Leaflet Delivery System (LDS)
Wind Supported Air Delivery System Variant

Overview:

The Wind Supported Air Delivery System (WSADS) LDS variant is a highly versatile, autonomously guided powered parafoil, capable of delivering leaflets or Psychological Operations materiel to target audiences in peacetime and across the spectrum of war.

"An Inexpensive, Rugged, High Payload UAV Providing Unmatched Operational Flexibility"

- Capable of both ground launch and air launch:
  - Ground launch from back of a HMMWV
  - Air Launch using existing aircraft roller beds and restraints – C-130, C-141, and C-17 cargo aircraft
- Up to 4 systems can be transported and launched from a single C-130
- Fully re-useable system
- Autonomous landings in a wide variety of unprepared terrains
- Recoverable by a four-person team
- Six cargo bays:
  - Modular fuel and leaflet cargo bins
  - Easily supports other cargo delivery
- Spacious cargo bays and large payload capacity:
  - Up to 100 lbs of cargo per bin
  - Autonomous payload deployment directly from cargo bay
- Quick configuration for each mission:
  - Short range mission:
    - All six bays used for cargo
    - Permanently mounted fuel tank in the nose provides two hours of loiter approximately 70 miles range
  - Long range mission:
    - Maximum endurance exceeds 19 hours
    - Carry up to five modular fuel bins and single cargo bin

Capabilities:

- 600 pounds total fuel and cargo
- Maximum airspeed of 50 km/hr
- Fly over 19 hours carrying 75 – 100 pounds of cargo
- High efficiency parachute system designed specifically for ground or air launch configurations (Ground launch parachute provides greater payload endurance and range capability)
- Air deployment from altitudes as high as 25,000 feet Mean Sea Level
- Parachute components retained during air launch deployment sequence
- Stabilizing drogue deploys after WSADS exit
- Main parachute deploys and drogue collapses for aerodynamic efficiency
- Landing gears lower
- Engine starts

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Guidance:

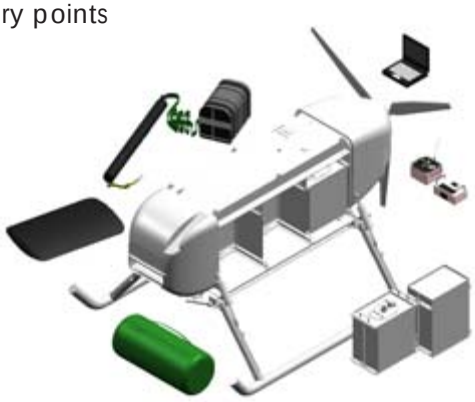
- Airborne Guidance Unit (AGU) provides fully autonomous Flight Control from release point through autonomous landing:
  - Includes wind correction for payload release function point
  - Hard and soft way point flight control and area avoidance
- AGU is active throughout deployment sequence
- After initiation of main canopy deployment and releasing the brakes in air launch employment:
  - Guidance unit deploys the landing gear
  - Initiates the engine start sequence
- Line of sight manual override capability is also provided to allow ground user to:
  - Redirect system
  - Modify final touch down location
  - Manual direct payload release

Propulsion:

- 110 Hp turbocharged engine – automotive or aviation gasoline
- Engine drives a three blade composite propeller
- 2.43:1 reduction gearbox
- 24 Volt alternator supplies up to 1kW of auxiliary electrical power

Mission Planning Software:

- Microsoft® Windows® based:
  - Assists user in selection of optimized deployment configuration, number of systems required, flight path, and recovery points
  - Point and click graphical interface
  - Intuitive and easy process
- Digital map underlay
- Mission plan download into AGU in seconds



Future Development:

- Fielding Initial Operational Capability 2004
- WSADS is baseline platform for Advanced Concept Technology Demonstration entitled Air Launched Extended Range Transport or ALERT:
  - Integration of Mode 4 Identification Friend or Foe for air space management
  - Over the horizon two way mission control/ communications with the WSADS
  - Insert upgrades to basic WSADS to make it compatible with a variety of payload requirements such as loudspeaker and radio television broadcast
  - Useful to other government and non-government agencies and potential commercial users
- Insertion of a heavy fuel engine compliant with DOD requirements for heavy fuel compatibility by 2004
- Integration of new high speed wind penetrating parafoil technology

Point of Contact:

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