and solid conductive (e.g. copper) foil, which is installed either with a heat blanket or autoclave cure process. Although this solution is effective, it has some drawbacks. For instance, the hot bond repair requires taking the aircraft out of service, bringing it to a service center, and draining all fuel out of the fuel tanks, in order to perform the hot-bond repair. Only after fuel drainage can technicians apply the patch, and then must wait for the patch to cure, which can take an additional 4-8 hours, depending on the material. This approach is appropriate for in-factory repairs or repairs during regularly scheduled aircraft maintenance, when the aircraft is intended to be out of service, but a quicker solution is more desirable for in-service repairs in order to allow the airplane to get quickly back into service until a permanent repair can be scheduled.

There thus exists a need for an inexpensive and robust technique for temporarily repairing outer composite aircraft skins that utilize copper foil along fastener rows for lightning strike protection that have been altered by lightning strikes or in some other way, in order to maintain the desired lightning prevention system to help divert lightning currents away from substructures.

## SUMMARY

In accordance with one embodiment thereof, the present disclosure provides a repair apparatus for an electrically conductive layer of a composite structure. The ~~temporary~~ repair ~~patch~~ apparatus includes a dielectric layer, having a perimeter, secured to the structure, and a conductive layer, secured over the dielectric layer and to the structure around an entirety of the perimeter of the dielectric layer, the conductive layer being treated along a perimeter region thereof to improve a conductive path between the conductive layer and the structure.

~~In accordance with another embodiment thereof, t~~The present disclosure also provides a method for temporarily repairing a conductive composite panel having a damaged area near a metal fastener. The method includes preparing a surface of the panel in the region of the damaged area and the fastener, affixing a dielectric material to the panel, and affixing a conductive patch to the dielectric material and the panel. The dielectric material is affixed with an adhesive, the dielectric material covering the damaged area and the fastener. The conductive patch is affixed with an adhesive, the conductive patch entirely covering the dielectric material and defining a perimeter region in contact with the panel. The perimeter region of the conductive patch is treated to increase electrical conductivity between the panel and the conductive patch.