CLAIMS

1. A method for automated or semi-automated inspection of a large, mobile structure using a camera-equipped unmanned aerial vehicle, UAV, the method comprising:

using ~~the~~a camera of the UAV to identify the mobile structure to be inspected;

selecting an inspection routine for a portion of the mobile structure from a plurality of available inspection routines;

retrieving, from a database, a flight plan for the UAV corresponding to the selected inspection routine, the flight plan corresponding to a portion of the identified mobile structure and comprising instructions to visit a plurality of positions in three-dimensional space corresponding to ~~the~~ points of the mobile structure identified for inspection in the inspection routine;

operating the UAV according to the retrieved flight plan, wherein the flight plan maintains the UAV at a predetermined distance from the surface of the mobile structure, determined by the selected inspection routine;

at one or more of the plurality of positions visited, capturing a particular data indicative of the condition of corresponding point of the mobile structure;

identifying points of the mobile structure where the condition of the mobile structure appears sub-optimal;

saving ~~the~~a plurality of coordinates of the points of the mobile structure so identified; and

on completion of the inspection routine, revisiting one of more points identified as sub-optimal and performing a further inspection under ~~the~~ control of an operator.

2. The method of claim 1, wherein the ~~captured~~particular data comprise image data.

3. The method of claim 1 or 2, wherein the ~~captured~~particular data comprise video data.

4. The method of any of claims 1 to 3, further comprising transmitting the ~~captured~~particular data to an operator for analysis.

5. The method of claim 4, wherein the transmitting is performed substantially in real-time as the particular data are captured.

6. The method of claim 4, wherein the transmitting is performed after the completion of the ~~inspection~~ flight plan.

7. The method of any of claims 1 to 6, wherein, the step of using the camera to identify the mobile structure to be inspected comprises capturing a unique identifier on the mobile structure.

8. The method of claim 7, wherein the mobile structure is an aircraft and the unique identifier is the aircraft tail number.

~~9. The method of any preceding claim, wherein the flight plan maintains the UAV at a predetermined distance from the surface of the mobile structure, determined by the selected inspection routine.~~

~~10~~9. A method according to any preceding claim, wherein the step of identifying points of the mobile structure where the condition of the mobile structure appears sub-optimal is performed automatically by comparison of data retrieved by the camera with pre-stored data for the respective point of the mobile structure.

~~11. A method according to any of claims 1 to 10, wherein the step of identifying points of the structure where the condition of the structure appears sub-optimal is performed by a human operator.~~

~~12~~10. A system for automated or semi-automated inspection of a large, mobile structure, comprising:

a camera-equipped unmanned aerial vehicle (UAV);

a database having stored therein a plurality of inspection routines, and a three-dimensional rendering of a plurality of mobile structures; and

a controller, the controller being programmed perform the steps of:

controlling a camera of the UAV ~~camera~~ to identify the mobile structure to be inspected;

selecting an inspection routine for a portion of the mobile structure from a plurality of available inspection routines;

retrieving, from the database, a flight plan for the UAV corresponding to the selected inspection routine, the flight plan corresponding to a portion of the identified mobile structure and comprising instructions to visit a plurality of positions in three-dimensional space corresponding to the points of the mobile structure identified for inspection in the inspection routine;

operating the UAV according to the retrieved flight plan, wherein the flight plan maintains the UAV at a predetermined distance from the surface of the mobile structure, determined by the selected inspection routine;

at one or more of the plurality of positions visited, capturing data indicative of the condition of corresponding point of the mobile structure;

identifying points of the mobile structure where the condition of the mobile structure appears sub-optimal;

saving ~~the~~a plurality of coordinates of the points of the mobile structure so identified; and

on completion of the inspection routine, revisiting one of more points identified as sub-optimal and performing a further inspection under ~~the~~ control of an operator.

~~13~~11. The system of claim ~~12~~10, wherein the controller is programmed to control the camera to identify the mobile structure to be inspected by capturing a unique identifier on the mobile structure.

~~14~~12. The system of claim ~~13~~11, wherein the mobile structure is an aircraft and the unique identifier is the aircraft tail number.

~~15. The system of any of claims 12, 13 or 14, wherein the flight plan maintains the UAV at a predetermined distance from the surface of the mobile structure, the distance determined by the selected inspection routine.~~

~~16~~13. A system according to any of claims ~~12~~10 to ~~15~~12, wherein the controller is programmed to perform the step of identifying points of the mobile structure where the condition of the mobile structure appears sub-optimal is performed automatically by comparison of data retrieved by the camera with pre-stored data for the respective point of the mobile structure.

~~17. A system according to any of claims 12 to 16, wherein the identification of points of the structure where the condition of the structure appears sub-optimal is performed by a human operator.~~