CLAIMS:

What is claimed is:

1. An unmanned aerial vehicle (UAV) launch tube apparatus, comprising:

at least one layer of ~~prepeg~~ prepreg substrate disposed about an aperture to form a tube;

a sabot disposed in an interior of said tube, said sabot having a first clasp tab; and

a clasp detachably coupled to said first clasp tab and contacting an inner circumferential wall of said tube;

wherein said clasp is rotationally constrained by said inner circumferential wall and said first clasp tab.

2. The apparatus of claim 1, wherein said sabot further comprises an expandable skirt to provide a pressure seal with said inner circumferential wall of said tube.

3. The apparatus of claim 1, wherein said expandable skirt is axially restrained within said tube by an adhesive.

4. The apparatus of claim 3, wherein said adhesive detachably binds said expandable skirt about a shell within said tube.

5. The apparatus of claim 4, wherein said shell comprises:

an exterior surface of a gas generator, said gas generator configured to generate gas between said expandable skirt and said shell; and

wherein the generated pressure of said generated gas is sufficient to push said expandable skirt off of said shell by breaking said adhesive restraint between the exterior surface of said shell and said expandable skirt.

6. The apparatus of claim 4, further comprising a UAV seated on said sabot, said UAV having a second clasp tab detachably coupled to said clasp, and wherein said clasp is rotationally constrained by said inner circumferential wall, said first clasp tab, and said second clasp tab.

7. The apparatus of claim 4, wherein said sabot is tethered to said tube.

8. The apparatus of claim 1, wherein said sabot comprises:

restraining said clasp against said inner circumferential wall of said launch tube to prevent said clasp from decoupling from at least one of: said UAV and said sabot.

15. The method of claim 14, further comprising:

sliding said clasp past said inner circumferential wall to release said clasp from at least one of: said UAV and said sabot.

16. The method of claim 14, further comprising:

tethering said sabot to said launch tube to prevent said sabot from exiting said launch tube.

17. A method of launching an unmanned aerial vehicle (UAV) launch, comprising:

restraining a sabot in a launch tube using an adhesive;

introducing gas to a high-pressure side of an expandable sabot skirt of a sabot to break said restraint of said sabot in said launch tube; and

driving said sabot up said launch tube using said gas.

18. The method of claim 17, further comprising:

pushing said expandable sabot skirt against an inner circumferential wall of said launch tube using said gas.

~~19. The method of claim 18, wherein said restraining a sabot comprises restraining said sabot using an adhesive.~~

~~20~~19. The method of claim ~~19~~17, wherein said restraining said sabot using an adhesive further comprises restraining an expandable skirt of said sabot to a shell surrounding a gas generator in said launch tube.

~~21~~20. The method of claim ~~20~~19, further comprising:

tethering said sabot to said launch tube.

~~22~~21. The method of claim 17, wherein said expandable sabot skirt further comprises a circumferential skirt protrusion that extends from said expandable sabot skirt toward an inner circumferential wall of said launch tube.

~~23~~22. The method of claim 17, further comprising:

restraining the travel of said sabot by a tether configured to prevent said sabot from exiting said launch tube, and wherein the restrained travel of said sabot substantially retains said gas within said launch tube.

~~24~~23. The method of claim ~~23~~ 22 wherein said tether is attached to said sabot and said inner circumferential wall of said launch tube by at least one of: a tether reel and a winding element.

~~25~~24. An unmanned aerial vehicle (UAV) launch tube apparatus, comprising:

a first aperture portion, wherein said first aperture portion comprises a constant cross-sectional area;

a second aperture portion, wherein said second aperture portion comprises an enlarged cross-sectional area relative to said first aperture portion, and wherein said first aperture portion and said second aperture portion form a launch tube;

a sabot disposed in said first aperture portion and configured to detachably couple to a UAV;

wherein said sabot is configured to decouple from said UAV upon movement of said sabot from said first aperture portion to said second aperture portion.

~~26~~25. The apparatus of claim ~~25~~ 24 wherein said sabot is configured to detachably couple to said UAV by a clasp, said clasp configured to detachably couple to a first clasp tab of said sabot and a second clasp tab of said UAV.

~~27~~26. The apparatus of claim ~~26~~ 25 wherein said clasp is rotationally constrained by at least one of: an inner surface of said first aperture portion, said first clasp tab of said sabot, and said second clasp tab of said UAV.

~~28~~27. The apparatus of claim ~~27~~ 26 wherein said clasp is configured to decouple from said second clasp tab of said UAV upon movement of said sabot from said first aperture portion to said second aperture portion.

~~29~~28. The apparatus of claim ~~28~~ 27 wherein said clasp is configured to decouple from said first clasp tab of said sabot upon movement of said clasp past an inner surface of said second aperture portion.

~~30~~29. The apparatus of claim ~~25~~ 24 further comprising:

at least one gas generator, wherein said at least one gas generator is disposed in a bottom portion of said first aperture portion; and

an expandable sabot skirt of said sabot, wherein a hollow end of said expandable sabot skirt is oriented toward said at least one gas generator, and wherein said expandable sabot skirt is axially restrained by a detachable restraint.

~~31~~30. The apparatus of claim ~~30~~29, wherein said at least one gas generator is configured to generate gas, and wherein said expandable sabot skirt is configured to substantially retain said gas within said launch tube.

~~32~~31. The apparatus of claim ~~31~~30, wherein said generated gas is configured to detach said expandable sabot skirt from said detachable restraint and propel said sabot from said first aperture portion to said second aperture portion.

~~33~~32. The apparatus of claim ~~32~~31, wherein said expandable sabot skirt is configured to expand to said enlarged cross-sectional area of said second aperture portion and continue to substantially retain said gas in said second aperture portion of said launch tube.

~~34~~33. The apparatus of claim ~~32~~ 31 further comprising: a tether, said tether attached to said sabot and a bottom portion of said first aperture portion, wherein said tether is configured to restrain a movement of said sabot such that said expandable sabot skirt substantially retains said gas from escaping past an opening in said launch tube.