

**This text is an excerpt from our 2012 Shortwave Frequency Guide. Its basic idea has first been published on our website as the**

***libya.pdf***

**file under the title**

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**Internet, SATCOM and HF Radio in Libya**

**Your comments are welcome.**

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## 4.4 Internet, SATCOM and HF Radio in dictatorships: censorship of the Internet and restricted online access vs. free worldwide shortwave reception for everybody

Just for the record, international and worldwide communication such as phone calls, fax messages, e-mail, SMS, data exchange, Internet access and so on relies on

- landline connections;
- submarine cables;
- satellite communication (SATCOM);
- high frequency (HF) / shortwave radio (SW).

Internet is certainly not some mystic new medium descending from Nirvana to Earth. In reality, it is merely some type of computer - e.g. a PC, a smartphone, a laptop, a tablet computer and so on - linked to a communication line: if the latter fails for whatever reason, there is no Internet at all, and that was that. Connectivity e.g. between Africa and Europe depends totally on the reliability of a few submarine cables and telecommunication satellites. If dictators such as Mr Qaddafi ☞ ☺ used to shut down the Internet plus all terrestrial mobile phone networks, this left only SATCOM and HF for ordinary Libyans wishing to communicate with the rest of the world.

Sure, SATCOM works perfect and everywhere, but it is pretty expensive, and not every buddy has a friend with an Inmarsat Isat or Iridium 9555 or Thuraya XT mobile phone just around the corner. This goes particularly for brutal dictatorships such as Communist China that kills thousands of so-called "dissidents" per year, the so-called "People's Republic" of North Korea, and so on, where the allotment of Inmarsat and Iridium and Thuraya and similar equipment is extremely restricted - if available at all.

In the case of an emergency or a revolution, **that leaves only HF** for ordinary people like you and us. Innovative nations such as the United States of America routinely fall back on the **amateur radio service as an officially recognized emergency communications medium**. After the installation of a HF transceiver, or after the purchase of a cheap 50 Dollars HF radio for listening to SW transmissions from all over the world - i.e. once the initial investment in equipment is made - there are no call costs or ongoing monthly communication line or equipment rentals. Even better: **HF cannot be "switched off"**, and it is very difficult to block - let alone censor! - broadcasts from abroad. What's more, shortwave is not only "terrorist-proof", but "revolution-proof" as well: a mobile communication station using a cheap laptop computer, connected to a radio transceiver operating from a car battery and feeding a simple wire antenna, is much less vulnerable to an attack from outside than high-tech telecom switchboards, cellphone-repeater antenna farms on rooftops of high buildings, and satellite ground stations with large dish antennas. Remember Haiti and Katrina and the Thai Tsunami and - only recently - the aftermath of the Japanese Tsunami? **HF radio is vital!**

Needless to say that, in the worst case, dictators such as Mr Gaddafi just jam SATCOM! Says Thuraya on 25 February 2011: "Thuraya Telecommunications announced today that its mobile satellite communication services have been subjected to harmful and intentional interference in Libya over the past 7 days. The interference has affected both data and voice communications over Libya and some surrounding areas. In a statement issued today, the company stated that it has conclusive evidence that demonstrates that the interference comes as a result of unlawful and intentional jamming activities. The company added that the reason for being a target for this jamming is likely to be the success of the company's products and services in the country and the wide availability of those in the market."

**Now consider the absurd decision by leading international broadcasters to shut down their world-wide shortwave transmissions ... completely!** Under the difficult situation described above: just how do BBC, DW, VoA and the like get their message - and mission! - across the border to the poor people that is most in need of independent information - and international support???

## 4.5 Selected references

3 February 2011, The Guardian: "The National Union of Journalists described the World Service's transmission policy as 'short sighted'. 'The Egyptian government's attempt to **close down the internet and mobile phone network** demonstrates how short sighted the current World Service transmission policy is,' said an NUJ official at the World Service. 'In a volatile world the World Service needs to maintain its own network of transmitters beyond the reach of dictators so it can continue to reach its audience.' One visitor to the 'Save World Service page on Facebook' said: 'With the events in Egypt this week where the internet was shut down, **how can the BBC honestly believe that satellite and internet feeds will replace shortwave?**' Another said: 'As shown in Egypt the internet and cell phones can easily be cut off. In many places where the internet does exist service is not reliable ... **You cannot compare a relatively inexpensive radio set with a costlier computer or hand-held electronic device.**' "

February 2011, The UK Parliament Homepage with a very interesting submission of The National Union of Journalists to the Foreign Affairs Select Committee inquiry into BBC World Service cuts [www.publications.parliament.uk/pa/cm201011/cmselect/cmfaff/uc849-i/ws34.htm](http://www.publications.parliament.uk/pa/cm201011/cmselect/cmfaff/uc849-i/ws34.htm) "Although some audiences are migrating to local FM relays and internet services, **only short-wave radio delivery guarantees our services reach our audience independently of local censorship.** Local FM relays and **internet services can be switched off at any time** by repressive regimes if they don't like what the BBC is putting out. The BBC is constantly removed from FM for political reasons in places such as Sri Lanka and parts of Africa. Many partner stations on FM across the Middle East do not carry BBC News bulletins. BBC World Television is frequently blanked out in China. **Shortwave radio guarantees editorial independence. This is the argument that BBC management has failed to grasp.** Shortwave is often still the cheapest way of reaching a mass audience. The BBC is abandoning ten million Hindi listeners in India. It will only provide a news service to 200,000 people who can afford computers."

26 February 2011, The Irish Times: "**Shortwave, unlike the internet, is difficult for dictators to jam**, as was shown during the Egyptian crisis earlier this month, when the Mubarak regime all but closed down the internet in a flailing attempt to survive. The decisions are not popular, with leading Indian intellectuals such as authors Arundhati Roy and Vikram Seth, historian Ram Guha and the BBC's own legendary former India correspondent, Sir Mark Tully, expressing dismay. The Hindi service, they said in an open letter, 'has been **a credible source of unbiased and accurate information**, especially in times of crisis: the 1971 war, the emergency in 1975, the communal riots after the demolition of the Ayodhya mosque in 1992'. 'Ten million listeners in India – most of them in rural and often very poor areas – need BBC Hindi radio and the accurate, impartial and independent news it provides,' they went on, adding that **shortwave is available where other media are not.** ' [It is] an essential source of learning for schoolchildren and college students in rural India preparing for competitive exams; and they cannot be silenced in times when democracy is under threat,' they said." In fact, BBC World Service should keep its frequencies occupied, so that other stations do not take them over, and its transmitters

operating, so that they do not fall into disrepair. A good way to do this is through a **global English service**. Such a service would be appreciated by the motley Anglophone community spread widely throughout the world: travellers, businesspeople, workers, students, diplomats, volunteers, missionaries, aid workers, yachtsmen, ship's crew, expatriates, wanderers and vagabonds. **Many are located in remote locations where internet access or satellite reception may not be possible.**"

5 March 2011, Al Jazeera *english.aljazeera.net* Libya Live Blog: "12:36am : Internet connectivity, already unreliable across the country since protests began on February 17, has apparently completely failed, according to Arbor Networks, a US-based network security company. Starting at about 7pm local time on Thursday, the company said that **internet traffic from Libya had fallen to zero**. Only about six per cent of Libyans enjoy internet access at the best of times."

The screenshot shows a Mozilla Firefox browser window with the address bar displaying the URL: <http://english.aljazeera.net/news/africa/2011/02/201122115405296823.html>. The page title is "Watch Al Jazeera during jamming - Africa - Al Jazeera English - Mozilla Firefox". The main heading of the article is "Watch Al Jazeera during jamming". Below the heading, it states: "Alternative frequencies on the Nilesat, Badr4 and Hotbird satellites where the signals are available." The article is dated "Last Modified: 21 Feb 2011 17:15 GMT". There are icons for "Email Article", "Print Article", "Share Article", and "Send Feedback". A highlighted text block reads: "Al Jazeera is suffering interference on the Arabsat satellite frequency. The network, on the basis of investigations by specialists, has blamed Libya's intelligence services for jamming its TV signals and blocking its websites. It has traced the source of the jamming to a Libyan intelligence technical administration building south of Tripoli, the capital." Below this, it lists satellite frequencies: "During jamming Al Jazeera English can be watched on Hotbird 13E Frequency: 11034 Vertical FEC: 3/4 Symbol rate: 27500 Badr4/Eurobird 2 (26East) Frequency : 11680.8 Horizontal; SR: 27.5; FEC: 3/4 Nilesat/ Atlantic Bird4A (7West) Frequency: 11393 Vertical; SR:27.5; FEC :3/4". It also mentions "During jamming, Al Jazeera Arabic can be watched on Nilesat 7W Frequency: 11555 Vertical FEC: 3/4 Symbol rate: 27500". A source is cited as "Source: Jazeera". On the right side, there are sections for "How to watch Al Jazeera English" and "Top News". The "Top News" section includes: "Libya protests spread and intensify", "Live Blog - Libya", "Watch Al Jazeera during jamming", "Europe plans for Libya evacuation", and "British PM holds talks in Egypt". The "Africa" section includes: "Libya protests spread and intensify", "Colonel sentenced for DRC mass rape", "Tunisia seeks Ben Ali's extradition", and "Deadly attack on Somali police base". The browser's taskbar at the bottom shows several open applications, including "Start", "Watch Al Ja...", "WAVECOM W...", "Kilometer - Mi...", "SuperHTML 7.0", and "WAVECOM-Gr...", along with a system clock showing "18:38".

## 6 March 2011, Al Jazeera

19 March 2011, DC Nepal: "A number of prominent civil society leaders have submitted a petition to the British Prime Minister David Cameron urging the UK government to stop the planned shutdown of the short wave transmissions of the BBC Nepali Service. The petitioners have regretted the decision by the BBC World Service to shut down its short wave transmissions in Nepali from March 27 saying that the service had been making tremendous contribution to promote a culture of democracy, tolerance and dialogue on issues of national importance particularly among the poorest and scattered sections of Nepali society who have little access to information. The petition states that **since short wave receivers can be battery operated, BBC Nepali Service has been available in places without electricity or during power cuts.** ' If the short wave transmission is shut down, millions of Nepali listeners, mostly in remote, mountainous areas of Nepal, will be cut off from their **essential source of dependable news**, and the UK will irreversibly damage its most successful (brand) presence in Nepal.' "

April 2011, Radio User, a monthly from Britain: "Recent crises have shown that short wave broadcasting is still necessary to reach some audiences, casting doubt - yet again - on the sense of replacing BBC World Service short wave services to countries like Egypt and China by internet-only streaming. The Chinese authorities already block the internet so BBC internet streamed broadcasts to there are unlikely to reach their audience. There is also the argument that **internet access in some parts of the world is non-existent, unreliable, slow or expensive** and it is only the western world that has a large number of computer users."

May 2011, Radio User: "With the BBC having axed its Mandarin service and the Voice of America announcing its intention to cut its Cantonese and Mandarin language services to China, a cynic might be forgiven for thinking that this was to appease the Chinese regime and to help boost UK and US commercial interests in China. The Epoch Times supports the view that China needs accurate, uncensored news. It also quoted the prominent Chinese democracy activist Yang Juanli as saying **the cuts were 'extremely bad news. It's a blow to the common people. A large number of Chinese are used to listen to VOA for the news they need.'** Yang believes the VOA's current shortwave radio format suits the people of China much better than online broadcasting. 'It's more secure and safer than using the internet. They're harder to track. Listening to the radio is relatively safer.' "

9 June 2011, Victor Goonetilleke 4S7VK, radio amateur and DXer for 50+ years from Sri Lanka: "BBC shortwave transmissions discontinued ... Local FM transmissions in Sinhala and Tamil often have been cancelled or censored ... **You're deceiving yourself if you set your priority only on the Internet.** Less than 10 percent of Sri Lanka's population has Internet access!"

27 August 2011, The Economist: "When Urumqi, in the western region of Xinjiang, was racked by ethnic violence in 2009, **the authorities simply switched off the internet in Xinjiang for ten months.** China, further alarmed by the alleged role of social networks in the recent riots in Britain, might well counter renewed regional unrest with another local internet shutdown."

8 September 2011, Bradford Oliver, Vice President Operations, Barrett Communications USA LLC, Wilmington DE: "**Your article [www.klingenfuss.org/libya.pdf](http://www.klingenfuss.org/libya.pdf) is spot on!**"

September 2011, Richard Fisher KI6SN in Popular Communications: "The VOA is considering scaling back its shortwave service. If the United States does not continue to stake its claim on shortwave, others will - oppressive and terrorist-oriented regimes that view human rights and freedom as a danger. - **We've seen the vulnerability of the Internet recently in the Middle East and China**, where the Web's ON/OFF switch is within arm's reach of a repressive government. Whither VOA then? - Most people in impoverished regions aren't likely to be Internet users. They might, however, have a transistorized shortwave radio and listen to the VOA. What seems missed or ignored by the Broadcasting Board of Governors is that much of the world is **at present** living in what the board seems to view **as the past.** For VOA to shut down broadcasts to China when Beijing is increasing its propaganda assault defies logic."

26 October 2011, Kim Andrew Elliott on Radio World at [www.rwonline.com](http://www.rwonline.com) : "**Shortwave radio still matters in the Internet Age.** In fact, as more nations develop more powerful methods to block Internet content, shortwave can come to the rescue. This would probably be **by means of text via shortwave**, which is a much more efficient mode than voice. Text via shortwave can be used **to get uncensored news to a few key users in a country**, who can in turn pass the information on via blogs and social media within the country."

And here we come full circle, since "**text via shortwave**" has been exactly our own subject for **40+ years of work**: monitoring and decoding digital utility radio stations for the transmission of data and text contents worldwide - on shortwave! ☺

## Comments

Rolf Spiker of Exida.com, Netherlands, 6 December 2011: "I agree fully with your point of view."

Nils Schiffhauer DK8OK, Germany, 6 December 2011: "Hi, Jörg - sehr spannend und sehr richtig!"

Anker Petersen, Chairman of Danish Shortwave Clubs International, 13 December 2011: "I agree with you on pages 184-187, that HF radio still is vital!"

Ronald Edberg, United Kingdom, 20 December 2011: "You are right about shortwave. For there are numerous threats to satellite communication, the Internet, and other communications sources. In the future shortwave is going to play a very important role in communications."

Harald Kuhl DL1ABJ, Buchbesprechungen editor of *Radio-Kurier Weltweit Hören*, Germany - February 2012: "... bauen internationale Hörfunkstationen ihre Sendekapazitäten weiter ab. Dies kritisiert der Herausgeber ganz richtig als kurzsichtig, denn die von früher bekannten Auslandssendern heute gern favorisierte Programmverteilung über örtliche UKW-Frequenzen, per Satellit oder übers Internet ist potenziell der Willkür der Zensoren im Zielgebiet ausgesetzt. Während die Kurzwelle immer einen Weg zum interessierten Hörer findet, geben Auslandssender diese und damit einen Teil der von ihnen selbst propagierten Informationsfreiheit auf."

## New references received after the publication of the 2012 Shortwave Frequency Guide

16 October 2011, James Careless on Radio World at [www.rwonline.com](http://www.rwonline.com) : "In the developing world ... the need for shortwave radio remains, but **listeners do not have the money to buy expensive DRM receivers.**" Keith Perron, founder of shortwave program producer PCJ Media: "Unless a company comes along with a DRM receiver that can cost less than 40 USD for countries in the developing world, **it won't happen.**"

28 October 2011, Jerome Socolovsky on Voice of America News at [www.voanews.com](http://www.voanews.com) : "Our view is that there is a great future for shortwave," says Charles Caudil, president of World Christian Broadcasting, which runs KNLS. He says **its long-range signal is ideal for reaching rural areas in the developing world.** "Very few people there have the Internet available to them, or satellites. But they do have shortwave receivers. **There are about three billion shortwave receivers in the world.**" he said. The outlet is building a relay station in Madagascar, which will open a door the Muslim world.

19 December 2011, Tony Harding on Radio World at [www.rwonline.com](http://www.rwonline.com) : "BBC WS cuts ... Next we will have broadcasts to Afghanistan on the web only, **as if the average hill farmer had a broadband connection.**"

22 January 2012, <http://swling.com> : "It's more clear than ever that VOA, BBC World Service, Radio Australia, Radio France International, Radio Netherlands Worldwide, and the like still hold the key to getting uncensored information into oppressed countries without bringing harm to listeners, namely, via broadcasts over shortwave radio. For, as we've often said, **shortwave radio is impossible to track,** works at the speed of light, is everywhere, **and requires very simple and affordable technology** on behalf of the listener. Let's keep it alive and well: burgeoning democracies rely upon it."

26 January 2012, The Guardian citing a member of the BBC Caribbean World Service office, one of the services being cut: "I think many people take it for granted, and because there is widespread democracy in Britain **I don't think a lot of people understand how significant a role the World Service plays in other parts of the world** where, to a large extent people, usually depend on the World Service because the local media is very biased or very government controlled and people are not getting a balanced diet when it comes to news and analysis."

26 January 2012, [www.usgbroadcasts.com](http://www.usgbroadcasts.com) : "Voice of America (VOA) Director David Ensor has commented on the Iranian jamming of VOA satellite television signals. His is a significant post since it exposes the ability of any country or even a group of people to render satellite television programs useless. That leaves the Internet and shortwave radio. The Internet can be censored as demonstrated by China. Only highly technically sophisticated individuals can overcome such censorship and even then they expose themselves to being monitored by the secret police. Shortwave radio can be jammed but it cannot be jammed completely. **Listening to shortwave radio is safe.** Some shortwave radio signals will always get through to some people, especially outside of urban areas. It is true that **not as many people listen to shortwave radio as before, but many do and many more will if they desperately need information and moral support and have no other choice.** The Broadcasting Board of Governors (BBG), which runs VOA, can complain all it wants, but it should always have a backup plan. That's why it is risky and foolish for the BBG to want to completely give up VOA shortwave radio transmissions to strategically important countries like China and Russia."

14 February 2012, *en.wikipedia.org* : "Shortwave does possess a number of advantages over newer technologies, including the following: The difficulty in censoring programming by authorities in target countries: unlike the Internet, government authorities have technical difficulties to monitor which stations (sites) are being listened to (accessed). - Low-cost shortwave radios are widely available in all but the most repressive countries in the world. - In many countries (particularly in most third world nations and in the Eastern bloc during the Cold War era) ownership of shortwave receivers is widespread. - Many newer shortwave receivers are portable and can be battery operated, making them useful in difficult circumstances. - Newer technology includes hand-cranked radios which provide power without batteries. - **Shortwave radios can be used in situations where Internet or satellite communications service is unavailable (or unaffordable).** - Shortwave broadcasts can be easily transmitted over a distance of several thousands of kilometers, e.g., from one continent to another. - Very little infrastructure is required for long-distance two-way communications using shortwave radio. All you need is a pair of transceivers, antenna and a source of energy (e.g. battery or electric grid). This makes shortwave radio **one of the most robust means of communications** which can be disrupted only by interference or bad condition of ionosphere. Modern digital transmission modes ... are even more robust allowing successful reception of signals well below noise level."

20 April 2012, *www.izvestia.ru* : "Digital radio is left without support. The Ministry of Communications plans to cut the state program of broadcasting development. Over the past few years, **the worldwide use of DRM has significantly decreased.**"