CLAIMS

What is claimed is:

1. A shock resistant fuselage system, comprising:
first and second fuselage side walls, each of the first and second fuselage side walls having a plurality of guide posts and at least one fixed post;
a printed circuit board (PCB) rigidly attached to at least one of the first and second fuselage side walls, the PCB having a plurality of guide slots and at least one mounting hole, wherein each of the plurality of guide posts is slideably seated in a respective one of the plurality of guide slots, and wherein each fixed post of the least one fixed post is fixedly seated in a respective one of the at least one mounting hole; and
a plurality of electrical components mounted to the PCB such that a larger proportion of larger electrical components of the plurality of electrical components are mounted at a PCB front end than a PCB rear end;
wherein elastic deformation of the PCB is guided by the guide slots between the first and second fuselage side walls.

2. The system of claim 1, wherein the first and second fuselage side walls are first and second fuselage side walls of a unitary fuselage clam shell.

3. The system of claim 1, wherein a major longitudinal axis of each of the plurality of guide slots extends parallel to a major longitudinal axis of the first and second fuselage side walls.

4. The system of claim 1, wherein the PCB is rigidly attached to the at least one of the first and second fuselage side walls at a front of the PCB board.

5. The system of claim 1, wherein the PCB is rigidly attached to the at least one of the first and second fuselage side walls at a rear of the PCB board.

6. The system of claim 1 wherein the plurality of electrical components mounted to the PCB are arranged such that each of the plurality of electrical components are mounted with their major longitudinal axis oriented perpendicularly to a major longitudinal axis of each of the first and second fuselage side walls.

7. The system of claim 1 wherein elastic deformation of the PCB is larger in an area of the PCB proximate the at least one fixed post.

8. The system of claim 1 wherein the plurality of electrical components mounted to the PCB are arranged such that electrical components less sensitive to the elastic deformation of the PCB are disposed in an area of the PCB proximate the at least one fixed post.

9. A shock resistant printed circuit board (PCB) comprising:
a plurality of guide slots for receiving a plurality of guide posts;
at least one mounting hole for receiving at least one fixed post; and
a plurality of electrical components mounted to the PCB, wherein the plurality of electrical components mounted to the PCB are arranged such that electrical components having relatively larger widths are mounted distal from the at least one mounting hole;
wherein elastic deformation of the PCB is guided by the plurality of guide slots.

10. The PCB of claim 9 wherein the plurality of electrical components mounted to the PCB are arranged such that electrical components having relatively smaller widths are mounted closer to the at least one mounting hole than the electrical components having relatively larger widths.

11. The PCB of claim 9 wherein a leaded integrated circuit (IC) component of the plurality of electrical components is disposed closer to the at least one mounting hole than a ceramic component of the plurality of electrical components.

12. The PCB of claim 9 wherein the plurality of guide slots are arranged such that the received plurality of guide posts can only slide axially and are restrained from sliding orthogonally.

13. The PCB of claim 9 wherein the at least one mounting hole is disposed at a central mounting point of the PCB.

14. The PCB of claim 9 wherein the at least one mounting hole is disposed at a center of mass of the PCB.

15. The system of claim 9 wherein elastic deformation of the PCB is larger in an area of the PCB proximate the at least one fixed post.

16. The PCB of claim 9 wherein the plurality of electrical components mounted to the PCB are arranged such that electrical components less sensitive to the elastic deformation of the PCB are disposed in an area of the PCB proximate the at least one fixed post.

17. A shock resistant printed circuit board (PCB) comprising:
a plurality of guide slots for receiving a plurality of guide posts; and
at least one mounting hole for receiving at least one fixed post;
wherein the at least one mounting hole is at least one of: disposed at a central mounting point of the PCB and disposed at a center of mass of the PCB;
wherein elastic deformation of the PCB is guided by the plurality of guide slots.

18. The PCB of claim 17, further comprising: a plurality of electrical components mounted to the PCB.

19. The PCB of claim 18 wherein the plurality of electrical components mounted to the PCB are arranged such that each of the plurality of electrical components are

mounted with their major longitudinal axis oriented perpendicularly to a major longitudinal axis of each of the plurality of guide slots.

20. The PCB of claim 18 wherein the plurality of electrical components mounted to the PCB are arranged such that a larger proportion of larger electrical components of the plurality of electrical components are mounted at a PCB front end than a PCB rear end.

21. The PCB of claim 18 wherein the plurality of electrical components mounted to the PCB are arranged such that electrical components having relatively larger widths are mounted distal from the at least one mounting hole.

22. The PCB of claim 18 wherein the plurality of electrical components mounted to the PCB are arranged such that electrical components having relatively smaller widths are mounted closer to the at least one mounting hole than the electrical components having relatively larger widths.

23. The PCB of claim 18 wherein a leaded integrated circuit (IC) component of the plurality of electrical components is disposed closer to the at least one mounting hole than a ceramic component of the plurality of electrical components.

24. The PCB of claim 18 wherein the plurality of electrical components mounted to the PCB are arranged such that electrical components less sensitive to the elastic deformation of the PCB are disposed in an area of the PCB proximate the at least one fixed post.