

ADS Patrol Rubber Boat for LH C-130

Introduction:

The Airsafe Patrol Rubber Boat ADS is designed to give a simple reliable rigging procedure in combination with a safe delivery followed by a simple release after landing for operation. The first version of the ADS was designed to be delivered with a cluster of converted T-10 canopies. This parachute system created a soft nice opening with minimum chock forces.

The Irvin SC14 and SC15 parachute were introduced to perform a low altitude capability to the Swedish Special Forces supply dropping but also much higher chock forces were to be considered.

The riser system was reinforced and the tie down of the rubber boat was redesigned to prevent sliding on the aluminium ramp.

It was also essential to simplify the rigging and also the release, when in the water, without tools such knives or similar that could damage the rubber boat.

The Ramp:



The ramp is designed to fit under the boat and to carry the load via the parachute risers. Floating aluminium tubes make the ramp possible to recover. Operational these tubes are to be punctured to allow the ramp to sink.

The ramp is designed to fit on to the rails inside the C-130.

Guidance rails and walls give the boat's position on the ramp.

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Ramp attachment:



Delta rings are attached to eight loops on the ramp by webbing loops.

Front boat attachment



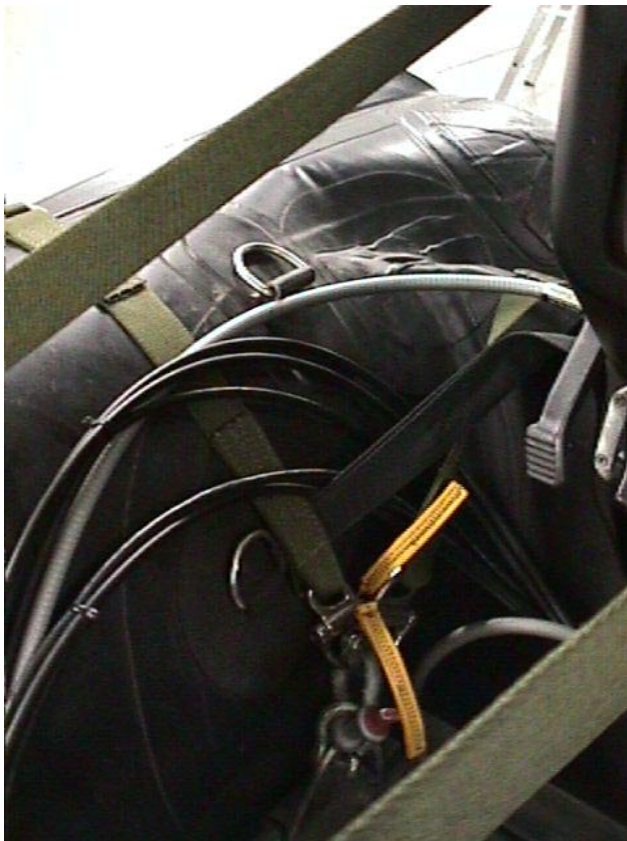
The front air tube of the boat is attached to the inside of the boat by an adjustable V-sling easy to release by a Swedlink by pulling a yellow strap.

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On the outside the V-sling is attached to two delta rings. Heavy adjustable AML buckles make the V-sling easy to adjust.

Aft boat attachment:



Two separate slings on each side tie down the AFT of the boat. These slings are adjustable and are released the same way as the front V- slings

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Engine tie down:



The engines are both secured by two slings.

A fixed sling that is easy to release ties down the engine rig.



An adjustable sling is locked to the engine with a cross section of the sling.

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The adjustable sling is attached to the boat strong point in the front. The sling is adjusted by an AML buckle and is also released by Swedlinks.

Riser System:



The photo shows the complete rigging but cargo net (also available). The six-legged riser system is designed to carry the complete chock force created by a CS15 parachute in one pair only with a design factor of 3,2.

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The risers are equipped with two horizontals to prevent overriding of the boat during rotation before parachute opening.

Cargo Release Unit:



During evaluation and previous test campaigns an FXC Cargo Release Unit was used in combination to riser and parachute system. In strong winds the FXC showed to be not reliable and a solution was to be found. The Norwegian Forces were consulted and a Capewell M-1 Cargo Release Unit was recommended to be

very reliable and consequently incorporated in this system with a very good result.

Exit of boat with ramp:



When the boat exit the aircraft ramp it starts rotating. To simplify the system no drogue is used and has been noted not necessary.

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The boat rotates until the parachute has been fully stretched. Only one pair of the riser system is considered to take the chock forces.

To enable low level delivery performance one Irvin-GQ SC15 Cargo Parachute is considered to be acceptable. This system however creates slightly damages to both

Delivery system and to the Patrol Rubber Boat.

Operational this can be accepted but not repeated in training campaigns. Therefore it has been considered to perform delivery also with cluster of five converted T-10 canopies with d-bags.



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Technical Data:

Denomination	Part Number
Patrol Rubber Boat	Zodiac FC530
Aluminum Boat Ramp	MVKBG 100065A
Safety Strap	Airsafe 2-0340B/ 2-0341B
Riser and Tie Down	Airsafe 2-1-765A
Cargo Net	Airsafe 2-0462A
Weight of ADS c/w Boat	800 – 1000 Kg
Rate of descent SC15	6 m/s
Rate of descent T-10 Cluster	7 m/s
Minimum delivery altitude SC15	90 m
Minimum delivery altitude T-10 Cluster	125 m

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