

Improving Australian animal health emergency preparedness – the experience of *Exercise Minotaur*

Peter Koob reports on Exercise Minotaur and its contribution to testing Australia's emergency response systems

Abstract

Exercise Minotaur was conducted in Australia in September 2002 as a direct response to the outbreak of foot-and-mouth disease (FMD) in the UK. Over 1000 people from government and industry agencies were formally involved in this COAG sponsored activity, which was a major stimulus to enhance the level of FMD preparedness in all jurisdictions and in industry. The aim of the exercise was to test Australia's national arrangements for managing post-border aspects (preparedness, response and recovery) of an FMD outbreak as a part of continuous improvement. The scenario included a description of the spread of FMD through the livestock population and a description of effects on the economy and communities and concentrated on critical points in a potential FMD outbreak. *Exercise Minotaur* improved Australia's emergency response systems, increased community, industry & government awareness, demonstrated Australia's ability to manage a serious animal emergency and highlighted areas for further improvement.

Introduction

Foot-and-mouth disease (FMD) is a highly contagious viral disease of cloven-hoofed animals that occurs throughout most of Africa and Asia, and much of South America.

The FMD outbreak in the United Kingdom in 2001 involved 2,020 infected premises, caused more

Figure 1. Countries recognised by the OIE as free from FMD without vaccination



than 9,300 farms to de-stocked with more than six million stock destroyed, with a cost to the public sector of £3 billion and a cost to private sector £5 billion. Predicted impacts on Australia from an FMD outbreak include \$450 million in disease control and compensation, \$13 billion in lost earnings, and significant social costs (Productivity Commission, 2002). It was recognised that a single case of FMD in Australia would seriously stretch current arrangements and resources, and a review and test of whole-of-government and government-industry preparedness was requested by the Council of Australian Governments (COAG, 2001), including "the holding as soon as possible of a full-scale simulation under third party oversight to test the arrangements." The simulation was called '*Exercise Minotaur*'.

Exercise Minotaur was the largest ever agricultural exercise in Australia and may have set an international benchmark. There was a significant improvement of awareness, particularly across non-agricultural agencies, of the potential impact and complexity of a major national animal disease outbreak such as FMD. Tangible evidence of enhanced preparedness was the number and level of people involved in the lead up to and during *Minotaur*. Over 1000 people from government and industry agencies were formally involved (and a multiple of this number unofficially involved), 100 observers, facilitators and evaluators and 18 people in the control team. There was serious engagement at the highest level of government and agricultural industries.



Enhanced Australian emergency animal disease preparedness

Exercise Minotaur was a major stimulus to enhance the level of FMD preparedness in all jurisdictions and in industry.

The COAG decision of 8 June 2001 required the upgrading and testing of emergency plans and the development by States and Territories and the Australian Government of complementary whole-of-government frameworks, for their respective jurisdictions. All jurisdictional emergency animal disease plans were reviewed and tested, and a national co-ordination framework for FMD was agreed between all jurisdictions (COAG, 2002).

Training was conducted in all jurisdictions and within industries including personnel operating in LDCCs, SDCHQs, CCEAD and NMG. A series of exercises was also planned and conducted by all jurisdictions and within many industries prior to *Exercise Minotaur*.

By August 2002, Australia was undoubtedly better prepared for an

emergency animal disease outbreak than it had ever been.

Developing *Exercise Minotaur*

In order to organise *Exercise Minotaur* at the strategic, operational and tactical levels, an Exercise Steering Committee, an Exercise Working Group and an Exercise Control Team were formed (DAFF, 2002a). Members of the Exercise Control Team, representing all jurisdictions and industry, developed:

- the aim, objectives and scope of the exercise;
- the disease and socioeconomic scenarios that formed the background to the exercise;
- the concept of operations and rules of engagement; and
- the exercise control messages.

The aim of the exercise was to test Australia's national arrangements for managing post-border aspects (preparedness, response and recovery) of an FMD outbreak as part of continuous improvement. The objectives of the exercise included testing:

- the integration of national arrangements (both intra- and inter-jurisdictional);
- administrative arrangements in support of operations;
- the capacity and capability of resources for managing an FMD outbreak and its consequences;
- the logistics arrangements;
- communication;

- disease control policies and strategies as described in AUSVETPLAN;
- trade management arrangements; and
- socioeconomic relief and recovery strategies and processes.

Risks to the development and conduct of the national FMD exercise were identified, risk treatment options considered, and risk treatment strategies developed and implemented. The greatest risk caused by the exercise was the possibility of an adverse reaction to the exercise following misreporting, or unexpected media, community or trading partner response.

Conducting *Exercise Minotaur*

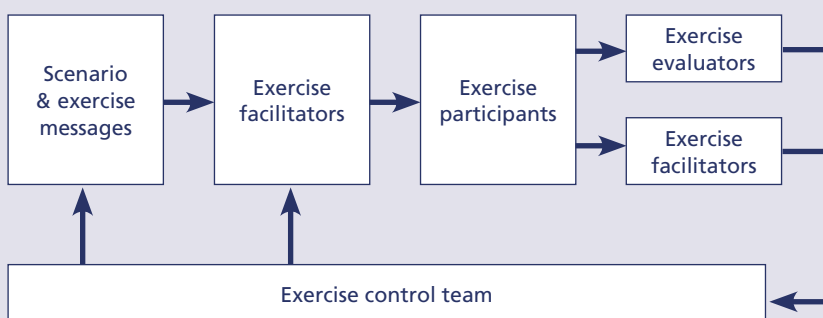
The exercise consisted of a number of elements including (DAFF, 2002b):

- the scenario;
- over 350 exercise control messages;
- exercise control staff; and
- exercise participants (refer Figure 2).

The scenario included a description of the spread of FMD through the livestock population and a description of effects on the economy and communities and concentrated on critical points in a potential FMD outbreak. The scenario was not revealed in its entirety until after the exercise, but information on what was 'happening' in the scenario

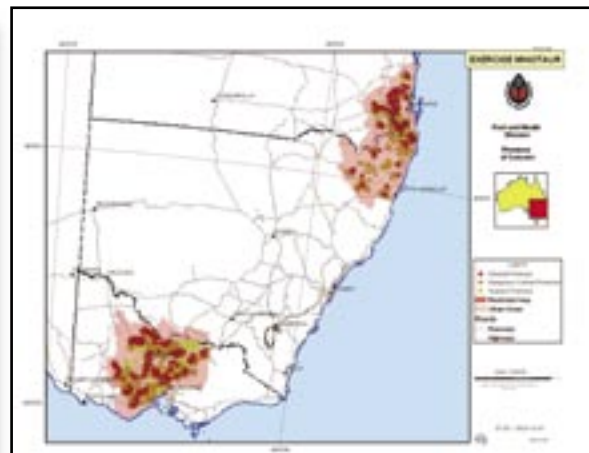
was conveyed to exercise participants through exercise control messages. The exercise control messages were prepared prior to the exercise and passed by exercise facilitators to exercise participants at pre-arranged times. The exercise control messages had attached, for the eyes of exercise control staff only, the expected actions of exercise participants.

Figure 2. Overview of the exercise





Simulated spread of FMD in Australia, day 1



Simulated spread of FMD in Australia, day 84

The 18 people in the exercise control team were located in Canberra and provided overall direction and control of the exercise. There were 80 exercise facilitators, evaluators, and assistants selected from Australian Government, State and Territory governments, and industry.

Exercise facilitators provided briefings and debriefings for exercise participants, provided input into the exercise of events and information, monitored the progress of the exercise, reported to the control team and solved problems when the exercise went off-track. Exercise evaluators worked in a jurisdiction other than their own, observed exercise participants, noted actions taken against expected actions, and evaluated arrangements based on these actions.

A select group of observers, both international and domestic, were asked to review the exercise

and through visits, interviews and debriefs provide an overall assessment of the effectiveness and relevance of the exercise to FMD management.

The exercise required the actual deployment of personnel in each State and Territory, in Australian Government organisations, in national organisations, and in industry, at each level of the response structure. Exercise participants worked from their designated operations centre or normal work areas. There were no field deployments. The role of exercise participants was primarily decision-making and undertaking activities to support the decision-making.

The exercise simulated three months of a large multifocal outbreak of FMD over a four-day period. FMD was chosen as the scenario disease because of its potential impact on the economy and community of Australia.

Information about a suspected vesicular disease was provided to authorities in the week before the exercise to simulate the lead-up to an outbreak. Specific points in the epidemic curve were chosen for testing specific aspects of response to and recovery from the simulated FMD outbreak. These points were:

- first day of outbreak;
- second day of outbreak;
- eighth day of outbreak; and
- end of third month of outbreak.

The scenario time periods were played out in real time by the exercise participants as shown in the table below.

The dates and times ('timetable of engagement') expected when emergency centres would be set up and management groups would meet were pre-determined and communicated to exercise participants prior to the exercise. This was an unusual move in the conduct of an exercise, but was

Figure 3. Scenario time periods

Real time	Exercise time period	Action	Day #
Thursday 5 – Friday 6 September 2002	Suspected disease	Pre-reading provided to exercise participants	D-3 – D-4
Monday 9 September 2002	Confirmation of FMD outbreak	Exercise from 9:00am to 5:00pm	D 0
Tuesday 10 September 2002	2nd day of the outbreak	Exercise from 9:00am to 5:00pm	D +1
Wednesday 11 September 2002	7th day of the outbreak	Exercise from 9:00am to 5:00pm	D +7
Thursday 12 September 2002	End of 3rd month of outbreak Debriefs for management groups	Exercise from 9:00am to 5:00pm	D+84
Friday 13 September 2002	—	Debriefs for emergency centres	—

taken to ensure that people would be available. The exercise was not designed to test activation, alerting, or the setting up of control centres.

Evaluating the exercise

Exercise evaluation and reporting was undertaken to:

- record and communicate lessons from the exercise as a part of continual improvement; and
- record and communicate lessons from the management of the exercise for future exercises.

The evaluation of *Exercise Minotaur* ensured:

- the validity of the exercise;
- the process of evaluation would stand up to scrutiny;
- the evaluation framework was used consistently;
- the evaluation was inclusive;
- perceived individual jurisdictional weaknesses were handled sensitively;
- consensus could be achieved on the recommendations; and
- the resulting recommendations were evidence-based, reasonable, practical, achievable and measurable.

The evaluation consisted of two major parts:

- validating the exercise (performed prior to and during the exercise); and
- evaluating decisions made, actions taken and communication (activity) within the exercise (performed during and after the exercise).

To ensure the validity of the exercise

- the exercise outline was endorsed by the Exercise Steering Committee;
- the exercise was developed by a multidisciplinary team with internal checks;
- a pilot exercise was conducted to ensure internal consistency and efficacy;
- independent reviewers validated the exercise as an appropriate test; and
- exercise observers were asked to comment on the value of the exercise after its conduct.

Activity within the exercise was evaluated using the following:

- participants' daily evaluations;
- daily debrief reports;
- exercise evaluators' reports;
- industry/agency/jurisdictional debrief reports;
- international and domestic observers' reports and debrief report;
- the national, multi-jurisdictional and industry debrief;
- the National Management Group debrief; and
- the control team report—a description of how to improve the planning and conduct of future exercises.

There was a remarkable amount of agreement between the various debriefs and reports as to the exercise findings and recommendations.

Results and lessons of Exercise Minotaur

Exercise Minotaur improved Australia's emergency response systems, increased community, industry and government awareness, demonstrated Australia's ability to manage a serious animal emergency, and highlighted areas for further improvement.

Lessons learnt from the exercise include:

- that a whole-of-government and industry approach is essential to the management of major emergency animal disease outbreaks;
- that good information and co-ordination systems are critical;
- that decision-making during emergencies should be risk-based in the face of incomplete information;
- that public communications during a major emergency animal disease outbreak would be very large scale and is critical;
- that emergency plans and disease control policies must be up to date and understood;
- that all parties should develop and conduct emergency exercises regularly; and

- that community recovery will continue long after the disease is eradicated.

The next steps in improving Australia's animal health emergency system include the enhancement of existing:

- management and information systems;
- public communications strategies;
- training and exercising programs; and
- livestock identification.

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Author

Peter Koob has worked in emergency management for 15 years. This work has included 11 years managing emergency planning for the Tasmanian State government; one year in the Division of Emergency and Humanitarian Action in WHO in Geneva; two years with Emergency Management Australia; and 18 months coordinating the development, conduct and evaluation of *Exercise Minotaur*. He specialises in risk management, emergency planning, training, and exercising.