CLAIMS

1. An electrical raft assembly (600) having an electrical raft (200) comprising:

a rigid material (220) having multiple electrical conductors (252) embedded therein; and

an electrically conductive screen layer (260), wherein:

the electrical raft assembly further comprises a mounting fixture (700) for attaching the electrical raft assembly to a mounting structure (40) of an apparatus (24); and

the mounting fixture is in electrical contact with the electrically conductive screen layer.

2. An electrical raft assembly according to claim 1, wherein the electrically conductive screen layer (260) is at least partially embedded in the rigid material.

3. An electrical raft assembly according to claim 1 or claim 2, further comprising an electrical unit (300) mounted to the electrical raft, wherein:

the electrical unit has a casing (320), at least part of which is electrically conductive; and

the casing of the electrical unit is electrically connected to the electrically conductive screening layer.

4. An electrical raft assembly according to claim 3, wherein:

the electrical raft comprises an electrical contact region (222) at which the electrically conductive screen layer is exposed at the surface of the electrical raft; and

the electrical unit is mounted to the electrical raft such that an electrically conductive portion of the casing is in direct contact with the electrically conductive screen layer at the electrical contact region.

5. An electrical raft assembly according to claim 3 or claim 4, wherein:

the electrical raft comprises an opening (330) having an electrically conductive insert (340);

the electrically conductive insert is electrically joined (350) to the electrically conductive screen layer; and

the electrical unit is mounted to the electrical raft using an electrically conductive fastener (310) that engages with an electrically conductive portion of the casing and is inserted into the opening so as to be in electrical contact with the electrically conductive insert.

6. An electrical raft assembly according to claim 5, wherein the electrically conductive insert is a threaded insert, and the electrically conductive fastener is a corresponding threaded fastener.

7. An electrical raft assembly according to any one of the preceding claims, wherein the mounting fixture comprises:

an anti-vibration mount (710); and

a conductive strap (720) fixed across the anti-vibration mount so as to provide electrical connection across the anti-vibration mount.

8. An electrical raft assembly according to claim 7, wherein:

the anti-vibration mount comprises a resilient core (716) sandwiched between upper (712) and lower (714) conductive surfaces;

a first end (722) of the conductive strap is in electrical contact with the lower conductive surface of the anti-vibration mount, which itself is in electrical contact with the electrically conductive screen layer; and

a second end (724) of the conductive strap is in electrical contact with the upper conductive surface of the anti-vibration mount.

9. An electrical raft assembly according to claim 8, wherein:

the mounting fixture comprises an electrically conductive raft fastener (730) that passes through the electrical raft;

one end (732) of the electrically conductive raft fastener is in electrical contact with the second end of the conductive strap; and

another end (734) of the conductive raft fastener extends through the electrical raft for connection with said mounting structure of said apparatus.

10. An electrical raft assembly according to any one of claims 1 to 6, wherein:

the mounting fixture comprises an electrically conductive raft fastener (740) that passes through the electrical raft;

one end (742) of the electrically conductive raft fastener is in electrical contact with the electrically conductive screen layer; and

another end (744) of the conductive raft fastener extends through the electrical raft for connection with said mounting structure of said apparatus.

11. An electrical raft assembly according to any one of the preceding claims, wherein the rigid material is a rigid composite material.

12. An apparatus (24) comprising:

an electrical raft assembly according to any one of the preceding claims; and

a mounting structure (40) for connecting the electrical raft assembly to the rest of the apparatus, wherein:

the mounting fixture of the electrical raft assembly is mechanically and electrically connected to the mounting structure of the apparatus, thereby electrically connecting the electrically conductive screen layer to the rest of the apparatus.

13. A gas turbine engine (10) comprising the apparatus of claim 12.

14. A gas turbine engine according to claim 13, wherein the electrical raft assembly is a first engine installation component, and the gas turbine engine further comprises:

a second engine installation component (600) having electrical conductors; and

at least one flexible cable (291-296) connected between the electrical raft assembly and the second engine installation component so as to electrically connect electrical conductors of the electrical raft assembly with electrical conductors of the second engine installation component.

15. A method of assembling an assembly and/or a gas turbine engine according to any one of claims 12 to 14, the method comprising:

preparing an electrical raft assembly (600) according to any one of claim 1 to 11; and

electrically and mechanically connecting the prepared electrical raft assembly to the rest of the apparatus/gas turbine engine by fastening the mounting fixture (700) of the electrical raft assembly to the mounting structure (40) of the apparatus/gas turbine engine.

CLAIMS

1. An electrical assembly (600) for use as at least a part of an electrical harness of a gas turbine engine, the electrical assembly having an electrical raft (200) comprising:

a rigid material (220) having multiple electrical conductors (252) embedded therein; and

an electrically conductive screen layer (260), wherein:

the electrical raft assembly further comprises a mounting fixture (700) for attaching the electrical raft assembly to a mounting structure (40) of an apparatus (24); and

the mounting fixture is in electrical contact with the electrically conductive screen layer.

2. An electrical assembly according to claim 1, wherein the electrically conductive screen layer (260) is at least partially embedded in the rigid material.

3. An electrical assembly according to claim 1 or claim 2, further comprising an electrical unit (300) mounted to the electrical raft, wherein:

the electrical unit has a casing (320), at least part of which is electrically conductive; and

the casing of the electrical unit is electrically connected to the electrically conductive screening layer.

4. An electrical assembly according to claim 3, wherein:

the electrical raft comprises an electrical contact region (222) at which the electrically conductive screen layer is exposed at the surface of the electrical raft; and

the electrical unit is mounted to the electrical raft such that an electrically conductive portion of the casing is in direct contact with the electrically conductive screen layer at the electrical contact region.

5. An electrical assembly according to claim 3 or claim 4, wherein:

the electrical raft comprises an opening (330) having an electrically conductive insert (340);

the electrically conductive insert is electrically joined (350) to the electrically conductive screen layer; and

the electrical unit is mounted to the electrical raft using an electrically conductive fastener (310) that engages with an electrically conductive portion of the casing and is inserted into the opening so as to be in electrical contact with the electrically conductive insert.

6. An electrical assembly according to claim 5, wherein the electrically conductive insert is a threaded insert, and the electrically conductive fastener is a corresponding threaded fastener.

7. An electrical assembly according to any one of the preceding claims, wherein the mounting fixture comprises:

an anti-vibration mount (710); and

a conductive strap (720) fixed across the anti-vibration mount so as to provide electrical connection across the anti-vibration mount.

8. An electrical assembly according to claim 7, wherein:

the anti-vibration mount comprises a resilient core (716) sandwiched between upper (712) and lower (714) conductive surfaces;

a first end (722) of the conductive strap is in electrical contact with the lower conductive surface of the anti-vibration mount, which itself is in electrical contact with the electrically conductive screen layer; and

a second end (724) of the conductive strap is in electrical contact with the upper conductive surface of the anti-vibration mount.

9. An electrical assembly according to claim 8, wherein:

the mounting fixture comprises an electrically conductive raft fastener (730) that passes through the electrical raft;

one end (732) of the electrically conductive raft fastener is in electrical contact with the second end of the conductive strap; and

another end (734) of the conductive raft fastener extends through the electrical raft for connection with said mounting structure of said apparatus.

10. An electrical assembly according to any one of claims 1 to 6, wherein:

the mounting fixture comprises an electrically conductive raft fastener (740) that passes through the electrical raft;

one end (742) of the electrically conductive raft fastener is in electrical contact with the electrically conductive screen layer; and

another end (744) of the conductive raft fastener extends through the electrical raft for connection with said mounting structure of said apparatus.

11. An electrical assembly according to any one of the preceding claims, wherein the rigid material is a rigid composite material.

12. An apparatus (24) comprising:

an electrical assembly according to any one of the preceding claims; and

a mounting structure (40) for connecting the electrical assembly to the rest of the apparatus, wherein:

the mounting fixture of the electrical assembly is mechanically and electrically connected to the mounting structure of the apparatus, thereby electrically connecting the electrically conductive screen layer to the rest of the apparatus.

13. A gas turbine engine (10) comprising the apparatus of claim 12.

14. A gas turbine engine according to claim 13, wherein the electrical assembly is a first engine installation component, and the gas turbine engine further comprises:

a second engine installation component (600) having electrical conductors; and

at least one flexible cable (291-296) connected between the electrical assembly and the second engine installation component so as to electrically connect electrical conductors of the electrical assembly with electrical conductors of the second engine installation component.

15. A method of assembling an assembly and/or a gas turbine engine according to any one of claims 12 to 14, the method comprising:

preparing an electrical assembly (600) according to any one of claim 1 to 11; and

electrically and mechanically connecting the prepared electrical assembly to the rest of the apparatus/gas turbine engine by fastening the mounting fixture (700) of the electrical raft assembly to the mounting structure (40) of the apparatus/gas turbine engine.