreted by anyone that a failure on any part of the range operator to accept and/or implement any of the suggestions set forth herein as evidence of a "cavalier attitude" regarding health and/or safety. A range operator may otherwise be very safety and health conscious without having to resort to any or all of these suggestions.

Report prepared by  
Range Technical Team  
National Rifle Association

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**Date: 21 Jan 2017**

**Subject: Texarkana Gun Club**

**Opening Statement:**

The Range Technical Team visited Texarkana Gun Club located on Farm Road FM 2149 between Maud and Redwater, Texas. The evaluation was completed on Saturday, January 21, 2017 to review the potential range expansion and existing range at the request of the Texarkana Gun Club board. The Range Technical Team included Ron Hoehn, Treasurer/Membership Director and Point of Contact, along with the club's current Vice President, Helen Humber. This evaluation focused on the review of the plans for expansion, current operations, range design, and safety in accordance with the guidelines set forth in the NRA Range Source Book.

**Summary:**

The club's Treasurer/Membership Director, Ron Hoehn, requested an evaluation for suggestions on range expansion to an adjacent sixty-three acre parcel that was recently purchased by the club, and to review the club's current range for suggestions on improvements and safety.

The Range Technical Team intends to provide suggestions regarding safety, operation, design, and the specific concerns of the club based on the guidelines available in the NRA Range Source Book. Short-term, low cost, and long-term options will be presented to address observations gathered during the range evaluation. The club may proceed, if desired, to implement the suggestions provided in this report through updates to the existing range, expansion and construction of the range on the purchased land, modified operations, and enhanced maintenance plans.

## **Background:**

Texarkana Gun Club, an incorporated non-profit and NRA affiliated club, has been around for approximately fifty years and has approximately 325 active members. Texarkana Gun Club is a private club with membership available to the general public. The club owns the original seventeen acres where the current range exists, and has an 8-year loan on the recently purchased sixty-three adjacent acres to the south. Texarkana Gun Club has an active and diverse membership, who participates in a variety of disciplines such as USPSA, Steel Challenge, Small-Bore Rifle, Large-Bore Rifle, 4H, and other shooting sports. The club regularly hosts matches and is seeking expansion to provide additional shooting opportunities to its members and match participants.

## **Observations:**

The Range Technical Team was provided with a printed map of the Texarkana Gun Club boundaries (**Photo 1**) by the POC while visiting the range. The existing seventeen acre range and club boundaries are highlighted in yellow. The recently purchased adjacent sixty-three acre track boundaries are highlighted in red. Note for reference, the map is oriented north. Reviewing the site boundaries, the Range Technical Team observed that the additional purchase of the sixty-three acre track provides an excellent buffer to surrounding properties which should serve as an added measure of safety and noise abatement. The area to the northwest corner, behind the existing firing line is especially useful to contain any errant projectiles to club property.

The Range Technical Team observed that the eastern half of the club property, including the existing range, is situated below grade. Per Texarkana Gun Club, it was told to the Range Technical Team that the general area was excavated for fill to construct a nearby highway by the state, which resulted in a large level area with a high cut-bank rising to grade level. This cut-bank runs north to south, and is located where the red and yellow lines can be found in parallel on the western border of the original seventeen acres (**Photo 1**). The cut-bank serves as the backstop for the current range (**Photos 7, 10, 11 & 12**), and the cut-bank bisects the new sixty-three acre parcel as well (**Photos 4, 5 & 6**).

Concerning the range expansion, the Range Technical Team was provided a potential site design (**Photo 2**) by Texarkana Gun Club. This site design was observed by the Range Technical Team. In addition to reviewing the sixty-three acre track for range expansion, the Range Technical Team evaluated the existing seventeen acre, multi-use range. This included a 200 yard rifle range and 6 multi-use/pistol bays (**Photo 1 – Yellow Area**).

The Range Technical Team observed the existing backstop for the rifle range and pistol ranges appeared to be 20 foot or greater (**Photos 7, 10, 11 & 12**). Due to range use while the evaluation was performed, the Range Technical Team was unable to verify. The Range Technical Team did observe heavy erosion along the backstop in some of the bays (**Photo 11**). The north berm was observed to be less than 8 feet in height in a few areas along the 200 yard range (**Photo 8**). It was observed that the rifle range lacked a south berm; however, it is bordered by heavy brush and a stand of trees (**Photo 9**). It should be noted that the southern area of the property is not currently utilized.

Bay/Stage 6 of the pistol range is adjacent and north of the rifle range. The Range Technical Team observed that Bay 6 is a few feet higher than the floor of the rifle range (**Photo 10**). This should be taken into consideration when constructing additional berms. Additionally, a gap in the rifle range berm exists near the entrance of Bay 6 (**Photo 8 – right side**). Texarkana Gun Club informed the Range Technical Team that this allows the rifle range to be utilized as a seventh bay for pistol matches, as the gap provides access from the other pistol bays. This gap could be improved for safety.

The Range Technical Team observed that the side berms in Bay/Stage 2 through Bay/Stage 6 of the pistol range appear to be lower than 8 feet (**Photo 11**). Bay 1, which is oriented toward the north, was observed to be utilized for Archery only. Per Texarkana Gun Club, this was based on previous recommendation from a safety evaluation. Further review of aerial photos shows that the direction of fire is in line with a pasture and state highway.

### **Suggestions:**

Based on the desires on Texarkana Gun Club, the main priority of expansion is the addition of the 600 yard rifle range. The Range Technical Team suggests that this range be constructed south and parallel of the existing rifle range (**Photo 3**) per Texarkana Gun Club input and utilizing the guidelines found in Section II, Chapter 2 of the Range Source Book. The Range Technical Team suggest building a 10-15 position covered firing area according to Section II, Chapter 2, Paragraph 2.01 in the Range Source Book (**Photo 3 – represented as a blue rectangle**). Construction of the covered firing position will assist in noise abatement and will protect the shooters from the elements.

The Range Technical Team suggest that side berms, a minimum of 8 feet in height according to the Range Source Book guidelines Section II, Chapter 2, Paragraph 2.05, be constructed along the entire length of the 600 yard rifle range (**Photo 3 – represented as white lines along the rifle range**). The northern berm of the 600 yard range would also serve as the south berm of the existing 200 yard range



Considering the 600 yard rifle range site design, whereas the proposed firing position sits below grade, and a cut-bank approximately 8-12 feet high (**Photos 4, 5 & 6**) bisects the proposed range (perpendicular to the firing position) around the 200-250 yard mark, the Range Technical Team suggests that the remaining 350-400 yards of the range be excavated to grade with the firing position. If the excavated portion of the 600 yard rifle range does not produce side berms 8 feet in height, it is suggested that additional fill be utilized to raise the side berms to a minimum of 8 feet according to the Range Source Book guidelines Section II, Chapter 2, Paragraph 2.05. Note, the backstop and side berms should be sufficient in height to be effective for the site specific range due to the 600 yard distance and all references herein refer to minimum design suggestions.

The Range Technical Team suggests the backstop of the range should be free of wood debris and large rocks, and the hillside should consist of 18 to 24 inches of clean fill up to a height of 20 feet with a 1.5- 1 slope according to the Range Source Book – Section II, Chapter 2, Paragraph 2.04. Texarkana Gun Club may consider utilizing newer Geocell materials (consult the Vendor List for more information) if the desired slope cannot be accommodated without erosion. The Range Technical Team suggests that the club consults with a contractor from the Vendor List in the Range Source Book on drainage and site design considerations for this unique range design.

Per Texarkana Gun Club, the second priority of the range expansion is the construction of two potential trap and skeet fields. The addition of trap and skeet fields will bring new members to the club, and provide additional shooting opportunities for existing members. The Range Technical Team suggests that the combination trap and skeet fields be constructed in regards to the guidelines available in the Range Source Book – Section II, Chapter 11. Due to the proposed location of the trap and skeet fields (**Photo 3** – represented as semi-circles with spokes), it is suggested to orient the fields in a safe direction that provides a recommended 300 yards from the point of fire for the shot fall zone according to the Range Source Book – Section II, Chapter 11, Paragraph 3.01. Note that the 300 yard shotfall zone can be reduced if shot size and ammunition type is controlled. The use of shot curtains (**Photo 13**) can also be used to contain shot to the shotfall zone, and it is suggested that a curtain be installed along the western side of the fields if parking and the pistol ranges are constructed in the location proposed (**Photo 3**). If shot curtains are considered, the range should utilize an experienced vendor for design and installation. Additional information on shot curtains can be found at <https://rangeservices.nra.org/media/4077/lead-shot-fabrics-and-curtain-systems-for-mitigating-lead.pdf>.

Per Texarkana Gun Club, the third priority of the range expansion is the construction of additional pistol range bays (**Photo 3**). Texarkana Gun Club hosts regular USPSA matches and provides the use of the range to multiple law enforcement personnel, which limits the availability of the existing pistol bays to its members for recreational use and training. The southern area of the sixty-three acre track is proposed to be developed for pistol and short range multi-use such as small bore and three gun activities (**Photo 3**). Based on the pistol range use described by the Texarkana Gun Club POC, the Range Technical Team suggests utilizing the guidelines for outdoor action pistol range construction found in Range Source Book – Section II, Chapter 9. Other Range Source Books chapters should be referenced for design suggestion, if specific use, such as Outdoor Pistol Bullseye is desired. Utilizing the guidelines in Range Source Book – Section II, Chapter 9, the southern area of the sixty-three track could potentially be developed for 5-6 pistol range bays. Range use would dictate the final design and heights of the berms.

The Range Technical Team suggests that if Texarkana Gun Club moves forward with the proposed expansion on the adjacent sixty-three acre track, that the club references and reviews all site design, safety, and management guidelines set forth in the Range Source Book. Concerning the overall range expansion, it is necessary to consider additional site design characteristics such as traffic flow, parking, utilities, and drainage to name a few. Furthermore, the Range Technical Team suggests consulting the Vendors List available in the Range Source Book to find experienced industry professionals to assist with the expansion. Note that architectural diagrams and other resources are available from NRA Range Services and NSSF for new range construction.

In addition to the range expansion evaluation, Texarkana Gun Club asked the Range Technical Team to review the current range for safety and design considerations. Beginning with the existing 200 yard rifle range, the Range Technical Team suggests increasing the height of the north berm to a minimum of 8 feet, where necessary, in accordance to Section II, Chapter 2, Paragraph 2.05. Regardless if the proposed 600 yard rifle range is built adjacent to the existing 200 yard rifle range, the Range Technical Team suggests that a side berm, a minimum in 8 feet in height according to the Range Source Book guidelines Section II, Chapter 2, Paragraph 2.05, should be constructed along the southern side of the existing 200 yard rifle range (**Photo 9**), as no berm currently exists. It is recommended that the backstop of the range should be free of wood debris and large rocks, and the cut-bank/hillside should consist of 18 to 24 inches of clean fill up to a minimum height of 20 feet with a 1.5- 1 slope according to the Range Source Book – Section II, Chapter 2, Paragraph 2.04.

In regards to Stage/Bay 6, it is suggested that an additional “wing” or rear berm (**Photo 3** – see annotation) be constructed perpendicular to the rifle range side berm and increase the existing side berms to a minimum 8 foot height, utilizing the considerations found in Section II, Chapter 2, Paragraph 2.05. This will add an additional layer of safety due to the gap that exists in the rifle range northern side berm and the rising grade of the location of Stage/Bay 6. Note that Stage/Bay 6 may provide enough width to create two stages or bays depending on specific use, per Texarkana Gun Club inquiry. Refer to the Range Source Book Chapter 2 for guidelines on stage design suggestions for matches.

The Range Technical Team suggests reviewing Stages/Bays 2-5 and improving the side berms (**Photo 11**), where necessary to a minimum height of 8 feet according to Section II, Chapter 2, Paragraph 2.05. Additionally, it is recommended that each bay’s backstop should be free of debris and large rocks, and the cut-bank/hillside should consist of 18 to 24 inches of clean fill up to a minimum height of 20 feet with a 1.5- 1 slope according to the Range Source Book – Section II, Chapter 2, Paragraph 2.04.

The Range Technical Team suggests keeping Stage/Bay 1 – Archery Only (**Photo 12**) range as a non-firearm use area due to the orientation of the range and proximity to the club’s border, adjacent pasture, and the highway. The Range Technical Team suggests that the range could be safely utilized for firearm use if “no-blue sky” over-head baffles (**Photo 14**) are constructed to prevent errant projectiles escaping over the backstop. Additional information on over-head baffles can be found in the Range Source Book – Section I, Chapter 1, Paragraph 3.04.

As a part of a general long-term improvement plan, the Range Technical Team suggests installing over-head baffles on each range which will assist in reducing errant projectiles escaping the range, and ultimately improve safety. Additionally, the Range Technical Team was notified that a previous Lead Reclamation Project was performed on the existing range. The Range Technical Team suggests the club creating a Lead Reclamation and Environmental program, as a part of the club’s operations. More information can be obtained from the book “Best Management Practices for Lead on Outdoor Shooting Ranges” available at [http://www.epa.gov/region02/waste/leadshot/epa\\_bmp.pdf](http://www.epa.gov/region02/waste/leadshot/epa_bmp.pdf).

## **Conclusion:**

In conclusion, the Texarkana Gun Club leadership is pursuing resolutions to address concerns related to safety on the existing range and is reviewing expansion to provide additional shooting opportunities to the membership and match participants. It is the intention of the club to operate a safe, enjoyable multi-use range.

Texarkana Gun Club provides a great opportunity to regional match participants, families, LEOs, trainers, and shooters who utilize the range, and the club wishes to continue to provide those opportunities in the safest possible manner well into the future. The purchase of the adjacent acreage will ensure that the club has room for future growth and to provide a buffer from encroachment.

The improvements contained in this report are simply suggestions based upon the industry's best practices, most of which can be found in the NRA Range Source Book. Suggestions offered in this report are to be utilized at the discretion of the club, and it is up to Texarkana Gun Club and the range board to implement any or all of the suggestions contained in this report.

In conclusion, the leadership of this range has shown that they are working to create the safest possible conditions on the existing range as proven by their desire to have the Range Technical Team evaluate the facility and this has also made it evident that they are putting health and safety first as they work towards the future expansion.

**Exhibit A: Pages (9) to (16) is all inclusive for the completion of this Final Report.**



Range Technical Team Leader  
Recreational Programs and Ranges Division  
Range Services Department



# EXHIBIT A

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Photo 1: Texarkana Gun Club Property Boundaries



Photo 2: Texarkana Gun Club Proposed Range Expansion - Provided by Texarkana Gun Club

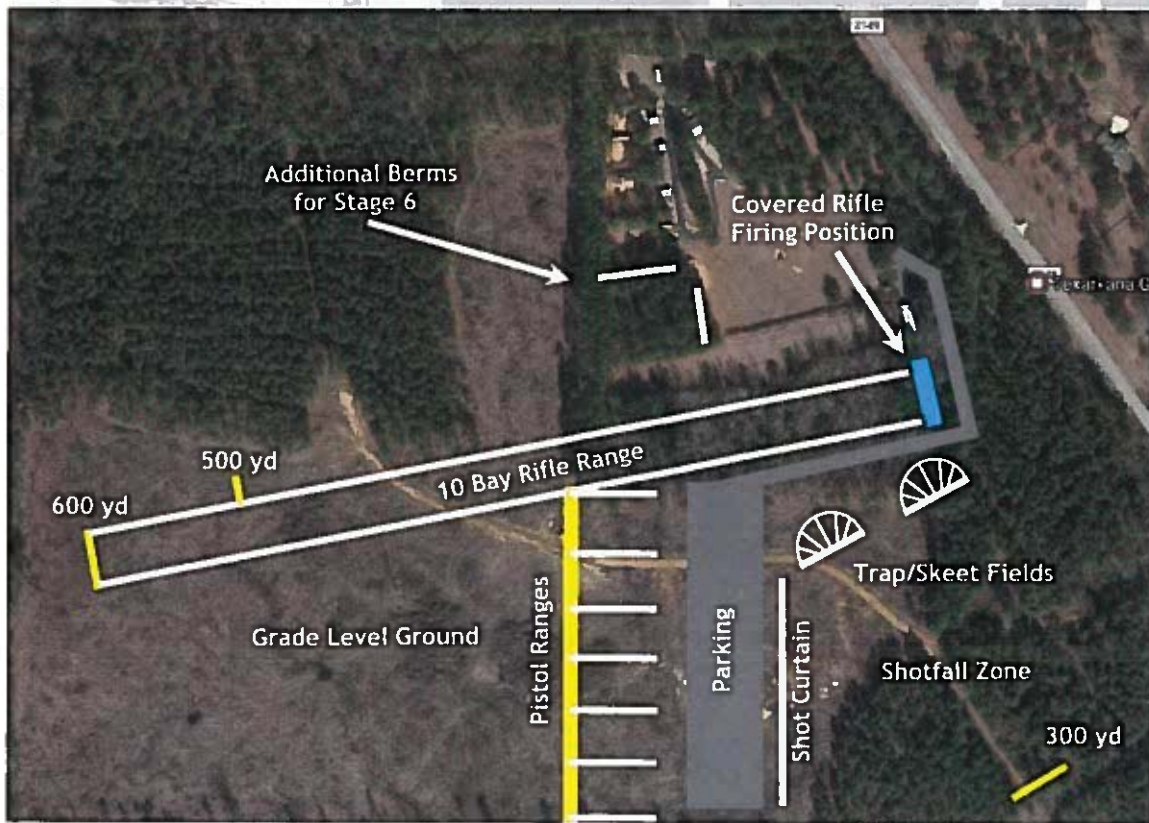


Photo 3: Texarkana Gun Club Proposed Range Expansion - Range Technical Team Suggestions





Photo 4: New Range Location – WestView (Down Range)



Photo 5: New Range Location - Existing Berm – West View (Down Range)



Photo 6: New Range Location – South/Southwest View



Photo 7: Existing Rifle Range - North Berm Near Firing Line





Photo 8: Existing Rifle Range - North Berm



Photo 9: Existing Rifle Range - South Side





Photo 10: Stage 6 Range/Bay



Photo 11: Pistol Range/Bays





Photo 12: North Range/Bay (Archery Only)



Photo 13: Shot Curtain Example



Photo 14: Example 'No Blue Sky' Baffles



NRA



May 24 - June 27			2017
Date	Check #	Transaction	Amount
		Beginning Cash Assets	\$36,592.47
2-Jun	Automatic	Land Payment	\$860.85
24-May	4457	Jay Tucker paint	\$64.56
24-May	4458	Doug Rochelle - grounds Maintenance	\$400.00
24-May	4459	Doug Rochelle - beach & keys	\$22.35
10-Jun	4460	Bowie Cass Water	\$52.99
10-Jun	4461	Lowe's	\$49.30
15-Jun	4462	US Practical debt	\$102.00
		Bowie Cass Electric	\$85.24
		<b>Total</b>	<b>\$1,617.29</b>
		<b>Deposits</b>	
5-Jun		Plinker +	\$ 90.00
5-Jun		USPSA	\$ 580.00
12-Jun		Steel Challenge	\$ 280.00
27-Jun		Membership	\$ 320.00
27-Jun		Concealed Carry Fee	7.00
		<b>Total</b>	<b>\$1,277.00</b>
		Checking Account Balance	\$36,252.18
		Cash on hand	\$86.77
		<b>Total (Ending Cash Assets)</b>	<b>\$36,338.95</b>