# Corrosive Primer Redux

By

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With the resurgence of interest in Garand and Springfield shooting and the availability of vintage .30-06 ammunition from the CMP, questions are being asked as to how to tell which ammunition is corrosive and which is non-corrosive. A lot of hearsay information and poor copies of tables of arsenal production are in circulation. An article originally published in the January 1961 issue of American Rifleman discussed the evolution of non-corrosive primers and how to distinguish which ammunition is non-corrosive. The information contained in the original 1961 article has been condensed for this article.

First, a little history. For non-mercuric corrosive primers the primary corrosion culprit is potassium chlorate ($KClO_3$). Potassium chlorate was used as an oxidizer, providing oxygen, to the primer compound reaction. When the reaction takes place the oxygen is removed from the molecule leaving potassium chloride (KCl). Potassium chloride is a salt much like sodium chloride (common table salt). As a matter of fact, take a look at most salt substitutes and you will find that they contain potassium chloride instead of sodium chloride. The potassium chloride residue left in a gun barrel absorbs water from the air and creates a corrosive film responsible for barrel rusting. Since potassium chloride is highly soluble in water this is the reason why it is recommended that barrels be washed with hot water after shooting corrosive ammunition. It is also recommended that shooters wash their brass that contained corrosive primers in the same manner.

Enough of the chemistry review, different arsenals and manufacturers transitioned over to non-corrosive primers at different times, but the bulk of the transitions occurred in the early 1950s. The following information is provided as a means of identifying non-corrosive ammunition with the lot and date of first manufacture. As an example, Lake City Arsenal went to non-corrosive .30-06 ball with its Lot 13700 produced in June 1951. Lots produced earlier than June 1951 should be considered corrosive, while Lot 13700 and all later lots are non-corrosive.

| **Manufacturer** | **Headstamp** | **Ammo Type** | **Starting Lot No.** | **Starting Lot No.** |
|---|---|---|---|---|
| **Frankford Arsenal** | FA and last 2 digits of year<br>Single 4 = 1944<br>Single 5 = 1955 | .30-06 ball<br>.30-06 AP<br>.45 M1911 ball | 4149<br>887<br>1542 | June 1951<br>October 1951<br>July 1954 |

**Exception #1** .30-06 ball with zinc plated primers and headstamped “FA 47” or later is **noncorrosive**.
**Exception #2** FA 30-06 special Match, headstamped “FA53”, “FA 54” or “FA 56” that has red, purple or green primer sealant is **corrosive**.

| Manufacturer | Headstamp | Ammo Type | Starting Lot No. | Date |
|---|---|---|---|---|
| **Federal Cartridge Co.** | FCC and last 2 digits of year | .45 M1911 ball | 1801 | November 1953 |
| **Lake City Arsenal** | LC and last 2 digits of year | .30-06 ball<br>.30-06 AP | 13700<br>13158 | June 1951<br>April 1952 |
| **Remington Arms Co., Inc.** | RA and last 2 digits of year | .30-06 ball<br>.45 M1911 ball | 33853<br>5552 | November 1951<br>September 1952 |
| **St. Louis Ordnance Plant** | SL and last 2 digits of year | .30-06 ball<br>.30-06 AP | 9420<br>9467 | May 1952<br>July 1952 |
| **Twin Cities Arsenal** | TW and last 2 digits of year | .30-06 ball<br>.30-06 AP<br>.45 M1911 ball | 19362<br>19776<br>18000 | December 1950<br>February 1952<br>August 1953 |
| **Western Cartridge Co.** | WCC and last 2 digits of year | .30-06 ball<br>.45 M1911 ball | 6428<br>6375 | June 1951<br>November 1952 |
| **Winchester Repeating Arms Co.** | WRA and last 2 digits of year | .30-06 ball<br>.30-06 AP<br>.45 M1911 ball<br>steel case | 23201<br>22007<br>22198<br>22000-22007 only | August 1951<br>June 1954<br>November 1951<br>June 1954 |
| **Dominion Arsenal, Canada** | DAQ and last 2 digits of year | .30-06 ball | 44000<br>all by this maker was noncorrosive | August 1945 |
| **Verdun Arsenal, Canada** | VC and last 2 digits of year | 30-06 ball | 42000<br>all by this maker was noncorrosive | April 1945 |

**Other Ammunition**
All .30 carbine ammunition is non-corrosive.
All 7.62mm NATO ammunition manufactured in the U.S. is non-corrosive except 1956 International Match ammunition manufactured at the Frankford Arsenal at the same time as the .30-06 International Match ammo listed previously. In 1930 Frankford Arsenal produced a batch of National Match ammunition that was non-corrosive. Problems with high pressures occurred at Camp Perry and the lot was replaced with a conventionally loaded lot and not used further.

The following manufacturers made small arms ammunition during World War II only **and all of their production was corrosive**:

| Manufacturer | Headstamp |
|---|---|
| Eau Claire Ordnance Plant | EW and last 2 digits of year |
| Denver Ordnance Plant | DEN and last 2 digits of year |
| Des Moines Ordnance Plant | DM and last 2 digits of year |
| Utah Ordnance Plant | U or UT and last 2 digits of year |

It should be noted that sometimes ammunition is repacked and the date of repacking is noted on the containers. This date is not the date of manufacture, if there is question about the manufacture date always check the headstamp!

References

1. The American Rifleman, “Beginners Digest: Nonmercuric, Noncorrosive Primers”, pp. 34-36, January 1961.

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