CANADIAN SHIELD

A DIVISION OF SIG | SUSTAINABLE INFRASTRUCTURE GROUP

DEFENCE · CS-901

LAND GENTLE — THEN LET IT WALK OUT

A canopy-retarded delivery pod: land on a crumple zone, right itself, open, release the carrier system.

RELEASE · DESCEND · LAND · RIGHT & OPEN · EGRESS

PATENT PENDING

EXPORT-CONTROLLED — INTERNATIONAL TRANSFER SUBJECT TO CANADIAN GOVERNMENT PERMITS

DELIVERY CONTAINER — NO WARHEAD, NO FUZE, NO ENERGETIC MATERIAL

250 KG	5	-40 °C	0
WORKED GROSS-MASS CASE	STAGES, RELEASE TO EGRESS	COLD ENVELOPE, LATCHES TO TEXTILES	PYROTECHNICS ANYWHERE IN THE POD

OVERVIEW

A DELIVERY CONTAINER FOR SITES WITHOUT A ROAD.

> Part of the **5-system Defence line** — shares its envelope and doctrine with Badger, Grizzly, Goose.

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The Shield Pod is an air-deployment container: a moulded shell over an internal load frame, a canopy-retarded descent train, a sacrificial crush stage at the base, and four petal doors that double as self-righting levers and egress ramps. It carries a carrier system — a Badger boring plant, a Grizzly, a Goose launcher fit, an Orca-exploratory package, or a humanitarian air/water/comms cache — through the drop, the landing, and out onto the ground, without a crew standing under it.

It is a defence platform, not an Industrial one, because of where and what it delivers: the cradle-interface catalogue is built around the fleet's own carriers first — Badger, Grizzly and the Goose launcher fit are named integration cases alongside the civil/humanitarian loads. Get a working carrier into a site a road can't reach or a crew can't be standing under, set it down gently enough that it still works when the doors open, and let it go. One pod envelope, one descent train, one release-logic state machine; the only thing that changes system to system is a swappable cradle insert, so a new carrier is a tooling change to the cradle, not a redesign of the pod.

The engineering headline is not the fall — it is the arithmetic underneath it. A budgeted landing at a 6–8 m/s sink rate onto a 10–15 cm crush stroke works out to ~12–33 g of average deceleration — well inside the shock tolerance of the mechanical and electronic systems this line already ships. What actually drives the design is reliable egress at any landing attitude, a cold-worthy release-logic chain, and the opening-shock case at the top of the canopy train — the case that sizes the internal frame.

THE DESIGN RULE

NO PART CARRIES TWO JOBS BADLY. THE FRAME LANDS IT, THE SHELL KEEPS WEATHER OUT.

Four elements, four jobs: the outer shell sheds weather and handling loads; the internal frame carries the landing, cradle and canopy-opening cases; the sacrificial crush stage takes the impact so nothing else has to; the petal doors right the pod and then become the ramp the payload leaves on.

HOW IT WORKS

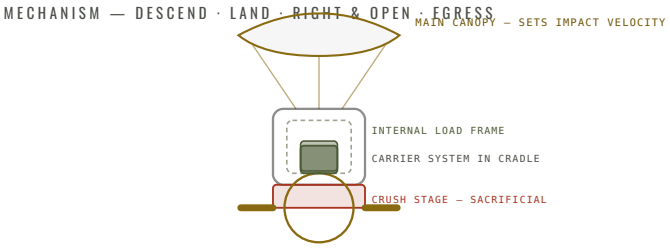
MECHANISM

ONE FALL, FOUR JOBS, NO CREW UNDERNEATH

Release fires an extraction stage that stabilises the pod and stages a main canopy — round for the baseline, steerable ram-air for the guided variant — at a controlled airspeed. The canopy converts a wide range of release altitudes into one known, repeatable impact velocity: everything downstream, from crush stroke to pad area, keys off that single number.

At touchdown the pod lands on its base, on purpose: a sacrificial crush stage absorbs the impact so the shell and cradle never have to. Passive geometry — a low center of mass and a shell with no stable rest attitude except base-down — does most of the righting work; if the pod comes to rest off-base, the petal doors open in sequence and lever it upright. Once the pod is base-down and stationary, the same doors swing out as an egress ramp and the cradle unlocks — never before both conditions are proven true.

The release-logic chain is deliberately conservative: it fails **locked** in the air — nothing opens on the way down, ever — and fails **open-able** on the ground by simple mechanical backup, so a sensor fault can never strand the payload inside a closed pod. A mechanical g-latch and a no-motion window back up the electronics at the one point where the two failure postures meet: impact detection.



CS-901 · MECHANISM — RELEASE · DESCEND · LAND · RIGHT & OPEN · EGRESS

SPECIFICATIONS

CAPABILITIES & SPECIFICATIONS

SHIELD POD CS-901

DIMENSIONS & MASS

Worked gross mass	250 kg class — worked case, sensitivity checked 100–500 kg
Configuration	Moulded outer shell over an internal load frame, four petal doors, sacrificial crush stage at the base
Role	Canopy-retarded delivery container for carrier systems

DESCENT & LANDING

Target sink rate	6–8 m/s under the main canopy
Canopy class	~78–139 m² (Ø10–13.3 m class), sized to the 250 kg case at 6–8 m/s; larger single or cluster canopy for heavier loads
Crush stroke	10–15 cm — the deceleration lever
Landing deceleration	~12–33 g, ideal-crush average over the stroke; peak values run higher
Impact energy	~1.8–9 kJ across the mass and sink-rate band
Crush hardware	~32 kN reaction · ~0.065 m² pad (~25 cm square) at honeycomb-class crush stress

DESCENT TRAIN & GUIDANCE

Descent train	Extraction/drogue stage + main canopy — round (baseline) or steerable ram-air (guided variant)
Descent guidance	Inertial + barometric propagation; terrain-referenced steering on the guided ram-air variant
Control & navigation	No-radio by design — GNSS logging only where the carrier and mission profile permit it
Release logic	Interlock state machine — carriage, descent, landed, right, open, release, safe; fails locked in the air, open-able on the ground by mechanical backup

PAYLOAD & CRADLE

Cradle interface	Common hard-point pattern + system-specific insert per carrier — a new system is a tooling change, not a pod redesign
Named integration cases	Badger, Grizzly, Goose launcher fit, Orca-exploratory, humanitarian air/water/comms cache
Carriage interface	Generic aircraft carriage interface, not a named aircraft — ramp/bay or pylon, integration handled case by case
Egress	Petal doors double as self-righting levers and the egress ramp

MATERIALS & CONSTRUCTION

Load frame & hinges	Engineered resin, machined/welded
Outer shell & petals	Moulded, rPET-eligible — material classes per the fleet materials rules
Crush cartridges	Sacrificial, honeycomb-class
Tooling	Shell and petal moulds cut in Canadian Shield's own 5-axis shop

OPERATING ENVELOPE & ACTUATION

Cold envelope	−40 °C — latches, lubricants, textiles and electronics keyed to this figure
Actuation	Mechanical, spring and pneumatic only
Pyrotechnics	None, anywhere in the pod, by design rule
Energetic material	None — no warhead, no fuze, no terminal-effect system, in any variant

COMPLIANCE

Patent status	Patent pending
Export control	Export-controlled — international transfer subject to Canadian government permits; export posture is counsel-first
Classification	Delivery container, not a munition — non-kinetic, no energetic material
Carrier scope	The pod delivers a carrier system to site; what the carrier does after egress belongs to that carrier's own brochure

LANDING DECELERATION IS STATED AS AN IDEAL-CRUSH AVERAGE OVER THE CRUSH STROKE; PEAK VALUES RUN HIGHER. THE 250 KG GROSS MASS IS A WORKED CASE FOR THE DESCENT AND IMPACT BUDGET, WITH SENSITIVITY CHECKED FROM 100 TO 500 KG.

THE TRADES, STATED

ONE POD. EVERY CARRIER. EVERY SITE A ROAD CAN'T REACH.

Canadian Shield's thesis is that manufacturing is the decisive capability. The Shield Pod carries that thesis to the last mile: the same moulded-shell and machined-frame discipline built on this manufacturing base, packaged into a container that gets a fleet carrier onto ground nothing else can reach — a site a road can't reach, or a crew shouldn't be standing under during release.

The overlap is physical, not rhetorical. The 5-axis shop that cuts moulds elsewhere in the group cuts the pod's shell and petal tooling; the internal frame is a machine-shop part, not a specialty one; the crush cartridges are moulded from the same materials rulebook as the rest of the fleet. One engineering canon, one materials rulebook, one cradle-interface logic — reused across every carrier the fleet ships, defence or civil.

And because its primary job is putting Badger, Grizzly and Goose-launcher fits into the ground, the pod carries the same no-radio posture the rest of the defence fleet does: descent guidance is inertial and barometric by design, not radio-dependent, and it does not assume a permissive spectrum the way a civil work platform can. The pod itself is non-kinetic — no warhead, no fuze, no energetic material — but international transfer is subject to Canadian government permits, counsel-first, the same as every other defence platform in the fleet.

THE CRADLE LOGIC

ONE POD ENVELOPE. EVERY NEW CARRIER IS A CRADLE CHANGE.

The pod's economics live in the cradle interface — specified once, so a new carrier system is a swappable insert rather than a new descent train. One envelope, one descent train and one release-logic chain across every carrier fit the fleet ships.

DEPLOYMENT

RIG IT. DROP IT. LET IT WALK OUT.

A Shield Pod job is a delivery, not a mission of its own: the carrier system inside is the point, and the pod's whole job is getting it there intact. One drop, walked end to end — illustrative of the operating sequence, not a mission record.

01 · ARRIVE & RIG

CRADLE LOADED, BOX PLANNED

The carrier system is seated in its cradle insert and the pod is rigged at the carriage interface. The release point, landing box and no-go boundaries are planned and geofenced before the pod ever leaves the ground — a per-system fit that is a tooling change, not a redesign.

02 · DELIVER

DESCEND, LAND, RIGHT, OPEN — UNATTENDED

Release stages the canopy to a known impact speed; the crush stage absorbs the landing; passive geometry and petal-sequence righting set the pod base-down; the doors open and the cradle unlocks. The whole sequence runs with no crew standing underneath it — the interlock chain is the only thing present at touchdown, and it fails locked in the air, open-able on the ground.

03 · EGRESS

THE CARRIER WALKS OUT

Once the pod is open and proven stationary, the carrier system egresses down the petal ramp under its own power and goes to work. The pod's job ends when the doors open: what the carrier does from there belongs to that carrier's own brochure, not this one.

THE FAMILY

RELATED SYSTEMS

CS-410 · NAMED INTEGRATION CASE

BADGER

The Underground boring plant — delivered by pod to ground a road can't reach.

CS-210 · NAMED INTEGRATION CASE

GRIZZLY

The Ground family's lead carrier — a named cradle-insert fit in the pod's interface catalogue.

CS-110 · LAUNCHER FIT

GOOSE

The Air family's launcher, podded as a launcher fit — a magazine delivered to site.

CS-310 · EXPLORATORY PACKAGE

ORCA

The Water family's carrier, named as an Orca-exploratory package alongside the humanitarian cache loads.

Shield Pod CS-901 · patent pending · a defence cross-fleet platform, no-radio by design · export-controlled — international transfer requires Canadian government permits; export posture is counsel-first. A delivery container for carrier systems — no warhead, no fuze, no energetic material and no terminal-effect system, in any variant, ever; no pyrotechnics anywhere — mechanical, spring and pneumatic actuation only. The pod delivers a carrier system to site; what that carrier does once it egresses is that carrier's own brochure, not this one.

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One pod envelope. Every new carrier is a cradle change.

01

REQUEST A TECHNICAL EXCHANGE

A working session with engineering, not sales — bring your engagement problem, we bring the mechanism.

02

REQUEST THE DEFENCE FAMILY DATA PACK

Drawings, tolerances and test basis for Shield Pod and its siblings, gated behind export screening.

03

DISCUSS A TRIAL QUANTITY

Tell us end-user, jurisdiction, quantity band and timeline — we respond against your program, not a price list.

SALES
sales@cdnshield.ca

GENERAL
info@cdnshield.ca

WEB
cdnshield.ca

Direct lines, named points of contact and facility details are shared with qualified programs following screening — not withheld, sequenced.

Canadian Shield is a defence and industrial drone company, backed by SIG: four-domain uncrewed systems built for jammed, GPS-denied environments — no-radio by design, manufactured for cost and salvo depth.

Shield Pod CS-901
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