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INSECTITHOPTER
SHORT RANGE--AIR
(C. Adkins, ORD)

Description:

This vehicle is a fluttering wing, miniature drone, which has limited flight characteristics. The design is intended to be insect-like in appearance when casually observed.

Status:

Engineering development of the vehicle subsystem primarily. Approximately \$100K has been funded through FY73.

I. Environmental Consideration:

a. WEATHER

Wind must be 10 fps or less since cruise speed is about 15 fps. Range will be reduced by the ratio of head wind speed to cruise speed. Winds below 10 fps will not appreciably affect structures or stability. Cold weather operations would not look realistic. Fog or smoke will affect Nav/Commo.

b. TOPOGRAPHY

Only local topographic extremes expected over 200 meter distances.

c. DEMOGRAPHY

High concentration of people and man-made objects. Detection is improbable at distances larger than several feet as being anything other than an insect.

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d. DETECTION

Detection is improbable at distances larger than several feet as being anything other than an insect from both acoustic and visual observations. This obviates cold weather operations.

e. DEFENSIVE SYSTEMS

No known defensive systems at distances larger than several feet.

f. MISSION PLANNING

This depends greatly on specific mission and could vary [redacted]
[redacted]

(b)(1)
(b)(3)

II. Systems Requirements:

a. VEHICLE

Plausibly disguised to observers as indigenous life.

b. GUIDANCE AND CONTROL

LOS command.

c. COMMO

LASER IR. LASER does not lase if beam is interrupted.

d. NAVIGATION

Vidicon display of vehicle azimuth and elevation.

d. MISSION CONTROL

Operation from [redacted]
[redacted] within 200 meters of target.

(b)(1)
(b)(3)

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f. MISSION PLANNING

Comparable to [redacted] audio ops.

(b)(1)
(b)(3)

III. Surface Coverage

a. RANGE

Up to about 200 meters.

b. LAUNCH AND RECOVERY

From rented space through window or roof or from auto, etc.

c. GEOGRAPHIC COVERAGE

Any place or time of year indigenous to insect.

d. TARGETS

Any line-of-sight target within 200 meters of launch.

IV. Payloads:

Optical microphone has been tested. This would be used for audio surveillance and could be a payload drop with vehicle returning to launch point or elsewhere. Payload weight is restricted to a few tenths of a gram.

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