



# THE PACKING CONUNDRUM

Richard and Jude's philosophy on packing a bike for our Aus to Wales motorcycle trip.



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# The Packing conundrum.

## Two People.

### Half the space and less available weight.

Discussions on what gear to take, how much weight can you carry and how to pack your bike for a long trip always elicits a plethora of diverse opinions and comments; “Halve what you have!” “You have way too much!” “Too much weight at the back” “The bike will snap in half” “Take a car instead!” “Put more weight forward!” “You don’t need to take that item” and even “you don’t have enough”, but not very often. There are so many opinions but so little actual fact to back up most of the claims. So, being a very important subject, I thought I would do a little research as to what is actually feasible and practical based on *our* circumstances and outline our packing philosophy so hopefully people can have a more informed discussion on how we arrived at what we are taking and how we packed the bike and come to a realistic decision of their own based on our circumstances.

I have no doubt this article will also prompt a wide range of views and think that would be a good thing. As you will see it goes against the normal view of *“take half of what you have”*.

I am not saying that our philosophy is 100% correct and indeed it would not apply to other riders in different circumstances and on a different route and riding different motorcycles. Somebody on a DR650, rider only, going off-road would need a very very different philosophy and packing list.

Absolutely there will be changes, miscalculations, poor decisions and failures as we progress along our journey and our experience builds. We might shed some items and we might purchase others. I just hope this document sheds some real light on all the considerations we thought of in choosing our gear and packing our bike, particularly being 2up where our available weight allowance for each of us for luggage is reduced by about 1/3rd and space each by more than half, and I hope it will help others in thinking about their own Packing Conundrum.

## Key Objectives

- What is the maximum weight of gear we can take?
- What impact would this have on the bike?
- What impact would this have on the rider?
- What are the items that we are going to pack and is it sufficient or excessive?
- If we did significantly reduce luggage weight, what difference would it have on the bike and rider?

## Assumptions

I would like to identify our assumptions and parameters on which this article is based.

- We already have a Motorcycle, 2015 R1200 GS Adventure which we have owned since 2018. It has just under 30,000kms on the clock.
- Based on research we believe that the manufacturers maximum payload of 220kgs (full of 30ltrs of fuel) is correct and there would be no major additional risk of damage to the bike if we stay within this limit.
- The “wet weight” (full of fuel) of the bike is 260kgs
- We already have the stock BMW Aluminium panniers and won't be changing before the start of our trip. This is not a discussion on the merits of hard v soft panniers.
- We will be riding 2up (with a pillion)
- Half our journey will be in temperatures 25-35c with high humidity.
- We will also experience temperatures close to freezing
- We will be camping for about 25% of the journey (Australia, parts of the Stans and some of Europe)
- We don't plan to go on any major off-road routes. We do expect potholes, gravel roads, wash-outs and wet conditions in some places but the majority of the journey will be on reasonable tarmac.
- We will be servicing our own bikes - tools and spares necessary
- We researched the need to replace the suspension (posts to various groups and calls to dealers etc) but there were very few reported issues despite the large number of bikes out there.
- Myself and Jude's combined weight is about 150kg, suited and booted.
- Our empty BMW panniers, two side and a top box, with attachments, weigh a total of 21kgs. (Yes, we know there are lighter options out there)

## **Packing Constraints**

There are two main constraints that we have to work within:

Maximum additional Weight, or Payload, and

Maximum Volume of equipment.

### **Weight**

As stated above we have to believe that the manufacturers maximum payload specification for our bike is correct and that if we stay within this limit there will be no significant additional risk of damage to the bike or any major adverse handling issues. Yes, it is correct that the more weight you have the greater the risk of both but if we stay within the limit both should be acceptable for the conditions we will be riding in.

### **Effects of added weight**

- Too much weight might compromise the integrity of the bike.
- Any added weight might adversely affect the handling of the bike to some extent.
- Position of any weight is critical. Additional weight placed high up has a significant and compounded effect on handling, particularly at lower speeds and being stationary. Consideration to balancing any additional weight, front and back and side to side is also very important.
- A Pillion passengers' weight is not only high but it also moves and has to be counterbalanced by the rider and is therefore of greater importance than static weight.

### **Volume**

We also have a maximum volume we are prepared to take, which is what will fit in our panniers, top box and accessories, with a minimal amount strapped to the panniers. We may be under our payload limit but we want to limit the amount of equipment outside of our storage to limit wind resistance, damage from the elements, greater risk of theft or malicious damage and potential loss of any external items.

## So how did we choose what to take and how to pack it?

As stated above any additional weight has an effect on the bike, the rider and passenger so keeping any luggage to a minimum goes without saying but we have to take some equipment with us. We categorized items into three categories:

1. Must have
2. Good to have
3. Luxury

And then we have 5 type categories

1. Tools and spares
2. Richard's gear
3. Jude's gear
4. Camping equipment
5. Other stuff

**Must have** items include things like puncture repair kit, tools, spares, water, medical kit, basic clothing needs for all environments (inc cold weather gear) tent and sleeping bag (we are going to camp so it's a must have) Also some items in this category we considered important if they prevented or helped keep us moving.

**Good to have.** Items like additional/duplicate items of clothing, some additional non-essential tools

**Luxury items.** Things like camp chairs, cameras and video equipment, a shirt for "going out" etc

After much research online as to what others have taken and with weight and volume in mind we put together an initial list of stuff we thought we would take, starting off with the essential "Must Have" items, then added "Good to Have" items and lastly "Luxury" items.

Firstly I looked at what **tools and spares** I would take. I knew this section would be important for two reasons: tools can help keep you moving in the event of a breakdown but they are heavy and would take up a fair share of our allowance. I gave our bike a full service so that as a minimum I knew which tools I would need to complete this. I then went over the bike to

see what size spanners, Torx heads and other fasteners I might need and put together a tool kit.

I then did lots of research on what are the common faults with our model of bike so I can see if I can prevent them or at least be prepared for them. This research yielded a small list of spares to take, some bike checks and to the additional service parts we would take (oil and air filters. Spark plugs etc, to be purchased later in the trip)

The online research we carried out helped us somewhat with our **personal gear** selection but we had to consider the wide range of climates we will be traveling through. I have to say I was less concerned about this section from a weight perspective as clothing is generally light; Adding extra pairs of trousers only adds a few hundred grams of weight. More importantly we had to consider what are the best types of clothing to take to help cope with the extremes in temperatures we will experience. What is important about clothing is that it is bulky and takes up a lot of our available volume so we looked at ways to minimise the packed clothing volume.

The **Camping equipment** is also a big concern as this is not only adds quite a bit of weight but also takes up a significant amount of volume. Although relatively light a sleeping bag and mattress takes up a huge amount of space, and then double that for two people. Add a tent, cooking gear, and associated stuff one starts to question the wisdom of deciding to camp, especially as we will probably only camp about maybe 30 days in the whole trip. I reckon our camp gear takes up about 1/3 of our volume and possibly just under 1/3<sup>rd</sup> of or weight. So why are we taking it? Well we love camping in amazing places. The feeling of adventure is so much more than staying in an Airbnb. (We are unlikely to camp through SE Asia / China and Tibet)

**Other Stuff** includes things like cameras, phones, chargers, documents, licenses, medical kit etc. Again there are comments out there about enjoying the ride rather than filming it, which is somewhat true. You can go mad and spend too much time doing just that and then having to sift through images and edit videos which can be time consuming. However, I do actually quite enjoy photography and although I have not done much video work I find it interesting so what better way to enjoy oneself than do do something you like so long as it does not become a chore or get in the way of the ride itself. We also believe it will be a great thing to have when we are even older and enjoy reliving past memories.

## **Packing the Gear**

We then packed all the gear up and weighed it all. Surprisingly our first pack showed us being just below the maximum payload but our volume was too high- we could not fit everything we wanted into our panniers and had more items strapped to the panniers than we wanted.

We made sure that all the heavy items were packed as low as possible, things like the tools and spares and then made sure only the lightest items were placed in the top box to reduce weight high up. We also tried to distribute the weight evenly between one side to the other. We looked at the fore and aft balance of the bike and considered how to minimize the weight at the back of the bike.

As the bike stands with just me the rider sitting on the bike it is front heavy with half a tank of fuel, defiantly front heavy with a full tank of fuel. With a pillion passenger and luggage the weight balance naturally shifts aft. Based on factory information and a full tank of fuel (30 ltrs) I calculated that with a pillion passenger and all our luggage the balance ratio would be 43% to the front and 57% on the rear. Nowhere near as bad as I thought it could have been and actually pretty good, considering we are 2 up with luggage.

I looked at ways in which we could transfer some of the weight forward. Suggestions of adding bags to the front crash bars were discounted as although they provide more packing volume and great access for some items, the items we can store in them, and the volume and weight they hold, would make so little difference to the weight distribution and they actually add a small amount of weight (of the bag). The contents are also more vulnerable. The only items that I did end up moving forward after the test run were all the camera equipment, batteries other stuff etc in a tank bag with the added benefit of being easily accessible and easy to remove and take with us.

## **The Test run**

We then set off on our test trip, roughly 10% of our big trip, where we camped, to test all our equipment out, and find out what we used and what we did not use. Along with how the bike handled the extra gear /weight. What did we learn? When underway the bike still felt remarkably nimble, hardly noticed the difference. Stopping distances were longer so we slowed down and kept a greater distance between ourselves and other vehicles to compensate for this. I did not feel at all like the bike was back end heavy or that the front

wheel was light nor did the bike wallow or dive. (Suspension setting was made to 2up) Where I noticed the biggest difference is both of us mounting the bike, setting off, stopping in traffic and dismounting, manoeuvring the bike whilst off, with a significantly higher risk of falling over at a standstill. I had to pay particular attention to the camber in roads when stopping at traffic lights to ensure my feet were planted firmly on the correct side, (high side) as any lean increased the risk of a stationary topple. Being a taller rider or having a lower seat height would help this issue considerably. (We now have a lower seat)

We tested all our camping gear, bike gear and were pretty pleased overall. We decided we would swap our gas powered Jetboil camping stove for an MSR multi fuel stove because: a) the gas Jetboil canisters are not that easy to find, b) you have to carry a few gas canisters as they don't last that long and they are bulky. c) From experience the Jetboil stove is very poor at altitude. The MSR multi fuel stove runs on unleaded so we can siphon it from the bike tank and it's lasts a long time. The 1ltr fuel bottle can also serve as a small reserve for the bike, although it's unlikely we will need it where we are going.

We also now very rarely fill the bike up with fuel to its 30ltrs capacity as we generally stop every hour or so and there are plenty of fuel stations. We normally top up to a max of 15ltrs in the tank which gives us a 300 km range, saving about 11kgs, or 5% of the payload.

By the end of the test trip I got used to handling the bike better and could perform tight U turns at slow speeds. Coming to a standstill was still the major concern but shedding even 10-15-20kgs would not fix this.

We had stored our water bottles in the panniers and now wanted these stored outside as they made the contents wet with condensation and possible leaks but also wanted easy access as we drank a lot in the hot weather. We had stored some items outside of the panniers like sleeping bags and shoes which we would have preferred to store in the panniers to protect them from the elements and reduce windage.

Our experience on the test trip also yielded some luxury items that we wish we had, like camp chairs and some additional camera equipment so we would have to decide if these luxury items were worth the sacrifice. We also agreed that we needed more water carrying capacity for the parts of the journey with extreme heat (Nullabor desert), but in something that does not take up much space or weight when empty. We also decided that we wanted to document our trip so we wanted a few more cameras and accessories. These definitely



fall under the luxury heading but we have decided that it is important to us as reliving these memories when we are two old farts sitting in our comfy chairs in our even-older-age is important to us.

On our return we started to go through everything again to see what from the “Good to Have” and “Luxury” items we were prepared to sacrifice. Although we were below the manufacturers’ max payload before the test trip we still wanted to reduce weight as much as possible. Greatest consideration for sacrifice was therefore given to high weight and high volume items. So a single T shirt takes up very little space and weight, so is going to make little to no difference but some tools weigh a lot and things like fleeces take a lot of space. We also investigated packing methods and found a couple of useful tips to help us reduce volume. Ranger rolling clothing items, which reduces volume and keeps clothes neat and then the use of compression sacks to store bulky items in to significantly reduce volume, which also have the benefit of protecting clothing from moisture and dust. Another way to reduce our total payload we implemented was to lose weight ourselves! We have given ourselves a target to lose 10kgs between us, another 4.5% of payload. I also went through our heavy tool kit and removed duplicate spanners, sockets that don’t correspond to anything on the bike and swapped out some tools for something that does the same job but is lighter and smaller.

### **The Revised Pack**

We repacked our bike with all the revised gear and equipment, making sure we kept the heavy items like tools low down and spread equally between both panniers. Nothing heavy goes in the top box to keep the weight as low as possible and we managed to get both our light but bulky sleeping bags and camping mattresses inside the panniers. The only items mounted outside are the tent and the luxury camp chairs (Nemo Moonlight. 1.7kgs for 2) and our extra 6ltr water bladder, which is only used occasionally. I added some lightweight and cheap modified PVC pipes to store the 1ltr stove fuel bottle, our 2x1.5ltr water bottles and the MSR camping stove (makes things smell of petrol if stored in the panniers). We then weighed everything again and found that with the now usual max of 15ltrs, instead of 30 liters of fuel in the tank and no reserve water, just our 2x 1.5ltr water bottles, we are **26 kgs under the Manufacturers Max payload**. If we achieve our goal of losing 10kgs of weight between us we will be 36kgs under max payload. With all this said the forward-aft balance of the bike should be about the same - 43%-57% due to a bit of rider weight loss and moving some weight forward to the tank bag.

As an interesting test I thought I would remove about 15kgs of gear from the bike (equivalent to about half of the gear weight) to see if I could notice any difference in handling and I have to say I could not, but it's not surprising if you think about it, with our bike, which itself weighs 260kgs and myself and my dear wife in our bike gear weighing about 150kgs so 15kgs, equivalent to about 1/2 reduction in our gear, only represents a small percentage of the overall weight.

## **The Conclusion**

Based on our riding parameters and route as above:

We believe that what we are taking is not excessive and indeed is quite a bit less than many other riders we came across during our research.

Myself and Jude, the largest weight item on the bike, are not overweight. We came across many riders and passengers who would have been quite a bit heavier than us, perhaps 30kgs between them, roughly equivalent to the weight of our gear. The bike is designed to carry people much larger than ourselves with luggage.

We believe the bike is more than capable of handling the payload we are taking as its about 26kgs below and have read very few failure reports despite the high number of this model bike being manufactured. That said there is always a risk of failure but we don't believe it's significantly increased.

Yes, the bike is more difficult to manoeuvre at low speeds but this is mainly due to the pillion rider and the weight being high up and mobile, something which we cannot do anything about.

We don't believe the bike handles significantly differently underway. Does not feel back end heavy, front-end light or brakes impaired.

## Review of Objectives

- *What is the maximum weight of gear we can take?*

Published Payload with full tank	220kgs
Additional payload due to ½ refuelling	11kgs
<b><u>Available payload</u></b>	<b><u>231kgs</u></b>
Less weight of pannier set	21kgs
Less weight of rider and pillion	150kgs
<b><u>Net available payload for gear</u></b>	<b><u>60kgs</u></b>
Actual weight of gear taken	34kgs (excludes 6L emergency water)
<b><u>Amount under available payload</u></b>	<b><u>26kgs</u></b>

- *What impact would this have on the bike?*

Any additional weight has an impact on the bike and adds additional stress on its parts, particularly suspension and frame. However based on being significantly under the Payload and from research, we cannot see any significant risk in taking what we have.

- *What impact would this have on the rider?*

In riding with a pillion passenger the weight of our gear had very little extra effect on the rider. Riding with a pillion has a significantly larger effect than the weight of our gear. More consideration in slow speed manoeuvring, stopping and starting and getting on and off the bike is required.

- *What are the items that we are going to pack and is it sufficient or excessive?*
- See the packing list below for items we are taking. We believe they are sufficient and not overly excessive. Yes there are some luxury items.
- *If we did significantly reduce luggage weight what difference would it have on the bike and rider?*

Based on a test run taking significantly less gear/weight we found there was no appreciable benefit.

## Is there anything else worth considering?

An upgrade to the suspension might be useful but we will wait for the failure to occur rather than trying to predict something that might not happen. This might cost us a week or two somewhere.

Soft panniers would be another consideration. They are slightly lighter and might be less prone to damage and causing damage to the rider and pillion. We would have to make sure they have a similar carrying capacity. (If I didn't already have the BMW panniers I would have purchased the Lone Rider semi rigid panniers).

We would have purchased a slightly lighter tent if we did not already have one, saving 2kgs

## Packing List

	Comments	Qty
<b>Richard's gear</b>		
T shirts	Wool/wool mix. Best for all climates. Quick dry.	4
Shorts/trousers	Combination Shorts and trousers (zip off)	2
Socks	Wool. Long and short	6
Underwear	Wool/wool mix	5
Thermal underwear - long John's	Wool	1
Thermal LS top	Wool	2
Down jacket	Compact	1
Fleece		1
Towel	Quick dry	1
Toileteries	Toothbrush, paste, soap, razor,	
Crocs - shower / camp shoes		1
Hiking shoes		1
Lightweight rain jacket		1
Spare glasses ( reading / sun glasses)		4
Swim shorts		1
Neck roll		1
Sun hat		1
<b>Jude's gear</b>		
Underwear		5
T shirts	Wool and light cotton	4
Long Johns thermal	Wool	1
Long sleeve thermal	Wool	1
Mid layer	Wool	1

Fleece	Polyester	2
Down jacket		1
Socks	2 long 2 short	4
Trousers		3
Swimsuit		1
Scarf		1
Crocs		1
Hiking shoes		1
Sun hat		1
Towel		1
Toiletries		1
<b>Camping (both)</b>		
2 man tent inc groundsheet	REI. 4kg	1
Sleeping pads	Thermarest. Tried and tested.	2
Sleeping bags	Down	2
Sleeping pad liner	Silk with stretch sides	2
Multi fuel stove	MSR Dragonfly	1
Cooking pot	Titanium	1
Bowls/mugs	Titanium	2
Cutlery	Titanium	2
Fuel bottle	887ml MSR bottle	1
Head torches		2
Waterproof matches / lighter		1
Water bottles- drinking	1.5 ltr each	2
Washing up equipment	Scrubber, cloth, dish soap	1
Fabric for outside tent	Tarp type. 1msq	1
Cutting board	Ultra thin	1
Kitchen knife		1
Camping chairs	Nemo Moonlite	2
Pillows	Inflatable	2
Water purifier	Katadyn	1
Water pack	Extra water bladder. +6L for remote areas	1
Small rucksack	Ultra small packable	2
Wet wipes		1
Aero press coffee maker		1
Rubbish bags		2
Paper towel / loo roll		1
<b>Equipment</b>		

Compression sacks	Sea to Summit Ultra sil Compress clothes	6
Leatherman		1
Phone		2
Charger with 2 cables		1
Selfie stick for phone		1
Stick for insta 360. 3m		1
Lens cleaning cloths		2
iPad		1
Sunscreen		1
Face masks	For crowded places to reduce chances of COVID	
Mosquito net for head	Over head	2
Mosquito repellent	40% Deet	2
Insta 360 camera and mount		1
GoPro and mounts	Hero 11	1
Drone	DJI mini 3 Pro	1
Shoe and hand warmers	Heat beads.	10
Memory cards and reader and cables		1
<b>Bike tools and parts</b>		
Puncture repair kit	Stick and snap off types with tools	1
Inner tube	19ins for emergency	
Tyre Compressor	12v	1
Dynema towing line	15m	1
Tiedowns	Rok straps,	
Oil filter	Purchase in Perth	2
Spare brake and clutch levers	BMW	1
Tyre levers / bead breaker	MP bead Pro	2
Fuses		
Tyre pressure gauge	Pencil type	1
Metal epoxy		1
Zip ties	Plastic and metal	10
Loctite	Red and Blue	2
Wire	Emergency fix	1
Spare wheel spokes	2 front 2 back	4
Workshop manual	Digital	1
Valve shims	Based on last check	4
Brake pads	2 front, 1 rear	
Spark plugs	NGK DCPR 8EKC	2
Spare keys	1 complete 1 just key	2
Bike lock	Disk lock	1
Bike cover	Black. Full cover	1
Helmet / gear lock	Cable and lock	1

Air filter	Purchase in Perth	1
Small WD 40		1
Spare torx bolts	Various BMW	
Insulation tape		1
Duct tape	Small roll.	1
Thermolite plastic	Small piece	1
Exhaust servo eliminator Healtech	ESE/1BM1	1
Side stand switch eliminator		1
Brake bleed hose. 6mm. Fuel siphon hose	1m	1
Spanners-open / ring	8,9,10,11,12,13,14,15,16,17	
Sockets and ratchet	1/4 ins ratchet with 5.5mm-14mm sockets	
Torx	T10,15,20,25,27,30,40,45,50,55	
Alun key fittings	3-10mm	
Vice grips		
Screwdriver set	One driver with multiple head fittings	
Adjustable pliers		
Small hammer		
Adjustable spanner	To 26mm	
14mm spark plug socket 3/8		
Extension bar 3/8	Short and long	
Oil filter removal tool		
Tyre valve removing tool	On Tyre valves	
Spare Tyre valves	Non sensor type	
Coil pack removing tool		
Feeler gauge		
Folding funnel	Small thin sheet that folds to form funnel	
Torque wrench	Small digital	
GS 911 diagnostics tool		
Wire brush	Small	
Sand paper	Various small sheets	
<b>Riding gear</b>		
Jacket		
Trousers		
Boots		
Winter gloves		
Summer gloves		
Waterproof over gloves		
Lightweight balaclava		
Ear plugs		
Helmet		
Intercom	Cardo packtalk edge	

Medical Kit	TO BE AGREED	
Antibiotics		
Antihistamine cream		
Band aids		
Steri strips		
Alcohol wipes		
Antiseptic cream		
Bandages		
Barrier cream		
Splint options		
Painkillers		
Tweezers		
Scissors		
Hydration powder		
Altitude sickness tablets		
Lamacil anti fungal cream		
Oxometer		
Nurofen / Paracetamol		
Vaccinations		
Emergency Blanket		
<b>Other</b>		
Original rego doc		
Good Colour copies of rego doc		
Copies of passports		
Medical Insurance		
Passport photos		
Original CDP carnet		
Copies of carnet		
International drivers licenses		
Copies of IDP		
Spare number plate.		