

REPORT ITU-R M.2085-1

Role of the amateur and amateur-satellite services in support of disaster mitigation and relief

(Question ITU-R 209-3/5)

(2006-2011)

1 Introduction

The amateur services have a long history of providing radiocommunications during emergencies and in support of disaster relief. Amateur stations are distributed throughout the world in populated and sparsely populated areas have flexible equipment with frequency agility and have trained radio operators capable of reconfiguring networks to meet the specific needs of an emergency.

Amateur stations are regularly involved in emergency radiocommunications for relief of hurricanes, typhoons and cyclones; tornadoes, floods; fires; volcanic eruptions; and some man-made emergencies such as chemical spills.

1. Úvod

Amatérské služby majú dlhú históriu poskytovania rádiokomunikácií počas mimoriadnych udalostí a na podporu pomoci pri katastrofách. Amatérské stanice sú rozmiestnené po celom svete v obývaných a riedko osídlených oblastiach, majú flexibilné vybavenie s frekvenčnou agilitou a majú vyškolených rádiových operátorov schopných prekonfigurovať siete tak, aby vyhovovali špecifickým potrebám núdzovej situácie.

Amatérské stanice sú pravidelne zapojené do núdzovej rádiokomunikácie na zmiernenie hurikánov, tajfúnov a cyklónov; tornáda, záplavy; požiare; sopečné erupcie; a niektoré núdzové situácie spôsobené človekom, ako sú úniky chemikálií.

2 Related texts (bez prekladu do slovenčiny)

The use of the amateur and amateur-satellite services is documented in ITU-R and ITU-D texts, namely:

- Article 5 of the Radio Regulations (RR) lists frequency allocations for the amateur and amateur-satellite service;
- Article 25 establishes basic rules for the amateur and amateur-satellite services. In particular, it states:
“25.9A§ 5A Administrations are encouraged to take the necessary steps to allow amateur stations to prepare for and meet communication needs in support of disaster relief. (WRC 03);”

- Resolution 644 (Rev.WRC-07) – Telecommunications resources for disaster mitigation and relief operations;
- Resolution 646 (WRC-03) – Public protection and disaster relief;
- Recommendation ITU-R M.1042 – Disaster communications in the amateur and amateur-satellite services;
- Recommendation ITU-R M.1732 – Characteristics of systems operating in the amateur and amateur-satellite services for use in sharing studies;
- Recommendation ITU-D 13.1 – Effective utilization of the amateur services in disaster mitigation and relief operations.

The ITU-D Handbook on Emergency Telecommunications (2005), in particular: Part II, Chapter 5 – The Amateur Radio Service – includes the following:

- the roles of the amateur services in emergency telecommunications;
- short-, medium- and long-range networks;
- communications modes;
- operating frequencies;
- repeater stations;
- the organization of amateur radio emergency service;
- third party communications in the amateur radio service;
- optimizing the use of the amateur radio service as a public service.

Part III of the ITU-D Handbook lists frequencies allocated to the amateur and amateur-satellite services as well as those allocated to the mobile service likely to be used for emergency radiocommunications. It includes antenna, propagation and other useful information related to emergency radiocommunications.

The contents of the ITU-D Handbook drew heavily on studies developed in ITU-R and ITU-R contributed to the work of the Handbook editorial team.

The ITU-R Special Supplement, *Emergency and Disaster relief*, lists studies carried out by Radiocommunication Study Groups and annexes related texts.

3 GAREC (bez prekladu do slovenčiny)

Since the first Global Amateur Radio Emergency Communications (GAREC) Conference took place on 13-14 June 2005 in Tampere, Finland, six more GAREC conferences have been held (Finland 2006, USA 2007, Germany 2008, Japan 2009, Netherlands Antilles 2010 and South Africa 2011). These conferences review the possibilities to further improve contributions of the amateur services and serve as an advisory group on emergency communications to the IARU. Furthermore, GAREC conferences promote the implementation of the goals defined by the World Summit on the Information Society, including:

- the existing structures and agreements of cooperation between national amateur radio organizations and institutional providers of emergency and disaster response services;
- the role of the amateur services in national and international humanitarian assistance and in disaster prevention and preparedness;
- the role of the amateur services in capacity building and in improving affordable connectivity;
- the need for a supportive regulatory framework as part of an enabling environment to improve access to communication.

The conclusions of the GAREC conferences confirm that:

- The amateur services have proven capabilities and capacities to serve the international community through their global network of infrastructure-independent stations. Such stations are not only most likely to withstand the physical impact of disasters, but their flexibility furthermore avoids the overload all public networks inevitably experience in the aftermath of disasters. The broad spectrum of technologies used by the amateur services allows the joint use of traditional media and new technologies.
- Beyond its character as a global network, the amateur services are an invaluable resource of skilled operators, trained and experienced in maintaining communications under the most adverse conditions. It is thus essential to ensure that this resource can be fully utilized in the service of emergency and disaster response providers.

As a result of GAREC-2005, the International Amateur Radio Union Administrative Council established a working group to develop an International Emergency Communication Handbook for the Amateur Radio Service.

4 Emergency centre of activity frequencies

The emergency centre of activity frequencies proposed by GAREC-2005 have been adopted by the conferences of all three regional entities (R1, R2, R3) of IARU. The frequencies reflect specific regional requirements such as band allocations and the respective IARU band plans.

Emergency radio frequencies in the VHF and UHF bands vary by country.

It should be noted that amateur radio equipment is tuneable rather than set to specific channels. Thus, the above centres of activity are nominal frequencies on or near which a number of networks can be supported as needed.

4 Frekvencie centier aktivity núdzovej komunikácie

Frekvencie centier aktivity núdzovej komunikácie navrhnuté na konferencii GAREC-2005 boli prijaté konferenciami všetkých troch regionálnych subjektov (R1, R2, R3) IARU. Frekvencie odrážajú špecifické regionálne požiadavky, ako je pridelenie pásiem a príslušné pásmové plány IARU. Núdzové rádiové frekvencie v pásmach VHF a UHF sa v jednotlivých krajinách líšia. Je potrebné poznamenať, že amatérske rádiové zariadenia je možné naladiť na rôzne frekvencie a nie sú obmedzené na konkrétne kanály. Vyššie uvedené centrá činnosti sú teda nominálne frekvencie, na ktorých alebo v blízkosti ktorých možno podľa potreby podporovať množstvo sietí.

5 Recent operational experiences

The following paragraphs outline specific experience gained during some of the catastrophic events that have affected public and private communication networks since 2006 including those of the institutional providers of emergency assistance and disaster relief

5 Nedávne prevádzkové skúsenosti

Nasledujúce odseky uvádzajú konkrétne skúsenosti získané počas niektorých katastrofických udalostí, ktoré postihli verejné a súkromné komunikačné siete od roku 2006 vrátane tých, ktoré poskytli inštitucionálni poskytovatelia núdzovej pomoci a pomoci pri katastrofách.

5.1 Interoperability with other services

The amateur radio services provide, by definition, primarily point-to-point communication between stations operating within these services. To the extent applicable regulations allow third-party communications, such communications can serve the providers of disaster relief and the public.

To an increasing degree, the utility of amateur radio service communication links is greatly enhanced by connections with public communication networks. Stations of the amateur service networks located within an affected area can provide links to stations of these services located in locations not affected by a disruption of public or private networks of other services, which in turn relay traffic from and to any location worldwide. The characteristics of amateur radio stations typically deployed in emergency situations do not normally allow full duplex and broadband communications required, for example, for Internet services such as web-browsing, but they ensure the exchange of messages through e-mail and on conventional telephone networks. The amateur radio services also maintain their own networks on the Internet.

5.1 Interoperabilita s inými službami

Amatérske rádiové služby podľa definície poskytujú predovšetkým komunikáciu bod-bod medzi stanicami pôsobiacimi v rámci týchto služieb. V rozsahu, v akom platné predpisy umožňujú komunikáciu s tretími stranami, môže takáto komunikácia slúžiť poskytovateľom pomoci pri katastrofách a verejnosti.

V čoraz väčšej miere sa užitočnosť komunikačných spojení amatérskych rádiových služieb výrazne zvyšuje spojením s verejnými komunikačnými sieťami. Stanice sietí amatérskych služieb, ktoré sa nachádzajú v postihnutej oblasti, môžu poskytovať spojenia so stanicami týchto služieb umiestnenými v lokalitách, ktoré nie sú ovplyvnené prerušením verejných alebo súkromných sietí iných služieb, ktoré zase prenášajú prevádzku z a do akéhokoľvek miesta na celom svete. Charakteristiky amatérskych rádiových staníc bežne nasadzovaných v núdzových situáciách bežne neumožňujú plne duplexnú a širokopásmovú komunikáciu potrebnú napríklad pre internetové služby, ako je prehliadanie webu, ale zabezpečujú výmenu správ prostredníctvom e-mailu a konvenčných telefónnych sietí. Rádioamatérske služby majú tiež svoje vlastné siete na internete.

5.2 Support to other services

Operators of the amateur radio services have in many cases assisted in the re-establishment of disrupted public and private services. Their skills, to use what is available, and their flexibility in respect to communication modes and procedures have been a valuable asset in such cases.

5.2 Podpora iných služieb

Prevádzkovatelia amatérskych rádiových služieb v mnohých prípadoch pomáhali pri obnove narušených verejných a súkromných služieb. Ich schopnosti využívať to, čo je k dispozícii, a ich flexibilita, pokiaľ ide o komunikačné spôsoby a postupy, boli v takýchto prípadoch cenným prínosom.

5.3 International assistance

The availability of the amateur radio services in times of disaster depends first of all on the number of stations normally operating in the affected region. The density of stations differ; not only because of differences in population density, but also as a result of different regulatory provisions established by national administrations. When a disaster strikes in a country or region with a low number of local amateur radio stations, international assistance is required.

Such assistance has been possible in some cases in the past, but it depends on respective agreements between administrations. International recognition of amateur radio licences has existed in some regions for many years, for example, within CEPT and those

administrations which have joined the relevant CEPT agreements. Like all humanitarian assistance, communication support has become an increasingly international element of disaster relief. The development of a scheme for international recognition of national amateur licences is therefore considered by the amateur service to be a high priority

5.3 Medzinárodná pomoc

Dostupnosť rádioamatérskych služieb v čase katastrofy závisí predovšetkým od počtu staníc bežne fungujúcich v postihnutom regióne. Hustota staníc sa líši; nielen z dôvodu rozdielov v hustote obyvateľstva, ale aj v dôsledku rôznych regulačných ustanovení stanovených vnútroštátnymi správnyimi orgánmi. Keď dôjde ku katastrofe v krajine alebo regióne s nízkym počtom miestnych amatérskych rádiových staníc, je potrebná medzinárodná pomoc.

Takáto pomoc bola v niektorých prípadoch možná aj v minulosti, ale závisí od príslušných dohôd medzi správami. Medzinárodné uznávanie rádioamatérskych licencií existuje v niektorých regiónoch už mnoho rokov, napríklad v rámci CEPT a tých správ, ktoré sa pripojili k príslušným dohodám CEPT. Ako každá humanitárna pomoc, aj komunikačná podpora sa stáva čoraz medzinárodnejším prvkom pomoci pri katastrofách. Rozvoj systému medzinárodného uznávania národných amatérskych licencií preto amatérska služba považuje za vysokú prioritu

6 Preparedness measures

Several countries have established preparedness measures including training courses, and have held major exercises, often in close cooperation with the disaster response organizations and institutions they serve. Such partners included national and international partners from government as well as non-governmental sectors. Joint exercises, during which amateur radio operators actively support the communication requirements of institutional providers of emergency response, are indispensable for an efficient use of the valuable resources that skilled operators with experience in establishing communications with often very limited means and under difficult circumstances can provide.

6 Opatrenia na zlepšenie pripravenosti

Viacere krajiny zaviedli opatrenia na zlepšenie pripravenosti vrátane kurzov odbornej prípravy a uskutočnili veľké cvičenia, často v úzkej spolupráci s organizáciami a inštitúciami v oblasti reakcie na katastrofy, ktorým slúžia. Takýmito partnermi boli národní a medzinárodní partneri z vládneho ako aj mimovládneho sektora. Spoločné cvičenia, počas ktorých amatérski rádiovi operátori aktívne podporujú komunikačné požiadavky inštitucionálnych poskytovateľov núdzovej reakcie, sú nevyhnutné pre efektívne využitie cenných zdrojov, ktoré môžu poskytnúť kvalifikovaní operátori so skúsenosťami s nadväzovaním komunikácie s často veľmi obmedzenými prostriedkami a za zložitých okolností.

