

STEP 1

Work out the power needed for 12V appliances

| 12V POWER DEMANDS  |               |                      |   |                              |                               |
|--------------------|---------------|----------------------|---|------------------------------|-------------------------------|
|                    |               | (a)                  | (b)                                     | (c)                          | (a) x (b) x (c)               |
| 12V Appliances     | Brand / Model | Number of appliances | Amps per appliance<br>Amps = Watts ÷ 12 | Average hours of use per day | Amp Hours (AH) per day @12VDC |
| REFRIGERATION      |               |                      |   |                              |                               |
| LIGHTING           |               |                      |   |                              |                               |
| TELEVISION         |               |                      |   |                              |                               |
| DVD / CD / RADIO   |               |                      |   |                              |                               |
| AIR COMPRESSOR     |               |                      |   |                              |                               |
|                    |               |                      |   |                              |                               |
|                    |               |                      |   |                              |                               |
| <b>SUB TOTAL =</b> |               |                      |   |                              | <b>(d)</b>                    |

Need to run 240V appliances? If "NO" go to Step 3.

STEP 2

Work out the power needed for 240V appliances

| 240V POWER DEMANDS (FOR USE WITH POWER INVERTER) |               |                      |  |                              |                               |
|--|---------------|----------------------|--|------------------------------|-------------------------------|
|  |               | (e)                  | (f)                                      | (g)                          | (e) x (f) x (g) x 20          |
| 240V Appliances                                  | Brand / Model | Number of appliances | Amps per appliance<br>Amps = Watts ÷ 240 | Average hours of use per day | Amp Hours (AH) per day @12VDC |
| REFRIGERATION                                    |               |                      |  |                              |                               |
| LIGHTING   |               |                      |  |                              |                               |
| TELEVISION                                       |               |                      |  |                              |                               |
| DVD / CD / RADIO                                 |               |                      |  |                              |                               |
| AIR COMPRESSOR                                   |               |                      |  |                              |                               |
|  |               |                      |  |                              |                               |
|  |               |                      |  |                              |                               |
| <b>SUB TOTAL =</b>                               |               |                      |  |                              | <b>(h)</b>                    |

An inverter will be needed to run the 240V appliances

<sup>1</sup> Check Amps power rating on inverter model

| POWER INVERTER             |                                |
|----------------------------|--------------------------------|
|                            | = (h) x 0.15                   |
| Brand / Model <sup>1</sup> | Amp Hours (AH) per day @ 12VDC |
|                            | <b>(i)</b>                     |

STEP 3

Don't forget to add 30% extra power for safety!

Should not exceed 368AH for 12V battery use (Based on 4 x 115AH deep cycle batteries to 80% D.O.D.)

| TOTAL POWER DEMANDS             |            |
|---------------------------------|------------|
| = (d) + (h) + (i)               | <b>(A)</b> |
| DAILY POWER DEMAND (AH) =       |            |
| = (A) x 1.3                     | <b>(B)</b> |
| ASSUMING %30 SAFETY MARGIN      |            |
| TOTAL DAILY POWER DEMAND (AH) = |            |

STEP 4

Choose quality batteries that will provide enough power

| BATTERIES REQUIRED   |   |   |                     |                   |                              |  |
|--|---|---|---------------------|-------------------|------------------------------|--|
| = (B) ÷ 0.8  | (C)                                       | (D)   |                     | (E)               | (F)                          | = (E) x (F)  |
| Daily Battery Capacity (AH) to 80% Depth of Discharge <sup>1</sup> | Number of Days Until Recharge (Daily = 1) | Total Power Required Until Recharge (AH) <sup>2</sup> = (I) x (C) | Battery Description | Battery AH Rating | Number of Batteries Required | Total Battery Capacity Amp Hours (AH) <sup>3</sup> |
| (I)  |   |   |                     |                   |                              |  |

<sup>1</sup> Deep cycle batteries should not be discharged below 20% state of charge <sup>2</sup> Total should not exceed 460AH <sup>3</sup> Total should be greater than (D)

STEP 5

Choose a charger that will easily recharge your batteries

| RECOMMENDED CHARGING METHOD SELECTION GUIDE (Based on recharging a 12 Volt battery over 12-15 hours) |  |             |                    |           |            |         |                     |             |
|--|--|-------------|--------------------|-----------|------------|---------|---------------------|-------------|
| Total Battery Capacity Amp Hours (AH)  | Solar Panel  |             | Charger (240 Volt) |           |            |         | Generator (12 Volt) |             |
|  | 60-80 Watt   | 80-100 Watt | Up to 5 Amps       | 5-10 Amps | 15-20 Amps | 40 Amps | 40-60 Amps          | 80-100 Amps |
| 45 to 55 AH  | √  | √           | √                  | √         |            |         | √                   |             |
| 65 to 70 AH  |  | √           |                    | √         | √          | √       | √                   | √           |
| 75 to 85 AH  |  | √           |                    | √         | √          | √       | √                   | √           |
| 95 to 115 AH   |  |             |                    |           | √          | √       |                     | √           |
| 115 to 200 AH  |  |             |                    |           |            | √       |                     | √           |
| 200 to 400 AH  |  |             |                    |           |            |         |                     | √           |
| Greater than 400 AH  | <b>Seek assistance from a qualified auto electrical service provider</b> |             |                    |           |            |         |                     |             |

NOTE: Based on recharging from approximately 30% state-of-charge. Where multiple charging options are shown, using a higher Amp charger may result in a slightly faster charging time.

| BATTERY CHARGING OPTIONS |       |             |
|--------------------------|-------|-------------|
| Type                     | Brand | Description |
| CHARGER <sup>2</sup>     |       |             |
| GENERATOR <sup>2</sup>   |       |             |
| SOLAR PANELS             |       |             |

<sup>1</sup> Only one type of charger to be in operation at any one time.

<sup>2</sup> A charge of up to 15 hours is recommended when delivering 10-20 Amps to a standard deep cycle battery. Delivering more than 20 Amps will generally recharge the battery faster.

For more information please contact (PLEASE HAVE THIS PAGE AVAILABLE FOR DISCUSSION)