

ARMADILLO EVS – USER GUIDE (ver. 1.2)



THE SMALL GEOGRAPHICAL EXPLORER FOR GREAT DISCOVERIES

1 ARMADILLO ∞ ENVIRONMENTS

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What is an Armadillo EVS? Since humans have begun to build tools, dresses and preserve food and drink water their greatest concern has always been the possibility to carry these equipments with them. Handbags and later primitive backpacks have been the first solutions, soon followed by man or animal hauled carts (with the invention of the wheel), sleds and boats. So here the idea of the Armadillo EVS, the first MAN HAULED PERSONAL CRAFT that can be at the same time:

- 1) **an all terra CART;**
- 2) **a bike TRAILER**
- 3) **a pulka SLED;**
- 4) **a small BOAT;**
- 5) **a BACKPACK.**

Why to use an Armadillo EVS? If you like to do your trips and/or mini expeditions in different environments and your concern is to carry with you heavy equipment and/or a lot of food and drink water the Armadillo is the right solution for you!

Which is the philosophy of the Armadillo? The concept of this craft relies on a Central Composite Core (the “3C” concept): a hull made of a composite material (fibreglass) that can be “transformed” in different types of equipment just by outfitting the hull with different accessories.

HANDCRAFTING and MATERIALS USED*

The Armadillo is completely handcrafted in Italy. The materials used are:

- 1) Hull: fibreglass made of high quality orthophthalic resin and glass fibre fabric. On request we can also use epoxy resin with Kevlar and/or carbon fibre fabrics.
- 2) Aluminium components: Anticorodal EN AW 6060 alloy that is very resistant to corrosion with 2 or 3 mm thick walls (depending on component);
- 3) Soft deck: printed PVC fabric (550 gr/m²). On request we also make 1000 Denier PU coated Nylon (Cordura™) soft decks.
- 4) Zipper: waterproof by TIZIP® (<http://www.tizip.com/index.php>) , model *MasterSeal*.
- 5) Wheels: polyurethane foam wheels (Ø 26 cm) with roller bearings and plastic rim. If you need more clearance under the hull we can also provide Ø 40 cm wheels.
- 6) Nuts & bolts: all nuts, bolts, washers and pipe clamps are made of stainless steel.
- 7) Roll-bar: is made of high quality pipes produced by Geberit®, model *Silent-PP* made of mineral reinforced triple layer polypropylene.
- 8) Bike wheels: standard 20” bike wheels with quick release skewers.
- 9) Hauling bar couplings: Fjelpulken (<http://fiellpulken.no/>) shaft couplings.
- 10) Bike tow bar coupling system: Burley’s (<https://burley.com/>) standard hitch and flex connector.
- 11) Hauling harness: Petzl (<http://www.petzl.com/>), model *Corax*.
- 12) Boat towing harness: Camp (<http://www.camp.it/>), model *Pettorale 0909*.
- 13) Hip belt and shoulder straps: The North Face (<http://www.thenorthface.com/>), model men’s *Primero*.

*The materials and the relative brands used may be subject to change according to the availability of the materials themselves.

WARRANTY

All the materials have a warranty of 3 years. Please read the serial number of your Armadillo via the QR Code on the side (**Figure 1**) or on the stern of the hull and register your product by e-mail at this address: sebastian@armadilling.com.



Figure 1

Use for this purpose a QR code reader software for your computer or mobile phone as, for example:

Android: <https://play.google.com/store/apps/details?id=com.gamma.scan>

iOS: <https://itunes.apple.com/us/app/qr-code-reader-by-scan/id698925807?mt=8&ign-mpt=uo%3D4>

TECNICAL SPECIFICATIONS

Max load capacity of bike version: 40 kg

Max load capacity of boat version: 35 kg

Max load capacity of sled version: 55 kg

Max load capacity of cart version: 45 kg

Max load capacity of backpack version: 35 kg

Volume: 90 litres

Weight (only hull): 5.440 kg (12 lb)

Weight (hull + soft deck + hauling bar couplings): 6.220 kg (13.7 lb)

Weight of complete cart outfitting components (axels + wheels): 5 kg (11.0 lb)

Weight of cart & sled hauling bar: 1.8 kg (4 lb)

Weight of complete bike trailer outfitting components (tow bar + 20" wheels + axel): 3.8 kg (8.4 lb)

Weight of complete sled outfitting components: 0.940 kg (2.0 lb)

Weight of complete backpack outfitting components: 0.830 kg (1.8 lb)

Weight of complete boat outfitting components (fin + hauling rope and harness): 0.470 kg (1.0 lb)

Weight of hauling harness: 0.420 (0.9 lb)



Overall length: 89 cm (35.0 in)

Overall width: 49 cm (17.7 in)

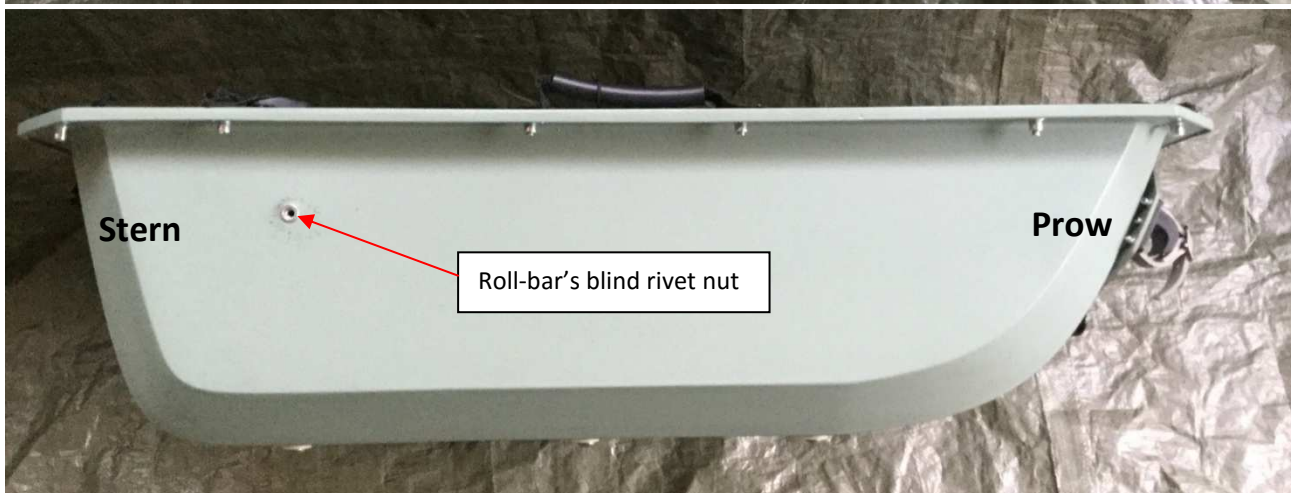
Overall height: 24 cm (9.45 in) only fibreglass hull; 44 cm (17.3 in) with soft deck expanded

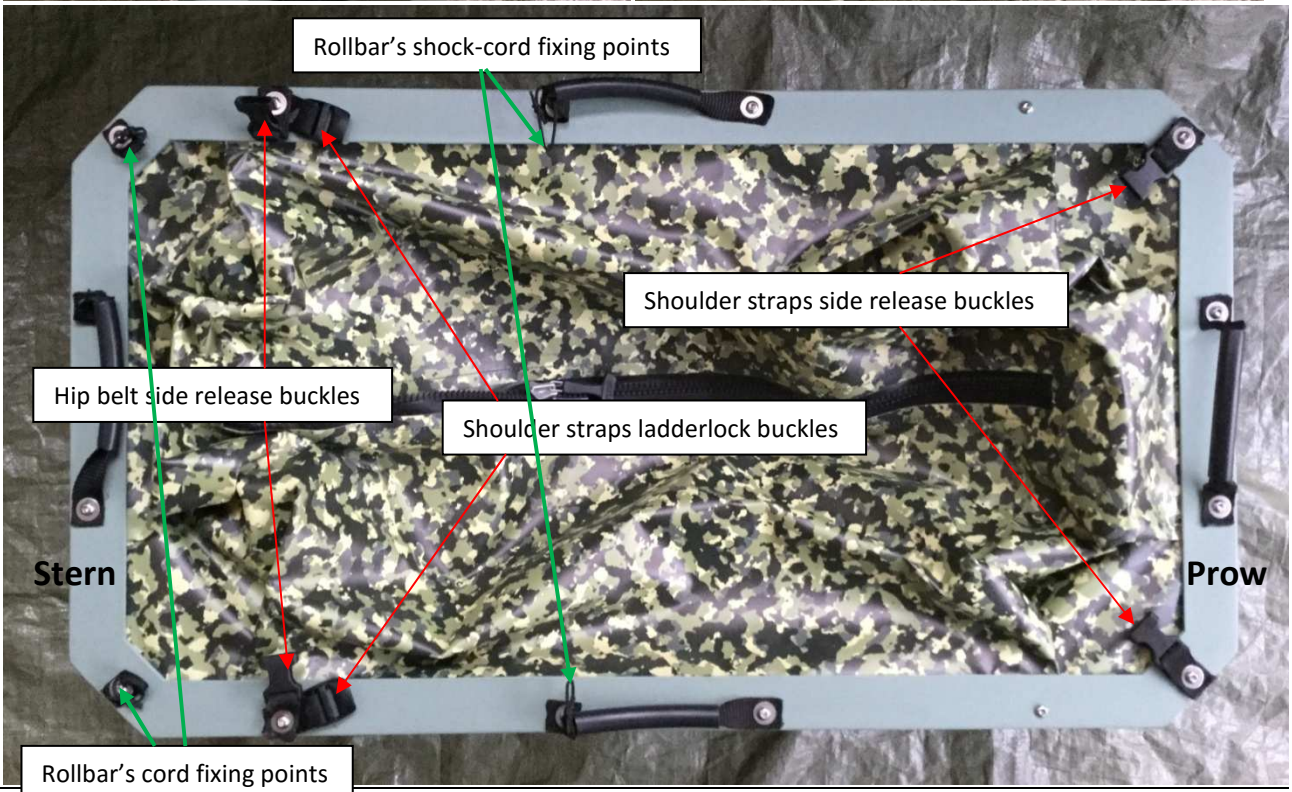
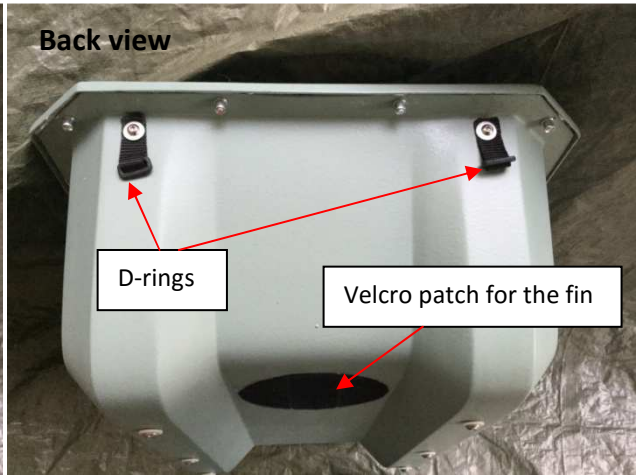
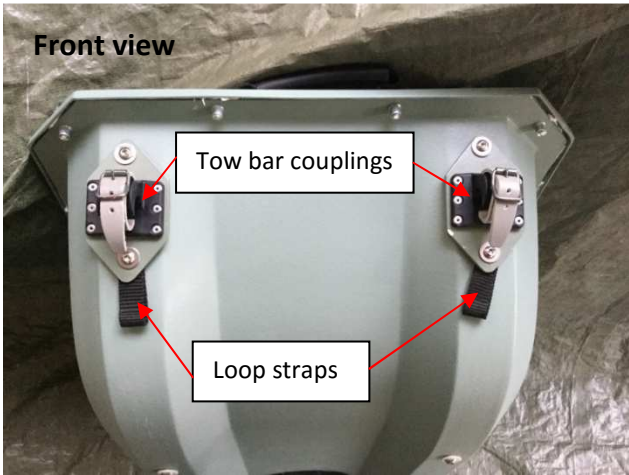
Small parts referencing:





<p>BL: LONG M8 (Ø 8 mm) bolt with stainless steel and rubber washer.</p> <p>BS: SHORT M8 (Ø 8 mm) bolt with red sealing washer.</p>	
<p>PC: Stainless steel Pipe Clamp</p>	
<p>QR: Quick Release Skewer</p>	
<p>PW: Plastic Washer</p>	
<p>AP: Aluminium Pipe</p>	
<p>FH: Forged hitch</p>	
<p>FX: FleX connector</p>	

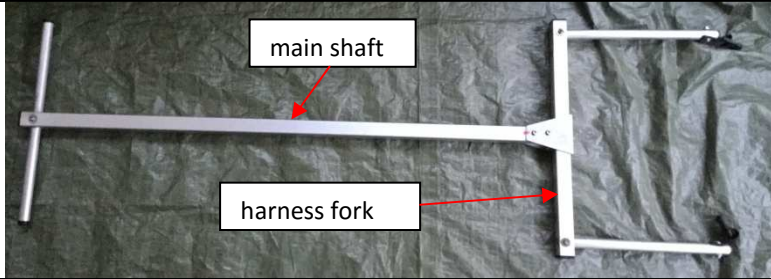






<p>TS: Toe Straps</p>	
<p>TB: Threaded Bolt with hand knob</p>	

Naming:





Side release buckle	
Ladderlock buckle	
Triglode buckle	
Square ring	

<p>Hauling bar</p>	
<p>Hauling bar coupling</p>	
<p>Open wrench</p>	
<p>Multi tool with allen keys and screw drivers</p>	
<p>Boat towing rope (5 meters)</p>	
<p>Oblique cut cylinders of the bike wheel quick release skewer</p>	
<p>Blind rivet nuts</p>	

IMPORTANT NOTES:

- 1- USE ALWAYS THE LONG BOLTS WITH TEIR STAINLESS STEEL WASHERS.
- 2- NEVER OVER TIGHTEN THE BOLTS USED FOR FIXING THE OUTFITTING COMPONENTS TO THE HULL.
- 3- ALWAYS CLOSE THE ZIPPER COMPLETELY IN ORDER TO AVOID WATER ENTERING THE HULL.

1. CART OUTFITTING SETUP

The Cart Outfitting consists essentially of the four wheels (with their axles) and the Hauling bar. Mount the outfitting as explained in the following steps:

1. Fix the two axles as shown in **Figure 2** using the long M8 (**BL**) bolts (with their washers!).
2. For each axle shaft insert in this sequence 1. a plastic washer (**PW**), 2. the wheel, 3. the second plastic washer (**PW**) and finally 4. the pipe clamp (**PC**) as in **Figure 3**.
3. Check that the wheels rotate freely: they don't have to be pressed too much against the square terminal of the axle. If a wheel doesn't rotate freely move the pipe clamp a little bit (**PC**) outwards: a little bit of play is better than a badly rotating wheel!



Figure 2

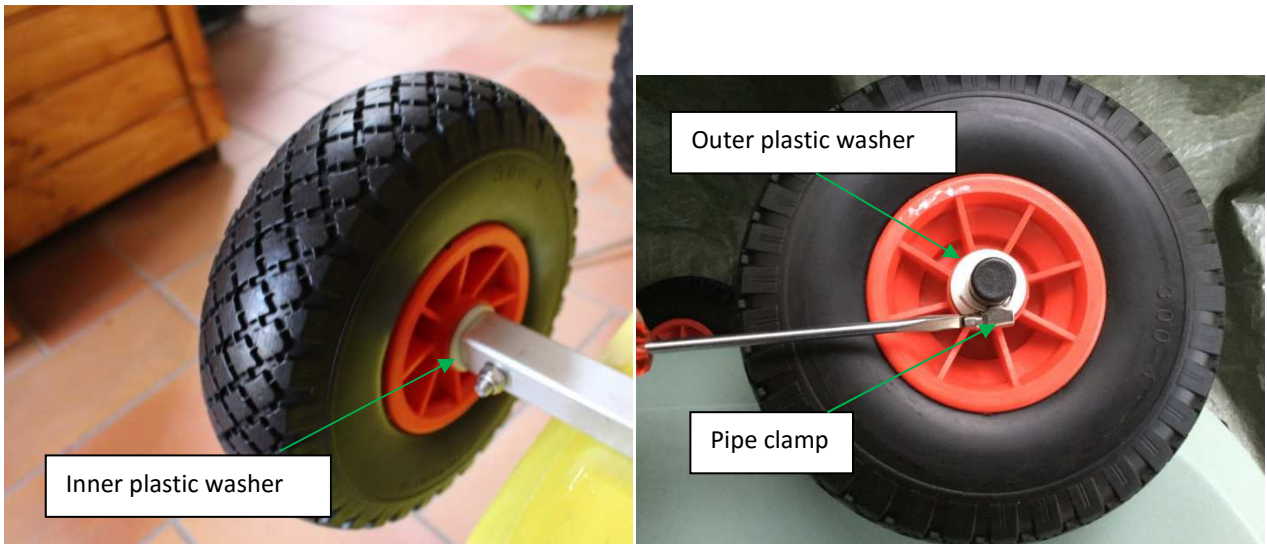


Figure 3

2. HAULING BAR SETUP

Here are the instructions to mount the Cart and Sled hauling bar.

1. Assemble the hauling bar by fixing the harness fork to the main shaft using the n. 10/11 open wrench and a n. 5 allen key as shown in **Figure 4-R**, please be sure that the two arrows on the shaft and on the fork are aligned as in **Figure 5-L**.
2. Fix the hauling bar to the couplings on the prow by pressing the transversal tube from underneath and paying attention that the plastic washers are on the external side of the tube itself (**Figure 6-L**); finally close the leather straps.
3. Attach the side release buckles to your hauling harness (**Figure 6-R**).



Figure 4



Figure 5



Plastic washer on external side!



Figure 6

Some use notes: slip into the harness as shown in **Figure 7-L** and tighten the harness with the closure straps (**Figure 7-R**). Set the shoulder straps straight (**Figure 8-L**) or crossed (**Figure 8_R**) over your shoulders.



Figure 7



Figure 8

3. BIKE TRAILER OUTFITTING SETUP

The bike Trailer consists of the two 20" bike wheels, their axle and a curved tow bar. Mount the outfitting as explained in the following steps:

1. Fix the wheel axle on the two central blind rivet nuts with the long M8 (BL) bolts.
2. Connect the tow bar to the trailer axel with the quick release skewer (QR) ONLY GIVING SOME TURNS to the round bolt of the skewer (Figure 9-L) and, holding firmly with one hand the tow bar, fix it with two long M8 (BL) bolts to the two prow blind rivets;
3. Tighten the quick release skewer (QR) as in Figure 9-R;
4. Fix the wheels aligning with the fingers the two oblique cut cylinders and inserting them in the axel shafts on each side (Figure 10); tighten the quick release skewer (QR).
5. Couple the trailer with the hitch to the bike (please see the Burley forged hitch (FH) and the flex connector (FX) instructions).



Figure 9



Figure 10

4. SLED OUTFITTING SETUP

The Sled outfitting consists essentially of a HD (High Density) PE (Polyethylene) 3 mm thick plate.

1. Assemble the hauling bar as explained in the cart outfitting setup.
2. Put the polyethylene plate on the Armadillo's hull observing the prow-stern orientation (**Figure 11**).



Figure 11

3. Fix the polyethylene plate at the prow of the Armadillo following this steps: 1. pass the left (or right) strap loop (fixed underneath the hauling bar couplings) through the slit at the plate's prow (**Figure 12-L**); 2. insert the round aluminium pipe (**AP**) into the strap loop (**Figure 12-R**).
4. Do the same thing with the right (or left) side.
5. Fix the plate at the stern of the Armadillo with the two bike pedal toe-straps (**TS**) passing them through the prow slits of the plate and the d-rings fixed on the prow of the Armadillo. Firmly tighten the toe-straps (**Figure 13**).



Figure 12



Figure 13

Some use notes: The sled version can be used with snowshoes or with short skies. If your ski's tail touches the Armadillo please contact us for a longer main shaft of the hauling bar. With the Armadillo it is also possible to use Fjellpulken (<http://fjellpulken.no/>) hauling bars (shafts) as we use couplings of this company.

Here is an example of a 2 meters long Fjellpulken shaft: <http://en.aventurenordique.com/fjellpulken-standard-shaft.html>

5. SMALL BOAT OUTFITTING SETUP

The small Boat outfitting consists in some easy steps:

1. Fix the fin to the Velcro patch underneath the hull (**Figure 14-L**);
2. Close the six fixing holes underneath the hull using the SHORT M8 bolts (**BS**) with the red sealing washers (**Figure 14-R**);
3. Attach the towing rope to the harness and to the prow handle of the Armadillo;
4. Always use the international diving flag inserted into the roll-bar (**Figure 15-L**).



Figure 14

5. Wear your boat towing harness as in **Figure 15-R**, attach to it the orange towing robe (5 m long) and close the harness with the Velcro strap (**Figure 16**).



Figure 15

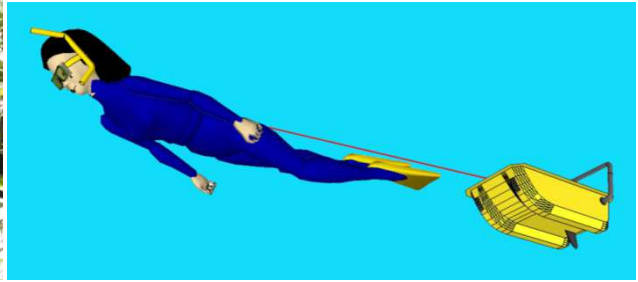


Figure 16

Some use notes: The small boat version is intended for towing. In the water we suggest to use a complete wetsuit, fins, mask and snorkel.

6. BACKPACK OUTFITTING SETUP

The Backpack outfitting is the *extrema ratio* when you have no other possibility than to transform your craft in a backpack. The outfitting consists of a unique harness that integrates the shoulder straps and the hip belt.

1. Fix the shoulder straps with the side release buckles on the left and right sides of the Armadillo's prow (**Figure 17-L**).
2. Fix the hip belt with the side release buckles on the left and on the right side of the Armadillo's stern (**Figure 17-R**).
3. Fix the end of the shoulder straps (red & black color) to the ladderlock buckles on the stern sides of the Armadillo's hull (the ladderlock is underneath the hip belt buckles, **Figure 18, L**).
4. Fix the two bottom straps under the hip belt to the hull passing the strap through the square ring fixed on the hull's stern (these are the same rings used also for the sled outfitting) and passing it once again through the triglide buckle (**Figure 18-R**);
5. Pass the long and large strap through the prow and stern handles (**Figure 19**) and fix it all around the hull with the big quick release buckle (**Figure 20-L**).



Figure 17



Figure 18



Figure 19



Figure 20

7. ROLL-BAR SETUP

The Roll-bar's function is not a protective/safety one but has rather a mounting function for devices like GPSs, action cams, lights, etc.

1. Choose if you want the flag tube on the right or the left side of the Armadillo (**Figure 21-L**).
2. Fix the roll-bar to the Armadillo using the threaded bolts (**TB**) with the hand knobs screwing them to the lateral blind rivet nuts in the stern zone (**Figure 21-R**).
3. attach the nylon cord to the rear outfitting-points and the shock cords to the front outfitting points (**Figure 22**).



Figure 21



Figure 22



Figure 23

Some application ideas:

Adventure and explorative expeditions

Of course the Armadillo was thought for this kind of applications and of course it may be used in the most different environments, from the desert to the arctic landscapes and in the roughest conditions.

Family and everyday applications

You can use the Armadillo for shopping: go by foot to your supermarket, it will be good exercise for your physical and mental (no traffic and parking problems) health and you will also protect the environment! Do you want to do shopping downtown but your kid, your dog or both of them are lazy? Let them jump on the Armadillo! Do you want to do a Pilgrimage on the Santiago de Compostela trek with the whole family but your kids can't load all the equipment in their backpacks? Here is the solution!

Scientific expeditions

The Armadillo may be used by scientific expeditions for transporting equipment on difficult terrains and/or in environmentally fragile areas. Environmental sensors and probes (e.g. Geiger counters, weather sensors, air quality probes, etc.) may be attached on the roll bar for continuous sampling. Coupling the Armadillo to an ATV may be a good idea...

Doomsday prepping

Doomsday and modern survivalist preppers rely often on their own forces and are waiting for the end of the world. In the mean time they prepare themselves to survive the collapse of the modern civilization: what is better than a man hauled cart for transporting equipment, food and water when there will be no more gasoline for the cars?

Humanitarian applications

The Armadillo may be used for transporting medical equipment and materials, portable water purification systems and food in hard approachable areas or for supporting mass escapes of refugees.

Other applications

If you decide to become a modern tramp consider to buy an Armadillo before losing all your possessions!

4 SEASONS - 1 ARMADILLO