INTERNATIONAL MINE ACTION STANDARD 10.60

SAFETY & OCCUPATIONAL HEALTH – INVESTIGATION AND REPORTING OF ACCIDENTS AND INCIDENTS

NOTES ON THE REVISED SECOND EDITION

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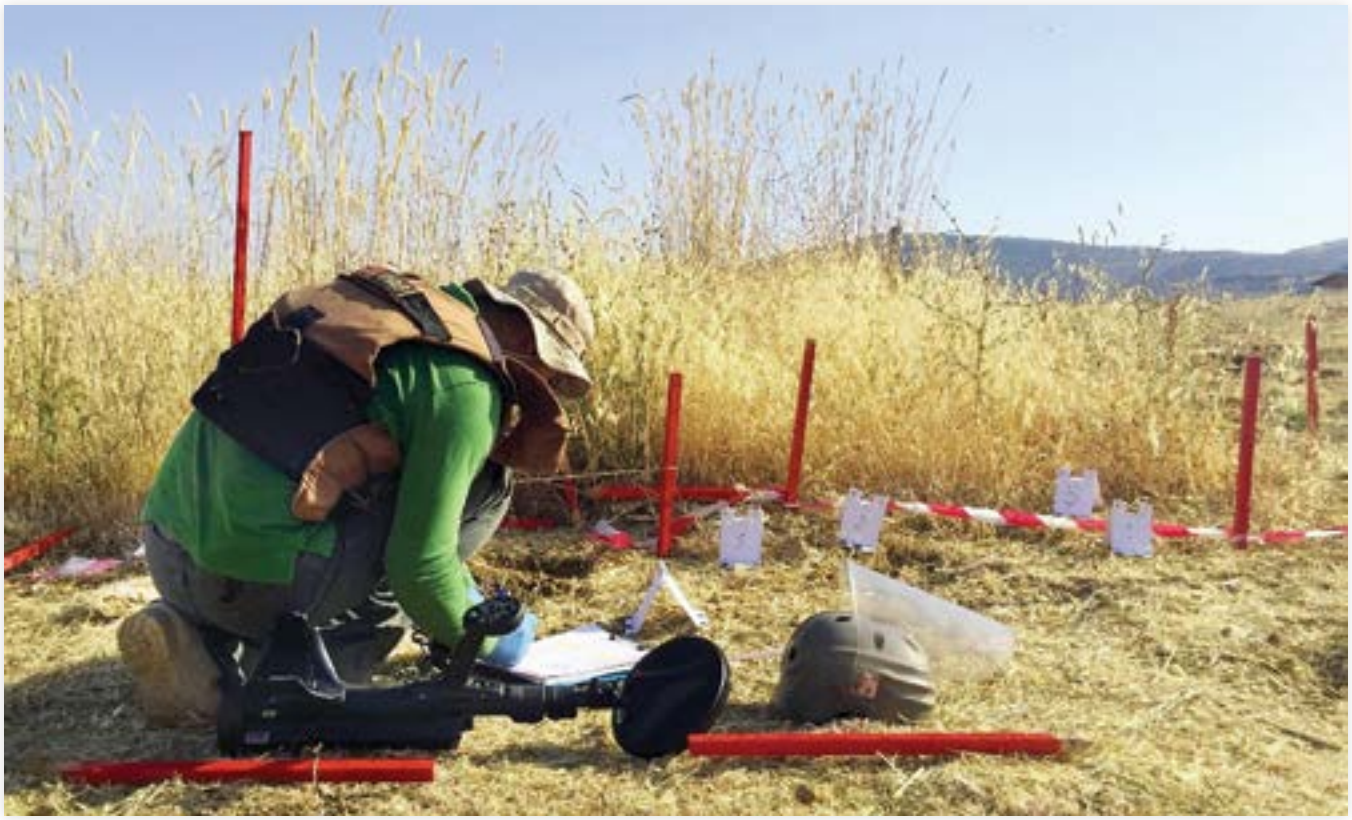

A Technical Field Manager (TFM) from MAG completes his Evidence Log during an assessed site investigation during the GICHD Accident Investigation Course at the Regional School for Humanitarian Demining Lebanon (RSHDL) in June 2019. The primacy of evidence in the investigative process is one of the key changes in the new IMAS 10.60.
Image courtesy of Ahmad Doghman.

In 2019, the Geneva International Centre for Humanitarian Demining (GICHD) received permission from the International Mine Action Standard (IMAS) Review Board (RB) to update IMAS 10.60, Safety & occupational health – Investigation and reporting of accidents and incidents. The first edition of the document, originally drafted in October 2001 and last amended in June 2013, included a number of areas where significant improvement was possible. In light of this, the IMAS RB established a Technical Working Group (TWG) in October 2019 to enable nominated representatives to feed into the drafting process. The original TWG included representatives from MAG, HALO, NPA, ICRC, HI, Afghanistan DMAC, Tetra Tech, CISR, PM/WRA, and independent members.[1] In time, UNMAS and the military representative on the IMAS RB joined the TWG.

The drafting team had a clear vision of how the original IMAS could be improved. Firstly, and possibly most importantly, the importance of evidence in the investigation process needed to be emphasized. In the old version, evidence was only mentioned three times. In the new version, it is mentioned eighty-one times. As the new introduction clearly states, "an investigation involves the identification, collection, recording and analysis of evidence."[2] Throughout, the document emphasizes the need to identify all relevant types of evidence: physical evidence, witness statements, and documentary evidence. The linking of factual statements to supporting evidence in report writing is also stressed. The document states that "investigators should be able to show not only that conclusions are strictly aligned with evidence but that all relevant evidence has been identified and collected in a competent

A TFM from MAG records crater measurements in the course of an assessed site investigation during the GICHD Accident Investigation Course at the RSHDL in June 2019. Post Blast Investigation including crater analysis was not included in this IMAS due to size limitations but could be a candidate for a supporting technical document, such as a Technical Note for Mine Action (TNMA) in the future.
Image courtesy of Ahmad Doghman.

manner. Evidence *shall* be rigorously recorded and secured so that an investigation can be subsequently analyzed if required." Even simple mechanisms can help with this process, such as the inclusion of a basic evidence log as an annex for the first time and the inclusion of basic forensic awareness procedures.

Another key improvement is the simplification of the reporting timeline following an incident or accident. The previous IMAS split the Initial Report for any incident or accident into two parts. This was confusing, so a change was made to have three clearly separate reports. An Immediate Report will be generated in the minutes after an accident by the team on site, providing key details for the mobilization of support. Then, within twenty-four hours, the organization that experienced an accident or incident will produce an Initial Report, providing strictly factual information about the accident/incident known to date. Within ten days, a Lead Investigator will produce a Detailed Report, ideally mandated by an agreed terms of reference (ToR) from the National Mine Action Authority (NMAA). The aim of this Detailed Report is to provide a comprehensive analysis, rigorously supported by evidence, of what happened and why it happened. Another aspect of the timeline that was changed was the old stipulation that enabled the "demining incident detailed report" (also to be completed in ten days) to "precede a formal investigation." Commencing an external investigation ten days after an accident or incident would, in all likelihood, inherently undermine such an investigation, since it would have little chance of effectively processing evidence from the scene. This is no longer the case in the new edition.

The new version also introduces a new system of different investigation levels. Internal investigations are now termed 1st Party Investigations. Those conducted by the NMAA, including Boards of Inquiry (BOI), are termed 2nd Party Investigations. Investigations completely independent of both the mine action organization in question, and the NMAA, are now termed 3rd Party. Ideally, accidents involving either a fatality or serious injury would be subject to at least a 2nd or 3rd Party Investigation; however, the IMAS recognized this is not always practicable. In circumstances where no NMAA exists, mine action organizations may find that a 1st Party Investigation is the only means of investigation available. In such instances, mine action organizations *shall* fully record the circumstances in their internal ToR mandating the investigation. There is still scope for mine action organizations to conduct a 1st Party Investigation even when an NMAA has initiated a 2nd or 3rd Party Investigation. However, the 2nd or 3rd Party Investigation *should*

have primary control of any accident site as well as all relevant physical and documentary evidence. In short, a 1st Party Investigation *shall* not compromise or interfere in any way with any ongoing or expected 2nd or 3rd Party Investigation.

This IMAS is the first to introduce concepts of causal analysis, albeit in a simple, straightforward manner. Causes are initially classified as *immediate* or *underlying*. Immediate causes tend to be those directly linked to the scene of the accident, such as behavior and worksite conditions. Underlying causal analysis tends to look more at management and organizational factors. The inclusion of underlying causal analysis was one of the key developments in the drafting process. The intent is to encourage organizations to look beyond specific actions on site, and to focus on organizational and managerial factors that could have contributed to the accident or incident. Invariably, the explanations are complex and not only found on site or with the conduct of those immediately involved. Causal analysis is difficult, since inevitably it entails organizations looking closely at themselves and their ways of working. Nevertheless, there was significant support from the TWG for a greater emphasis on causal analysis; this good practice can now hopefully become standardized for all.

The locations of demining and mine accidents and incidents[3] are usually dangerous places. They are also the locations where most of the physical evidence is found. Such locations have to be processed by individuals with suitable levels of training and experience. For the first time, IMAS 10.60 now lists preferred requirements for those conducting site investigations. While not listing specific qualifications, investigation requirements implicitly necessitate experienced and qualified personnel. The IMAS recommends specific accident and incident investigation training for those who might be called upon to fulfill such a task. As yet, there is no set of agreed competencies that such a course would potentially teach. It is possible that the development of such competencies could be recognized as a natural progression for this IMAS in the future.

Another area where the drafting team was particularly keen to see progress was the inclusion of Near Miss reporting. The term *Near Miss* refers to an incident that, while not causing harm, has the potential to cause injury or ill health. This definition was also added to IMAS 04.10, Glossary of Terms. It might be described as a form of incident, although in this IMAS it is effectively treated as a separate category of event. Within other industries such as aviation, Near Miss reporting has been systematized for decades. Within mine action, possibly due to individuals and organizations being fearful of the consequences of admitting Near Misses, such reporting is limited. Some organizations have made significant efforts in this direction in recent years. For example, Tetra Tech has a mobile application that allows staff to electronically report Near Misses quickly and in a standardized format. The system is not abused as a means of undermining the chain of command and has engendered important internal improvements. Near Miss reporting is mandated by a *should* statement in the new IMAS draft; it is not a *shall* requirement. At present, mine action organizations and NMAAs are encouraged to set up credible Near Miss reporting that does not penalize those who are willing to admit fault. In the future, it is hoped that such an approach becomes commonplace.

A TFM from MAG conducts a fingertip search of a small crater looking for evidence in the course of an assessed site investigation during the GICHD Accident Investigation Course at the RSHDL in June 2019.
Image courtesy of Ahmad Doghman.

The TWG also addressed the language used for report writing. Individuals can often intend slightly different meanings to adjectives that describe a level of confidence in an assertion. For example, what is *likely* for one report writer might just be *possible* for another. In an attempt to at least start addressing this subjective approach, the IMAS introduced standard confidence levels. Five levels, with associated percentages, are suggested by means of a *should* statement. These are Certain (>90%), Likely (75%–90%), Possible (40%–60%), Unlikely (10%–25%), and Remote (<10%). The use of such language for indicative probability does not, of course, preclude a subjective approach by any report writer. However, it may be seen as a step toward making the language used by report writers more objective. A future revision of this IMAS might look at the percentage levels so that the complete percentage range is covered.

Other new aspects of the IMAS include a short section on cognitive bias. The intent here is to improve awareness among both investigators and organizations about the universal potential to exhibit some form of cognitive bias. A number of organizations already have good peer review procedures for their accident and incident reporting, including the use of external expertise. It is hoped that, within the confines of applicable data protection legislation, and subject to suitable non-disclosure agreements, such reviews become increasingly standardized.

A student takes his final evidence layout images during an assessed task on the GICHD Accident Investigation Course, Thun, Switzerland, August 2020. *Image courtesy of Edison Pineda.*

While full implementation of the IMAS will take time, the GICHD is already mindful of how the document may evolve when it comes to potential amendments. For example, greater clarity is possible when distinguishing between the *should* requirement to report Near Misses and the *shall* requirement to report incidents. Some have requested revised percentages for the confidence levels used. The format of the Detailed Report could be developed further. A number of the TWG members are keen for a central repository for accident reporting to be mandated by an amended IMAS in the future. If work progresses on establishing such a database, it can then be assessed by the IMAS RB. As with all desired amendments, the drafting must balance the need to make valid changes with the need not to overburden field operators with ever-increasing requirements. Hopefully an acceptable balance can be found that ensures this IMAS will serve, rather than hinder, those who implement it. In any case, it is likely that this IMAS will be amended in some way relatively soon. The standard 12–18-month review for all new IMAS, recently introduced by the RB, provides the ideal opportunity for this, as is intended.

The causal analysis section of the document is already a candidate for minor change when the next IMAS amendment is conducted. Lead Investigators at present only *should* be able to conduct causal analysis. In the future, this might change into a *shall* requirement. The factors for both immediate and underlying causes could also be revised. For instance, the addition of a specific equipment factor would add clarity rather than this factor being included within a more general title of "worksite conditions."

This article briefly summarizes some of the main changes to IMAS 10.60. The previous IMAS of 8,504 words became a new one of 13,790. This involved not just new material but a thorough revision of the existing text. Essentially this is almost an entirely new document. It is now one of the longest IMAS in the series. While it represents a significant change for the mine action sector, it is a change supported by the main industry actors represented on the IMAS RB, with no votes against the second edition of the document. This IMAS has already been adopted by key operators such as MAG, who have fully updated their Accident Investigation standard operating procedures accordingly. The overall aim is for the sector to improve collectively, so that we discharge our responsibilities to field staff by learning as much as practicable when an adverse event occurs. The drafting team hope that this IMAS, at least in part, contributes to achieving that aim.

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