WHAT IS CLAIMED IS:

1. A diffuser for distributing insects from an aircraft, the diffuser being mountable on the aircraft, the diffuser comprising:

at least one distribution tube for connection to a source at a first end and open to the outside at a second end for distribution of the insects;

a nozzle surrounding the second end, the nozzle being configured to allow part of a flight airstream to enter the diffuser and decrease in velocity;

and a tube cover surrounding the second end within the nozzle, the tube cover having an aerofoil-shaped cross section with an opening, the diffuser thereby shielding the insects being distributed; thereby to form an air transition volume, wherein the aerofoil shape is an NACA standard shape.

2. The diffuser of claim 1, wherein the nozzle comprises a subsonic two-dimensional converging-diverging nozzle.

3. The diffuser of claim 2, wherein the nozzle comprises a bi-cubic polynomial internal contour.

4. The diffuser of any of claims 1 to 3, wherein the nozzle comprises an elliptical external shape.

5. A diffuser for distributing insects from an aircraft, the diffuser being mountable on the aircraft, the diffuser comprising:

at least one distribution tube for connection to a source at a first end and open to the outside at a second end for distribution of the insects;

a nozzle surrounding the second end, the nozzle being configured to allow part of a flight airstream to enter the diffuser and decrease in velocity;

and a tube cover surrounding the second end within the nozzle, the tube cover having an aerofoil-shaped cross section with an opening, the diffuser thereby shielding the insects being distributed; thereby to form an air transition volume wherein the tube cover is positioned within the nozzle such as to limit flow separation to a near wake of a blunt trailing edge section of the nozzle.

6. The diffuser of claim 1, wherein the NACA standard shape is an NACA 0018 standard shape.

7. The diffuser of claim 5, wherein the aerofoil-shaped cross section is an NACA standard shape.

8. The diffuser of any one of claims 5 to 7, wherein said tube cover comprises a smooth external contour of the standard shape.

9. The diffuser of any one of the preceding claims, wherein the nozzle comprises a cross-sectional internal contour following a cubic polynomial shape.

10. A method of setting up an air velocity gradient comprising:

flying an aircraft in excess of stall speed and ambient air, the aircraft having a diffuser mounted thereon, the diffuser being according to any one of the preceding claims;

setting up an air transition volume using the diffuser, the air transition volume being between the aircraft flying in excess of an aircraft stall speed and in excess of 110kmh, and the ambient air, the air transition volume being set up by the diffuser to comprise:

a first transition volume part immediately behind an opening of a tube part of the diffuser, at a location shielded by a wing-shaped tube cover and surrounded by a nozzle, the first transition volume part defined by an airspeed of air exiting the opening at a velocity of at least 1m/s less than a speed of the aircraft;

successive further transition volume parts receding from the first transition volume part rearwardly of the diffuser, said further transition parts eventually merging into the ambient air, the transition volume being characterized by a maximum wind shear over any cubic centimeter volume within the air transition volume being less than 60km/h.

11. The method of claim 10, further comprising

using overpressure to push insects out of an insect source into the first end of said tube and allowing the insects to exit the tube at a second end into the air transition volume.

12. A diffuser for distributing insects from an aircraft, the diffuser being mountable on the aircraft, the diffuser comprising:

at least one distribution tube for connection to a source at a first end and open to the outside at a second end for distribution of the insects;

a nozzle surrounding the second end, the nozzle being configured to allow part of a flight airstream to enter the diffuser and decrease in velocity, the diffuser forming an air transition volume; and

a tube cover having an aerofoil-shaped cross section with an opening, wherein the tube cover is positioned within the nozzle such as to limit flow separation to a near wake of a blunt trailing edge section of the nozzle, the diffuser thereby shielding the insects being distributed, wherein the tube cover comprises a smooth external contour of a NACA standard shape.