

Considering HACs for Disaster Response: An in situ study of first responders

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Aims

The **objective** of the study was to get an insight of the knowledge, the practices and the experience of actual first responders in order to identify areas of interest for human-agent interaction and the design of human-agent collectives (HACs). More specifically, the main points we were interested in were:

- the organisational features of the response
- the artifacts and processes used by first responders to assess, plan and act (from sense-making to decision making and execution)
- the ways in which communication is accomplished during a disaster response

The setting

Disaster City is a 52-acre training facility located in College Station, Texas. It was created by the Texas Engineering Extension Service (TEEX), a member of the Texas A&M System, and provides full-scale, collapsible structures designed to simulate various levels of disaster and wreckage which can be customized for the specific training needs of any group. Local, national and international teams of first responders and fire-fighters use Disaster City for their training as it delivers the full array of skills and techniques needed by today's emergency response professionals.



Disaster City Training Areas

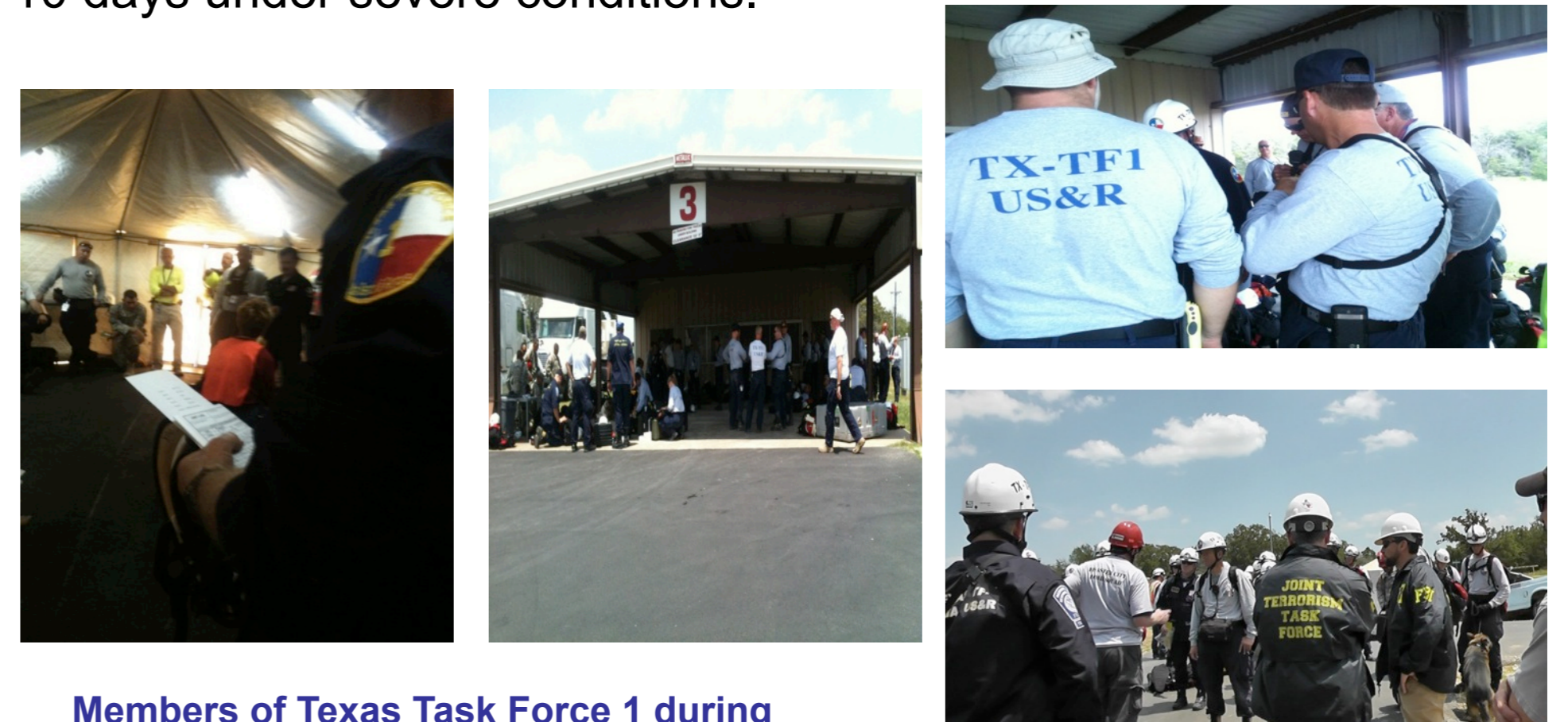
The team

Texas Task Force 1 is the most active urban search and rescue team among 28 national teams in the country coordinated by FEMA. Every year since 1998, Texas Task Force 1 is responding to at least one major disaster including the 9/11 World Trade Centre attacks and Hurricane Katrina.



It is comprised of 510 personnel from over 72 agencies and companies (eg FBI, NSA, US Army etc) and various professional backgrounds, from fire and police to IT support and petroleum engineers.

The team is deployable within 4 hours; operationally fully independent for 72 hours at any conditions and can function up to 10 days under severe conditions.



Members of Texas Task Force 1 during the three-day exercise

The study: Design and initial results

To address the main aims, an **in situ observational study** of a training exercise of the Texas Task Force 1 (White Team) was undertaken. This took place in Disaster City in April 2012 over a period of three days. In addition to the observations, interviews were also conducted during and after the exercise with members of the team. At the moment, the analysis of the collected data (fieldnotes, audio, video) is in progress; however, initial results indicate a number of considerations that can be of value to the design of HACs:

- The temporal attributes of the disaster response can be different to emergency response
- The processes of sense-making ('what is going on') precede the decision making and action
- The diligence to safety and its implications for decision-making and execution
- The visceral nature of disaster response
- The hierarchical structure of communication and action
- Shared practices/knowledge and levels of autonomy with respect to implicit coordination and communication
- Previous lived experience and the opportunistic use of materials



Material from the on-going analysis