

3-13-1997

DDASaccident229

Humanitarian Demining Accident and Incident Database
AID

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DDAS Accident Report

Accident details

Report date: 18/05/2006	Accident number: 229
Accident time: not recorded	Accident Date: 13/03/1997
Where it occurred: Rapti Borani, Popovo Polije	Country: Bosnia Herzegovina
Primary cause: Management/control inadequacy (?)	Secondary cause: Field control inadequacy (?)
Class: Missed-mine accident	Date of main report: 18/03/1997
ID original source: WL/JD	Name of source: BiH MAC
Organisation: Name removed	
Mine/device: PMA-2 AP blast	Ground condition: bushes/scrub hard route/path
Date record created: 17/02/2004	Date last modified: 17/02/2004
No of victims: 2	No of documents: 2

Map details

Longitude:	Latitude:
Alt. coord. system: GR: BN615412	Coordinates fixed by:
Map east:	Map north:
Map scale: Ljubinje	Map series: M709
Map edition:	Map sheet: 2780 IV
Map name:	

Accident Notes

inadequate metal-detector (?)
pressure to work quickly (?)
safety distances ignored (?)
inadequate communications (?)
protective equipment not worn (?)
inadequate investigation (?)

Accident report

The demining company involved in this accident appear to have operated in three-man teams with one-man drills, whereby a single deminer cuts undergrowth, uses the detector and excavates any finds while a second deminer watches and "controls" him from a safe distance. A third deminer is resting.

No record of this accident was formally lodged among the files held by the country MAC. A mine accident report (with investigators dominated by members of the demining group involved) was found in the appendices of another accident report. The following summarises its content. That report makes it clear that the demining group was a well known international commercial company. A subsequent report from the MAC invents a pseudonym for that company. That report and false name is reproduced under *Related papers* (at the "Other documents" tab) and should be read as an Annex to this. The MAC's spreadsheet of incidents records also recorded this accident with the correct name of the international demining group involved.

The area where the accident occurred was described as mountainous, sparsely vegetated with rough terrain. The group were demining over the length of a rough mountain footpath. They were using a Schiebel detector that often signalled constantly and the hard ground conditions made probing difficult.

The team started work at the site at 08:00 as usual and broke for lunch at 13:00. The lane they had cleared varied between one and four metres in width. They had cleared 600 metres that day, as opposed to 75 metres on the two previous days. At 14:10 one dog located a PMA-2 mine. The dog continued another 10 metres and was then sent back to the Control Point because the terrain became unsuitable and manual searching was required. In the next 30 minutes Victim No.1 found and "lifted" seven PMA-2 mines. Then the Team Leader initiated the change of personnel drill.

The team decided that the work had moved away from the direction of the path, so work would start three metres behind the end of the lane and go in a slightly different direction. This was in the area that had been probed, not checked by a dog. The deminers walked to the new start point, then began to return to the change-over point. Victim No.1 was behind Victim No.2 when he stepped on a PMA-2. He suffered a "traumatic amputation" below his right knee. Victim No.2 had "less serious" injuries.

Recommendations

The investigators recommended that Team Leaders keep a detailed daily log, that probing be done slowly, that change-overs be made according to SOPs and that lanes should not exceed 1.5 metres in width.

Victim Report

Victim number: 296	Name: Name removed
Age:	Gender: Male
Status: deminer	Fit for work: not known
Compensation: not made available	Time to hospital: not recorded
Protection issued: Frag jacket	Protection used: none
Helmet	
Short visor	

Summary of injuries:

AMPUTATION/LOSS

Leg Below knee

COMMENT

No medical report was made available.

Victim Report

Victim number: 297	Name: Name removed
Age:	Gender: Male
Status: deminer	Fit for work: presumed
Compensation: not made available	Time to hospital: not recorded
Protection issued: Frag jacket	Protection used: none
Helmet	
Short visor	

Summary of injuries:

COMMENT

The victim's injuries were recorded only as "minor". No medical report was made available.

Analysis

It is important to read the BOI report under *Related papers* to understand what occurred in this accident.

The primary cause of this accident is listed as a "*Management/control inadequacy*" because it seems that the demining was being carried out with a complete disregard for National and international safety standards and this could only have been done with the knowledge of senior management. The secondary cause is listed as a "*Field control inadequacy*" because the field controllers failed to ensure that SOPs were adhered to – but it is accepted that they were probably only doing what they were told.

The failure of the MAC to hold a record of this accident immediately after it occurred was reported to be due to a semantic struggle between UN Technical Advisors at the time. It was said that their way of defining mine "incidents" and mine "accidents" had led them to adopt a definition whereby a missed-mine accident was always outside their concern, even when the accident occurred while demining of the area was still happening. With the subsequent attempts to "cover" the failings of the International demining group involved, it becomes clear that this may have been a ruse to distract subsequent investigators from the truth. In any case, this definition seems to have been dropped fairly quickly.

When the independent investigation of this accident was made available, it had been edited to conceal the identity of the International demining group involved. Given that the group was in breach of very basic safety and clearance SOPs, it is possible that this was a deliberate attempt to conceal their failing.

The length of the path cleared in that day (compared to previous days) implies a possible pressure to work quickly.

Related papers

When the MAC was first visited the following report was not made available. The ex-pat UN MAC officer who wrote it had left Bosnia Herzegovina before it was released.

This report is unusual because the well known international company involved in the accident has been renamed. The company claimed world-leading dog expertise. It has been renamed "CROW" throughout the following report. No organization of that name is registered as a mine-clearance organization in Bosnia Herzegovina. The Demining group's own internal report used their real name, and the MAC's spreadsheet summary used their real name. There is evidence to suggest that the file was changed after the event.

The fact that the report was originally concealed and then shown to make a misleading record of the particular International Demining group's performance, raises the suspicion of deliberately false reporting.

Original Bol report

The following is the original report, edited for anonymity.

REPORT ON MINE ACCIDENT AT RAPTI BOPANI

INTRODUCTION

1. A mine accident occurred on 13 March 1997 near the village of Rapti Bopani, Grid Reference BN615412. The accident was reported to UN MAC by CROW consulting organisation on 13 March 1997. Initial accident report at Annex A and Mine Accident Report at Annex B refer. A speculative addendum report was also issued by Operations officer Sarajevo on 14 March. This is shown at Annex C.
2. On this day UN MAC appointed [name excised 1] to conduct an investigation and report about the accident. On the same day [name excised 1] was also appointed to the formal investigative board convened by CROW. 2 X Letters at Annex D refer.

CONDUCT OF THE INVESTIGATION

3. [Name excised No.1] Chairman of the investigating board, [Name excised No.2] who is CROW Training Standards Officer, deployed to CROW Regional HQ, from Sarajevo at 0730hrs 14 March 1997. Arrived in Trebinje in mid-afternoon on the same day. On arrival at Trebinje linked up with the other members of the investigating board.
4. Shortly after arrival at Trebinje, written statements were requested from all members of the team involved. No statements had been taken prior to this time.
5. A plan was determined, to begin re-clearance of the entire route from the nearest hard-standing, in order to make the scene of the accident accessible. The UN MAC stated that this re-clearance must involve dogs and manual clearance. The re-clearance was started on 15 March. It was suspended on 16 March because CROW staff in this region do not work on Sundays. Witnesses were also not available for interview on Sunday. Re-clearance of the route was completed up to the site of the accident at 1615 hrs Mon 17 March. All members of the investigative board were at the task site when the last ten metres of ground before the point of the explosion were cleared. The clearance team were instructed not to move, remove, place or replace anything that was not part of their clearance task. The re-clearance of the last ten metres of the route took approximately two hours and fifteen minutes.
6. Bushes and scrub which had not been moved during the initial clearance were cut and removed from the clearance lane during the re-clearance.
7. Access to injured personnel was restricted due to hospital and intensive-care requirements. It was not possible to interview personnel injured during this mine-accident until hrs Tue 18 March.

8. Investigation lasted five days, this included interviews, writing of statements, visits to the site of the accident, inspection of documents & maps, and of clothing belonging to injured personnel.

9. On Sunday 16 March, CROW Regional Manager instructed his staff not to speak to members of the investigative board unless all members of the board were present. This decision was taken unilaterally and without any reference to either the Chairman of the board or the board generally. The Chairman of the board and the board generally were not informed of this ruling until it had already become apparent that CROW personnel were not communicating.

10. CROW regional staff members appointed to the board were aware of this decision. UN MAC member of the board discovered the ruling had been made after overhearing a radio conversation between CROW Sarajevo and CROW Region. In effect the only person affected by this decision was the UN MAC member of the board. Because all three other members are CROW employees, and known by all the staff at Trebinje, they were able to speak to anyone at any time.

11. In view of the personal interest in the accident and its investigation by members of the regional management and staff, it may be considered that their appointment to the investigating board was of a limited value. It may be inevitable that staff members closely connected to an accident will feel defensive to any investigation and may not be ideally suited to provide a fair, independent, dispassionate and impartial contribution.

GENERAL

12. CROW's relations with local people are generally good. This is furthered by CROW's removal and disposal of occasional items of ordnance found and reported by local people.

13. Personnel from CROW Region 1 started a task near the village of Rapti Bopani on Monday 10 March 1997. UN MAC recommendations for work scheduling in RS were provided to on 19 Oct 96 as part of a larger group of a total 231 tasks. Letter at Annex E refers.

14. CROW Regional Manager states that the task was further requested by a local FWF (VRS) officer who also provided a FWF minefield record. After this request CROW Sarajevo was consulted by the Regional Manager and the task was then prioritised for work. Discussions between CROW Regional Manager and [VRS officer] about demining in this area started around January 97. The minefield record was handed to CROW deminers on 12 March.

15. The minefield record showed that 43 PMA-2 Anti Personnel mines and 2 TMP-500 explosive devices had been laid in the area in 1992. A copy of this record, in English and in original language is shown at Annex F. Further information about the locations of mines at this site was provided by a VRS reserve soldier who had helped to lay this minefield during the war. [The Reserve soldier] is resident of Trebinje and is coincidentally attending a FWF demining course at CROW Regional HQ Trebinje, he was interviewed as part of this investigation. He states that he knows the area of Diklic and Rapti Bopani villages well.

16. [The Reserve soldier] was at the task area, with the CROW Deputy Operations officer for a part of the morning of Wed 12 March. At this time he walked along the uncleared part of the route, accompanied by [the Deputy Operations officer] for approximately 600 metres. At the end of this walk along the route was a single strand barbed-wire fence across the path. Hanging on this fence, above the path was a signboard, approximately 400mm X 100mm, yellow lettering on a black background, showing the single word "MINES". This barbed wire fence and similar signboards surround what appears to be the entire mined area. This area is estimated as less than 50m wide and 50 metres long. Detailed measurements of this area were not taken during the investigation.

17. The task was being worked by CROW Survey Team number 2, this consisted of a team leader, three deminers, a medic and a mine detecting dog with handler. This team

was structured in accordance with CROW Regional Structure, as shown at Annex G to this report.

18. A CROW Region 1 Platoon team has six deminers. A CROW Region 1 Survey team has three deminers.

19. CROW Regional Manager states that this region has Platoon teams and Survey teams, not Demining teams.

20. For the two days prior to the accident, the team leader had been away on leave and was therefore not on the site. Because of this absence, the team leader of Survey Team number 1 took over the leadership of Team number 2, in addition to his own team, who were working nearby, on a related task. Team leader number 2 returned from his leave at approximately 2200hrs on the night before the accident and was working with his team as normal on the day of the accident.

21. CROW Team-Leader daily Sign-in sheets for the entire week state that the team leader for Survey Team number 2 was [Mr X]. [Mr X] states that the signatures on the sheets for Tue 11 and Wed 12 March are not his. Sign-in sheets are shown at Annex H.

22. The team travelled to work each day in Landcruisers and Cherokee jeeps. Due to the nature of the access roads it is not possible to travel to the area in larger vehicles. Task site from CROW Regional Headquarters is approximately 53 Km, 55 minutes.

GEOGRAPHY

23. The area is part of the Popovo Polje valley. This mountainous region is sparsely populated and consists of rough, broken and difficult scrub terrain.

24. The task was over the length of a rough, mountain footpath which links a single track road near the village of Rapti Bopani to the village of Diklici. The entire length of the track runs for approximately 1800m. The alternative route would be approximately 9 Km over a single track road. Nearest IEBL marker is approximately 500 metres away from the task Control Point. See map-trace at Annex I.

25. The CROW daily reports at Annex J state that this task affects an estimated 300 people. The nearest village is approximately one Kilometre away. No people were seen living there although there is some evidence of reconstruction at about eight houses. This reconstruction seems to be undertaken by the former residents on an ad-hoc, weekend basis. The area is not a UN HCR priority area. The clearance area is not farm or agricultural land. No local people were seen within 1 Km during the period of the investigation. Three herders were seen with their flocks, but none closer than 1 Km.

26. CROW personnel live in and deploy from CROW Headquarters at the Hotel Jazina, Grid Reference BN958310, near to the village of Niksic. The CROW Headquarters is 53 Km from the accident site, approximately one hour. All local employees live at the hotel. International staff live in rented apartments in the town of Trebinje, approximately 15 Km East.

27. See map at Annex K.

SITE LAYOUT

28. The clearance started directly from the side of a single-track tarmac road.

29. The task was to clear a length of approximately 1800 metres of rough, mountain footpath. The clearance route was marked as it progressed.

30. The cleared area consisted of one, single, clearance lane. Over the length cleared to the site of the accident the width of the clearance lane varies from approximately one metre to more than four metres. This clearance lane is marked by plastic tape suspended on bushes and plants. The marking is neither stable or fixed. In some places it is not possible to determine the edge of the cleared area accurately. Marking in this region is

difficult because of the broken nature of the ground. A combination of paint and tape or other markers would probably provide the most precise marking that could be attained.

31. Approximately the last ten metres of the clearance lane was marked with wooden pegs only. This marking was not confirmed by tape or any other marking.

SUPERVISION

32. Supervision of clearance and survey teams in this CROW region is provided, in the first instance, by team leaders. The next line of supervision is provided by irregular visits to the sites by the Deputy Operations Officer. These visits are supported by occasional visits by the CROW Regional Manager. The regular Operations Officer is currently on duty in Sarajevo, assisting in the mine clearance of Dobrinja flats.

33. Regional Officer's last visit to the site was on Monday 10 March.

34. Senior Dog Trainer had not visited this site prior to the accident.

35. Deputy Operations Officer did not visit this site on the day of the accident.

36. No site diary or record of visitors is kept to record visits.

COMMUNICATIONS

37. The accident occurred in Republika Srpska. The nearest large town is Trebinje. There are very few telephone links from this region to the outside world. The local Spanish SFOR base has a military link to their headquarters in Medjugorje. This link is not continuous or reliable. During three days of attempted calls it was not possible to contact UN MAC Sarajevo on PTT or VSat links.

38. /CROW communications to anywhere outside the region is generally by HF radio or by travelling to Dubrovnik, in Croatia, to use a telephone there. Personnel carrying SFOR ID cards can make this journey in less than one hour.

39. CROW radio log for the day shows little information other than that the team started work at 0800 and that an accident occurred at 1445hrs. This is shown at Annex L.

40. VHF and HF communications between the accident area and CROW Regional HQ are good.

MEDICAL

41. A comprehensive medical kit and an ambulance was on site at the time of the accident. Medic was following approximately one hundred metres behind the team, on the route of the cleared path.

42. The nearest hospital to the accident site is at Trebinje, approximately 38 Km, 40 minutes. Telephone number for Trebinje hospital is (089) 23755.

43. Team medic was Ms [Y]. Ms [Y] qualified as a nurse at Doboje medical high school and has wartime experience as a medic and as a surgery nursing assistant.

44. CROW internal medical report for each of the injured deminers is shown at Annex M.

45. Ms Dakovic states that the last Medevac or Casevac practice exercise was carried out approximately two weeks ago. No records are available to show Medevac or Casevac practices carried out during the month of March 97. Regional head medic's report for February is shown at Annex N. This report states that responsibility for these practices was handed to Team leaders and Team medics.

PERSONALITIES

47. Personnel directly involved are as follows. All personnel have worked for CROW for about six months or more. All personnel have attended at least a CROW basic deminers course.

- a. Team leader, Survey Team 2.
- b. Deminer no 1 Survey Team 2 - lost right foot.
- c. Deminer no 2, Survey team 2 - Right calf & frag injuries.
- d. Deminer no 3, Survey Team 2.
- e. Dog Handler, Survey Team 2.
- f. Medic, Survey Team 2.
- g. Team leader, Survey Team 1.

DOGS

48. The senior dog trainer was unclear whether one or two dogs had worked over the clearance lane up to the point where the first mine was found. [The Senior dog trainer] states that because two dogs were working within this general area, on two different tasks, he assumed that two dogs had worked over this particular clearance lane to the point where the team commander decided that the task would continue manually.

49. [The Senior dog trainer] states that if more than one dog works an area, a minimum of 24 hours must elapse between each dog working there. This is because second or subsequent dogs on the area will follow the scent of earlier dogs, rather than search independently for mines.

50. CROW Regional manager explained that a second dog is worked over cleared areas as a Quality Control measure. This takes place after the task is completed and the clearance team has left the site. Usually 5 to 7 days is allowed to pass before this quality check is made, but never less than 24 hours.

51. The daily reports for Monday, Tuesday, Wednesday and Thursday, 10, 11, 12, and 13 March shows that "Ringo" was the dog used on this lane.

52. A note on Ringo's condition and performance is shown at Annex O. A supplementary note on the utilization of dogs is shown at Annex P.

53. The dog handler from Survey Team 2 states that one dog, "Ringo" worked this clearance lane. All other members of the team agree on this point.

54. The other dog in this area, "Brenda", worked another, related clearance lane near to this site. At no time did Brenda work in Survey Team 2's area.

EQUIPMENT

55. The use of the Schiebel AN 19/2 is difficult in this region due to interference from residual fragmentation from the war and from the high metallic content of the rocks/ground. An informal test was carried out on the ground which showed that the detector signalled even when there was no metal apparent in or on the ground.

56. The use of a prodder is not easy or highly efficient because the area is largely rocky and most soil coverage is shallow or crowded with a jigsaw of close or loose entwined rocks.

57. During the work period prior to the accident, Team Leader's statement states that deminer number 1, [Victim No.1] had been working in the clearance lane using a prodder and a trowel.

DRESS

58. Full protective clothing and headgear is available for all vulnerable personnel in the demining programme. Foot protection is not provided. [Victim No.1]'s footwear was severely damaged during the blast. Although CROW issue all deminers with working boots, on this day [Victim No.1] was wearing training shoes.

59. All protective clothing provided by CROW to demining teams is designed to provide a minimum protection to the wearer against 50% of 1.1g fragments travelling at a velocity of 450 metres per second.

60. Deminer number 1 normally wears a full suit of protective clothing. This consists of a back and chest protective vest, a pair of sleeves, a pair of leggings and a groin/upper thigh protector.

61. Deminer number 2 normally wears a lighter vest than number one, this is a chest protector with incorporated groin protection.

62. It is normal for deminers to change protective clothing with each other when they change from being number 1 or number 2, to being the other number.

63. Every number 1 and number 2 deminer in every team is issued with a helmet. Each team is issued with a total of four helmets.

64. Deminer [Victim No.1] states that at the time of the accident he was wearing his helmet and the lighter, one piece body armour normally worn by deminer number 2.

65. Deminer [Victim No.2] states that at the time of the accident he was not wearing any body armour and that he was carrying his helmet in his hand.

66. Other members of the team are either confused about or cannot fully remember who was wearing what type of body armour or helmets at the time of the explosion.

a. Team leader says in his written statement that [Victim No.1] removed his body armour and helmet.

b. Medic states that she is unsure whether [either Victim] were wearing body armour. She further states that she thought she had seen [Victim No.1] carrying his fragmentation vest as he was walking back towards the Control Point after the explosion.

67. The protective clothing issued to the two injured deminers was made available for inspection on Tue 18 March. Protective leggings from the suit normally worn by deminer number one are bloodstained. This is because they were used to support [Victim No.1]'s injured leg after the explosion.

DETAILED ACCOUNT OF ACTIVITIES ON 13 MARCH 1997.

68. This account is taken from formal and informal interviews and statements from all personnel involved. Statements are shown at Annex Q. A selective summary of formal interview questions are shown at Annex R. Most interviews took place through various, different interpreters.

69. Survey team 2 departed CROW headquarters as normal at around 0700hrs. They started work on the site at around 0800hrs, as normal. Because the team leader had been away from the site for two days, the daily briefing to his team as required by CROW Standing Operating Procedures was not carried out. Instead the team leader was briefed about the task and the team's progress by team members.

70. Lunch was taken for one hour, by all the team together, in the Control Point, at around 1300hrs, as normal.

71. Progress on this day had been faster than on previous days. CROW regional daily reports show that on the day of the accident, the team had cleared 600 square metres of ground. On the Monday they had cleared 100 square metres. On the Tuesday, 75 square metres. On the Wednesday, 100 square metres. CROW regional daily reports at Annex J refer.

72. One reason given for this high rate of progress was that VRS 2Lt and Deputy Operations Officer had walked over a length of the path, up to the place where a barbed-wire

fence across the path marked a minefield. After this it was decided to run the dog over the walked part of the path, and not to follow-up this clearance with any other action.

73. After lunch, at about 1410hrs, the dog, "Ringo" found a PMA-2 Anti-Personnel mine. This was disarmed and removed by [a] deminer.

74. After this the clearance continued normally for approximately ten metres, with the dog leading and the manual clearance coming behind. This method was used up to where the surface of the ground changed, from an area of relatively smooth, flat surface, known by the team as "The Meadow". At this point there was a noticeable step up, approximately 300mm, to rougher, rocky terrain.

75. The team leader's statement says that at this time he decided to send the dog back to the Control point, 900 metres back, for a rest. He had decided the task would continue manually. This decision was taken because the team commander had decided that if there was a large number of mines, the dog might become confused by so many competing scents.

76. The Team Leader believed that there could be a large group of mines just beyond the step because information from VRS 2Lt, who had helped to lay the mines at this site had indicated this. 2Lt had visited the site on the day before the accident and provided confirmation of some of the information in the minefield record. Team leader was not at the site on the day before the accident and therefore was not present during 2Lt's visit.

77. During the next half-an-hour or so, Deminer number 1, [Victim No.1] discovered and disarmed seven more PMA-2 mines

78. During this time Deminer number two was approximately 8 metres behind deminer number one. The normal minimum safety distance of 25 metres had been reduced because of the nature of the ground. There were so many large rocks in the area that if deminer number two been any further back, he would not have been able to see deminer number one at work. Team leader was approximately ten metres behind number 2 and deminer number 3 was about ten metres behind the team leader. The team medic was in the cleared part of the clearance lane approximately 100 metres behind this group. See explanatory sketch and photograph at Annex S.

79. Shortly after this the team leader instructed the demining team to carry out change-over drills.

80. Deminer number 1, [Victim No.1], stood up from his kneeling position, turned around and walked approximately eight metres to his partner, [Victim No.2]. He explained to his partner what he had done and what needed doing next. It was decided that the clearance was inadvertently moving away from the path and to correct this [Victim No.2] would start at about three metres from the end of the cleared area and begin towards a new direction.

81. The team leader states that [Victim No.1] removed his helmet and his protective leggings at some stage between standing up and beginning the explanation to his partner.

82. As [Victim No.1] was explaining, the two deminers walked to [Victim No.1]'s new start point, [Victim No.2] walking behind [Victim No.1]. Once the explanation was complete, they both turned and walked one or two steps back towards the safe area and the team leader's location. [Victim No.1] was now walking behind [Victim No.2]. It was at this time that the detonation occurred.

83. After the explosion the injured deminers were removed from the area, first aid was administered by the team medic and the pair were evacuated in the team ambulance to reach Trebinje hospital at about 1525hrs. The MEDEVAC was completed successfully and the surgeon who later operated on [Victim No.1] congratulated [the medic] on her work to [his] leg.

SUMMARY

84. This Survey team were demining with minimum supervision in an area which was well marked and documented. High-grade information about all aspects of the minefield was available to them. Standard Operating Procedures were varied without reference to

Regional headquarters. Procedures and assets were not used to best advantage. Progress of clearance was probably too quick along the lane. Reporting and supervision procedures were not adequate. The dog found one mine, shortly after which the dog was removed from the scene. Deminer number one missed a mine, moving over it twice. On his third traverse across the mine it detonated. This caused the amputation of Deminer number one's right leg below the knee and less serious injuries to Deminer number two.

RECOMMENDATIONS

85. The following recommendations may be considered suitable.

a. In order to avoid the clearance of less important areas taking priority over more important areas, confirmation of priority should be sought before demining resources are employed in an area.

b. The Standing Operating Procedures of any demining organisation must not be varied in the field in any way without prior approval from a higher office. The following SOPs were varied during this task without any reference to higher authority.

- (1) Clearance lanes were not restricted to 1 metre width.
- (2) Clearance lanes were not adequately marked.
- (3) Change-over drills were not carried out in accordance with SOPs.
- (4) Safety distances were not observed.
- (5) Team leader's daily safety brief was not carried out.
- (6) Protective clothing and helmets were not worn where they should have been worn.

c. Prodding should be carried out slowly, deliberately and within a limited space. Where the use of the prodder is difficult or limited by the surface of the ground, its use should be supplemented by a manual and visual search of the ground.

d. The team involved in the accident should receive a minimum of one day's refresher training, as specified in the UN MAC Technical Guidelines, Page 3 Paragraph 16j. To date this training has not been carried out. It is understood that there is a plan to incorporate this training with a regional training period which is programmed for this region in the near future.

e. Reporting procedures and documentation should be reviewed generally. Daily reports should be reviewed and actioned as required. Such activities as supervisory visits to sites, number of dogs working in each clearance lane, Team-Leader sign-in sheets and Casevac practices carried out should be recorded daily. These records should be checked and confirmed daily by regional headquarters staff. Every clearance site should maintain a site diary to record activities and visitors at the site.

f. Supervision of teams at task sites should be subjected to a continuous programme of regular visits by managers or supervisors more senior than the team leader. These visits should be structured to check on the activities and safety of all relevant parts of the task. Discipline and the adherence to training standards should remain paramount.

g. No area of any task should be cleared by one dog only. All areas must be checked by a minimum of two dogs.

h. A combination of dogs, prodding and metal detector clearance techniques should be used in all areas. An area should never be considered clear if only one technique has been used over it.

Signed : UN Mine Action Centre

Annexes

A. - Initial Accident Report.

- B. - Mine Accident report.
- C. - Addendum Report on Mine accident.
- D. - Letters to convene/appoint Investigative Board.
- E. - UN MAC Letter - Recommendations for work scheduling in RS.
- F. - FWF (VRS) Minefield Record.
- G. - CROW Regional structure.
- H. - Team leader sign-in sheets.
- I. - Map trace.
- J. - Regional Daily Reports.
- K. - Map.
- L. - Radio log.
- M. - Internal Medical Reports.
- N. - Regional Head medic's Report.
- O. - Note on Dog's condition.
- P. - Supplementary Note on Utilization of Dogs.
- Q. - Statements from Survey Team 2.
- Selective Summary of Questions.
- Sketch and photograph of relative positions of team members.

Annex to Accident Report: Dated 18 Mar 97

SELECTED SUMMARY OF QUESTIONS TO 2LT (Abbreviated answers only are shown)
[Original]

1. Did you assist in laying mines around the scene of the accident?
- Yes.
2. Where do you live?
- Trebinje.
3. Do you know the area around the villages of Diklici and Rapti Bopani very well?
- Yes.
4. How many people live in Diklici?
- None.
5. How many people live in Rapti Bopani?
- No-one lives there but a few people return occasionally to look after their houses.
6. When did you last visit the task site?
- Wed 12 Mar, for a couple of hours. I was with [name excised].

Annex to Accident Report Dated 18 Mar 97

SELECTED SUMMARY OF QUESTIONS TO DOG HANDLER (Abbreviated answers only are shown) [Original]

1. How many dogs were used in the clearance lane at this site?

- One - Ringo.
- 2. When did [name excised] last visit the site?
- He has never visited this site.

SELECTED SUMMARY OF QUESTIONS TO TEAM LEADER SURVEY TEAM 1

(Abbreviated answers only are shown)

1. Did you supervise team 2 during the absence of [their Team Leader]?
 - Yes.
2. How many dogs were used on the clearance lane?
 - One.
3. When did Regional Manager last visit?
 - Mon 10 Mar.

SELECTED SUMMARY OF QUESTIONS TO REGIONAL OFFICER

(Abbreviated answers only are shown) [No answers were actually shown.]

Have mines been found in this area?-Numbers and types?

Have mines been found on this task?- Numbers and types?

Explain system of supervision.

How are operations Commanded, Controlled Coordinated & Supervised? - Describe.

Describe leave (holiday) rotation plot.

What is CROW's mission in this region?

Where did this task come from? What priority is it?

Are minefield records available for this site? Did the team have them?

How many persons work from Hotel? - 60 / 70

How many tasks are you maintaining/working? - 3 sites / 5 teams

Describe how platoons/teams are structured.

State any problems with metallic ground or use of detectors.

Is the bar at Hotel used by deminers without restriction?

How often do you visit sites?

Where were international staff? - Was this normal?

SELECTED SUMMARY OF QUESTIONS TO TEAM LEADER TEAM 1

(Abbreviated answers only are shown) [No answers were recorded.]

As for deminers.

What equipment were injured persons carrying?

How were they dressed? Visors?

Could you see the team at time of detonation?

Distance between them?

Describe the site layout and reference points and designated areas.

Had dog(s) been at this task? Why did they leave?
Where exactly? Over the "missed" mine?
How had the clearance lane been cleared? Detector? Prodder??
What would you do differently next time?
Describe change-over drill.
Has safety ever been an issue on your site?
What went wrong?
Who "missed" the mine - was it the injured? Why?
Did drills change beyond area covered by dogs? How?
Describe the state of mind of each team member.
Were any locals watching?
Were SOPs followed, did you have copy on site?
Did you brief the team in accordance with CROW SOP's?

SELECTED SUMMARY OF QUESTIONS TO MEDIC

Name
Formal qualifications.
Time with CROW?
Experience with traumatic injuries?
Describe first aid and Casevac.
Was this in accordance with CROW SOP?
Was this a safe site?
Where were you?
Where was ambulance?
When was your last Casevac/Medevac practice or drill?

SELECTED SUMMARY OF QUESTIONS TO DEMINERS

Describe your day - from departure Hotel, was start time normal?
What did you do the night before?
How long with CROW?
What demining training have you had?
Where were you when detonation occurred?
What happened?
What went wrong?
What action was taken?
Was this in accordance with CROW SoPs?
Was route in to clearance lane cleared? How? Daily?
Did you eat/drink that day?

How many hours is a normal day? Breaks?

Is the ground metallic or contaminated with metal?

Do you trust the detector?

SELECTED SUMMARY OF QUESTIONS TO INJURED PERSONNEL

As for deminers.

Dress?

Equipment?

Distance between no 1 and no 2?

How long have you worked as a pair?

What would you do differently if you had another chance?

describe change-over drill.

Has safety ever been an issue?

Did you use/trust detector?

Who cleared the area with the "missed" mine? You?

What went wrong?

How many dogs were used on this clearance lane? Names?