2015 ARC SURVEY

KEEPING IN TOUCH AT SEA

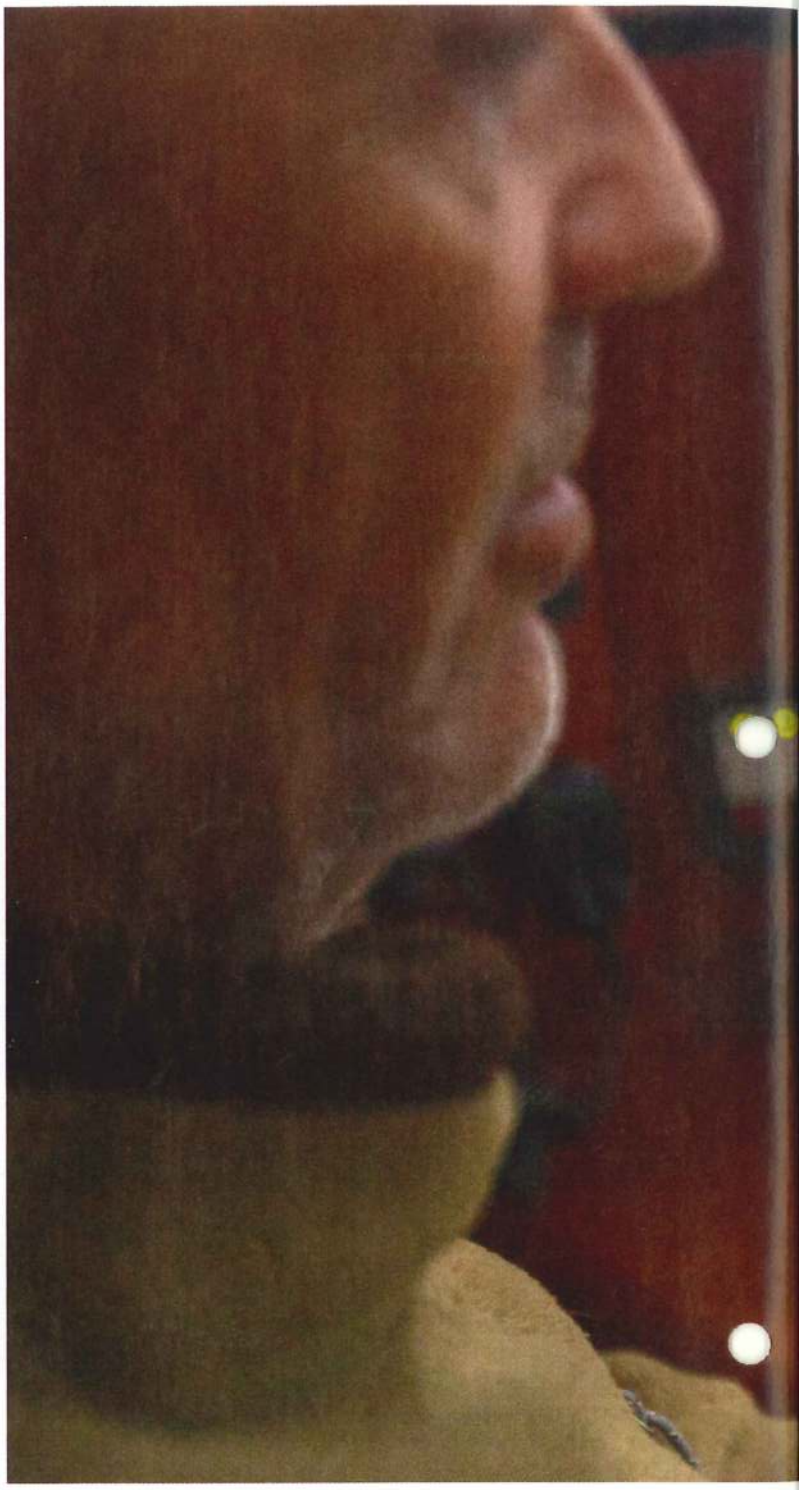
THIS YEAR OUR ANNUAL ARC GEAR SURVEY CONCENTRATED ON THE VITAL ISSUE OF COMMUNCATIONS. TOBY HODGES REPORTS

Few could honestly claim they are not reliant on the internet today. The advent of stronger and faster 3G and 4G networks and wi-fi boosters have allowed us to maintain our screen-dependent worlds when coastal sailing. But for that trip further offshore, communication via satphone or single-sideband (SSB) radio is required.

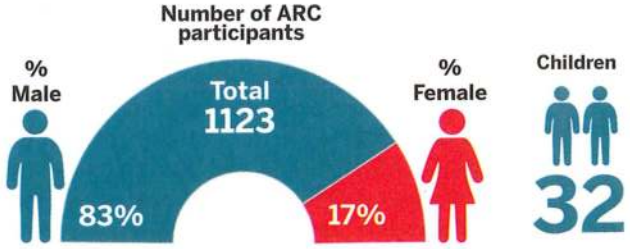
In our ARC Gear Survey two years ago, data communications came out as the second highest recommended equipment carried by all the skippers (behind AIS). Surprisingly, despite the eye-watering cost of the hardware and airtime, it was the smaller yachts in the fleet that rated the various satcom devices particularly highly. A reliable means of contacting those ashore should never be underrated.

In fact, it is a safety requirement of the World Cruising Club (WCC) that all participants in the ARC Rally carry a means of data communication. At the start of the ARC and ARC+ in Las Palmas last November, we issued every yacht with a survey to fill in, and this time the questionnaire focused specifically on data communication.

We wanted to know what the 259 skippers (ARC plus ARC+) had chosen and why, how they set up their system, how well they rated their equipment, what the issues were and, crucially, how they would advise others looking to equip their yachts with long-distance comms. ›



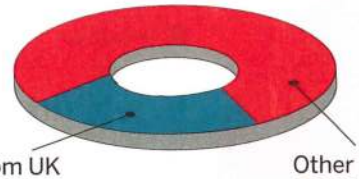
2015 ARC FACTS



Most popular multihull
Lagoon
13 entries

Most popular monohull
Oyster 56
5 entries

Number of boats in ARC fleet
195 from 30 countries



From UK
31%

Other Nationalities
69%

Types of boats

Monohull
174

Multihull
21

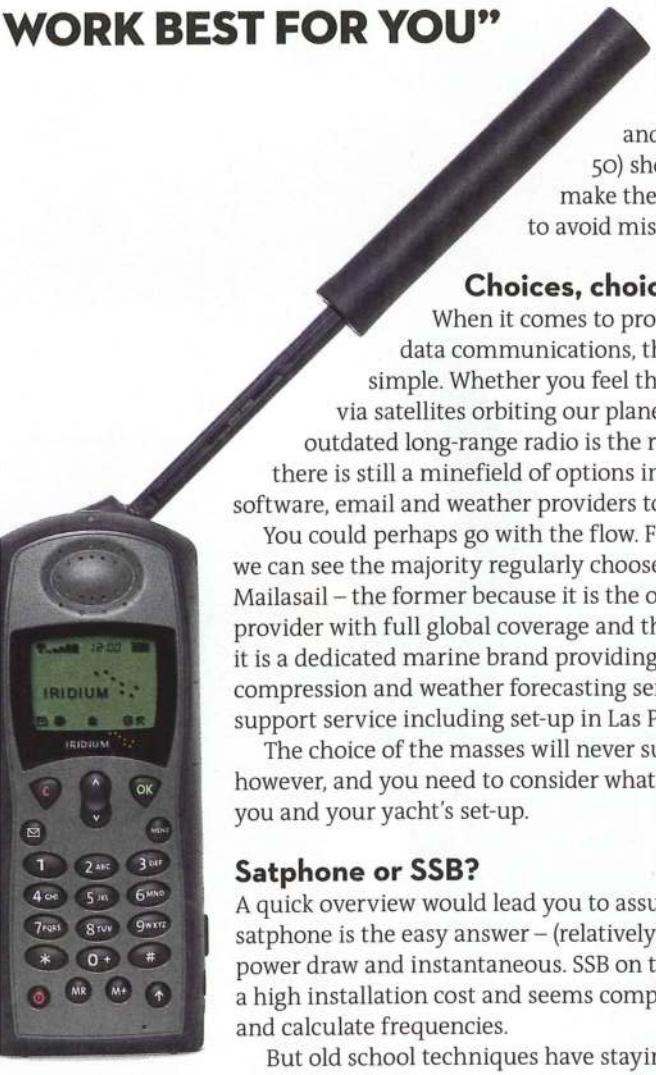
Average boat LOA
50ft

Average boat age
11 years

Smallest boat
Hallberg Rassy 310

Largest boat
Southern Wind 104ft

"THE CHOICE OF THE MASSES WILL NEVER SUIT EVERYONE. YOU NEED TO CONSIDER WHAT WILL WORK BEST FOR YOU"



Above: the Iridium 9505A satphone. The most popular model is the 9555

Their answers and comments (page 50) should help others make their decisions and to avoid mistakes.

Choices, choices

When it comes to providing a means of data communications, the options aren't simple. Whether you feel that costly comms via satellites orbiting our planet, or seemingly outdated long-range radio is the route for you, there is still a minefield of options in hardware, software, email and weather providers to choose from.

You could perhaps go with the flow. From past surveys we can see the majority regularly chooses Iridium and Mailasail – the former because it is the only satellite provider with full global coverage and the latter because it is a dedicated marine brand providing email compression and weather forecasting services, plus a support service including set-up in Las Palmas.

The choice of the masses will never suit everyone, however, and you need to consider what will work best for you and your yacht's set-up.

Satphone or SSB?

A quick overview would lead you to assume that a satphone is the easy answer – (relatively) affordable, low power draw and instantaneous. SSB on the other hand has a high installation cost and seems complicated to operate and calculate frequencies.

But old school techniques have staying power for a reason. This long-range medium of ship-to-ship communication can be invaluable, and the low-cost email connection that an added Pactor modem provides may be all some long-term cruisers really require.

During last year's ARC, there were 267 satcom sets carried by the 259-strong fleet (190 Iridium, 71 Inmarsat, 6 other). That compares with 69 carriers of SSB.

That there were more satcom sets than yachts and that some favoured SSB instead of satcom, shows many carried a secondary form of data communication (58 yachts).

SATCOM – THE OPTIONS

Iridium, Inmarsat, Thuraya and Globalstar are the main players in the marine satcoms world, but the latter two don't have Atlantic coverage – hence by far the most ARC sailors ship Iridium, followed by Inmarsat.

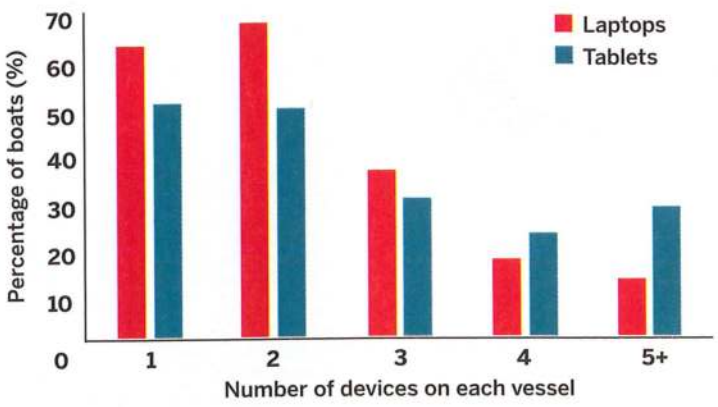
When assessing the options, first decide how you want to use data. Choices vary from pay-as-you-go to basic monthly plans to large broadband plans that can lower the costs per megabyte. Inmarsat's FleetBroadband, the first service that offered broadband/voice simultaneously at any time, offers guaranteed data rates on demand up to 256 kbps – and calls can be made at the same time as web browsing/internet use. Iridium's version is called Pilot.

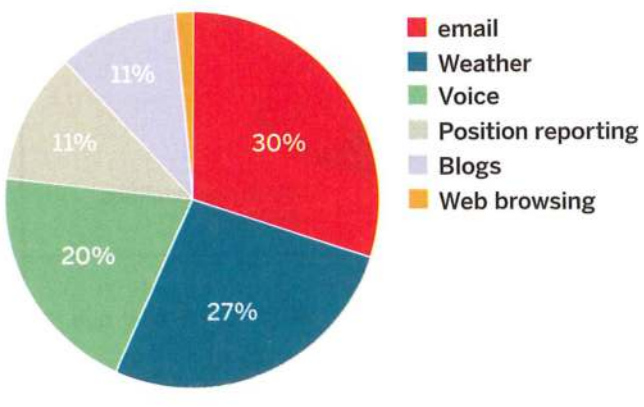
Airtime costs are similar to mobile phone tariffs. Satcom phones are also SIM card-operated, with retailers offering pre or post-pay options. And again, like the mobile phone market, bundles are broken into minutes or amount of data plus line rental.

You also need to consider whether to purchase a specialist email or weather forecasting service, designed to minimise satellite airtime. By compressing emails and GRIB files for sending and receiving in one and blocking unwanted large files, you can potentially save a lot more on airtime than the cost of such a subscription service.

Defining your budget and how much data you need or want at sea will quickly narrow the decisions.

[Note: the Iridium network has 66 Low Earth Orbit satellites providing global coverage. Inmarsat meanwhile, founded specifically for providing maritime satcoms, has

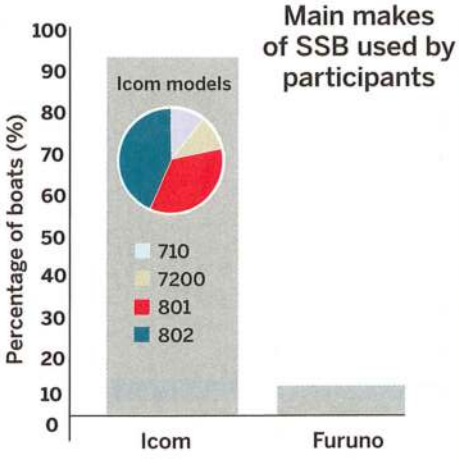


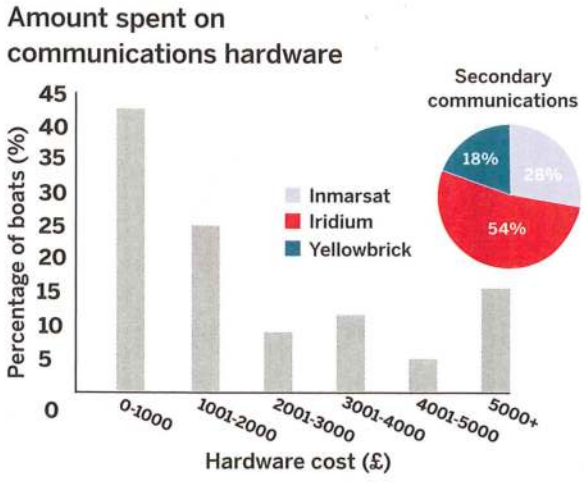


Above: Icom's current IC-M802 was carried by the majority of SSB users

SATCOMS: typical usage and options

- Text based/emergency only = handheld satphone or tracker devices like Delorme InReach, Yellowbrick, SPOT.
- Single user, low email and weather forecast/ small GRIB file use, voice calls = handheld satphone such as the Inmarsat Isatphone2 (£500 ex VAT) or the Iridium 9555 (£695 ex VAT).
- Multiple emails, calls and internet browsing, medium or large size GRIB files = Inmarsat Fleetbroadband 150 or Iridium Pilot (circa £3,500 ex VAT).
- Should have stayed in the office – full browsing and data downloading (multiple users, video calls, heavy internet use, etc) = Iridium Pilot, Fleetbroadband 250 or 500 (£5,000-£10,000) or larger VSAT systems.





Two new economic options to consider for coastal sailing

Iridium GO!

This is a compact device that functions in a similar way to a MiFi hub for terrestrial mobile data, but with the addition of a facility for voice calls, SMS text messaging and an SOS facility. It provides the option of buying unlimited data for just US$125 per month, the only Iridium device with this offer.

It is priced at two hours' worth of data connection at typical pay-as-you-go rates – although speed is capped at the industry standard of 2.4kbps.

GO! has an SOS button that will send your position, plus an emergency message, to a user-defined group of contacts. An external antenna is also advised at £650 ex VAT.

Delorme inReach Explorer

This is another compact option for those who want to stay in touch cheaply anywhere in the world with text, tracker or SOS functionality. It can send and receive text messages via the Iridium network.

The tracking is accurate to around 50m and can be accessed via a website that allows selected contacts to look at a map or satellite view.

Priced around £270, monthly airtime fees start at $21 ex VAT with 115 inclusive messages from **www.inreachdelorme.com** or **www.globaltelesat.co.uk**

"THE MODERN SAILOR IS MORE LIKELY TO COMPARE EQUIPMENT WITH A BASELINE OF HOME COMFORTS, WHICH CAN LEAD TO DISAPPOINTMENT"

Above: Iridium's network of 66 satellites buzzing around Earth give global satcom coverage

12 satellites that cover all bar the extreme poles. Globalstar reaches most of the Northern Hemisphere, plus Australasia and South America, and Thuraya covers Europe, Asia and Australasia.]

SSB – THE OPTIONS

SSB is a shortwave marine radio operating on medium to high frequency – the higher frequency you tune to, the further the range (up to around 4,000 miles before consistency becomes an issue). SSB allows unlimited users to listen to the same transmissions, which makes it ideal for weather forecasts and for creating a community on a rally such as the ARC.

Pairing an SSB with a Pactor (a particular type of modem) allows text emails to be sent and received. The common email service for SSB is SailMail, a voluntary association with an annual fee (**www.sailmail.com**).

You can get a receiver from as little as £195 ex VAT from Nasa Marine, but the most popular manufacturer is Icom, which has an IC-M802 unit costing around £2,000.

Then you have to factor in the expense of a Pactor modem – £600 for a Pactor 3 or £800 for the faster Pactor 4.

SURVEY RESULTS

Satcom stats

The majority of ARC participants use satcoms for email, followed closely by weather forecasting, then calls. It was comforting to see that very few used their precious airtime minutes for web browsing! One-third used fixed sets, but by far the majority shipped mobile handsets.

The larger the boat and crew, the greater the dependence on screens. In the case of Swan 56 *Why Not*, for instance, there were reportedly nine laptops and nine tablets aboard. And a rather frightening 20 tablets were shipped aboard the 104ft Southern Wind *Farfalla*.

Once again the largest independent supplier of both equipment and airtime purchased was Mailasail in the UK. Comments on the after-sales service and support consistently include expressions like 'excellent', 'fantastic', 'terrific'. However, there were, as ever, some grumbles.

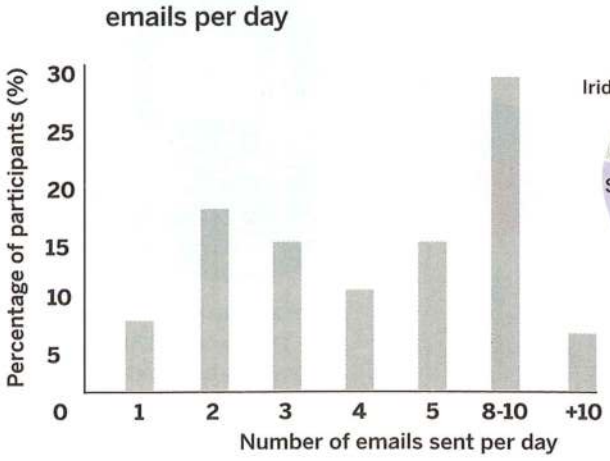
"Whereas previously a majority of longer distance cruisers would build a boat and their experience over a longish period of time, it's more common now for cruisers to build a boat more quickly and hence approach an Atlantic crossing as a more 'temporary change' in circumstances," said Mailasail's director Ed Wildgoose. He put forward the point that the modern sailor is more likely to compare equipment relative to a baseline of home comforts, which can lead to disappointment.

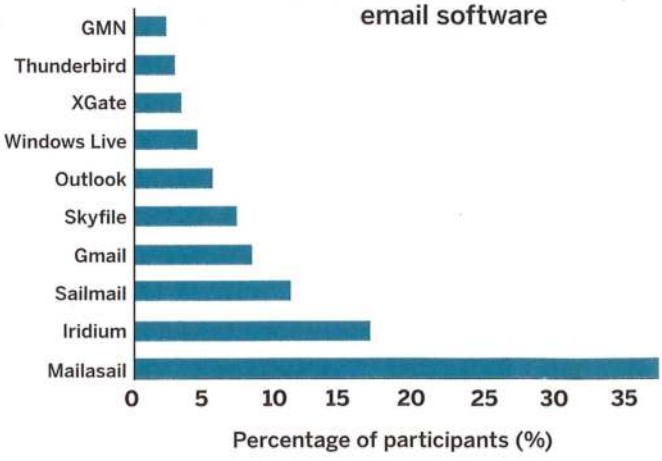
Satcom feedback

Satcom is a big expense. The sense of disappointment, resentment even, is tangible in a lot of the skipper's comments – they expect this equipment to perform. The majority of complaints were, as always, centred around the poor connection and slow speed of communication.

Two-thirds of the yachts carried a handheld set so it is worth stressing that an external antenna fixed permanently on deck (priced around £130) can help solve connection issues and allow for operation below decks.

It is also worth highlighting the fact that, whether on land or at sea, the performance and speed of connection on a computer will always be hindered by the amount of memory and applications it is burdened with. Consider shipping a laptop purely for weather forecasts and emails at sea. "Make sure the primary computer connected to sat





Richard Langdon/Ocean Images

is dedicated, and will not download anything not regulated!" said ARC veteran Ross Applebey from his Oyster Lightwave 48 *Scarlet Oyster*.

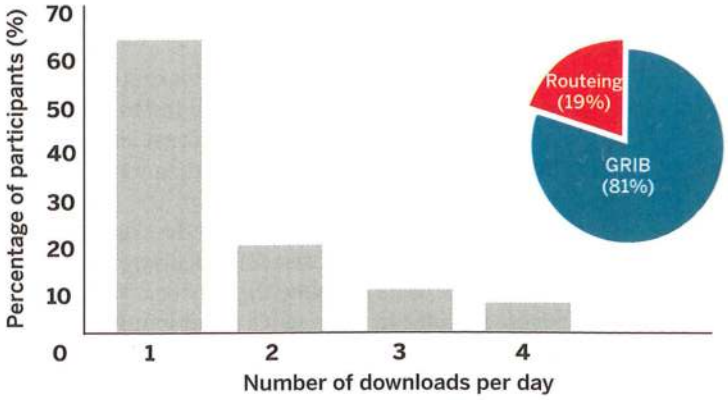
Typical moans about satcoms from last year's ARC skippers included: "Cancelled data download due to connection," from those aboard *Ohio*, an Oceanis 46, about their Iridium 9555 handset. "Coverage issues as to be expected with Iridium," warned a Hanse 575 crew. "Data speed so slow it is unusable – I call home and have emails read to me," said *Proteus*, a Hunter Passage 42.

And the skipper of *Carpe Diem*, a Fountaine Pajot Belize 43 carrying both an Isatphone2 running Inmarsat and a KVH minisat on the Iridium network, was appalled when "both systems dropped all communication, from KVH to Inmarsat," despite the "very high fees".

The skipper of Beneteau Sense 50 *Grace*, however, had no problems during the ARC, but advised that "you need

Above: Iridium's Pilot is the system Mailasail recommends to ARC skippers, as it is over 50x faster and 10x cheaper than the handheld devices

Satellite weather downloads and type



Look out for our upcoming full comparative test of tracking systems, including the inReach, Yellowbrick and SPOT systems

Skippers' satcoms tips

Buy it, set it up and test it early is the biggest advice. Other than that the tips centred around thrifty use of satcoms:

"Having a back up weather routeing person in UK to confirm our local weather knowledge was really useful."

Jeanneau SO45DS *Tantrum*

"Have a land-based support service for SMS weather updates."

Beneteau Sense 50 *Cheery Bye*

"Have someone ashore to monitor emails and only send through relevant text to a dedicated boat email."

Skye 51 *Skyelark of London*

"Don't get more than 100 to 400mb/month – we had too much."

Moody 54DS *Mojeka*

"Don't use open internet connection."

BD80 *Bliss II*

"Use satcom just as back-up because of extremely high costs of airtime. Use SSB for long-term crossing and sat for short-term cruising."

Swan 55 *Cesarina*

"Software/OS/driver dependence is a pain... keep it simple (Mac OS) and use a smart router."

Bowman 48 *Lydia*

"Use Mailasail or similar. Practise a lot and learn to use it at sea. Lot of issues if you do not know the workings."

Beneteau Sense 50 *Grace*

"Contact Mailasail."

GS43 *Quokka 8*

"Satcom is more reliable than SSB for data."

Discovery 55 *Eupraxia*

"Have either a second satphone or SSB. We plan to install an SSB in the Caribbean. Just feel too unsafe to rely on our satphone!"

Leopard 44 *Sea Bear*

"THE MAIN COMMENT THAT ALWAYS SHINES THROUGH WITH SATCOMS IS TO TEST THE EQUIPMENT THOROUGHLY BEFORE YOU LEAVE"

a lot of practising". Oyster 53 *Crackerjack* agreed, saying: "Setting up was a nightmare," about their Iridium 9555, adding "just use Yellowbrick".

Many others also reported having no problems, once their system had been set up and tested correctly. Indeed Lagoon 450 *Sea Rose* was "amazingly surprised by the voice and data quality" running FleetBroadband from their KVH V3IP, but advised to locate the satdome on the spreader and not the pushpit.

Rustler 42 *Pantalaimon II* said they had no problems and that their fixed Iridium set worked well throughout, but cautioned that you need to "get used to using it well before departure". And Arcona 430 *Loupan*'s report read: "Almost flawless – Iridium phone and red port optimiser is very easy to use. GMN (service provider) is a very professional company."

What would they do differently?

Typically Iridium users said change to Inmarsat, and Inmarsat users vice versa! But where does that leave those of us in the market for a satellite phone?

The main comment that always shines through with satcoms in the ARC is not about being brand-loyal, but to test the equipment completely and thoroughly before you leave. "Spend more time earlier perfecting the set-up, particularly software issues," advised the owners of the Island Packet 440, *Seraphina of Chichester*. "Get it working six months in advance and keep using it before leaving," said Bavaria 41 *Slipper 1*.

Iridium GO!, a new compact satellite router that works like a MiFi hub (see page 49) drew common praise. Jeanneau SO45DS *Tantrum* advised that in hindsight they would use Iridium GO! as primary satcoms. "Don't invest in a Pactor modem, get Iridim GO!" declared *Belafonte*'s skipper.

The skipper of the Hunter Passage 42 *Proteus*, on the other hand, said: "I could have saved money and used ONLY my Delorme InReach."

SSB feedback

The majority of the comments regarding SSB seem to contain the word 'slow'. Or as *Belafonte*'s skipper put it: "The reliability is not good enough when compared to sat." This is somewhat backed up by the numbers of SSB sets we have noticed being replaced by satcoms over recent years. Yachtsmen are taking less time to prepare newer, larger yachts for a crossing, yet they want the equipment to be as intelligible as possible and function without fault.

Most SSB users had something negative to say about the experience, it seems – either that or SSB is simply the victim of negative feedback outshining the will to post positive comments. The gripes centred on antenna issues, lengthy installation problems, poor reception or propagation and, ultimately, slow speeds.

"Propagation/static quality of voice comms with other boats at sea very variable," reported Island Packet 440, *Seraphina of Chichester*.

Power was an issue for some. "Could receive, but not transmit at less than 6000kHz,' said Oyster 545 *Shelena*, echoed by others with low battery or charging problems.

"Don't use the SSB because of terrible quality, system is completely outdated and should be replaced by digital system," grumbled a frustrated crew aboard X612 *Nix*.

Perhaps more helpful was the advice from *Timshel*, a Westerly Oceanlord 41: "Spend more time setting it up correctly and practising." *Belafonte* thought it was best to use SSB for voice and satcoms for data, while Van de Stadt *Alexandra* advised yachtsmen to "get SSB programmed to Ham frequencies".

Once again the take-home advice is to make sure the equipment is installed properly and is well-tested before departure. Discovery 58 *Aqualuna* advised that leaving testing until Las Palmas is too late as there is much interference there.

Last (and most positive) thoughts go to the skipper of Swan 55 *Cesarina*, who proved that SSB will always have a fanbase: "After two years cruising: the very best you can get! I'm deep in love with SSB and it's the absolute perfect solution for emails/GRIBs at sea for our long-term cruising! Use it and you'll love it!!" ■