



# Malaysian Amateur Radio Emergency Service (MARES)

Persatuan Perkhidmatan Kecemasan  
Radio Amatur Malaysia



*Saving Lives Through The Airwaves*



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## Introduction

When a disaster - huge flood, landslides and tornadoes strikes, communication facilities such as fixed telephone lines and mobile communication infra-structure are either completely knocked down or become unreliable for effective communication. So when first emergency responders arrived at the disaster area to assess the damage, they usually have difficulty relaying critical information back to the headquarters. Furthermore, when search and rescue (SAR) teams from different agencies arrived at the scene, they usually cannot communicate with one another as each team is usually equipped with a particular radio system, incompatible with those used by other teams. In some situations, even the personnel of the same agency may not be able to use two way radios to talk to one another as they are separated by a hill or by large buildings. As such emergency and disaster relief operations are often hampered by communication difficulty, making things harder for the emergency or relief personnel and causing a lot of problem as a result of miscommunication between the different parties.



Emergency Communication (EmComm) is vital as it provides critical communications links and channels when the normal ones are either degraded or totally non-existent immediately following a disaster. EmComm exists to support normal communication channels often used by public safety agencies which may not be able to cope with the high demand of emergency traffic.

This is where MARES fits into the picture. We provide communication facilities such as walkie-talkies, portable VHF two way radios and HF radios. Our seemingly unlimited range of frequencies from High Frequencies through microwaves, coupled with our sophisticated equipment that is capable of being both mode and frequency agile, allows us extreme versatility in providing short-range tactical communication and long-haul communications in support of disaster relief efforts.

We can setup communication network to link various government agencies, NGOs, and other parties involved in emergency or disaster relief operations within short notice. In short we help these people to communicate with one another any time, any where. And most importantly, we are not dependent on telecommunication infrastructure.



## What is MARES?



MARES logo.



MARES on-site radio station

MARES is the abbreviation for Malaysian Amateur Radio Emergency Service, a registered non governmental organization, established in 2002 as a result of the need to have a team of dedicated and well trained radio operators to assist the authorities in times of emergency and disaster. As such, we specialize in radio communications for emergency and disaster relief operation. We can operate at various frequencies, use various communication modes such as PSK31, RTTY, morse code, and SSTV, and can communicate in analog or digital. We also provide communication assistance for certain social events such as sports and fund raising campaign.

Our members are made up of amateur radio enthusiasts, most of whom are licensed Amateur Radio operators who are ever ready to sacrifice their precious time and energy when their assistance is required. Amateur radio operators (also called Radio amateurs or simply hams) are people who enjoy experimenting with wireless communication. Most of them have two-way radio equipment including walkie-talkies, VHF, UHF and HF transceivers. Being a MARES member enables most of them to focus on emergency and disaster preparedness.

In line with the National Security Council directive number 20, we developed our own standard operating procedure which makes us different from other amateur radio organizations in the country. In addition to that, we have also developed specialized portable communication equipment which can be deployed easily even to remote areas where no telecommunication service exists. Furthermore, we train regularly to ensure that our communication equipment works, and that our skills are not rusty.

Thus far MARES is the leading non-governmental organization that provides emergency communication to various government agencies in Malaysia. Our operations and functions share many similarities with Amateur Radio Emergency Service (ARES) in the United States of America, Radio Amateur Emergency Network (RAYNET) in the United Kingdom and Wireless Institute of Civil Emergency Network in Australia (WICEN).



MARES Command Center during a disaster operation



MARES field-day event

## MARES Vision, Mission, Objectives and Motto

### VISION

To be an effective and efficient amateur radio emergency service organization of international standard.

### MISSION

MARES, a Malaysian non-profit, non-government organization which consists of amateur radio enthusiast, who volunteered to be ready to provide communication service in time of emergency or disaster, when normal communication channels are either down or congested.

### OBJECTIVES

1. To provide efficient and effective communication service on a wide scale of responses in times of disaster or emergency - e.g., floods, multi-casualty accidents, large fires, hazmat incidents, and plane crashes.
2. To setup emergency communication network at any disaster area when required within a reasonable time frame.
3. To provide communication link from disaster/incident area to emergency operation centre.
4. To provide an effective and efficient communication network linking various government agencies such as Civil Defense Corp, Fire and Rescue Department, Royal Malaysian Police, Royal Malaysian Air Force, Department Of Civil Aviation and other organizations involved in search and rescue operations.
5. To promote the general advancement of science and the practice of wireless communication and to facilitate the exchange of information and ideas on this subjects among its members.
6. To promote the general advancement of science and practice of the radio and satellite communication, be it analog or digital, to school and university students, and also to the general public.



Radio amateur providing communication support to MRCS during



MARES Repeater Setup

### MOTTO

Saving Lives Through The Airwave



MARES promotes amateur radio and emergency communication to public.

## Radio Amateurs Involvement in Disaster / Relief Missions

Most of MARES members have been actively involved in emergency communications to support disaster and relief missions in Malaysia. In 1967 a **big flood hit Kota Bahru Kelantan knocking down** telecommunication network. Radio amateurs were called in to provide emergency communications for the disaster area; and also to link Kota Bharu with Kuala Lumpur.



Communication support during Feb 2002 Pahang flood.

### **Dec 1993 Highland Tower Tragedy**

When the Highland Towers Condominium collapsed on 11 December 1993, we were called on to provide EmComm service linking the disaster area and the Kuala Lumpur General Hospital. The communication link was operational for 24 hours a day for five days.

### **1994 Subang Airport Fire**

In 1994 fire broke out at Subang International Airport. Radio amateurs were requested by the Department of Civil Aviation to provide back up communication for the failed Airport Terminal Information Service (ATIS) system.



Operating the Command Center during Mar 2005 Klang Gates Dam plane crash.

### **Feb 1999 Mantin Plane Crash**

In February 1999 a light plane crashed in Hutan Lipur Mantin, Negeri Sembilan. Amateur Radio operators were called in by the Civil Defence Department to setup Emergency Communication Unit at the Emergency Command Centre of the Search and Rescue Operation.

### **Dec 1999 Y2K Changeover**

On 31 December 1999 our members were requested by The Civil Defence Department Of Negeri Sembilan to provide emergency communication service in lieu of any eventuality during the Y2K changeover.

### **Feb 2002 Pahang Flood**

In February 2002 Malaysian Red Crescent requested us to provide an Emergency Communication link from Kuantan to their headquarters in Jalan Nipah Kuala Lumpur during the flood Relief Operation in Pahang.



Supporting communication needs during Dec 2006 Johor flood.

### **Mar 2005 Klang Gates Dam Plane Crash**

On the request of the Civil Defense Corp, MARES members set up an Emergency Communication Network to support of a Search and Rescue (SAR) operation, between 15 and 16 March 2004, to find a light airplane (Piper 28) which crashed in the vicinity of Gunung Bidai near Bentong. MARES also setup an Incident Command Centre at the Klang Gates Dam in Hulu Kelang to coordinate all communication traffics.



Acheh Dec 2004 Tsunami



Setting up a radio antenna during Dec



Delivering food supplies during Dec  
2007 Pahang flood.



Dec 2008 Bukit Antarabangsa  
Landslide.

## **Dec 2004 Asian Tsunami**

26 Dec 2004, following an unexpected Tsunami, MARES headquarter becomes a relay station to coordinate communications between search and rescue agencies in Meulaboh, Banda Aceh and Medan. Some of our members were also dispatched to Banda Aceh to help support communication link for the relief agencies.

## **19<sup>th</sup> - 24<sup>th</sup> Dec 2006 Johor Flood Disaster (1<sup>st</sup> Mission)**

Upon receiving an urgent request from the Department of Civil Defence in Segamat, we immediately dispatched our first responders along with 4 jet skis which arrived in Segamat within the first 24 hours. We setup VHF radio network linking Segamat Police Headquarters, Civil Defence Corp and temporary relief shelters. We also setup HF communication to link Segamat District Police Headquarters to the Disaster Operation Center at the Civil Defence Corp Headquarters in Kuala Lumpur.

## **28<sup>th</sup> - 30<sup>th</sup> Dec 2006 Johor Flood (2<sup>nd</sup> Mission – Segamat)**

MARES assisted Yayasan Salam, a non-government organization, in their relief works in Segamat. MARES helped to control their traffic and provide communication facility for Yayasan Salam's convoy to Segamat. In Segamat we setup portable EmComm stations at various places to enable Yayasan Salam provides fast and efficient relief works.

## **12<sup>th</sup> - 14<sup>th</sup> Jan 2007 Johor Flood (3<sup>rd</sup> Mission - Batu Pahat)**

MARES and Yayasan Salam organized the third relief work in Batu Pahat.

## **19<sup>th</sup> - 21<sup>st</sup> Jan 2007 Johor Flood (4<sup>th</sup> Mission - Batu Pahat)**

MARES and Yayasan Salam worked together and organized the fourth relief work for Segamat flood victims.

## **14<sup>th</sup> - 16<sup>th</sup> Dec 2007 Pahang Flood (Temerloh)**

Huge flood hit several different districts in Pahang including Temerloh, Maran, Bera, Jerantut and Pekan. Temerloh District Police Headquarters requested MARES to provide EmComm support for the district of Temerloh. MARES deployed several teams which setup portable station at the Temerloh Police Headquarters and at the Bilik Gerakan Banjir at the District Office. We also organized and dispatched a team of 4 jet skis from our affiliate organization to help in flood disaster relief mission in Temerloh.

## **19<sup>th</sup> – 21<sup>st</sup> Dec 2007 Pahang Flood (Pekan)**

19<sup>th</sup> December 2007 - Civil Defense Corp in Pekan requested MARES' assistance for flood relief operation in Paloh Hinai, Pekan. Our team was immediately dispatched to Paloh Hinai Police Station the same day; setup a portable station and operated the station until 21<sup>st</sup> December.

## **27<sup>th</sup> – 29<sup>th</sup> Dec 2007 Pahang Flood (Pekan)**

MARES received a request from Bilik Gerakan Banjir at Pekan Police Headquarters. Our EmComm teams were immediately dispatched. We setup emergency communication stations at Bilik Gerakan Banjir at Pekan Police Headquarters, and another station at Bilik Gerakan Banjir UMNO in Pekan.

## **6<sup>th</sup> – 9<sup>th</sup> Dec 2008 Bukit Antarabangsa Landslide**

Following a landslide at Bukit Antarabangsa, Kuala Lumpur MARES received an urgent request for EmComm support. MARES deployed several teams involving at least 40 EmComm volunteers. MARES setup 2 EmComm stations linking Malaysian Red Crescent Society's Headquarters in Ampang and its mobile command centre at Bukit Antarabangsa. MARES also setup 5 portable EmComm stations for the Medical teams from the Ministry of Health, particularly:

1. at the trauma centre,
2. forward base,
3. at the Police Operation Centre,
4. at the Fire and Rescue Operation Centre and
5. at Temporary relief centre at SK. Hulu Kelang.



Operating Comm. Center during Dec 2008 Bukit Antarabangsa landslide

## **19<sup>th</sup> Feb – 27<sup>th</sup> Mar 2009 Gunung Yong Yap Missing Person SAR.**

MARES supported the authorities by providing emergency communication support for SAR operation to find a missing climber at Gunung Yong Yap, near Perak and Kelantan border. In the operation which lasted more than a month, MARES and other radio amateur volunteers operated on-site command center from 19th Feb – 27th Mar 2009. The operation however, failed to locate the missing person.

## **28<sup>th</sup> – 30<sup>th</sup> May 2009 Jaya Supermarket Collapsed**

On Thursday 28 May 2009 the abandoned Jaya Supermarket in Section 14, Petaling Jaya collapsed during demolition operations. MARES was requested by Pusat Perubatan Universiti Malaya (PPUM) to provide emergency communication support at the incident area.

## **3<sup>th</sup> – 7<sup>th</sup> Sep 2009 Broga Hill Missing Person SAR.**

In September 2009 MARES assisted JPAM and provided communication support during a SAR operation to find 2 missing jungle trackers at Broga hill near Semenyih. Both trackers were eventually found.



Operating Comm. Center during Dec 2008 Bukit Antarabangsa landslide





Operating Comm. Center during 2014  
Ops Cessna Plane Crash at Ulu Yam

## 11 January 2014 Ops Cessna

MARES received a request from assistance in the Search and Rescue (SAR) activity of Cessna Plane crashed at Empangan Batu, Ulu Yam. The SAR was conducted by the Selangor Fire and Rescue Department. MARES assisted in providing a secondary communication link for the SAR team and the command center.

## 18<sup>th</sup> – 22 June 2014 Ops Kelanang

MARES was contacted by Selangor Fire & Rescue Department (FRD) to provide emergency communication in support of the search and rescue operation conducted on a capsized boat carrying 97 passengers off Banting waters. As the appointed coordinator for radio hams emcomm support for FRD's RESCAR, MARES had broadcasted through all communication means calling for volunteers to assist the SAR agencies.



MARES member on SAR team boat  
providing up to date information to 2014  
Ops Kelanang Command Center

## December 2104 Ops Murni

MARES was called by SKMM to provide communication support for Ops Murni in Kelantan. MARES setup its communication center at 8 Briged RAMD. We provided ground to air radio coordination for air operations and ground communication network between Pengkalan Chepa, Manik Urai and Kuala Krai.



## Event and Conference



Providing communication support to MPPJ during 2005 PJ Challenge.



Radio amateurs operating radio stations at the annual scouts Jamboree-On-The-



Ladies radio amateurs conducting 2m Net from MARES club house.



3rd Asian Ministerial Conference on Disaster Risk Reduction – Dec 2008

The following is a list of various events and conferences which we have participated.

1. Horse Endurance in Kuala Pilah 2003.
2. White water rafting Gua Musang organized by KESEDAR and Kementerian Belia Dan Sukan – Provided Emergency Communication System for the Medical teams.
3. Participated in Bandaraya Bersejarah Scout Jamboree in Ayer Keroh Melaka 2003.
4. Provided communication system to Majlis Perbandaran Petaling Jaya, the organizer of PJ Challenge 2004 and 2005.
5. Provided communication system to the Malaysian Scout during International Jamboree On The Air year 2002, 2003, 2004 and 2005.
6. Participated in Airport Emergency Exercise (AIREX07) to assist Malaysia Airline System's Emergency Management Center (EMC) and provided backup emergency communication 10/04/2007.
7. Participated in the Emergency Response Conference And Exhibition organized by Emergency Management Centre of Malaysia Airlines at Kelana Jaya on the 28th November 2007.
8. Participated in the LIMA Langkawi 2007 exhibition together with Prometeo Malaysia Sdn. Bhd., from 4<sup>th</sup> December 2007 ~ 8<sup>th</sup> December 2007.
9. Participated in the "Exhibition On Disaster Management" organized by National Security Council (NSC) 10<sup>th</sup> December 2007 ~ 11<sup>th</sup> December 2007 at PWTC.
10. 1<sup>st</sup> Jun 2008 MARES was invited by the National Security Council (NSC), to participate in the "3<sup>rd</sup> Asian Ministerial Conference On Disaster Risk Reduction Conference Partners Meeting. We sat together with United Nation International Strategy For Disaster Risk Reduction (UN ISDRR), Asian Disaster Preparedness Centre (ADPC), International Federation For Red Cross (IFRC), Office for The Coordination of Humanitarian Assistance (OCHA), MERCY, Asian Disaster Reduction and Response Network (ADRRN).
11. The 3<sup>rd</sup> Asian Ministerial Conference On Disaster Risk Reduction, held at PWTC from 3<sup>rd</sup> to 4<sup>th</sup> December 2008. MARES was invited to present a paper on the Role Of Amateur Radio in Disaster Communication.
12. MARES delivered a talk at the Second National Conference on Extreme Weather and Climate Change: Understanding Science And Risk Reduction 14<sup>th</sup> -15<sup>th</sup> October 2008, at Putrajaya International Convention Centre.



ARF-DiREX 2015 table top exercise

13. Presented "MARES: Radio Amateur & Radio Astronomy" at National Islamic Astronomy Symposium 2009 at International Islamic University Malaysia on 31st Jan 2009.

14. Attended Open Day for Cape Rachardo Light House, Tanjung Tuan, Melaka on 15 October 2011. This event was held in conjunction with the World Maritim Day 2011.

15. Attended Emergency Preparedness for Flood Season briefing by Majlis Keselamatan Negara (MKN) on 27 October 2011. MARES was called for radio communication infrastructure.

16. Participated in Adventure World 2012 and MIDE 2012, in which MARES was partner to the organizing company, Asiaexec Events Sdn. Bhd.

17. Malaysian Observer at Asian Regional Forum – Disaster Relief Exercise 2015 (ARF-DiREX 2015). MARES played advisory role to SKMM during the exercise. ARF-DiREX 2015 was co-hosted by the Malaysian and Chinese government with 27 countries participating in a large scale exercise involving sea, air, land and table top simulation.



ARF-DiREX 2015 with team China

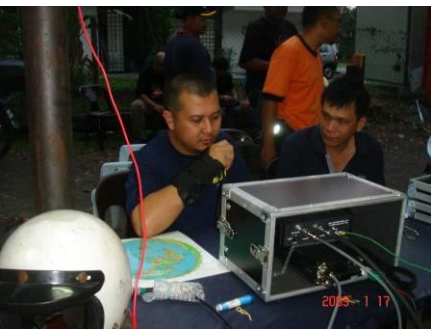


ARF-DiREX 2015 with UN OCHA and SMART Team

## Training



Radio Amateur Examination (RAE) preparation class by MARES.



EmComm simulations during MARES ERT training.



The following are some trainings which we conducted.

1. "Kursus Kecekapan Pengendalian Peralatan Komunikasi Wireless Operator Siri 4/2008" training to Malaysian Department of Fisheries at Pusat Latihan Perikanan Lumut (PULAPEL), Lumut, Perak on 14<sup>th</sup> Aug 2008.
2. "Kelas Pengenalan ERT Peringkat -1" on 1<sup>st</sup> Feb 2009 to radio amateur in Temerloh, Pahang. The class which covers the basics of Emergency Response Team was a joined activity between Peramah Temerloh amateur radio club and MARES.
3. Radio Amateur Examination (RAE) preparation class to Majlis Perbandaran Subang Jaya QRT Unit (Quick Response Team Unit) on 3<sup>rd</sup> & 4<sup>th</sup> Mar 2009 at Komplek 3C, MPSJ nearby Sunway Pyramid.
4. Radio Amateur Examination (RAE) preparation class to staff members of Cyber Security on 27<sup>th</sup> Mar and 3<sup>rd</sup> Apr 2010.
5. Radio Amateur Examination (RAE) preparation class to candidates prior to each SKMM's RAE (normally twice a year). The 2 days weekend class includes introduction to amateur radio, related guidelines and technical information related to amateur radio operation.
6. Emergency Response Team (ERT) trainings to MARES members who signed up as MARES ERT members. These internal trainings are aimed to improve the efficiency and effectiveness of MARES ERT when responding to emergency communication situation.
7. Emergency Response Team (ERT) trainings to Suruhanjaya Komunikasi dan Multimedia Malaysia Disaster Response Teams at all regions. These trainings were subsequent to Ops Murni (Kelantan Flood 2014) with the objective to improve the efficiency and effectiveness of SKMM and Telco response to emergency communication situation.
8. SMART Team Malaysia communication training in preparation for UN OCHA Heavy Urban Search and Rescue certification. SMART Team received the Heavy USAR certification.



## Organization Structure (2016-2018)

### **President:**

En. Mohd Ashwar Abdul Aziz, 9W2FG

### **Vice-President:**

En. Abdul Mutalib Omar, 9M2SQL

### **Secretary:**

En. Fahrordzi Ibrahim, 9W2BBS

### **Assistant Secretary:**

En. Farid Mohamed Hanif, 9W2ARD

### **Treasurer:**

En. Hazali Hashim, 9W2ZLH

### **Council Members:**

En. Mohd Azhar Mohd Amin, 9M2USB

En. Azizul Rahman Mohd Ghazali, 9W2FD

En. Wan Mohd Fadzil Wan Ab. Manaff, 9W2WF

Cik Mazura Muhammad, 9W2MIT

Mohd Rizal Mohd Said, 9M2RZL

Rashid Ahmed Abdul Rahman, 9W2TR

Amiruddin Mohamed, 9W2AAM

Omar Atan, 9W2MCC

Adzhar Maludin, 9W2FYB

### **Internal Audit:**

Ahmad Hasni Mohamed Jalilah, 9M2ABC

Mazli Shahar Mohamed, 9M2MZT



## Contact Address

**PERSATUAN PERKHIDMATAN KECEMASAN RADIO AMATUR MALAYSIA  
MALAYSIAN AMATEUR RADIO EMERGENCY SERVICE SOCIETY  
(MARES Malaysia)**

**ROS Registration #:**  
PPM-001-10-20062002

**Mailing Address:**  
P.O. Box 8124  
Pejabat Pos Kelana Jaya  
46782 Kelana Jaya  
Selangor Darul Ehsan  
**MALAYSIA**

**Club House:**  
4A, Jalan Tinggi 6/12,  
Seksyen 6,  
46000 Petaling Jaya  
**MALAYSIA**

**Club Callsign:**  
9M4CME

**GPS Coordinate:**  
N3° 05' 40.9" E101° 38' 57.3" (WGS84)

**Contacts:**  
Telephone: SMS +6012-2353769  
Email: info@mares.org.my

**Emergency**  
Email: emergency@mares.org.my

**Website:**  
<http://www.mares.org.my>

**Facebook:**  
<http://www.facebook.com/groups/mymares/>

**Twitter:**  
<http://twitter.com/MyMARES>

*"Saving Lives Through The Airwave"*