



## Imperial College Union Finance and Risk Committee

**Date**

<b>AGENDA ITEM NO.</b>	
<b>TITLE</b>	Large Harlington Grant purchase – club towing vehicle
<b>AUTHOR</b>	James Medler
<b>EXECUTIVE SUMMARY</b>	Decision to purchase a towing vehicle using the funding provided by the Harlington Fund (already allocated)
<b>PURPOSE</b>	Towing vehicle for clubs & societies use for multiple uses
<b>DECISION/ACTION REQUIRED</b>	Decision on purchase

## **Brief History**

Earlier this year at College Council, a fund of £48,943 was approved for the Underwater Club at Imperial to purchase a towing vehicle with upgrades for use by themselves and other clubs at Imperial College Union. The use and history for this can be seen in the Proposal document below, as well as the more detailed summary provided by the Underwater club, where 29 clubs have shown its use. The money is approved to be spent on this vehicle, or similar, but due to the nature of the size of expenditure, is being run by F&R prior.

## **Cost**

The cost of the vehicle, service package (first and second services) and the upgrades for expeditions comes to £43,662. The remaining ~£5,000 would then be able to be put aside as a specific pot for truck maintenance / if income varied year to year. Annual maintenance costs as in appendix B are estimated at £2,089 per year, and a strategy for hiring costs of the minibus would need to be looked into. This would work out at needing to make £55 per week (over 38 weeks of term time). There is at minimum one, usually two to three clubs going on weekend trips, every week during term time, hiring a minibus at a cost of £300. The majority of these trips would also require use of the truck going forwards for the transport of their equipment. Whilst it does need to be looked into further, a hire cost of even £100 per weekend would cover the maintenance for the year, with any unlikely shortfall initially being able to come out of the remaining £5,000. This would enable the hire cost to remain as cheap as possible to the clubs, without any financial burden on the Union.

## **Tests**

Whilst not looked into yet, we need to properly establish a testing procedure for the drivers, to ensure that the vehicle is in good hands – and our students are safe driving it. It is currently proposed that only those with B+E licenses (trailer training) are able to use this vehicle with trailer, or without. Those clubs who need the vehicle mostly already have this license, however centrally organising and advertising this to students could be a possibility.

## **Sustainability**

One item for F&R to be aware of is the sustainability going forwards. Whilst this towing vehicle can be funded, and maintained, it begs the question of what happens in 5-10 years when it reaches its lifespan. This could be built into the cost of hire, increasing it in line with the minibus hire fees, or could be looked at separately, but is here for committee awareness.

## **Decision**

A decision needs to be made on the purchase of this vehicle. A pricing strategy needs to be fully formulated, but it has been demonstrated that this would be a possible amount to generate over the year in the documents, and likewise tests need to be worked out. Ultimately, the money for this vehicle has been provided, with approval from College on the type, the assurance that has been undertaken in documents also provided is extra assurance for the Union that this is the correct vehicle. Please see both attached for your reference – the application itself, and the further information.

## HARLINGTON GRANTS FUND COMMITTEE – PROPOSAL FOR A LARGE CAPITAL GRANT

This form must be completed for all large capital grant applications. Please read the instructions at the end of this form and be as specific as possible when completing it. Completed applications should be forwarded by email to the Deputy President (Clubs & Societies) in the first instance ([dpcs@imperial.ac.uk](mailto:dpcs@imperial.ac.uk))

### APPLICANTS

PARTY 1 NAME	Imperial College Union (Co-ordinating party for all large capital grant proposals)
PARTY 2 NAME	Imperial College Underwater Club (ICUC)

### PARTY 2 CONTACT DETAILS

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### PARTY 3 CONTACT DETAILS

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### PARTY 4 CONTACT DETAILS Enter the details of the person co-ordinating the application.

NAME	
ADDRESS	
EMAIL	
PHONE NUMBER	

### PARTY 5 CONTACT DETAILS Enter the details of the person co-ordinating the application.

NAME	
ADDRESS	
EMAIL	
PHONE NUMBER	

## PROPOSAL

1. TOTAL AMOUNT APPLIED FOR (£)

48,943

2. What is the purpose of the grant that is being applied for, and how is the total amount applied for made up? Please include competitive quotes where relevant. You may continue on a separate sheet if you require. \*

DESCRIPTION	AMOUNT APPLIED FOR
Volkswagen Amarok V6 3.0 TDI manual with tow bar, parking sensors, fog lights, tyre pressure warning, centre brake light and cargo lights, rubber flooring. Note this is the vendor's recommended on the road price including first registration fee, Delivery to van centre, vehicle excise duty (VED), and number plates.	£33,863
Expeditions equipment Truck top, front winch bumper and winch, snorkel and waterproofing, roof rails, front and rear roof light bar, additional driving lights, and safety beacon.	£9,000
ICU decals to ensure the vehicle can be identified as an Imperial College Union asset	£500
0.75t weight rated hard top trailer	£3,250
5% contingency	£2,330
<b>TOTAL AMOUNT APPLIED FOR</b>	<b>£48,943</b>

### 3. CASE FOR SUPPORT FOR THE PROCUREMENT OF AN OFF-ROAD EXPEDITIONS VEHICLE

#### Proposal, Use-Cases, and Key Benefits

The Imperial College Union operates a highly successful minibus hire scheme to its members providing transport for groups of up to fifteen students for all kinds of activities. This large capital grant application is for the addition of an off-road capable expedition vehicle to the hire scheme to all members to enable them to endeavour in a wide range of currently hard to access activities. The 4x4 vehicle should be equipped with standard expeditions gear and accompanied by a 0.75 tonne trailer to be used for the transport of club equipment and safe towing training.

Having canvassed a wide range of clubs, it was identified that such a vehicle and trailer would for example enable the following use cases:

- towing of high weight rated club equipment,
- towing training to obtain a B+E license,
- transport of specialist or bulky equipment,
- transport, launch, and recovery of boats on hard accessible locations,
- safe access to off-road locations and other locations not accessible by a minibus, and to
- enable focussed expeditions requiring off-road gear.

The following examples identified during the consultation highlight just a few of the possible additional experiences brought to Union members:

- Team Bo' currently depends on the goodwill of an alumni towing the City & Guilds College Union's official motorised mascot to rallies and events as Bo's trailer weight exceeds the rating of the current Union hire fleet. Commercial hires are not feasible due to age restrictions and lack of facilities to train members in towing. The addition of a high towing weight rated 4x4 vehicle would safely transport heavy club equipment like Bo'. Towing training to obtain a B+E license could be organised using the new vehicle.
- The Gliding Club also depends on the availability of member vehicles for their activities involving glider transport. Whilst the minibuses could transport the majority of their equipment, some requires a B+E license and appropriately rated vehicle not existing in the Union hire fleet. The proposed off-road vehicle would better suit the gliding club as their activities typically involve no more than five people. The ability to tow their glider using the 4x4 would allow them to drive the plane directly on the mostly off road (air) fields and safely recover upon landing. A winch would add extra safety to their operations.
- The Underwater Club have two boat trailers in regular use, one of which is rated 2 tonnes requiring a B+E license. The transport of the main expedition boat is not supported by any vehicle in the Union hire fleet. Consequently, current dive expeditions are restricted to the boat's mooring location. The club is dependent on alumni to support a wide range of expeditions and adventurous diving. In addition to the aforementioned high weight rating and B+E training possibilities, the Underwater Club would benefit from an all-wheel drive vehicle with high torque, high clearance, and sufficient power required to safely launch and recover its boats. A winch would support diving of hard to access locations like very steep harbour slipways or beaches.

- The Surfing Club is restricted on the ability to transport a sufficient amount of surf boards on their trips. The proposed vehicle would provide a roof rack to conveniently transport all gear for its passengers, whilst the proposed trailer would enhance the experience of students participating in larger expeditions by enabling the club to cater for such equipment needs.
- The Canoe Club currently relies on the bus roof racks to transport kayaks. With an average kayak weight of 15-20kg and maximum roof load on a Ford Transit of 100kg this significantly limits their ability to legally transport boats for all participants in a 9 or 15-seat bus. The proposed trailer would provide additional loading space for kayaks, and could be towed either with the new towing vehicle, or a 9-seat minibus.
- The Outdoor Club currently run expeditions in a 15-seat minibus. The addition of a 4x4 vehicle would enable them to access new destinations for climbing and hiking and increase their ability to transport specialist equipment including safety kit directly to locations. Furthermore, they would be able widen participation by increasing the size of expeditions by to 5 members.

The addition of such an off-road capable expedition vehicle including trailer would have the following ongoing key benefits:

- Allow the running of more adventurous trips to new locations safely and legally.
  - Enable members to develop further within a club.
  - Inspire newer members, which is anticipated to improve student membership growth and retention.
- Enable students to gain towing experience, train for, and obtain a B+E license.
- Make current towing-based activities sustainable in removing the dependency on alumni members to having both a B+E license and appropriately rated vehicle.
- Raise Imperial College Union profile by running research focussed expeditions under the Union brand.

The idea for the grant application was developed based on a recent development in the Underwater Club. Imperial divers recently run a research focussed expedition with the aim to collect evidence for the expansion of a Marine Conservation Zone in Cornwall supporting a national initiative of marine conservation activists. The authors believe the Union should provide facilities to enable members to participate in such activities that raise the merit of the Union by supporting similar activities.

#### Vehicle Choice and Value for Money

Having highlighted the advantages and long-lasting benefits of the extension of the Imperial College Union’s hire fleet, we would like to provide further details on the choice of vehicle and a proposed funding model for on-going costs for upkeep and servicing.

Members of the Underwater Club invested time in comparing a wide range of vehicles based on initial capital expenditure, on-going cost for upkeep, repairs, and servicing, as well as ability to cater for the aforementioned use-cases. A summary of this work can be found in the summary table in Appendix A. Following this research, we propose to procure a Volkswagen Amarok (V6 3.0 TDI Euro 6 engine, manual, front + rear diff lock) equipped with the required expeditions kit including tow bar, truck top, winch, roof rails, additional driving lights, roof light bar (forward and backwards), and beacon. The vehicle offers an excellent balance between power, torque, payload, towing capabilities, whilst providing excellent running costs due to affordable parts and high maintenance intervals.

Based on an annual mileage of 18,000 miles and the official vendor’s servicing schedule, the annual service, maintenance and repair cost of the vehicle is estimated at £2,089 including road tax. The vehicle would need adding to the Union’s fleet policy and due to the inclusion of young drivers, we estimate this at another £1,000. The operational cost of the trailer is anticipated to be £250.

#### Operational Cost, Risks, and Model

In addition to the aforementioned servicing, repair, insurance and tax adding up to £3,089 we assume a total annual operational cost of £4,000 to cover the Union’s additional administrative overheads. Based on existing minibus usage fees, this would result in the following proposed usage fees of about 70% of the 9 seat minibus charges:

Period	4x4 Expeditions	9 Seat Minibus	15 Seat Minibus
2-4 hours	£25.00	£38.00	£55.00
Weekend (3pm Fri – 12am Mon)	£180.00	£263.50	£300.00
Full week	£310.00	£443.50	£535.00

Following the Union’s 2017/18 impact report<sup>1</sup>, the well-established minibus scheme had 1,077 bookings for about 15 vehicles. This equates to about 72 bookings per vehicle. Adding a more specialist vehicle, we would cautiously assume half the usage with 15 weekend bookings, 3 full week bookings, and 15 half-day bookings (for training). The proposed trailer hire fee is £10 per day and free for training.

This very cautious usage pattern would result in an annual income of £4,005 for the expeditions vehicle, which would very well cover all operational cost and thereby exhibit very low financial risk to the Union. Any additional usage fees should be put into a designated monetary fund primarily aimed at covering a replacement vehicle or emergency fund for a low-income situation.

<sup>1</sup> <https://www.imperialcollegeunion.org/news/read-our-impact-report-201718>  
<https://www.imperialcollegeunion.org/about-us/annual-reports>

The vehicle and trailer are intended to be managed as part of the Union's current minibus fleet. To ensure the vehicle is used primarily for the extension of activities the following order of hire preference is suggested. This is based on the difficulty and cost of sourcing an alternative vehicle.

1. B+E towing requirements including high torque activities (for example off-road towing, launch of boats)
2. B+E towing requirements excluding high torque activities
3. Off road activities excluding towing
4. Non-B+E (<750 kg) towing activities
5. Other hires (for example small or overseas trips)

#### **Driver Training and Safety**

Every driver should undergo the standard Imperial College Union safe driving induction.

In order to ensure safe towing practices, it is proposed that all members wishing to hire the vehicle for non-B+E towing purposes (<750kg) undergo the following training:

- An online theory assessment relating to towing safe driving practices, speed limits and loading
- A towing induction using the box trailer, to include basic maneuverings, hitching, and trailer checks. This induction could be led by any B+E qualified union member and members of the Underwater Club are happy to volunteer to start this scheme.

For B+E towing requirements (>750kg) all users will be legally required to have a B+E license and will have undergone relevant training to obtain this. It is proposed that B+E qualified members are required to complete the theory assessment only.

The car should be accompanied with a special check-out and check-in form collecting additional information required for the upkeep of the expedition equipment. Due to the nature of the envisioned off-road activities the engine should under no circumstances be restricted or limited.

#### **Summary**

This Harlington Large Capital Grant Application aligns well with the trust's values and offers large benefits to the student body by providing a new vehicle type under the successful Union minibus hire scheme. The integration into this well-established scheme shall safeguard the investment, reduce the financial risk profile, and provide long lasting availability of the new resource. It is safe to say this application having cross club support as the authors received almost entirely positive feedback as part of the consultation of 28 clubs which welcomed the ability to widen club activities or endeavor on new adventures.

#### **4. Please give details of the club's or society's current finances. If multiple parties are applying, please use a separate paragraph for each. You may continue on a separate sheet if you require.**

The Underwater Club currently has the below financial details:

SGI	£9209.08
DMF - Boat	£20,000
DMF - Equipment	£5000
Grant	£4341.46

The Underwater Club's annual grant was cut by 10% for the 2018/19 financial year and the club is already under high financial pressure to cover regular operational expenses.

#### **5. Please give details as to why the bid cannot be provided for out of the club's or society's own funds. If multiple parties are applying, please use a separate paragraph / table for each. You may continue on a separate sheet if you require.**

Though the club has a reasonable sum in SGI, it is unable to use these funds for the vehicle. The SGI is maintained at this level to cover the cost of large and unexpected repairs on boats or equipment, which cannot be guaranteed on being approved by the Union contingency scheme.

The DMFs the club have in saving are for the replacement of high capital expenditure items such as the boat, compressor and diving equipment. Reassigning these savings would compromise the club's ability to plan for its core activities.

#### **6. Have any other sources of financial support been confirmed, e.g. from an application to the Imperial College Trust?**

No.

**7. Are there any other applications for financial support outstanding / intended?**

No.

**8. Please provide details of previous applications made by all parties to this proposal to the Harlington Committee within the last three years (date of application, amount requested, amount awarded and date of report).**

The Harlington Grant supported the Underwater Club in October 2015 with £6,000 to replace a broken compressor.

**9. If applicable, please provide details of where the club or society intends to safely store the equipment listed in the application, and what steps you have taken to ensure that sufficient storage space is available.**

A key element of the proposal is the off-road expeditions vehicle and trailer joining the existing minibus hire scheme operated by the Imperial College Union. It is envisioned that the 4x4 and trailer will be collocated with the existing pool of vehicles on the South Kensington campus.

We reached out to the Imperial College Union on the 27<sup>th</sup> September 2018 to review this application and potential parking locations. However, they were unable to assist until later into the term. In the event college parking not being available, we anticipate there being sufficient parking space available at the Harlington Sports Ground for trailer and vehicle storage.

**10. EVALUATION: You will be required to submit a report once the proposed project has been delivered. This will be used to help assess its impact. Please outline the main benefits against which this impact should be measured. Please note that evidence should be available to show that these goals have been met.**

We propose to measure all the anticipated benefits using the following criteria:

- Number of rentals, average duration of rental, total usage days, as well as voluntary information on usage scenario (including explicit mention of towing training) to show the positive impact on club activities and measure towing training activities.
- Correlate membership numbers of clubs using the new facility to infer impact on membership growth and retention.

Furthermore, a survey could be conducted at the end of each academic year pending the availability of the 4x4 hire information to contact each user.

## **AUTHORISATION**

I confirm that I have read the notes for applicants (on the reverse of this form).

I understand that I, or my club/society, will be required to:

- Produce receipts as proof that any money awarded has been spent as specified in this application;
- Safeguard equipment bought with Trust funds and produce it on request; and
- Produce a report for the Committee detailing how the award of money has been spent.

### **PARTY 1 – IMPERIAL COLLEGE UNION**

ICU PRESIDENT SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_

### **PARTY 2 – IMPERIAL COLLEGE UNDERWATER CLUB**

UNDERWATER CLUB PRESIDENT SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_



## Appendix A – Vehicle Comparison Summary

Make	Landrover	Landrover	Toyota	Isuzu	Jeep	Volkswagen
Model	Defender 110 Utility Wagon	Discovery 3.0 TD6 HSE	Hilux Double Cab Icon	D-Max Yukon Double Cab	Wrangler 2.8 CRD, 4 door	Amarok 3.0 V6 TDI 204PS
Mileage	26,000 mi	12,000 mi	0 mi	0 mi	0 mi	0 mi
Engine size	2,198 cc	2,993 cc	2393 cc	1,898 cc	2,776 cc	2,970 cc
Engine HP	122 HP	306 HP	150 HP	164 HP	200 HP	204 HP
Torque	360 Nm @ 1,800 rpm	430 Nm @ 1800 rpm	400 Nm @ 1800 rpm	360 Nm@ 2500 rpm	460 Nm @ 1600 rpm	500 Nm @ 1800 rpm
Manual / automatic	manual	automatic	manual	manual	automatic	manual
Diff-lock	lockable centre diff	automatic centre diff	rear diff lock	none	traction control + EBD (Sahra)	auto front + rear
Passengers	5 pax	7 pax	5 pax	5 pax	5 pax	5 pax
Payload	1,500 kg	660 kg	1,045 kg	1,106 kg	431 kg	1,070 kg
Roof load	100 kg	80 kg	?	100 kg	30 kg	100 kg
Towing capacity braked	3,500 kg	3,500 kg	3,500 kg	3,500 kg	2,200 kg	3,000 kg
Nose weight	125 kg	150 kg	?	245 kg	170 kg	120 kg
EU Rating	Euro 5	Euro 6	Euro 6	Euro 6	Euro 6	Euro 6
Emissions	295 g/km CO2	201 g/km CO2	185 g/km cO2	183 g/km CO2	235 g/km CO2	229 g/km CO2
Fuel type	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Miles per gallon (comb)	25.50 mpg	36.70 mpg	40.40 mpg	40.40 mpg	31.40 mpg	32.50 mpg
Fuel tank size	75 l	77 l	80 l	76 l	85 l	80 l
Winch compatible?	yes	yes	yes	yes	yes	yes
Wading depth	500mm (750mm)	900 mm	700 mm	600 mm	480 mm	500 mm
<b>Purchase price</b>	<b>£42,000</b>	<b>£45,000</b>	<b>£33,500</b>	<b>£28,150</b>	<b>£41,735</b>	<b>£33,863</b>
Upgrades	£4,500	£4,500	£3,000	£8,500	£7,000	£7,000
Upgrades detail	Winch, front tow bar, extra driving lights, light bar, beacon	Winch, tow bar, light bar, beacon	Winch, ligh bar, driving lights, beacon	Tow bar, winch, light bar, driving lights, trunk cover, beacon	Tow bar, winch, light bar, driving lights, beacon	Winch, light bar, driving lights, beacon, truck top
3y linear depreciation to 50%	£7,750 p.a.	£8,250 p.a.	£6,083 p.a.	£6,108 p.a.	£8,123 p.a.	£6,811 p.a.
6y linear deprecation to 25%	£6,975 p.a.	£7,425 p.a.	£5,475 p.a.	£5,498 p.a.	£7,310 p.a.	£6,129 p.a.
<b>Annual costs</b>						
insurance group	28	31	9A	40A	28	10E
service interval	12,000 mi	16,000 mi	10,000 mi	10,000 mi	7,500 mi	15,000 mi
service price	£250	£275	£395	£350	£350	£399
service 18k mi	£375	£309	£711	£630	£840	£479
parts and repairs (original parts, strict adherence to maintenance for breaks, oil, plugs, etc)	£1,200	£1,200	£1,200	£1,200	£1,200	£1,200
road tax (1st year)	£555	£450	£830	£830	£1,760	£1,760
road tax (2nd year onwards)	£555	£450	£140	£140	140	140
<b>annual maintenance cost</b>	<b>£2,130</b>	<b>£1,959</b>	<b>£2,166</b>	<b>£2,085</b>	<b>£2,450</b>	<b>£2,089</b>
fuel cost 18k mi (£1.30/liter)	£4,172	£2,899	£2,633	£2,633	£3,388	£3,273
Total cost per annum for 3y (to 50%)	£14,052	£13,108	£10,882	£10,826	£13,960	£12,172
Total cost of ownership 3y (to 50%)	£42,155	£39,324	£32,647	£32,479	£41,881	£36,517
Total cost per annum for 6y (to 25%)	£13,277	£12,283	£10,274	£10,216	£13,148	£11,491
Total cost of ownership 6y (to 25%)	£66,384	£61,415	£51,371	£51,078	£65,741	£57,457

## **INSTRUCTIONS**

The Harlington Grant Fund Committee invites proposals to form the basis of its application to the Council in November. **This is an opportunity to think big and develop an idea well beyond the usual scope of funding which is available. Proposals are welcomed from both Clubs/Societies working individually and those working in partnership.**

Once completed according to the instructions below, this form should be emailed to James Medler ([dpcs@imperial.ac.uk](mailto:dpcs@imperial.ac.uk)). The deadline for proposals is **8 October 2018**, but earlier submission is encouraged.

Proposals must be in line with the principles of the Harlington Grants Fund Committee. They must be **for the benefit of students of Imperial College in relation to sporting, athletics and recreational facilities.**

### **(A) Proposals submitted should:**

- request between spend of £25,000 and £300,000. If you expect to exceed £300k, you must email the Deputy President (Clubs & Societies) as soon as possible with an outline of the proposal
- confirm all necessary space which is required for the proposal is secured (proposals including requests for space cannot be considered)
- Any proposal to purchase new equipment must be accompanied by details of where it will be stored and, if appropriate, where it will be used
- note other ways in which the proposed idea could be funded
- be proposed by students, or have clear student support if proposed by a member of staff

### **(B) Proposals should evidence clearly the potential for:**

- opportunities to increase student engagement and improve the experience of students at Imperial
- ongoing benefit to a wide range of students. (It is noted that at campuses away from South Kensington student numbers are limited and this is not a barrier to applications from groups at these sites)
- engagement of multiple student groups, where practicable
- lasting impact and tangible improvement on current facilities, equipment or activities

### **(C) In making award decisions the Harlington Trust's Principles will be considered:**

- **Cost/Benefit.** Whether the cost of the bid is likely to benefit an adequate number of students or the College as a whole, as compared with other bids for support;
- **Official Support.** Whether the proposed activity is part of a recognised club or society open to all Imperial College Students, has the support of the Imperial College Union and is likely to have a sufficiently long and continuous existence;
- **Financial Risk.** Whether the proposed bid is unduly dependent on commercial or non-college involvement;
- **Merit.** Whether the purpose of the bid is likely to enhance or maintain the reputation of the College through involvement in a prestigious activity or event;

- **Outside Benefit.** Whether those who are not current students are likely to benefit unduly from any grant.

All cases should include a full breakdown of costs and a summary of why the project would be good value for money. **Please refer in particular to the above mentioned criteria and principles when considering questions 3 (Case for Support) and 10 (Evaluation).**

It is envisaged that some proposals may involve the refurbishment of space operated by the College. In this case an indicative costing of works within the College framework will be required. If you are intending to submit a proposal of this nature you should contact James Medler ([dpcs@imperial.ac.uk](mailto:dpcs@imperial.ac.uk)) at the earliest opportunity to seek guidance on how these costings should be undertaken.

#### **(D) Deadline and process for consideration**

**All proposals must be submitted by no later than 8 October 2018. It is likely that some refinement of successful proposals will be necessary up to late-October and *applicants should be prepared to undertake some additional work at short notice during this period.***

When proposals have been received they will be evaluated by the Harlington Grants Fund Committee. Proposals which are evaluated as feasible by the Committee will be presented to the President's Executive Group before they can be approved for final submission to the Council in November. The Committee will evaluate proposals according to how well they meet the above criteria and the core principles of the Harlington Grants Fund Committee (see above).

**September 2018**

# Imperial College Union

## Large Harlington Grant 2018 – 4x4 Vehicle selection details

Authors: Joanna Beresford, Marko Jung<sup>†</sup>

Date: 2019-04-15

Version: 2

### Executive summary

The Imperial College Underwater Club's (ICUC) successfully applied for funding from the Large Harlington Grant for the procurement of a Volkswagen Amarok V6 3.0 TDI (manual) including substantial expeditions equipment upgrades and a 750kg weight rated hard top trailer. This document outlines the rationale for the vehicle selection with the aim to demonstrate the equipment choice is an excellent match for a wide range of student clubs and provides best value for money.

The document also provides competitive quotes for suitable vehicles. The supply of Volkswagen Amarok V6 3.0 TDI with manual transmission is decreasing fast. There are only a few vehicles available on the UK market. For this reason, **we recommend the Imperial College Union takes immediate action and reserves one of the few last remaining vehicles by paying a deposit of £1,000 for a very competitively priced model supplied by Cordwallis Heathrow.**

### Requirements engineering – survey covering ICU outdoor and sport clubs and resulting equipment considerations

Prior submission of the grant application, ICUC reached out to wide range of sports and outdoor clubs. The list of 29 involved clubs, questionnaire, and identified usage scenarios can be found in Appendix A. Following this survey, it was identified that such a vehicle and trailer should enable the following use cases:

1. towing of high weight rated club equipment:
  - *minimum 2.2t towing capacity (for Bo or ICUC boats),*
  - *minimum nose weight of 100kg,*
  - *hazard lights (to be used whilst manoeuvring and in emergencies);*
2. transport of specialist or bulky equipment like gliders, bikes, surf boards:
  - *high vehicle payload (minimum 1,000kg),*
  - *lockable hard top for cargo area,*
  - *roof rack to add extra capacity (minimum 100kg high roof load capacity),*
  - *750kg trailer to transport gear (can be used with only B license);*
3. safe access to off-road locations and other locations not accessible by a minibus:
  - *4x4 wheel drive with differential lock,*
  - *additional driving light;*
4. enable focussed expeditions requiring off-road gear:
  - *5 passenger crew cab,*
  - *2.0t winch (for vehicle recovery),*
  - *non-plastic hard-top,*
  - *bull-bar style front bumper to protect vehicle;*
5. launch and recovery of boats on hard accessible locations:
  - *manual drive gear,*
  - *450-500 Nm @ 1,800rpm torque,*

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<sup>†</sup> The corresponding author can be contacted via [mjung@mjung.net](mailto:mjung@mjung.net) or +44 7812 215 375 including iMessage and WhatsApp.

- 4.0t winch,
- Wading depth of at least 500mm;

6. towing training to obtain a B+E license (*covered by the equipment mentioned above*).

Following the successful grant application, the Imperial College Union expressed the intention to be able use vehicle and trailer to:

- 7. transport club equipment from and to storage spaces off main-site (e.g. judo mats)  
→ *hard top trailer to be able to transport gear in all weather conditions*

## Vehicle choice and value for money

The authors a wide range of vehicles based on initial capital expenditure, on-going cost for upkeep, repairs, and servicing, as well as ability to cater for the aforementioned use-cases. A summary of this work can be found in the summary table in Appendix B.

The following table matches the four best matching vehicles against the 9 non-upgradable requirements identified in the survey across the 29 outdoor and sport clubs:

Requirement	Make	Toyota	Isuzu	Jeep	Volkswagen
	Model	Hilux Double Cab Icon	D-Max Yukon Double Cab	Wrangler 2.8 CRD, 4 door	Amarok 3.0 V6 TDI 204PS
450-500 Nm @ 1,800rpm torque	Engine size	2393 cc	1,898 cc	2,776 cc	2,970 cc
	Engine HP	150 HP	164 HP	200 HP	204 HP
	Torque	400 Nm @ 1800 rpm	360 Nm@ 2500 rpm	460 Nm @ 1600 rpm	500 Nm @ 1800 rpm
manual drive gear	Drive gear	manual	manual	automatic	manual
full differential lock (front + rear)	Diff-lock	rear diff lock	none	traction control + EBD	auto front + rear
5 passenger crew cab	Passengers	5 pax	5 pax	5 pax	5 pax
≥1,000 kg vehicle payload	Payload	1,045 kg	1,106 kg	431 kg	1,070 kg
≥100kg roof load capacity	Roof load	40 kg	100 kg	30 kg	100 kg
≥2.2t towing capacity	Towing capacity braked	3,500 kg	3,500 kg	2,200 kg	3,000 kg
≥100kg nose weight	Nose weight	100 kg	245 kg	170 kg	120 kg
≥500mm wading depth	Wading depth	700 mm	600 mm	480 mm	500 mm
	Purchase price	£33,500	£28,150	£41,735	<b>£31,422</b>
# Requirements missed, close miss, met		1 2 6	2 0 7	3 2 4	0 0 9

The Volkswagen Amarok 3.0 V6 TDI 204PS manual is the only vehicle on the market that is able to meet all the identified requirements.

The authors also did a running cost analysis. The table in Appendix B. also compares the annual maintenance cost. The proposed Volkswagen has the longest service interval (20,000 miles/2 years) across all compared vehicles. This 4x4 pickup truck offers an excellent balance between power, torque, payload, towing capabilities, whilst promising excellent running costs due to affordable parts and long maintenance intervals.

**Based on the presented evidence, we are convinced the Volkswagen Amarok is the only car in the comparison that meets all requirements but also offers the best value for money in terms of annual upkeep across the compared new vehicles. Following this research, we propose the Imperial College Union procures a Volkswagen Amarok V6 3.0 TDI 204 HP with manual transmission, front + rear diff lock, and factory installed tow bar.**

## Volkswagen Amarok price comparison and availability

The authors have acquired several competitive quotes from Volkswagen Commercial Vehicle dealerships for Volkswagen Amarok 3.0 V6 TDI 204 Trendline. The individual quotes can be found in Appendix C.

Car and features	Cordwallis 1	Cordwallis 2	Colbornes 1	Colbornes 2	Marshall
Manual	X	X	X	X	
Automatic					X
Towbar	X	X	X	X	X
Differential Lock	X	X	X	X	X
Lights and Vision pack		X			
Tyre pressure warning light	X		X	X	X
Parking sensors (front + rear)		X	X	X	X
Fog lamps (and cornering)			X	X	X
Load Compartment Coating		X			
Rubber floor mats			X	X	X
Vehicle Price (inc VAT)	£ 30,626	£ 32,390	£ 33,329	£ 32,850	£ 35,591
1st service (20k miles)	£ 398	£ 398	£ 398	£ 398	£ 335
2nd service (40k miles)	£ 398	£ 398	£ 398	£ 398	£ 398
<b>Total (inc VAT)</b>	<b>£ 31,422</b>	<b>£ 33,186</b>	<b>£ 34,125</b>	<b>£ 33,646</b>	<b>£ 36,324</b>
<b>Availability (as of 2019-04-13)</b>	<b>Available</b>	<b>Sold</b>	<b>Sold</b>	<b>Sold</b>	<b>3-4 Months</b>

We have been informed that due to the changes in the EU emissions requirements, **Volkswagen has stopped production and delivery of commercial vehicles until the completion of additional emissions tests. Furthermore, the manual transmission version of the Amarok has been discontinued.**

**However, we were able to identify a vehicle available from Cordwallis Heathrow for a highly competitive price of £30,626 plus the cost of the first two services. The car can be secured for a deposit payment of £1,000 and would be delivered within 4-6 weeks.**

## Expedition equipment and upgrades to the vehicle

Assuming the Imperial College Union is able to secure a Volkswagen Amarok 3.0 V6 TDI 204 Trendline as specified above, the vehicle would need additional upgrades to meet all the expeditions requirements:

1. metal lockable truck top,
2. boot cover,
3. bull bar style front bumper,
4. winch (>4t),
5. roof rails,
6. additional driving lights,
7. wilderness lights (forward and backwards), and
8. hazard beacon.

We have obtained two quotes from 4x4 upgrade specialists (see Appendix C). These quotes have not been negotiated any further with the cheaper offering coming to £12,240 (inc. VAT). Both upgrade experts have recommended to also upgrade the suspension. This would be to cater for an even higher load capacity, but that could be done in year 3 or 4 when a suspension service will be due.

## Cost summary

A vehicle with all these upgrades would cost about £43,662.

Expense	Supplier	Cost
VW Amarok 3.0 V6 TDI manual, diff lock, tow bar	Cordwallis	£30,626
Service package (1 <sup>st</sup> and 2 <sup>nd</sup> service)	Cordwallis	£796
Expedition upgrades	PB Customs	£12,240
<b>Total vehicle price (inc VAT)</b>		<b>£43,662</b>

This would include the vehicle including delivery, paperwork, number plates, upgrades, and the first two services. This is well within the expected expenditure of the grant application.

We expect the ICU branding costing no more than £500. This would allow for sufficient headroom to procure at least one 750kg rated hard top trailer, but most likely even for the purchase a second trailer aimed at kayak and canoe transport.

## Recommended next steps

1. **The Imperial College Union should immediately secure one of the few last remaining VW Amarok with manual transmission.** This would ensure all the effort gone into this research would not be invalidated.
2. Following the deposit payment, the authors would obtain a series of revised competitive quotes for upgrades.
3. The time between delivery of the vehicle and the additional 2-4 weeks to complete the upgrades can be used to finalise last outstanding operational details.
4. The completed and fully upgraded vehicle is integrated into the existing vehicle hire scheme.

## Appendix A. Vehicle specification survey

The Underwater Club reached out to the following clubs and societies to participate in a survey to provide input into the vehicle specification:

1. CGCU VVMC	<a href="mailto:mguilds.bo@imperial.ac.uk">mguilds.bo@imperial.ac.uk</a>	
2. ICSM BOATCLUB	<a href="mailto:kit.tsar@imperial.ac.uk">kit.tsar@imperial.ac.uk</a>	
3. ICU Boardsailing Club	<a href="mailto:boardsailing@imperial.ac.uk">boardsailing@imperial.ac.uk</a>	
4. ICU Boat Club	<a href="mailto:boat.club@imperial.ac.uk">boat.club@imperial.ac.uk</a>	
5. ICU Canoe Club	<a href="mailto:canoe@imperial.ac.uk">canoe@imperial.ac.uk</a>	
6. ICU Caving Club	<a href="mailto:ic.caving@imperial.ac.uk">ic.caving@imperial.ac.uk</a>	
7. ICU Cycling Club	<a href="mailto:cycling.club@imperial.ac.uk">cycling.club@imperial.ac.uk</a>	
8. ICU Exploration Club	<a href="mailto:exploration@imperial.ac.uk">exploration@imperial.ac.uk</a>	
9. ICU Fellwanderers	<a href="mailto:fellsoc@imperial.ac.uk">fellsoc@imperial.ac.uk</a>	
10. ICU Gliding Club	<a href="mailto:gliding@imperial.ac.uk">gliding@imperial.ac.uk</a>	
11. ICU Motor Club	<a href="mailto:motor-club@imperial.ac.uk">motor-club@imperial.ac.uk</a>	
12. ICU Mountaineering Club	<a href="mailto:mountain@imperial.ac.uk">mountain@imperial.ac.uk</a>	
13. ICU Outdoor Club	<a href="mailto:outdoor@imperial.ac.uk">outdoor@imperial.ac.uk</a>	
14. ICU Pilots Club	<a href="mailto:pilots@imperial.ac.uk">pilots@imperial.ac.uk</a>	
15. ICU Racing Club	<a href="mailto:ic.racing@imperial.ac.uk">ic.racing@imperial.ac.uk</a>	
16. ICU Racing Green Team	<a href="mailto:racinggreen@imperial.ac.uk">racinggreen@imperial.ac.uk</a>	
17. ICU Riding and Polo Club	<a href="mailto:riding@imperial.ac.uk">riding@imperial.ac.uk</a>	
18. ICU Rifle and Pistol Club	<a href="mailto:icrpc@imperial.ac.uk">icrpc@imperial.ac.uk</a>	
19. ICU Sailing Club	<a href="mailto:sailing@imperial.ac.uk">sailing@imperial.ac.uk</a>	
20. ICU Scuba / Underwater Club	<a href="mailto:scuba@imperial.ac.uk">scuba@imperial.ac.uk</a>	(Lead applicant)
21. ICU Ski Club	<a href="mailto:ski@imperial.ac.uk">ski@imperial.ac.uk</a>	
22. ICU Skydiving Society	<a href="mailto:parachute@imperial.ac.uk">parachute@imperial.ac.uk</a>	
23. ICU Surfing Society	<a href="mailto:surfsoc@imperial.ac.uk">surfsoc@imperial.ac.uk</a>	
24. ICU Wakeboarding	<a href="mailto:wakeboarding@imperial.ac.uk">wakeboarding@imperial.ac.uk</a>	
25. ICU Wilderness Medicine	<a href="mailto:wmed@imperial.ac.uk">wmed@imperial.ac.uk</a>	
26. ICU Yacht Club	<a href="mailto:yacht@imperial.ac.uk">yacht@imperial.ac.uk</a>	
27. RCS Motor Club	<a href="mailto:rsmc@imperial.ac.uk">rsmc@imperial.ac.uk</a>	
28. RSM Geophysics Society	<a href="mailto:geophysoc@imperial.ac.uk">geophysoc@imperial.ac.uk</a>	
29. RSM Motor Club	<a href="mailto:rsmmc@imperial.ac.uk">rsmmc@imperial.ac.uk</a>	

### Questionnaire

The initial message inviting to participate in the vehicle specification was sent 17<sup>th</sup> September 2018:

*Hi everyone,*

*I am contacting you on behalf of the Underwater club about the large capital Harlington grant the union are offering this year. If you don't know what this is, the union are asking for grant applications at a minimum amount of £25,000 and have a pool of £500,000.*

*I think the proposal the underwater club is putting together will help many clubs and perhaps especially yours. The proposal is simple: we would like to propose the purchase of a towing vehicle and <750kg rated trailer. And possibly on top of this funds the union can use to maintain and teach students towing (but these are details can be ironed out after meeting with the union).*

*If you are tight on time please just read the bullet points below and reply if they interest you. Even better continue reading for more details and some questions that will help us devise the best application. Please note the first deadline for this is the 1<sup>st</sup> of October so a reply either way ASAP would be much appreciated!*



**The benefits that this could bring your club are:**

- A smaller vehicle that would be cheaper than minibuses for when you have only a small requirement on people but possible large requirement on equipment. How many 4 people trips have you had to cancel due to minibus cost!!?
- A vehicle with off road capabilities able to access roads, parking and facilities not possible with a minibus. For example, if a minibus can't get down to a beach this vehicle could at least drop off equipment.
- A vehicle that can tow! This could be specific equipment you have (we have boats that need towing) or it could be a tow box (we have included one in the application) that you can fill with equipment.
- A more niche reason that probably only affects a subset of you: it would be able to launch and recover boats. We currently have two boats (both ribs) that if we could tow easier we could use to teach powerboating courses to anyone interested.

Many thanks for your patience so far!

Specifically, the underwater club's interest in this is due to: we have two boats that require towing and slipping a few times a year. A union towing vehicle would remove a lot of the complications we currently encounter arranging this and allow the club to extend its activities by running more adventurous and remote trips. We imagine a vehicle along these lines would benefit your clubs also, but would like to understand what use case you would have for such a vehicle. The initial specification requirements we have are as follows:

**Vehicle**

The vehicle should be a heavy-duty towing and off-road capable vehicle, with a spec along the lines of a Landrover Defender 110 (utility truck), or a crew-cab pickup with off road capability. As well as being able to tow it should be able to support non-towing expeditions by making it easier to transport equipment to less accessible locations. We anticipate it having the following features:

- Tow capacity of minimum 2.2 tonnes
- Payload exceeding 1 tonne (including passengers)
- Seating for 5 passengers, so that it could support small expeditions on its own
- A heavy-duty roof rack
- A winch rated to minimum 2 tonnes
- 4x4 drive with off road capabilities (including differential lock)

**Trailer**

The trailer purchased with the vehicle is proposed to be a 750kg rated box trailer, in order to allow anyone to tow equipment on their current license. This trailer would then also be available for clubs to use for training if they have members looking to get the B+E license. Furthermore, the trailer would be useable behind a 9-seater minibus.

**Towing/training**

As part of the application we will need to include proposals on how we plan to train users in towing weights <750kg, and support the official training of union members for the B+E license.

If this is something you could envisage your club having any use for please could you complete the below questionnaire by end of Monday 24/09/2018? You don't need to complete the full thing, just the general questions and any specific features relevant to you.

### **General questions**

1. *Would your club benefit from the availability of a 5 seat, high payload vehicle? If so please describe what activities this would benefit or extend.*
2. *How often would you envisage using such a vehicle?*
3. *Would this vehicle allow you to extend activities which have not previously been feasible?*

### **Questions specific to features**

4. *Does your club have any towing requirements?*
  - a. *What do you tow?*
  - b. *What is the weight rating of your trailers?*
  - c. *How do you currently meet your towing requirements? What is the cost of this?*
  - d. *Do you have any B+E level (>750kg trailer rating) towing requirements?*
  - e. *If so, do you have any trained towers in your club?*
5. *Does your club (or would like to) undertake any high torque activities (e.g. slipping boats, launching gliders, lumberjacking, ...)?*
  - a. *Please describe the activity*
  - b. *How do you do this currently? What is the cost of this?*
6. *Does your club (or would you like to) undertake any off-road or non-standard terrain driving?*
  - a. *Please describe the terrain (fields, beaches, snow, etc)*
7. *Does your club have a high equipment to person ratio?*
  - a. *What do you transport?*
  - b. *Roughly what is the equipment weight per person on a standard trip?*
  - c. *What would the equipment weight per person potentially go up to on an expedition level trip?*
8. *Would a winch be a useful feature for your club?*
  - a. *Please describe what activities this might be useful for.*
9. *Does your club use roof racks?*
  - a. *What do you transport on roof racks?*
  - b. *What is the minimum weight loading you would require from a roof rack?*
10. *Would a box trailer be useful for your club?*
  - a. *What equipment would you take in the trailer?*
  - b. *What dimensions would you require from the trailer (e.g. for canoe roughly how long are the boats)?*
11. *Does your club do much urban driving, apart from leaving London (in order to judge importance of emissions in vehicle selection)?*
12. *Are there any other features which would be useful for your club? (E.g. warning beacons, raised air intake and waterproofing, roof tents). Please describe these and how they would benefit or extend your activities.*
13. *Are there any similar spec vehicles you've used for your own activities in the past that you think should be considered?*

Thanks, [...]

## Use-cases based on the survey

The following examples identified during the consultation highlight just a few of the possible additional experiences brought to Union members:

1. Team Bo' currently depends on the goodwill of an alumni towing the City & Guilds College Union's official motorised mascot to rallies and events as Bo's trailer weight exceeds the rating of the current Union hire fleet. A high towing weight rated 4x4 vehicle would safely transport heavy club equipment like Bo'. Furthermore, towing training to obtain a B+E license could be organised using the new vehicle.
2. The Gliding Club also depends on the availability of member vehicles for their activities involving glider transport. Whilst the minibuses could transport the majority of their equipment, some requires a B+E license and an appropriately rated vehicle not existing in the Union hire fleet. An off-road vehicle would better suit the gliding club as their activities typically involve no more than five people. The ability to tow their glider using the 4x4 would allow them to drive the plane directly on the mostly off road (air) fields and safely recover upon landing. A winch would add extra safety to their operations.
3. The Underwater Club have two boat trailers in regular use, one of which is rated 2 tonnes requiring a B+E license. The club is dependent on alumni to support a wide range of expeditions and adventurous diving. In addition to the aforementioned high weight rating and B+E training possibilities, the Underwater Club would benefit from an all-wheel drive vehicle with high torque, high clearance, and sufficient power required to safely launch and recover its boats. A winch would support diving of hard to access locations like very steep harbour slipways or beaches.
4. The Surfing Club is restricted on the ability to transport a sufficient amount of surf boards on their trips. The proposed vehicle would provide a roof rack to conveniently transport all gear for its passengers, whilst the proposed trailer would enhance the experience of students participating in larger expeditions by enabling the club to cater for such equipment needs.
5. The Canoe Club currently relies on the bus roof racks to transport kayaks. With an average kayak weight of 15-20kg and maximum roof load on a Ford Transit of 100kg this significantly limits their ability to legally transport boats for all participants in a 9 or 15-seat bus. The proposed trailer would provide additional loading space for kayaks, and could be towed either with the new towing vehicle, or a 9-seat minibus.
6. The Outdoor Club currently run expeditions in a 15-seat minibus. The addition of a 4x4 vehicle would enable them to access new destinations for climbing and hiking and increase their ability to transport specialist equipment including safety kit directly to locations. They would be able widen participation by increasing the size of expeditions by to 5 members.

## Appendix B. Vehicle comparison and total cost of ownership

Make	Landrover	Landrover	Toyota	Isuzu	Jeep	Volkswagen
Model	Defender 110 Utility Wagon	Discovery 3.0 TD6 HSE	Hilux Double Cab Icon	D-Max Yukon Double Cab	Wrangler 2.8 CRD, 4 door	Amarok 3.0 V6 TDI 204PS
Mileage	26,000 mi	12,000 mi	0 mi	0 mi	0 mi	0 mi
Engine size	2,198 cc	2,993 cc	2393 cc	1,898 cc	2,776 cc	2,970 cc
Engine HP	122 HP	306 HP	150 HP	164 HP	200 HP	204 HP
Torque	360 Nm @ 1,800 rpm	430 Nm @ 1800 rpm	400 Nm @ 1800 rpm	360 Nm@ 2500 rpm	460 Nm @ 1600 rpm	500 Nm @ 1800 rpm
Manual / automatic	manual	automatic	manual	manual	automatic	manual
Diff-lock	lockable centre diff	automatic centre diff	rear diff lock	none	traction control + EBD (Sahra)	auto front + rear
Passengers	5 pax	5+2 pax	5 pax	5 pax	5 pax	5 pax
Payload	1,500 kg	660 kg	1,045 kg	1,106 kg	431 kg	1,070 kg
Roof load	100 kg	80 kg	40 kg	100 kg	30 kg	100 kg
Towing capacity braked	3,500 kg	3,500 kg	3,500 kg	3,500 kg	2,200 kg	3,000 kg
Nose weight	125 kg	150 kg	100 kg	245 kg	170 kg	120 kg
EU Rating	Euro 5	Euro 6	Euro 6	Euro 6	Euro 6	Euro 6
Emissions	295 g/km CO2	201 g/km CO2	185 g/km cO2	183 g/km CO2	235 g/km CO2	229 g/km CO2
Wading depth	500mm (750mm)	900 mm	700 mm	600 mm	480 mm	500 mm
Fuel type	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Miles per gallon (comb)	25.50 mpg	36.70 mpg	40.40 mpg	40.40 mpg	31.40 mpg	32.50 mpg
Fuel tank size	75 l	77 l	80 l	76 l	85 l	80 l
<b>Purchase price</b>	<b>£42,000</b>	<b>£45,000</b>	<b>£33,500</b>	<b>£28,150</b>	<b>£41,735</b>	<b>£33,863</b> (now £31,422)
Estimated upgrade cost	£4,500	£4,500	£3,000	£8,500	£7,000	£7,000
<b>Annual costs</b>						
insurance group	28	31	9A	40A	28	10E
service interval	12,000 mi	16,000 mi	10,000 mi	10,000 mi	7,500 mi	15,000 mi
service price	£250	£275	£395	£350	£350	£399
service 18k mi	£375	£309	£711	£630	£840	£479
parts and repairs (original parts, strict adherence to maintenance for breaks, oil, plugs, etc)	£1,200	£1,200	£1,200	£1,200	£1,200	£1,200
road tax (1st year)	£555	£450	£830	£830	£1,760	£1,760
road tax (2nd year onwards)	£555	£450	£140	£140	140	140
<b>annual maintenance cost</b>	<b>£2,130</b>	<b>£1,959</b>	<b>£2,166</b>	<b>£2,085</b>	<b>£2,450</b>	<b>£2,089</b>
fuel cost 18k mi (£1.30/liter)	£4,172	£2,899	£2,633	£2,633	£3,388	£3,273
Total cost per annum for 6y (to 25%)	£13,277	£12,283	£10,274	£10,216	£13,148	£11,491
Total cost of ownership 6y (to 25%)	£66,384	£61,415	£51,371	£51,078	£65,741	£57,457

## Appendix C. Vehicle quotes

Please find a selection of quotes from various Volkswagen Commercial Vehicles dealerships on the following pages.

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## Quote for the supply of an Amarok

---

**Stacey Caesar** <stacey.caesar@cordwallis.co.uk>  
To: Marko Jung <mjung@mjung.net>

Fri, Apr 12, 2019 at 3:34 PM

Hi Marko,

Please see the attached quotation for your perusal.

Please note that the VW two FREE service offer expired at the end of last month.

The vehciel is still showing available I will check again when I am in on Monday then get back to you.

Regards

Stacey Caesar

Sales Executive

Cordwallis Commercials

Direct dial 0208 582 6084

Mobile 07980 863706



On CV Hub today



[www.cordwallis.com](http://www.cordwallis.com)

**From:** Marko Jung [mailto:mjung@mjung.net]  
**Sent:** 12 April 2019 12:29  
**To:** Stacey Caesar <stacey.caesar@cordwallis.co.uk>  
**Subject:** Re: Quote for the supply of an Amarok

Hi.

Yes that would be of interest. Please indicate the deposit required for the purchase on the quote.

Any chance this can be a PDF or office document with company details on it please?

Thank you

Marko

On Fri, 12 Apr 2019 at 12:20, Stacey Caesar <[stacey.caesar@cordwallis.co.uk](mailto:stacey.caesar@cordwallis.co.uk)> wrote:

Hi Marko,

I have found a White Amarok Trendline 204PS manual with the following options:

- Fixed towbar
- Diff lock
- Tyre pressure warning light
- Fog lights with cornering

If this is of interest please let me know ASAP and I will forward a quotation.

Please note that it is the only one in which has been built and is an estimated 3-4 week away.

Regards

Stacey Caesar

Sales Executive

Cordwallis Commercials

Direct dial 0208 582 6084

Mobile 07980 863706



On CV Hub today



[www.cordwallis.com](http://www.cordwallis.com)

**From:** Marko Jung [mailto:[mjung@mjung.net](mailto:mjung@mjung.net)]

**Sent:** 12 April 2019 11:49

**To:** Stacey Caesar <[stacey.caesar@cordwallis.co.uk](mailto:stacey.caesar@cordwallis.co.uk)>

**Subject:** Re: Quote for the supply of an Amarok

## Quotation



Volkswagen

## Cordwallis Heathrow

Great South West Road  
Bedfont  
TW14 8ND  
Telephone: 0208 582 6000

Mr. Marko Jung  
Imperial College Union  
Beit Quadrangle  
Prince Consort Road  
London  
SW7 2BB

Ref:DW007130

Prepared on 12-Apr-2019 by Stacey Caesar

	£
VW Amarok Pick Up 3.0V6 TDI 204 Trendline Selectable Bmt	25985.00
Manufacturers Delivery Charge	640.00
Factory Options	
1D1 Towbar - Fixed Ball	305.00
1Y4 Differential Lock	255.00
7K3 Tyre Pressure Warning Light	160.00
Dealer Accessories	
Administration Process Fee	83.33
Adjustments	
Loss	-2100.50
Sub Total	25259.75
VAT @ 20%	5051.95
Other	
Road Fund Licence	260.00
First Registration Fee	55.00
Total Price	30626.70

Quotation Valid until 19-Apr-2019





Marko Jung <mjung@mjung.net>

---

## Amarok Enquiry

---

Colin Harris <Colin.Harris@marshall.co.uk>  
To: Marko Jung <mjung@mjung.net>

Mon, Mar 18, 2019 at 10:32 AM

Hi Mark,

I have had a look now for you.

Firstly, Volkswagen are now no longer doing the Amarok in a manual transmission. It only comes in automatic which therefore does incur a slight increase in price.

The Amarok comes to £35,591 inc VAT in the automatic with;

- Rubber Floor Mats
- Towbar Fixed Ball
- Differential Lock
- Front And Rear Parking Sensors
- Front Fog Lights With Cornering Function
- Tyre Pressure Light
- Solid Paint Colour White or Red (Free choice)

Servicing costs;

The Amarok runs on a 2 year or 20,000 miles schedule. The first service at 20,000 miles would cost £335 and the second service at 40,000 miles would cost £398.

I hope this gives you the information you needed. In regards to the price of the Amarok, please let me know where we need to be in order to secure your business.

Kind Regards,

Colin Harris  
Sales Executive and Motability Specialist  
Marshall Volkswagen Van Centre Reading  
145 Bath Road, Reading, Berkshire, RG30 2BD  
W: [www.marshall.co.uk](http://www.marshall.co.uk)

Marshall Motor Group Ltd  
Registered in England No. 295579. Registered office: Airport House, The Airport, Cambridge CB5 8RY. Marshall Motor Group Ltd is authorised and regulated by the Financial Conduct Authority.

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Please help us to respect the environment and print this email only if you have to. Thank you.



Marko Jung <mjung@mjung.net>

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## Quote for the supply of an Amarok

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**Stacey Caesar** <stacey.caesar@cordwallis.co.uk>  
To: Marko Jung <mjung@mjung.net>

Fri, Mar 15, 2019 at 10:58 AM

Hi Marko,

As per our recent conversation please see the below stock vehicle quotations for your perusal.

Ref: DW006779

Prepared on 15-Mar-2019 by Stacey Caesar

VW Amarok Pick Up 3.0V6 TDI 204 Trendline Selectable Bmt	25985.00	£
Manufacturers Delivery Charge	640.00	
Factory Options		
ZL2 Lights And Vision Pack	185.00	
7K3 Tyre Pressure Warning Light	160.00	
7X2 Parking Sensors - Front And Rear	420.00	
8R1 Center High Mounted LED Brake Light	20.00	
8WH Front Fog Lamps+Cornering Function	75.00	
RI7 Discover Media Navigation System	570.00	
ZM1 Leather multi-function steering wheel with gear-shift paddles	120.00	
Candy White paint	0.00	
Dealer Accessories		
Administration Process Fee	83.33	
2 x Fixed price Servicing	399.00	
Adjustments		

Less	-2210.08
	<hr/>
Sub Total	26447.25
VAT @ 20%	5289.45
Other	
Road Fund Licence	250.00
First Registration Fee	55.00
	<hr/>
Total Price	32041.70
	<hr/> <hr/>

**OR**

VW Amarok Pick Up 3.0V6 TDI 204 Trendline Selectable Bmt	25985.00
Manufacturers Delivery Charge	640.00
Factory Options	
ZL2 Lights And Vision Pack	185.00
1D1 Towbar - Fixed Ball	305.00
1Y4 Differential Lock	255.00
7X2 Parking Sensors - Front And Rear	420.00
YMB Load Compartment Protective Coating	690.00
Candy White paint or Red	0.00
Dealer Accessories	
Administration Process Fee	83.33
2 x Fixed price service	399.08
Adjustments	
Less	-2225.33

Sub Total	26737.08
VAT @ 20%	5347.42
Other	
Road Fund Licence	250.00
First Registration Fee	55.00
Total Price	32389.50

Quotation Valid until 22-Mar-2019 while stock last

Regards

Stacey Caesar

Sales Executive

Cordwallis Commercials

Direct dial 0208 582 6084

Mobile 07980 863706



**On CV Hub today**



[www.cordwallis.com](http://www.cordwallis.com)

[Quoted text hidden]



Commercial  
Vehicles

# Illustration

For the supply of Volkswagen Commercial Vehicles

**Prepared for**

Joanna Beresford  
Imperial College Union

**Prepared by**

Richard Wood

Citygate Van Centre (Wooburn Green)  
Holtspur Lane  
Wooburn Green  
Bucks  
High Wycombe  
HP10 0BB

Telephone: 01494 450611  
Email: [richard.wood@citygvate.co.uk](mailto:richard.wood@citygvate.co.uk)

Date: 9 March 2019

# Summary

9 March 2019

Citygate Van Centre (Wooburn Green)  
Holtspur Lane  
Wooburn Green  
Bucks  
High Wycombe  
HP10 0BB

Joanna Beresford  
Imperial College Union

Telephone: 01494 450611  
Van centre contact: Richard Wood  
Email: richard.wood@citygvate.co.uk

Summary of vehicles illustrated	Qty	Price inc. any discounts exc. VAT & licensing
Amarok 3.0 TDI 204PS Manual Low Roof Trendline 4Motion	1	£26,960.93
with 6 factory-fit options, 2 dealer-fit options		
	<b>Subtotal</b>	<b>£26,960.93</b>
	<b>VAT</b>	£5,392.19
	<b>Total</b>	<b>£32,353.12</b>
<b>Total taxes &amp; duties</b>		
New vehicle registration fee @ £55	1	£55
Vehicle Excise Duty	1	£250
	<b>Subtotal</b>	<b>£305</b>
<b>Balance payable</b>		<b>£32,658.12</b>

# Amarok

100% pickup. 100% premium. Uncompromising off road. Sprinted on the asphalt. The Amarok combines everything that you expect from a premium and exclusive all rounder.

Standard Trendline equipment includes	Optional Highline equipment includes
Multi-Function display plus	Bi-Xenon Headlights with separate LED daytime running lights
"Climatronic" air conditioning system	Park distance control, front and rear parking sensors with rear-view camera
17 inch "Posadas" alloy wheel	18 inch "Manaus" alloy wheels 7.5J x 18
Composition Media DAB+ radio system	"Vienna" leather seat upholstery & Form



Vehicle image shown and features listed are for illustration purposes only

# Amarok Qty:1

## 3.0 TDI 204PS Manual Low Roof Trendline 4Motion

<b>Basic price</b>	£25,985
<b>Factory fit options</b>	
Solid - Candy White	£0
Differential Lock	£255
Front Fog Lights with Cornering Lights	£75
Towbar - Fixed Ball	£305
Tyre Pressure Warning Light	£160
Parking Sensors - Front and Rear	£420
<b>Subtotal</b>	<b>£1,215</b>
<b>Dealer fit options</b>	
Fuel	£25
Front And Rear Rubber Mats	£47.93
<b>Subtotal</b>	<b>£72.93</b>
<b>Discounts</b>	
Van centre discount	£952
<b>Subtotal</b>	<b>£952</b>
<b>Sundries</b>	
Delivery package	£620
Number plates	£20
<b>Subtotal</b>	<b>£640</b>
<b>Total price per vehicle ex. VAT</b>	<b>£26,960.93</b>
<b>VAT @ 20%</b>	<b>£5,392.19</b>
<b>Total price per vehicle inc. VAT</b>	<b>£32,353.12</b>



# Amarok Qty:1

3.0 TDI 204PS Manual Low Roof  
Trendline 4Motion

Taxes & duties	
New Vehicle Registration fee	£55
Vehicle Excise Duty	£250
<b>Subtotal</b>	<b>£305</b>
<b>Total price on the road per vehicle</b>	<b>£32,658.12</b>

## Terms & Conditions

All data and specifications are in accordance with information available at the time of going to print and are subject to change without notice. Unladen weight and payload may be influenced by the addition of factory options. Vehicles not currently in UK stock and customer order vehicles may take a number of weeks for delivery. Certain combinations of vehicle specifications and factory-fitted extras are not compatible and therefore all orders received are subject to confirmation. Models, factory-fitted options and paint and upholstery options are subject to availability. Please check details and availability at the time of ordering.

## Appendix D. Upgrade quotes

Please find the so far best upgrade quotation on the the following pages.



Marko Jung <mjung@mjung.net>

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## Upgrading a VW AMAROK

3 messages

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**Marko Jung** <mjung@mjung.net>

Fri, Mar 15, 2019 at 10:17 AM

To: "info@pb-customs.co.uk" <info@pb-customs.co.uk>

Hi Paul.

Thank you very much for the friendly phone call last Saturday. I finally got round to make the time to send you an email requesting a quote for the work.

We would supply a VW AMAROK 3.0 V6 204HP MANUAL. We would ask for a quote for the following modifications:

1. RSI Hardtop (lockable)
2. Hard plastic boot cover (optional)
3. Discrete front winch bumper (preferably with a hook point for the winch)  
3a (alternatively). Rhino style front bumper (e.g. Rival VW AMAROK or similar)
4. 5.4t WARN winch
5. Roof rack for twin cab
6. 4x Wilderness Scene Compact 2+ (front left, front right on roof rack, rear left and rear right on hard top)
7. Wilderness Solo 20" (on grill or front of roof rack)
8. Wilderness Scene down on hard top
9. Wilderness Hazard 360 (on centre back of hard top)
10. Internal LED light for truckman top (e.g. Labcraft 100Cm Nebula)
11. Switching solution for lights (scene front, scene back, scene back down, hazard)

And obviously the labour for these changes.

Thank you very much,  
Marko

Mobile 07812 215 375

---

**Paul Brown** <paul@pb-customs.co.uk>

Tue, Mar 26, 2019 at 4:47 PM

Reply-To: Paul Brown <paul@pb-customs.co.uk>

To: Marko Jung <mjung@mjung.net>

Hi Marko,

Apologies for the delay.

RSI Hardtop (lockable) - £1998 - painted . Rear tailgate mesh (optional) £92.40 extra.. Labour 5hrs £375

2. Hard plastic boot cover (optional) - £200 Labour 1.5hrs £112.50

3. Discrete front winch bumper (preferably with a hook point for the winch) - £303.86 - Labour 8hrs £600

3a (alternatively). Rhino style front bumper (e.g. Rival VW AMAROK or similar) - Rhino bumper in powdercoat form £1999.99 Paint £450 Labour 8hrs £600 or Rival bumper £1960 (Paint / labour similar.)

4. 5.4t WARN winch - Warn Tabor 10,s winch £940.98 or Warn Zeon 10,s winch £1485.56 - Electric isolator £60 and labour 1.5 hrs £112.50
5. Roof rack for twin cab - Front runner £810 Labour 7hrs £525
6. 4x Wilderness Scene Compact 2+ Front left, front right on roof rack, rear left and rear right on hard top) £41.66 each £166.64 x 4) Labour 2hrs £150
7. Wilderness Solo 20" (on grill or front of roof rack) £207.50 led bar / £80 bracket Labour 6hrs £450
8. Wilderness Scene down on hard top £24.99 each £49.98 x2)
9. Wilderness Hazard 360 (on centre back of hard top) £50 lamp (Magnetic) or if permanent labour 1.5hrs £112.50
10. Internal LED light for truckman top (e.g. Labcraft 100Cm Nebula)
11. Switching solution for lights (scene front, scene back, scene back down, hazard) - To be quoted on seeing but 10 hrs generally would be a pretty accurate figure £750

**All prices stated are subject to Vat**

Let me know your thoughts ..

**Many Thanks**

**Paul Brown**

[Paul@pb-customs.co.uk](mailto:Paul@pb-customs.co.uk)  
**01832358948**

<http://www.pb-customs.co.uk/>  
<https://www.facebook.com/pages/PB-Customs/276653475855789>

**VAT - 194548664**  
**EORI - GB194548664000**

**BACS**  
**Acc - 24087866**  
**Sc - 54 - 21 - 22**

**BIC - NWBKGB2L**  
**IBAN - GB29NWBK54212224087866**

## Appendix E. Survey responses

Please find a selection of relevant survey responses on the following pages. Responses with no interest in a 4x4 were omitted.



## The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

9 messages

**Broughton-Venner, Jacob** <jacob.broughton-venner13@imperial.ac.uk> Mon, Sep 17, 2018 at 5:27 PM  
To: Imperial College Canoe Club <canoe@imperial.ac.uk>, IC CAVING <ic.caving@imperial.ac.uk>, "Exploration, Exploration" <exploration@imperial.ac.uk>, Fellwanderers <fellsoc@imperial.ac.uk>, GLIDING <gliding@imperial.ac.uk>, "Mountaineering Club, M C" <mountain@imperial.ac.uk>, Outdoor Club <outdoor@imperial.ac.uk>, "Motor Club, C+G M C" <motor-club@imperial.ac.uk>, RSM Motor Club <rsmmc@imperial.ac.uk>, Pilots Club <pilots@imperial.ac.uk>, IC Racing <ic.racing@imperial.ac.uk>, RCS Motor Club <rscsmc@imperial.ac.uk>, ICU Skydiving Society <parachute@imperial.ac.uk>, ICU Wakeboarding <wakeboarding@imperial.ac.uk>, ICU Wilderness Medicine <wmed@imperial.ac.uk>, CGCU VVMC <guilds.bo@imperial.ac.uk>, SURFSOC <surfsoc@imperial.ac.uk>, Imperial College Sailing Club <sailing@imperial.ac.uk>, SKI <ski@imperial.ac.uk>, ICU Boardsailing Club <boardsailing@imperial.ac.uk>, ICU Cycling Club <cycling.club@imperial.ac.uk>, ICU Riding and Polo Club <riding@imperial.ac.uk>, ICU Boat Club <boat.club@imperial.ac.uk>, ICSM BOATCLUB <kit.tsar@imperial.ac.uk>, Yacht Club <yacht@imperial.ac.uk>, RSM Geophysics Society <geophysoc@imperial.ac.uk>, Rifle and Pistol Club <icrpc@imperial.ac.uk>, Imperial Racing Green Team <racinggreen@imperial.ac.uk>

Hi everyone,

I am contacting you on behalf of the Underwater club about the large capital Harlington grant the union are offering this year. If you don't know what this is, the union are asking for grant applications at a minimum amount of £25,000 and have a pool of £500,000.

I think the proposal the underwater club is putting together will help many clubs and perhaps especially yours. The proposal is simple: **we would like to propose the purchase of a towing vehicle and <750kg rated trailer**. And possibly on top of this funds the union can use to maintain and teach students towing (but these are details can be ironed out after meeting with the union).

**If you are tight on time please just read the bullet points below and reply if they interest you. Even better continue reading for more details and some questions that will help us devise the best application. Please note the first deadline for this is the 1<sup>st</sup> of October so a reply either way ASAP would be much appreciated!**

The benefits that this could bring your club are:

- A smaller vehicle that would be cheaper than minibuses for when you have only a small requirement on people but possible large requirement on equipment. How many 4 people trips have you had to cancel due to minibus cost!!!?
- A vehicle with off road capabilities able to access roads, parking and facilities not possible with a minibus. For example, if a minibus can't get down to a beach this vehicle could at least drop off equipment.
- A vehicle that can tow! This could be specific equipment you have (we have boats that need towing) or it could be a tow box (we have included one in the application) that you can fill with equipment.
- A more niche reason that probably only affects a subset of you: it would be able to launch and recover boats. We currently have two boats (both ribs) that if we could tow easier we could use to teach powerboating courses to anyone interested.

**Many thanks for your patience so far!**

Specifically, the underwater club's interest in this is due to: we have two boats that require towing and slipping a few times a year. A union towing vehicle would remove a lot of the complications we currently encounter arranging this and allow the club to extend its activities by running more adventurous and remote trips. We imagine a vehicle along these lines would benefit your clubs also, but would like to understand what use case you would have for such a vehicle.

The initial specification requirements we have are as follows:

#### Vehicle

The vehicle should be a heavy duty towing and off road capable vehicle, with a spec along the lines of a Landrover defender 110 (utility truck), or a crewcab pickup with off road capability. As well as being able to tow it should be able to support non towing expeditions by making it easier to transport equipment to less accessible locations. We anticipate it having the following features:

- Tow capacity of minimum 2.2 tonnes
- Payload exceeding 1 tonne (including passengers)
- Seating for 5 passengers, so that it could support small expeditions on its own
- A heavy duty roof rack
- A winch rated to minimum 2 tonnes
- 4\*4 drive with off road capabilities (including differential lock)

#### Trailer

The trailer purchased with the vehicle is proposed to be a 750kg rated box trailer, in order to allow anyone to tow equipment on their current license. This trailer would then also be available for clubs to use for training if they have members looking to get the B+E license. Furthermore the trailer would be useable behind a 9 seater minibus.

#### Towing/training

As part of the application we will need to include proposals on how we plan to train users in towing weights <750kg, and support the official training of union members for the B+E license.

If this is something you could envisage your club having any use for please could you complete the below questionnaire by end of Monday 24/09/2018? You don't need to complete the full thing, just the general questions and any specific features relevant to you.

#### General questions

- 1) Would your club benefit from the availability of a 5 seat, high payload vehicle? If so please describe what activities this would benefit or extend.
- 2) How often would you envisage using such a vehicle?
- 3) Would this vehicle allow you to extend activities which have not previously been feasible?

#### Questions specific to features

- 4) Does your club have any **towing** requirements?

#### 4a) What do you tow?

- 4b) What is the weight rating of your trailers?

- 4c) How do you currently meet your towing requirements? What is the cost of this?

- 4d) Do you have any B+E level (>750kg trailer rating) towing requirements?

4e) If so, do you have any trained towers in your club?

5) Does your club (or would like to) undertake any **high torque activities** (e.g. slipping boats, launching gliders, lumberjacking, ...)?

5a) Please describe the activity

5b) How do you do this currently? What is the cost of this?

6) Does your club (or would you like to) undertake any **off-road or non-standard terrain** driving?

6a) Please describe the terrain (fields, beaches, snow, etc)

7) Does your club have a **high equipment to person ratio**?

7a) What do you transport?

7b) Roughly what is the equipment weight per person on a standard trip?

7c) What would the equipment weight per person potentially go up to on an expedition level trip?

8) Would a **winch** be a useful feature for your club?

8a) Please describe what activities this might be useful for.

9) Does your club use **roof racks**?

9a) What do you transport on roof racks?

9b) What is the minimum weight loading you would require from a roof rack?

10) Would a **box trailer** be useful for your club?

10a) What equipment would you take in the trailer?

10b) What dimensions would you require from the trailer (e.g. for canoe roughly how long are the boats)?

11) Does your club do much **urban driving**, apart from leaving London (in order to judge importance of emissions in vehicle selection)?

12) Are there any **other features** which would be useful for your club? (E.g. warning beacons, raised air intake and waterproofing, roof tents). Please describe these and how they would benefit or extend your activities.

13) Are there any **similar spec vehicles** you've used for your own activities in the past that you think should be considered?

Thanks,

Jacob

Imperial College Committee Member

---

**Broughton-Venner, Jacob** <jacob.broughton-venner13@imperial.ac.uk>  
To: CGCU VVMC <guilds.bo@imperial.ac.uk>  
Cc: Marko Jung <mjung@mjung.net>, "Joanna.beresford11@alumni.imperial.ac.uk"  
<joanna.beresford11@alumni.imperial.ac.uk>

Wed, Sep 19, 2018 at 10:30 AM

Good Morning Ed,



I really appreciate you spending the time going through the questions!

I'm going to send out a chase out email later this week in which I was hoping to say something along the lines of "the following clubs have already expressed interest: mountaineering, Team Bo...."

Is that okay with you?

Thanks,

Jacob

**From:** CGCU VVMC

**Sent:** 18 September 2018 21:56

**To:** Broughton-Venner, Jacob <jacob.broughton-venner13@imperial.ac.uk>

**Subject:** Re: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

Hi Jake,

Team Bo was thinking along similar lines since we don't tend to have more than 5 people on trips when we are towing Bo.

In answer to your questions:

1) Would your club benefit from the availability of a 5 seat, high payload vehicle? If so please describe what activities this would benefit or extend.

Yes. We tow Bo if going on longer journeys but generally don't need the space and the fuel consumption and cost of a minibus. Also an additional towing vehicle may increase the number of rallies we can do.

2) How often would you envisage using such a vehicle?

A few times a year. Currently we use the minibus to tow for 1 week and 1 weekend each year. We would probably use a smaller tow vehicle for this if it was available. We have also had offers to go to 2 further weeks of rallies which we would need to tow the car to if it's working.

3) Would this vehicle allow you to extend activities which have not previously been feasible?

Potentially if the tow vehicle is cheaper to run.

#### **Questions specific to features**

4) Does your club have any **towing** requirements?

Capable of towing a 1.5tonne trailer. Space for a large amount of kit.

#### **4a) What do you tow?**

A flat bed trailer with car on top.

4b) What is the weight rating of your trailers?

1.5 tonne

4c) How do you currently meet your towing requirements? What is the cost of this?

Using the towing minibus. £600 a week, generally split 5 ways and paid for by the club members.

4d) Do you have any B+E level (>750kg trailer rating) towing requirements?

Yes

4e) If so, do you have any trained towers in your club?

An alumni has a license paid for by the club. We would consider getting another current student trained but would be cheaper to do it with other clubs.

5) Does your club (or would like to) undertake any **high torque activities** (e.g. slipping boats, launching gliders, lumberjacking, ...)?

Other than towing a car, potentially out of a ditch?

5a) Please describe the activity

5b) How do you do this currently? What is the cost of this?

Use the minibus or a friends land rover

6) Does your club (or would you like to) undertake any **off-road or non-standard terrain** driving?

Only in fields at rallies.

6a) Please describe the terrain (fields, beaches, snow, etc)

Muddy fields.

7) Does your club have a **high equipment to person ratio**?

Yes.

7a) What do you transport?

One car with space for 5 people plus a large amount of the garage is carried as spares and for repairs.

7b) Roughly what is the equipment weight per person on a standard trip?

Excluding the car, probably about 150 kilos per person, although that's never been measured.

7c) What would the equipment weight per person potentially go up to on an expedition level trip?

Similar.

8) Would a **winch** be a useful feature for your club?

Potentially. We have one on the trailer but could be useful in exceptional situations.

8a) Please describe what activities this might be useful for.

Towing the car out of a ditch or out of the mud.

9) Does your club use **roof racks**?

Not normally.

9a) What do you transport on roof racks?

9b) What is the minimum weight loading you would require from a roof rack?

10) Would a **box trailer** be useful for your club?

No. We already use the tow ball for a flat bed trailer.

10a) What equipment would you take in the trailer?

Car. Trailer boxes filled with spares and tools.

10b) What dimensions would you require from the trailer (e.g. for canoe roughly how long are the boats)?

None. We have our own.

11) Does your club do much **urban driving**, apart from leaving London (in order to judge importance of emissions in vehicle selection)?

No but long distances.

12) Are there any **other features** which would be useful for your club? (E.g. warning beacons, raised air intake and waterproofing, roof tents). Please describe these and how they would benefit or extend your activities.

Large boot space. Comfortable in case we spend the night in the vehicle while driving to Europe.

13) Are there any **similar spec vehicles** you've used for your own activities in the past that you think should be considered?

Land rover discovery.

Hope that helps,

Ed

[Quoted text hidden]

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**Marko Jung** <mjung@mjung.net>

Wed, Sep 19, 2018 at 10:35 AM

To: Jacob Venner-Broughton <jacob.broughton-venner13@imperial.ac.uk>  
Cc: Joanna Beresford <joanna.beresford11@alumni.imperial.ac.uk>

Hi.

Thanks Jake. Good start!

> From: CGCU VVMC

>> 13) Are there any similar spec vehicles you've used for your own activities in the past that you think should be considered?

> Land rover discovery.

Haha - not even considering the way cheaper Land Rover Defender ;)

Cheers,  
Marko

---

**Broughton-Venner, Jacob** <jacob.broughton-venner13@imperial.ac.uk>

Wed, Sep 19, 2018 at 10:37 AM

To: Marko Jung <mjung@mjung.net>  
Cc: Joanna Beresford <joanna.beresford11@alumni.imperial.ac.uk>

Yeah that's first response, although I spoke to the chair of mountaineering on Monday. He had only just read the email but could get behind it especially if they don't get their application, for a new climbing wall, off. I explained to them the two applications would compete so should have mountaineer too. They typically have low people high kit demands.

Thanks,  
Jacob

-----Original Message-----

From: Marko Jung <mjung@mjung.net>

Sent: 19 September 2018 10:35

To: Broughton-Venner, Jacob <jacob.broughton-venner13@imperial.ac.uk>

Cc: Joanna Beresford <joanna.beresford11@alumni.imperial.ac.uk>

Subject: Re: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

[Quoted text hidden]

---

**Broughton-Venner, Jacob** <jacob.broughton-venner13@imperial.ac.uk>

Fri, Sep 21, 2018 at 3:16 PM

To: GLIDING <gliding@imperial.ac.uk>

Cc: "joanna.beresford11@alumni.imperial.ac.uk" <joanna.beresford11@alumni.imperial.ac.uk>, Marko Jung <mjung@mjung.net>

Hi Donato,

Really appreciate the feedback! Thanks for taking the time to go through the questions. I'll send around the proposed application next week.

Thanks,

Jacob

---

**From:** GLIDING

**Sent:** 21 September 2018 15:09

**To:** Broughton-Venner, Jacob <jacob.broughton-venner13@imperial.ac.uk>

**Subject:** Re: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

Hi Jacob,

Thank you for your email. It's an interesting opportunity. Have a look at my answers below.

1) Would your club benefit from the availability of a 5 seat, high payload vehicle? If so please describe what activities this would benefit or extend.

**Our club would benefit from the availability of a 5 seats vehicle if it would be cheaper than a minibus. Payload is not a problem, but sometimes we have to tow our gliders (using our trailers) so a tow bar could be very useful.**

2) How often would you envisage using such a vehicle?

**I asked to the previous secretary how many trips with 5 or less people our club organized last year, and I'm waiting for the reply.**

**In the meantime, my best guess is between 5 and 13 days per year.**

**Most of these would be 1 day trips in which we have 5 people or less, the rest could possibly be due to a several days long trip in which we would use that vehicle to tow a glider.**

3) Would this vehicle allow you to extend activities which have not previously been feasible?

**No.**

Questions specific to features

4) Does your club have any towing requirements?

**Yes, but not for every trip. We sometimes organize trips in which we bring our gliders with us, and in those cases yes.**

4a) What do you tow?

**A trailer with a glider inside.**

4b) What is the weight rating of your trailers?

**I'm not sure. If you need more precise information just ask and I'll let you know.**

4c) How do you currently meet your towing requirements? What is the cost of this?

**Mostly using the car of one of our members. (I think there's a minibus with the tow bar, but I personally never used it)**

4d) Do you have any B+E level (>750kg trailer rating) towing requirements?

**Yes. One of our trailers falls in that category.**

4e) If so, do you have any trained towers in your club?

**Not sure. If it's important I will investigate and let you know.**

5) Does your club (or would like to) undertake any high torque activities (e.g. slipping boats, launching gliders, lumberjacking, ...)?

**No. (Launching gliders by auto-tow is extremely rare. It's not something that we are interested in doing. But I appreciate that you thought about it :)**

5a) Please describe the activity

5b) How do you do this currently? What is the cost of this?

6) Does your club (or would you like to) undertake any off-road or non-standard terrain driving?

**No. Sometimes we might have to drive on a grass airfield, but we drive 98% of the time on tarmac, and that 2% is not problematic in general.**

6a) Please describe the terrain (fields, beaches, snow, etc)

7) Does your club have a high equipment to person ratio?

**No, with the exception of having to transport a glider sometimes. But it stays in its trailer, so I guess it's not the kind of equipment you were asking about.**

7a) What do you transport?

7b) Roughly what is the equipment weight per person on a standard trip?

7c) What would the equipment weight per person potentially go up to on an expedition level trip?

8) Would a winch be a useful feature for your club?

**No.**

8a) Please describe what activities this might be useful for.

9) Does your club use roof racks?

**No.**

9a) What do you transport on roof racks?

9b) What is the minimum weight loading you would require from a roof rack?

10) Would a box trailer be useful for your club?

**No.**

10a) What equipment would you take in the trailer?

10b) What dimensions would you require from the trailer (e.g. for canoe roughly how long are the boats)?

11) Does your club do much urban driving, apart from leaving London (in order to judge importance of emissions in vehicle selection)?

**No.**

12) Are there any other features which would be useful for your club? (E.g. warning beacons, raised air intake and waterproofing, roof tents). Please describe these and how they would benefit or extend your activities.

13) Are there any similar spec vehicles you've used for your own activities in the past that you think should be considered?

Thanks,

Donato

ICGC Secretary

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**From:** Broughton-Venner, Jacob

**Sent:** 21 September 2018 10:35:53

**To:** Imperial College Canoe Club; IC CAVING; Exploration, Exploration; Fellwanderers; GLIDING; Mountaineering Club, M C; Outdoor Club; Motor Club, C+G M C; RSM Motor Club; Pilots Club; RCS Motor Club; ICU Skydiving Society; ICU Wakeboarding; ICU Wilderness Medicine; CGCU VVMC; SURFSOC; Imperial College Sailing Club; SKI; ICU Boardsailing Club; ICU Cycling Club; ICU Riding and Polo Club; ICU Boat Club; ICSM BOATCLUB; Yacht Club; RSM Geophysics Society; Rifle and Pistol Club; Imperial Racing Green Team

**Subject:** RE: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

Yooooo again,

Just thought I'd chase this with the deadline fast approaching. We've had positive responses from 2 clubs so far but I'm sure there are more out there!

Even at this point it would be great if you could reply saying the general concept sounds good for your club.

Thanks again,

Jacob

[Quoted text hidden]

13) Are there any **similar spec vehicles** you've used for your own activities in the past that you think should be considered?

Thanks,

[Quoted text hidden]

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**Broughton-Venner, Jacob** <jacob.broughton-venner13@imperial.ac.uk>

Fri, Sep 21, 2018 at 6:50 PM

To: SURFSOC <surfsoc@imperial.ac.uk>

Cc: "joanna.beresford11@alumni.imperial.ac.uk" <joanna.beresford11@alumni.imperial.ac.uk>, Marko Jung <mjung@mjung.net>

Hi Harry,

Great to hear from you, really appreciate it. Yeah If you do get a chance that would be amazing to have Surf's input.

Thanks,

Jacob

---

**From:** SURFSOC

**Sent:** 21 September 2018 16:47

**To:** Broughton-Venner, Jacob <jacob.broughton-venner13@imperial.ac.uk>

**Subject:** Re: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

Hi there,

The surf society do not currently have a need for this but we do struggle with taking people's boards on smaller trips and a tow trailer would allow us to take more surfboards than the 1 or 2 we can currently shove into a minibus. If I get time over the weekend I will answer the questions in your original email point by point but just so you know.

Kind Regards,

Harry Uglow

President - Imperial College Surf Society

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[Quoted text hidden]

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**Broughton-Venner, Jacob** <jacob.broughton-venner13@imperial.ac.uk> Fri, Sep 21, 2018 at 8:06 PM  
To: ICU Wakeboarding <wakeboarding@imperial.ac.uk>  
Cc: "joanna.beresford11@alumni.imperial.ac.uk" <joanna.beresford11@alumni.imperial.ac.uk>, Marko Jung <mjung@mjung.net>

Hi there,

Thanks for getting back to me all the same.

Regards,

Jacob

---

**From:** ICU Wakeboarding  
**Sent:** 21 September 2018 19:59  
**To:** Broughton-Venner, Jacob <jacob.broughton-venner13@imperial.ac.uk>  
**Subject:** Re: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

Hi Jacob,

We wakeboard. We don't need massive tow trucks! :)

All the best,

The Wake Team

On 21 Sep 2018, at 12:35, Broughton-Venner, Jacob <jacob.broughton-venner13@imperial.ac.uk> wrote:

Yooooo again,

Just thought I'd chase this with the deadline fast approaching. We've had positive responses from 2 clubs so far but I'm sure there are more out there!

Even at this point it would be great if you could reply saying the general concept sounds good for your club.

Thanks again,

Jacob

[Quoted text hidden]

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**Broughton-Venner, Jacob** <jacob.broughton-venner13@imperial.ac.uk>

Sun, Sep 23, 2018 at 2:51 PM

To: Outdoor Club <outdoor@imperial.ac.uk>

Cc: "joanna.beresford11@alumni.imperial.ac.uk" <joanna.beresford11@alumni.imperial.ac.uk>, Marko Jung <mjung@mjung.net>

Hi Todd,

Really appreciate the feedback! I'm going to touch base with the union early this week and will update everyone with the rough costing and application at the end of the week.

Thanks,

Jacob

---

**From:** Outdoor Club

**Sent:** 23 September 2018 14:50

**To:** Broughton-Venner, Jacob <jacob.broughton-venner13@imperial.ac.uk>

**Subject:** Re: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

Hi Jacob,

We would perhaps be interested in a 4x4 vehicle. Normally we tend to only drive on roads and leave a minibus in a car park but an additional car in the union's fleet might enable us to take more people on trips when normally we're restricted to 13.

Here are our answers to the questionnaire:



- 1) We would benefit simply as it would allow us to take up to 18 people on a trip
- 2) Potentially every trip but more likely every other trip. So approximately once a month.
- 3) It might make it easier to reach certain destinations from which we would climb or start a hike

9) We often take all our climbing/camping gear and mountain bikes on top of the minibus. We're not sure if we would use a trailer for this instead.

Regards,

Todd

Outdoor Club

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[Check out our Website](#)

[Buy Membership](#)

[Unsubscribe](#) :(

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[Quoted text hidden]

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**Broughton-Venner, Jacob** <jacob.broughton-venner13@imperial.ac.uk>

Mon, Sep 24, 2018 at 10:19 AM

To: SURFSOC <surfsoc@imperial.ac.uk>

Cc: "joanna.beresford11@alumni.imperial.ac.uk" <joanna.beresford11@alumni.imperial.ac.uk>, Marko Jung <mjung@mjung.net>

Morning Harry,

No that's very useful, thanks again for spending the time doing that.

Regards,

Jacob

---

**From:** SURFSOC

**Sent:** 24 September 2018 07:34

**To:** Broughton-Venner, Jacob <jacob.broughton-venner13@imperial.ac.uk>

**Subject:** Re: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

Hi Jacob,

Sorry for the slow response, on holiday at the moment. To answer your questions:

1. We don't do trips as small as 5, but we could potentially use this in addition to a minibus to tow our own surfboards and kit (which we do not currently have but would feel capable of purchasing if a tow vehicle were available).
2. Average of twice a term
3. Yes
4. Not currently but we do struggle with taking people's boards on smaller trips and a tow trailer would allow us to take more surfboards than the 1 or 2 we can currently fit in a minibus or potentially own our own kit.

4a) n/a

4b) n/a

4c) n/a

4d) n/a

4e) No

5. No

6. No

7. It could, currently we hire.

7a) Boards, wetsuits and wetsuit boots owned by our members.

7b) Very low, average weight less than 1 wetsuit per person even when someone brings a board.

7c) This wouldn't increase unless the club made significant investment into boards and other equipment which we don't currently foresee, but **\*could\*** be possible with a tow trailer.

8. No

9. Yes

9a) Hired boards from shop to beach

9b) Unsure

10. I would see us gain the most use from a box trailer

10a) As above, boards, wetsuits boots

10b) At least 9ft long to fit the longest boards

11. No

12. No

13. No

Hope this helps.

Kind Regards,

Harry

[Quoted text hidden]



Marko Jung <mjung@mjung.net>

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## RE: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

1 message

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**Broughton-Venner, Jacob** <jacob.broughton-venner13@imperial.ac.uk>  
To: "Pearcy, Andrew" <andrew.pearcy15@imperial.ac.uk>  
Cc: Marko Jung <mjung@mjung.net>, "joanna.beresford11@alumni.imperial.ac.uk" <joanna.beresford11@alumni.imperial.ac.uk>

Mon, Oct 1, 2018 at 1:24 PM

Hi Andrew,

Thanks for getting back to me. The main use we want is a vehicle with enough power to launch and recover our boat.

What activates would this ford transit van allow you to do that you can't already with a minibus? Is it ease of loading? This could be solved with the trailer box?

Thanks,

Jacob

---

**From:** Pearcy, Andrew  
**Sent:** 01 October 2018 13:20  
**To:** Broughton-Venner, Jacob <jacob.broughton-venner13@imperial.ac.uk>  
**Cc:** SCUBA / UNDERWATER CLUB <scuba@imperial.ac.uk>; Atkinson, Aithne H C <a.atkinson16@imperial.ac.uk>  
**Subject:** Re: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

Hi Jacob,

Sorry for not replying to the initial email which was sent to the canoe club email address. I like the idea of this application. With regards to the canoe club, our ideal vehicle along these lines would be a ford transit van which we could throw kayaks in the back of. The minimum specification would be a vehicle with at least 9ft of load space. I realise this is slightly different from your requirements as you are in the search of a more rugged vehicle. There is a crew cab van available with this much loading length but it may not be what you are after.

If this vehicles does not suit your needs and you would not be willing to adapt your application to add the 9ft length requirement, then we would still be willing to support the application, provided the vehicle has a full length roof rack. I.e. we would like a vehicle with the longest potential roof rack available to allow us to transport the maximum number of boats. I would also suggest perhaps applying for more than one of these vehicles as there may be competition between clubs if these get purchased.

With regards to the box trailer, canoe would also support this if it has an interior length of 2m (to store paddles) and it would be nice the have the ability to install roof bars on top of the box trailer, but I am not sure how feasible this is.

Let me know your thoughts and you can come find canoe at Freshers fair tomorrow if you need us to provided a signature for support. We'll be based in Beit quad, probably right next to you guys!

See you at Freshers fair!

Andrew Percy

From: Broughton-Venner, Jacob

Sent: Monday, 1 October, 12:44

Subject: FW: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

To: Percy, Andrew

Cc: SCUBA / UNDERWATER CLUB, Atkinson, Aithne H C

Hey Andrew,

This is the proposal I've been sending around to people. I've had 6-8 response back from people all good. And Slavina (union staff who looks after the minibus fleet) thinks it's a good idea that will work.

I've asked the union for a meeting before the deadline but I don't think that's going to happen with freshers.

It's great to hear back from you, how similar is our proposal to yours?

Thanks,

Jacob

**From:** Broughton-Venner, Jacob

**Sent:** 21 September 2018 10:36

**To:** Imperial College Canoe Club <[canoe@imperial.ac.uk](mailto:canoe@imperial.ac.uk)>; 'ic.caving@imperial.ac.uk' <[ic.caving@imperial.ac.uk](mailto:ic.caving@imperial.ac.uk)>; Exploration, Exploration <[exploration@imperial.ac.uk](mailto:exploration@imperial.ac.uk)>; Fellwanderers <[fellsoc@imperial.ac.uk](mailto:fellsoc@imperial.ac.uk)>; GLIDING <[gliding@imperial.ac.uk](mailto:gliding@imperial.ac.uk)>; 'mountain@imperial.ac.uk' <[mountain@imperial.ac.uk](mailto:mountain@imperial.ac.uk)>; Outdoor Club <[outdoor@imperial.ac.uk](mailto:outdoor@imperial.ac.uk)>; 'motor@imperial.ac.uk' <[motor@imperial.ac.uk](mailto:motor@imperial.ac.uk)>; 'clem@imperial.ac.uk' <[clem@imperial.ac.uk](mailto:clem@imperial.ac.uk)>; Pilots Club <[pilots@imperial.ac.uk](mailto:pilots@imperial.ac.uk)>; RCS Motor Club <[rscsmc@imperial.ac.uk](mailto:rscsmc@imperial.ac.uk)>; 'skydive@imperial.ac.uk' <[skydive@imperial.ac.uk](mailto:skydive@imperial.ac.uk)>; 'wakeboarding@imperial.ac.uk' <[wakeboarding@imperial.ac.uk](mailto:wakeboarding@imperial.ac.uk)>; ICU Wilderness Medicine <[wmed@imperial.ac.uk](mailto:wmed@imperial.ac.uk)>; 'bonerges@imperial.ac.uk' <[bonerges@imperial.ac.uk](mailto:bonerges@imperial.ac.uk)>; 'surf@imperial.ac.uk' <[surf@imperial.ac.uk](mailto:surf@imperial.ac.uk)>; Imperial College Sailing Club <[sailing@imperial.ac.uk](mailto:sailing@imperial.ac.uk)>; 'ski@imperial.ac.uk' <[ski@imperial.ac.uk](mailto:ski@imperial.ac.uk)>; 'boardsailing@imperial.ac.uk' <[boardsailing@imperial.ac.uk](mailto:boardsailing@imperial.ac.uk)>; 'cycle@imperial.ac.uk' <[cycle@imperial.ac.uk](mailto:cycle@imperial.ac.uk)>; 'riding@imperial.ac.uk' <[riding@imperial.ac.uk](mailto:riding@imperial.ac.uk)>; 'boat@imperial.ac.uk' <[boat@imperial.ac.uk](mailto:boat@imperial.ac.uk)>; 'icsmbc@imperial.ac.uk' <[icsmbc@imperial.ac.uk](mailto:icsmbc@imperial.ac.uk)>; Yacht Club <[yacht@imperial.ac.uk](mailto:yacht@imperial.ac.uk)>; RSM Geophysics Society <[geophysoc@imperial.ac.uk](mailto:geophysoc@imperial.ac.uk)>; 'icrpc@imperial.ac.uk' <[icrpc@imperial.ac.uk](mailto:icrpc@imperial.ac.uk)>; Imperial Racing Green Team <[racinggreen@imperial.ac.uk](mailto:racinggreen@imperial.ac.uk)>

**Subject:** RE: The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

Yooooo again,

Just thought I'd chase this with the deadline fast approaching. We've had positive responses from 2 clubs so far but I'm sure there are more out there!

Even at this point it would be great if you could reply saying the general concept sounds good for your club.

Thanks again,

Jacob

**From:** Broughton-Venner, Jacob

**Sent:** 17 September 2018 17:27

**To:** Imperial College Canoe Club <canoe@imperial.ac.uk>; 'ic.caving@imperial.ac.uk' <ic.caving@imperial.ac.uk>; Exploration, Exploration <exploration@imperial.ac.uk>; Fellwanderers <fellsoc@imperial.ac.uk>; GLIDING <gliding@imperial.ac.uk>; 'mountain@imperial.ac.uk' <mountain@imperial.ac.uk>; Outdoor Club <outdoor@imperial.ac.uk>; 'motor@imperial.ac.uk' <motor@imperial.ac.uk>; 'clem@imperial.ac.uk' <clem@imperial.ac.uk>; Pilots Club <pilots@imperial.ac.uk>; 'icracing@imperial.ac.uk' <icracing@imperial.ac.uk>; RCS Motor Club <rccsmc@imperial.ac.uk>; 'skydive@imperial.ac.uk' <skydive@imperial.ac.uk>; 'wakeboarding@imperial.ac.uk' <wakeboarding@imperial.ac.uk>; ICU Wilderness Medicine <wmed@imperial.ac.uk>; 'bonerges@imperial.ac.uk' <bonerges@imperial.ac.uk>; 'surf@imperial.ac.uk' <surf@imperial.ac.uk>; Imperial College Sailing Club <sailing@imperial.ac.uk>; 'ski@imperial.ac.uk' <ski@imperial.ac.uk>; 'boardsailing@imperial.ac.uk' <boardsailing@imperial.ac.uk>; 'cycle@imperial.ac.uk' <cycle@imperial.ac.uk>; 'riding@imperial.ac.uk' <riding@imperial.ac.uk>; 'boat@imperial.ac.uk' <boat@imperial.ac.uk>; 'icsmbc@imperial.ac.uk' <icsmbc@imperial.ac.uk>; Yacht Club <yacht@imperial.ac.uk>; RSM Geophysics Society <geophysoc@imperial.ac.uk>; 'icrpc@imperial.ac.uk' <icrpc@imperial.ac.uk>; Imperial Racing Green Team <racinggreen@imperial.ac.uk>

**Subject:** The Imperial College Underwater Club needs your help! Large Harlington grant application for a 4\*4 offroad/towing machine

Hi everyone,

I am contacting you on behalf of the Underwater club about the large capital Harlington grant the union are offering this year. If you don't know what this is, the union are asking for grant applications at a minimum amount of £25,000 and have a pool of £500,000.

I think the proposal the underwater club is putting together will help many clubs and perhaps especially yours. The proposal is simple: **we would like to propose the purchase of a towing vehicle and <750kg rated trailer.** And possibly on top of this funds the union can use to maintain and teach students towing (but these are details can be ironed out after meeting with the union).

**If you are tight on time please just read the bullet points below and reply if they interest you. Even better continue reading for more details and some questions that will help us devise the best application. Please note the first deadline for this is the 1<sup>st</sup> of October so a reply either way ASAP would be much appreciated!**

The benefits that this could bring your club are:

- A smaller vehicle that would be cheaper than minibuses for when you have only a small requirement on people but possible large requirement on equipment. How many 4 people trips have you had to cancel due to minibus cost!!?
- A vehicle with off road capabilities able to access roads, parking and facilities not possible with a minibus. For example, if a minibus can't get down to a beach this vehicle could at least drop off equipment.
- A vehicle that can tow! This could be specific equipment you have (we have boats that need towing) or it could be a tow box (we have included one in the application) that you can fill with equipment.
- A more niche reason that probably only affects a subset of you: it would be able to launch and recover boats. We currently have two boats (both ribs) that if we could tow easier we could use to teach powerboating courses to anyone interested.

### **Many thanks for your patience so far!**

Specifically, the underwater club's interest in this is due to: we have two boats that require towing and slipping a few times a year. A union towing vehicle would remove a lot of the complications we currently encounter arranging this and allow the club to extend its activities by running more adventurous and remote trips. We imagine a vehicle along these lines would benefit your clubs also, but would like to understand what use case you would have for such a vehicle.

The initial specification requirements we have are as follows:

#### Vehicle

The vehicle should be a heavy duty towing and off road capable vehicle, with a spec along the lines of a Landrover defender 110 (utility truck), or a crewcab pickup with off road capability. As well as being able to tow it should be able to support non towing expeditions by making it easier to transport equipment to less accessible locations. We anticipate it having the following features:

- Tow capacity of minimum 2.2 tonnes
- Payload exceeding 1 tonne (including passengers)
- Seating for 5 passengers, so that it could support small expeditions on its own
- A heavy duty roof rack
- A winch rated to minimum 2 tonnes
- 4\*4 drive with off road capabilities (including differential lock)

#### Trailer

The trailer purchased with the vehicle is proposed to be a 750kg rated box trailer, in order to allow anyone to tow equipment on their current license. This trailer would then also be available for clubs to use for training if they have members looking to get the B+E license. Furthermore the trailer would be useable behind a 9 seater minibus.

#### Towing/training

As part of the application we will need to include proposals on how we plan to train users in towing weights <750kg, and support the official training of union members for the B+E license.

If this is something you could envisage your club having any use for please could you complete the below questionnaire by end of Monday 24/09/2018? You don't need to complete the full thing, just the general questions and any specific features relevant to you.

### General questions

- 1) Would your club benefit from the availability of a 5 seat, high payload vehicle? If so please describe what activities this would benefit or extend.
- 2) How often would you envisage using such a vehicle?
- 3) Would this vehicle allow you to extend activities which have not previously been feasible?

### Questions specific to features

- 4) Does your club have any **towing** requirements?
  - 4a) What do you tow?
  - 4b) What is the weight rating of your trailers?
  - 4c) How do you currently meet your towing requirements? What is the cost of this?
  - 4d) Do you have any B+E level (>750kg trailer rating) towing requirements?
  - 4e) If so, do you have any trained towers in your club?
- 5) Does your club (or would like to) undertake any **high torque activities** (e.g. slipping boats, launching gliders, lumberjacking, ...)?
  - 5a) Please describe the activity
  - 5b) How do you do this currently? What is the cost of this?
- 6) Does your club (or would you like to) undertake any **off-road or non-standard terrain** driving?
  - 6a) Please describe the terrain (fields, beaches, snow, etc)
- 7) Does your club have a **high equipment to person ratio**?
  - 7a) What do you transport?
  - 7b) Roughly what is the equipment weight per person on a standard trip?
  - 7c) What would the equipment weight per person potentially go up to on an expedition level trip?
- 8) Would a **winch** be a useful feature for your club?
  - 8a) Please describe what activities this might be useful for.
- 9) Does your club use **roof racks**?
  - 9a) What do you transport on roof racks?
  - 9b) What is the minimum weight loading you would require from a roof rack?
- 10) Would a **box trailer** be useful for your club?
  - 10a) What equipment would you take in the trailer?
  - 10b) What dimensions would you require from the trailer (e.g. for canoe roughly how long are the boats)?
- 11) Does your club do much **urban driving**, apart from leaving London (in order to judge importance of emissions in vehicle selection)?
- 12) Are there any **other features** which would be useful for your club? (E.g. warning beacons, raised air intake and waterproofing, roof tents). Please describe these and how they would benefit or extend your activities.

13) Are there any **similar spec vehicles** you've used for your own activities in the past that you think should be considered?

Thanks,

Jacob

Imperial College Committee Member