

EXPERIENCE OF CISAR MANAGEMENT IN IER HEAVY RECLASSIFICATION IN 2019

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Abstract

China International Search and Rescue Team (CISAR) has successfully undergone an intensive 36 hours full-scale and demanding peer-review field exercise as per the INSARAG External Reclassification of USAR Team under the INSARAG guidelines, from 20 to 24 October 2019 in China. This paper is mainly about some good experience and some bad aspects for CISAR management component in IER. Firstly, discusses the structure of the management component, the command process, the management tent layout and information exchange. And then focuses on the application of two intelligent systems. Team Management System can help to manage team members in real time and dynamically, it can provide accurate, refined information for team members and rescue task management. Worksite Monitoring System has five monitoring manners to monitor the worksite, if the worksite environment changes, the system will alarm immediately, which is conducive for rescue members to evacuate in time after hearing the alarm. Finally, the paper summarizes some faults of the management component in IER Heavy reclassification, such as transition problems walking from the airport to the LEMA meeting place without taking a bus, scripted exercise in the part of LEMA meeting and some management members who had no specific tasks in the process of Base of Operation(BoO) site selection. In view of these problems, this paper put forward some improvement measures and suggestions.

Keywords: IER Heavy reclassification ; CISAR; The management component

Introduction

The United Nations(UN) General Assembly Resolution 57/150 on "Strengthening the Effectiveness and Coordination of International USAR Assistance" (2002) adopted by the general assembly of the United Nations on 16 December 2002, which clearly pointed out and emphasized the responsibilities and obligations of the United Nations, the international community, the donor countries and the recipient countries in responding to serious natural disasters, especially earthquake disasters. The resolution confirmed the guidelines for urban search and rescue, which is the International Search and Rescue Advisory Group (INSARAG) Guidelines. INSARAG Guidelines is to facilitate coordination between the international USAR Teams who make themselves available for deployment to countries experiencing devastating events of structural collapse due primarily to earthquakes(INSARAG Guidelines,2020). INSARAG has formulated the corresponding INSARAG External Classification (IEC) and INSARAG External Reclassification (IER)(INSARAG,2020). In 2005, the INSARAG network supported the establishment of independently verifiable, operational standards for international USAR Teams through the IEC/R process. USAR Teams may need to be reclassified for every five years,because classification period is five

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years. The classified USAR team are well recognized by the INSARAG patch and be authorized by the UN, they are qualified to set up On-Site Operations Coordination Centre(OSOCC) and USAR Coordination Cell(UCC) in international search and rescue operations (Baokun Ning,2013) .

In 2001, China has set up the first International USAR team, China International Search and Rescue Team(CISAR), which were composed of seismologists from China Seismological Bureau, troops from the Chinese people's Liberation Army and medical personnel from the third medical center of the Chinese people's Liberation Army. There are 222 members in the team. Since establishment, it has participated in 10 international humanitarian emergency rescue missions, including the Algerian earthquake, Iran Bam earthquake, Indian Ocean earthquake tsunami, Haiti earthquake, East Japan earthquake tsunami, Nepal earthquake, Pakistan flood and so on.

CISAR has successfully undergone the IEC in November 2009, the first IER in August 2014 and the second IER in 2019. From 20 to 24 October 2019, CISAR has successfully undergone an intensive 36 hours full-scale and demanding peer-review field exercise as per the INSARAG External Reclassification of USAR Team under the INSARAG guidelines. Ten international evaluation experts conducted a comprehensive evaluation on the team's management, search, rescue, medical and logistics capabilities. CISAR has the capacity of cross-border rescue and self-protection for 10-15 days, has the capability for complex technical search and rescue operations in collapsed or failed structures, particularly those involving structures reinforced and/or built with structural steel, adequately staffed and logistically sufficient to allow for 24 hour operations at two independent sites for up to ten days. At the same time, it has the ability to act as the coordinator of UN field operations, can set up Reception and Departure center (RDC), OSOCC, UCC, and Sub Coordination Cell (SCC). It can undertake multiple tasks such as disaster assessment, emergency response, action decision-making and communication and coordination with different USAR teams under the INSARAG Guidelines.

This paper is mainly about some good experience and some bad aspects for CISAR management component in IER. The structure of the management component, the command process, the management tent layout, information exchange, the application of two intelligent systems are all good experiences. During the exercise, there exist some communication, coordination and deployment problems, mainly in airport meeting and LEMA meeting.

Structure and activities of the management component

Structure of the management component

The management component of CISAR has 12 team members (Figure 1). There are one Team Leader, three deputy Team Leaders, one Planning and Safety Officer, one Liaison Officer, two Information and Assessment Officers, one Media Officer and three officers are prepared for United Nations Disaster Assessment and Coordination Team(UNDAC), UCC and RDC. CISAR is composed of three different administrative units, so there are three deputy Team Leaders, which can help to effectively manage team members from three different units.

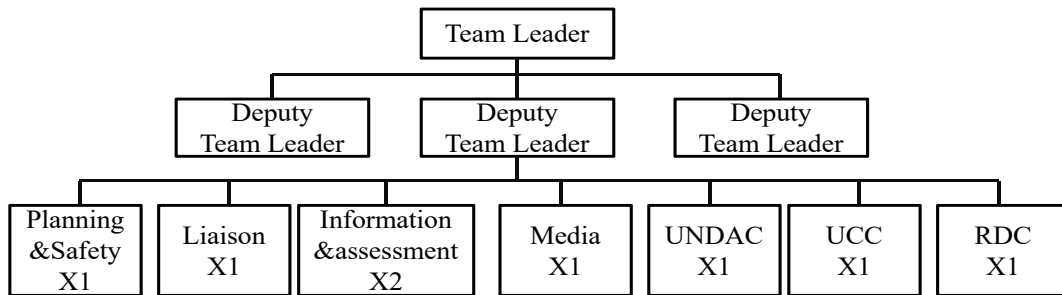


Figure 1: The structure of the management component to be used in IER

Team Leader manages all aspects of team activities including command and control, operations, assessments, coordination, planning, media, as well as safety and security, Team Leader needs to commanding rescue activities, keeping abreast of the rescue progress in worksites, participating in the coordination meeting such as the LEMA meeting, UCC meeting, attending the external activities and facilitate external coordination and so on.

CISAR has three deputy Team Leaders, one is responsible for management work, organize and coordinate with other teams and other components, formulate and implement the disaster tracking plan; arrange important meetings about CISAR, manage UCC and RDC. The second deputy Team Leader is responsible for worksite operation including organizing and coordinating search and rescue operations, accountable for worksite records, logs and worksite briefing, the safety and security of BoO and worksite, including providing safety and security planning throughout the deployment, recognizing the risks associated with construction types encountered and potential consequences from specific collapse patterns. The third deputy Team Leader is responsible for all medical team activities. It includes the specific arrangement of the medical work, arranging the sanitation and decontamination plan of the BoO, making the health plan of the team members.

There are two UNDAC members in CISAR, they can do some UNDAC works if needed. According to the requirements of the INSARAG Guidelines and the exercise, CISAR is the first USAR team to arrive in the affected countries, it is necessary to set up and operate RDC and UCC, contact and communicate with Local Emergency Management Authority (LEMA). In a word, the Management component of CISAR is accountable for all aspects of the team's activities throughout the response cycle, including command and control, operations, assessments, coordination, planning, media, as well as safety and security (INSARAG, 2020).

The management process

The management process can be divided into four stages (Figure 2). The first stage is mobilizing, when receiving the simulation earthquake information, the Team Leader of CISAR take part in the deployment meeting and make a decision on whether to dispatch CISAR to affected country. After CISAR assembled at airport, Information Officer would brief team members on current situation, culture, weather, safety and security, emergency evacuation, health and wellbeing issues about affected country, this is a very important step. The second stage is from the airport of the affected country to BoO. When arriving at the airport, the Team Leader and some management officers met with the Chinese embassy and the airport manager, negotiated about simplifying the customs procedures and operating RDC.

And then, some management officers met with LEMA, discussed the disaster and rescue situation, location of BoO, and using unmanned aerial vehicles to carry out Assessment, Search and rescue 2(ASR2) .After the LEMA meeting, Team Leader grouped the team members and assigned tasks.The third stage is to deploy the search and rescue operation and communicate with UCC. This is a cyclic and dynamic process. The Team Leader adjusted the search and rescue operation dynamically according to the requirements of actual task and UCC.The fourth stage is the evacuation stage, in which Team Leader presided the evacuation meeting to discuss the evacuation matters and communicate with Domestic Agency. Finally,the management component handover with LEMA and complete the entire exercise.

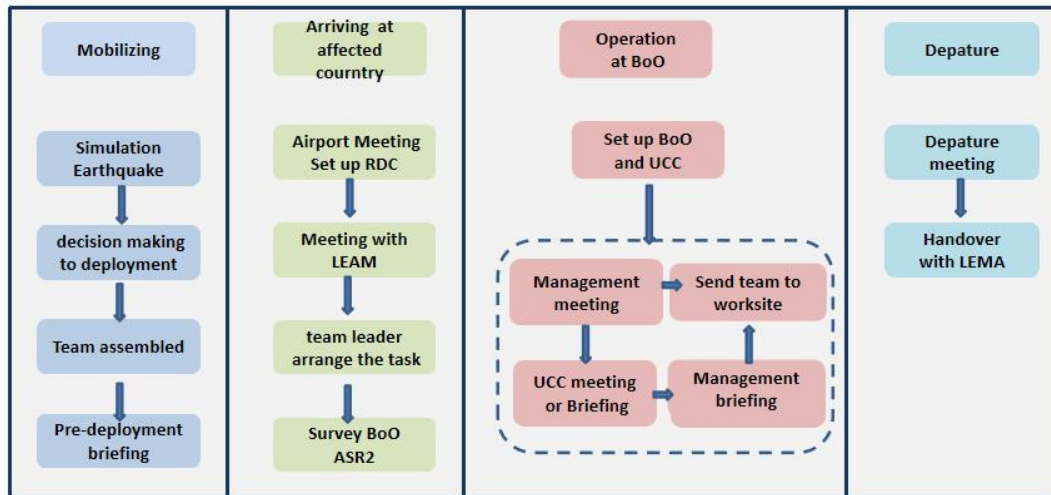


Figure 2: The management process of CISAR

Management Tent Layout

The management tent is divided into three parts(Figure 3): meeting and information zone, working zone and communication zone. The meeting and information zone is separated from the working zone and communication zone by curtain. Wireless communication equipment include satellite telephone are mainly placed in communication zone for communication with the worksite, UCC and other disaster relief units. Printers, laptop and other office supplies are mainly placed in the working zone for internal work processing.The meeting and information zone is located in the front of the tent, occupying 2/3 of the tent, meeting table and chairs are placed in the middle. The layout of tents adopts the principle of separating static zone from dynamic zone. Maps and charts are hang on both sides of the tent, one side displayed with dynamic and updated maps and rescue operation charts, and the other side is static display zone such as static maps, duty schedule and so on. There is a Team Management System at the entrance of the tent which is convenient for all team members, they need to register in Team Management System when leave or return to the BoO. Behind the meeting table, there is Worksite Monitoring System displayed on the curtain, which is convenient for management officers to know the worksite rescue situation.Weather forecast information, emergency evacuation route , and latest rescue results displayed outside of the tent.

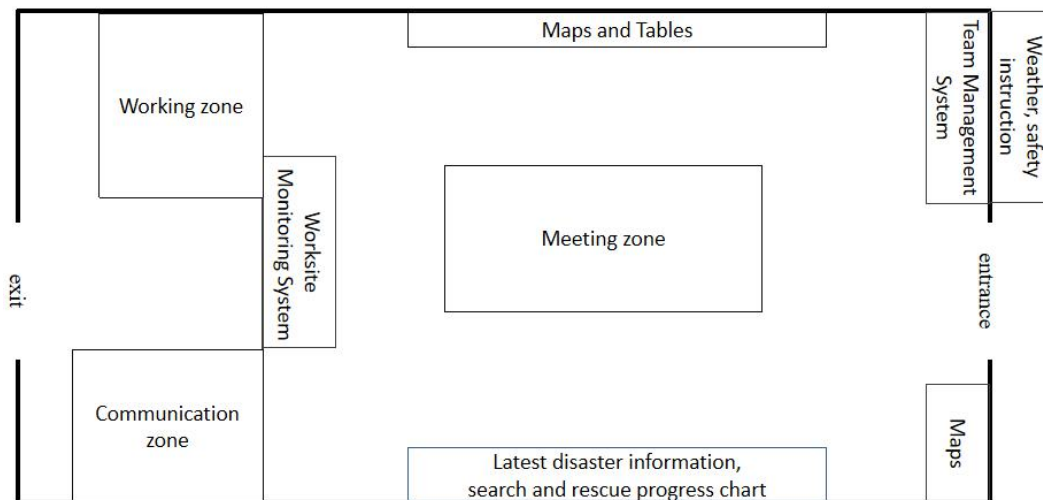


Figure 3: The management tent layout used in IER

The information exchange and coordination

During the exercise, there are three information exchange manners for CISAR to communicate with LEMA, RDC, UCC, international USAR teams and Domestic Authorities, which is Virtual On-Site Operations Coordination Centre (VOSOCC), Kobo and email.

Disaster information is the only way to promote the exercise, VOSOCC platform is one of the main ways for CISAR to obtain disaster information. Information officers need to pay attention to VOSOCC at any time, receive disaster information and upload team status. For example, before the departure, USAR Team Fact Sheet is needed to fill in and upload to VOSOCC. After team arrived at the airport of the affected country, information officer need to change the team status in VOSOCC. On the other hands, rescue information and relief requirements, UCC meeting or briefing and other relief information are all released on VOSOCC by different rescue component. VOSOCC is the most important communication platform in the process of disaster relief.

Kobo is an effective supplement for VOSOCC with statistical analysis function. It is a very convenient recording platform for worksite search and rescue activities. When CISAR did rescue activities in worksites, they need to fill in some INSARAG forms under INSARAG Guidelines, such as Worksite Triage Form, Victim Extrication Form, Worksite Report Form, Incident/Sector Situation Report, these forms must be uploaded to Kobo. UCC officers need to statistic and analysis these forms on Kobo and display the latest search and rescue work in the form of charts, this help them know the progress of different international USAR teams. All of these operations are done on Kobo.

After CISAR arrived in the affected country, there were series of activities, such as meeting with airport manager, meeting with LEMA, internal meeting and work deployment in management component, UCC meeting and other major activities, all those activities would be sent to the Domestic Authorities by Email prepared for IER and cross-border rescue activates. The progress of search and rescue activities, and daily briefing are also mailed to the dedicated mailbox.

Two intelligent systems applied in IER

Using scientific and technological manners to carry out rescue mission will become the mainstream direction of urban search and rescue in the future and plays a positive role in promoting the efficiency of search and rescue.

In this IER exercise, CISAR used the latest version of Team Management System. At first, a personal information database established pre-exercise, database is the foundation of Team Management System, the database comprehensively recorded the basic information of registered team members, including personal information, task records, training exercise, vaccination records and so on, this will help to provide effective information query and select the proper team members as soon as possible, which is very convenient for decision makers when decide to start the mission. During the process of the team gathering, team members check-in using the face recognition or intelligent wearable bracelet, the check-in process can be displayed in real time on a large projection screen and electronic whiteboard, which help managers to see the status of every single team member in real time (Figure 4). The Team Management System solves the crowded problem in physical examination zone and control the process of pre-deployment medical screening. In the search and rescue stage, managers can use the system to issue search and rescue tasks, group and dispatch team members. In the worksite, the search and rescue Team Leader arrange the rescue plan according to the actual situation of the rescue site, and upload the plan to Team Management System, so that the managers can see the rescue situation and actual implementation of the rescue plan in real time (Figure 5). Team Management System significantly improves the informatization capability of team, and provides accurate, refined and information-based technical support for team members and managers.



Figure 4: Team Management System used in pre-deployment



Figure 5: Team Management System used in worksite

For the first time, Worksite Monitoring System was used in this IER exercise. The system has five monitoring manners to monitor the worksite, which are dangerous gas, crack, lean, displacement and aftershock, using these five monitoring methods, a variety of potential hazards can be monitored in real time. If the worksite environment changes, the system will alarm immediately, which is conducive for rescue members to evacuate in time after hearing the alarm. On the other hand, the system can quickly obtain the three-dimensional model of the rescue scene by oblique photography, it can also display the sensor position, real-time data and early warning information in the three-dimensional model by visual interactive software interface. In the management tent, managers can see the worksite directly, which is helpful for the manager to see the worksite rescue progress and do some decisions-making (Figure 6).



Figure 6: Worksite Monitoring System used in management tent

Some flaws in IER

During the exercise, there exist some communication, coordination and deployment problems, mainly in airport meeting and LEMA meeting. After CISAR arrived at the airport of the affected country, the Team Leader and some management officers met with the Chinese embassy and enter the customs first, at the same time, ambassador negotiated with airport manager about simplified the customs procedures and help team entered the customs quickly. After hearing that CISAR is the first USAR team to arrive in the affected country, Team Leader proposed the requirements of setting up and operating RDC for the airport director. There were many team members and participants at the airport, and the scene is quite messy. Several tasks are carried out at the same time. Some managers met with the airport

manager and the ambassador, some team members were responsible for setting up RDC, some were setting up the network to obtain VOSOCC disaster information, and most team members were entering the customs successively. After the customs clearance, the team members need to find a separate zone for a short rest, if some members walk around at will, the scene would be more chaotic.

After the managers arrived at LEMA office, Team Leader introduced the general situation of CISAR, and told them the disaster information they have collected and put forward the requirement to establish BoO and UCC, LEMA and CISAR discussed the rescue situation, key rescue areas, location of BoO. At last, CISAR proposed to divide the disaster area into four sectors, A, B, C and D, and use unmanned aerial vehicles to carry out Assessment, Search and Rescue 2(ASR2) in sector A, and obtained the consent of LEMA. The most prominent problems of LEMA meeting is the transition from airport to LEMA office and conversation with LEMA is completely scripted. In the previous self-assessment exercises, CISAR managers directly walked from the airport to the LEMA meeting place without taking a bus. This has caused a lot of confusion for the evaluation experts. They don't know what CISAR is doing and why they walk? In the last exercise, this fatal flaw was improved. Due to the limitation of language, English is not an official language in China, which leads to the scripted exercise in the part of LEMA meeting. the language communication between CISAR managers and LEMA is relatively stiff and not flexible enough. Moreover, the exercise site of LEMA is too open, which leads to voice of the conversation was too low, the bystanders can not hear clearly, and the meeting effect is not so good.

After LEMA meeting, Team Leader arranged the task and team members were divided into groups, the first group was led by management Team Leader went to survey two places recommended by LEMA, and then decide which place is more suitable to set up BoO and UCC. The second group led by operation Team Leader went to sector A and did ASR2 with structural engineer, hazardous chemical experts, medical experts and so on. After the division of tasks, there were some management members who had no specific tasks for the time being, They did not return to the airport to meet with the team, nor did they go to investigate the disaster, in order to make the exercise look satisfactory and reasonable, all the remaining members got on the minibus and waited for the BoO selection results. In the actual rescue mission, all the teams are very busy, the tasks are full, and the unreasonable division of tasks is a defect in this IER.

Conclusion

CISAR has made great progress in command and management, information acquisition and application of new technology in this IER , but there exists still some aspects to be improved.

Some team members of the management are not good at communication in English, which is a common problem for countries that English is not an official language. Team members with high level of English are arranged for setting up and operating RDC and UCC. Due to the weak ability of communication in English , in some meetings, especially meeting with LEMA, team members communicate with LEMA according to the content of the script prepared in advance. On the other hand, some of the participants of LEMA are not good at English. If don't follow the script, they can't communicate smoothly.

During the process of BoO site selection, ASR2 evaluation, and some team members' entering the custom, Team Leader did not combine with the actual rescue mission, the task division was not comprehensive, and the exercise was performed in accordance with the script. At the same time, the division of tasks is not reasonable enough, and some members have no task. In the follow-up work, the management officers should strengthen their English study and improve their English communication ability, on the other hand, arranged task and plan completely according to the disaster information which provided by Exercise controller, and make the exercise more real, more practical significance.

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