CLAIMS

What is claimed is:

1. A nonlethal cartridge adapted to be chambered in a firearm having a barrel that includes rifling, the nonlethal cartridge comprising:

a cartridge case;

a primer and/or a propellant disposed in the cartridge case and ignitable to produce a propellant gas;

a sabot telescopically coupled to the cartridge case to allow relative movement between the cartridge case and the sabot in response to expansion of the propellant gas, wherein the sabot has a sabot mouth and is configured to fluidly communicate the propellant gas to the sabot mouth; and

a nonlethal projectile configured to be propelled from the sabot through the barrel of the firearm, the nonlethal projectile comprising:

a polymer base projectile portion disposed in the sabot mouth and formed of a first polymer material; and

a polymer front shell projectile portion formed of a second polymer material that is softer than the first polymer material, the polymer front shell projectile portion coupled to the polymer base projectile portion and having an outer surface that includes a circular locking rib feature that forms an interference fit with the sabot mouth, thereby constraining the nonlethal projectile by the sabot mouth to prevent disconnection of a projectile snap, wherein the polymer base projectile portion is ~~configured~~ dimensioned or otherwise sized to engage the rifling of the barrel to impart spin stabilization to the nonlethal projectile when propelled from the sabot in response to the expansion of the propellant gas and the polymer front shell projectile portion is configured to deform upon impact to absorb impact energy.

2. The nonlethal cartridge of claim 1, wherein the polymer base projectile portion is configured to engage the rifling of the barrel to remove combustion and/or polymer residues.

3. The nonlethal cartridge of claim 1, wherein the circular locking rib feature has a profile shape that includes a square shape, a rectangle shape, an arcuate shape, a radius, a cone shape, or a combination thereof.

4. The nonlethal cartridge of claim 1, wherein the polymer front shell projectile portion comprises a shell wall that surrounds an internal shell volume, and wherein the shell wall has the outer surface and an inner surface that is opposite the outer surface and that is facing the internal shell volume, and wherein the polymer base projectile portion has a base wall that surrounds an internal base volume, and wherein the base wall has an outer base surface that interfaces with the inner surface of the shell wall.

5. The nonlethal cartridge of claim 4, wherein the projectile snap is formed on an outer base surface includes a projectile snap feature that of the projectile base portion and engages the inner surface of the shell wall.

6. The nonlethal cartridge of claim 5, wherein the circular locking rib feature is positioned substantially axially aligned with the projectile snap feature.

7. The nonlethal cartridge of claim 4, wherein the shell wall has a perimeter shell end portion, and the polymer base projectile portion has a perimeter base end portion that extends from the outer base surface and that defines a rear driving band, and wherein the perimeter shell end portion is disposed forward and adjacent to the perimeter base end portion, and the perimeter base end portion is sized to engage the rifling of the barrel.

8. The nonlethal cartridge of claim 7, wherein the rear driving band is a rear, substantially full-length driving band.

9. The nonlethal cartridge of claim 7, wherein the rear driving band is a rear, grooved driving band.

10. The nonlethal cartridge of claim 7, wherein the rear driving band is a rear, rear edged driving band.

11. The nonlethal cartridge of claim 7, wherein the rear driving band is a rear, forward edged driving band.

12. The nonlethal cartridge of claim 7, wherein the perimeter base end portion defines an outer base end diameter and the circular locking rib feature defines an outer circular rib diameter that is substantially the same as the outer base end diameter.

13. The nonlethal cartridge of claim 7, wherein the circular locking rib feature is spaced apart from the rear driving band to define a gap.

14. The nonlethal cartridge of claim 7, wherein the polymer front shell projectile portion has a shell length, and the polymer base projectile portion is disposed in the internal shell volume a distance of at least about 30% of the shell length, and the perimeter base end portion is disposed rearward of the polymer front shell projectile portion outside of the internal shell volume.

15. The nonlethal cartridge of claim 7, wherein the rear driving band has at least one sharp leading-edge configured to facilitate removing combustion and/or polymer residues from the barrel while the nonlethal projectile is propelled therethrough.

16. The nonlethal cartridge of claim 4, wherein the shell wall defines a plurality of frangible lines configured to rupture upon impact to facilitate deformation of the polymer front shell projectile portion to absorb impact energy.

17. The nonlethal cartridge of claim 4, wherein the nonlethal projectile further comprises a marking compound that is disposed in the internal shell volume.

18. The nonlethal cartridge of claim 4, wherein the internal shell volume does not contain any marking compound.

19. The nonlethal cartridge of claim 1, wherein the outer surface of the polymer front shell projectile portion includes at least one circular guiding band configured to help aligned the nonlethal projectile traveling through the barrel against the rifling.

20. A nonlethal projectile for a nonlethal cartridge that has a mouth for holding the nonlethal projectile and that is adapted to be chambered in a firearm having a barrel that includes rifling, the nonlethal projectile comprising:

a polymer base projectile portion disposed in the mouth and formed of a first polymer material; and

a polymer front shell projectile portion formed of a second polymer material that is softer than the first polymer material, the polymer front shell projectile portion coupled to the polymer base projectile portion and having an outer surface that includes a circular locking rib feature that forms an interference fit with the mouth, wherein the polymer base projectile portion is ~~configured~~ dimensioned or otherwise sized to engage the rifling of the barrel to impart spin stabilization to the nonlethal projectile when propelled through the barrel of the firearm in response to an expansion of propellant gas and the polymer front shell projectile portion is configured to deform upon impact to absorb impact energy.