

APPENDIX C

HANDOUTS

COURSE: Crew Boss (Single Resource), S-230

UNIT 1: Exercise - **SOLUTION**

Questions:

How do you provide purpose?

- **Communicate a crew/unit vision or mission statement.**

How do you provide direction?

- **Supervise by interaction and through delegation.**

How do you provide motivation?

- **Praise publicly; discipline privately.**
- **Take care of your crewmember's needs.**
- **Provide for training opportunities.**
- **Keep crew informed.**

COURSE: Crew Boss (Single Resource), S-230

UNIT 2: Exercise 1 - **SOLUTION**

1. What miscellaneous optional equipment should a Crew Boss consider for an incident?

- **Belt weather kit**
- **Handheld radio with extra batteries; cloning cable**
- **Compass and signal mirror**
- **Global Positioning System (GPS) unit**
- **Maps**
- **Flagging**

2. List the administrative items that should be included in a Crew Boss kit.

- **ICS-214, Unit Log**
- **ICS-226, Individual Performance Rating**
- **Crew Time Report**
- **Manifest, Passenger/Cargo blanks**
- **Travel log**
- **Agency specific forms**
- **Accident forms**
- **Fireline Handbook**
- **Incident Response Pocket Guide**
- **National Interagency Mobilization Guide**
- **Interagency Incident Business Management Handbook**
- **Interagency Standards for Fire and Aviation Operations**
- **Radio frequency guide**
- **Agency directives**
- **Pocket calculator**
- **Pens/pencils**
- **Note pad**
- **Atlas**
- **Cell phone**
- **Phone/credit card**

3. What are eight pieces of information a Crew Boss should request from dispatch?

- **Incident/Project name**
- **Incident/Project order number**
- **Office reference number (cost code)**
- **Descriptive location/response area**
- **Legal location (township, range, section)**
- **Incident radio frequency (if available)**
- **Incident base/phone number**
- **Request number**
- **Reporting date/time and location**
- **Transportation arrangements/travel routes**
- **Special instructions**

4. What is the maximum allowable weight for web gear and personal gear a crewmember is allowed to take to a fire?

- **65 pounds**
Refer to the National Interagency Mobilization Guide

5. What is the maximum allowable weight for a crew?

- **5100**
Refer to the National Interagency Mobilization Guide

6. What must be done with all saws before they can be flown?

- **Purge saws per agency requirements**
- **Cover dogs**
- **Install chain guard**

COURSE: Crew Boss (Single Resource), S-230

UNIT 2: Exercise 2 - SOLUTION

STANDARD FORM 245 (6/77) Prescribed by USDA FSM 5716 USDI MP9400.518			PASSENGER AND CARGO MANIFEST				NO. OF PASSENGERS ON THIS PAGE <u>20</u>		PAGE <u>1</u> OF <u>1</u>	
ORDERING UNIT NM-SWC			PROJECT NAME Rocky Point				PROJECT NO. NM-SWC-0001			
NAME OF CARRIER Sierra Pacific - NIFC			MODE OF TRANS & ID NO. Boeing 737 N737SP				PILOT OR DRIVER Steve Smith			
CHIEF OF PARTY Dan Smith, CRWB			REPORT TO: New River Gorge				IF DELAYED CONTACT SWCC 505-843-3473 NICC 208-389-2400			
DEPARTURE		INTERMEDIATE STOPS					DESTINATION			
PLACE	ETD	ETA	PLACE	ETD	ETA	PLACE				
ABQ	0600 MDT	1100 EDT	ATL	1200 EDT	1345 EDT	Dulles Int'l Airport				
PASSENGER AND/OR CARGO NAME			M/F	PASSENGER WEIGHT	CARGO WEIGHT	DUTY ASSIGNMENT IF APPLICABLE		HOME UNIT		
1.	Dan Smith		M	185	55	CRWB		NM-NMS (all)		
2.	Johnny Jones		M	243	55	FFT2				
3.	Fred Mertz		M	135	55	FFT2				
4.	Penny Cook		F	145	55	FFT2				
5.	Sally Rietz		F	135	55	FFT2				
6.	Tyrone Brown		M	165	55	FFT2				
7.	Richard Rodriguez		M	200	55	FFT2				
8.	Jose Villaneuve		M	167	55	FFT1				
9.	Tony Chin		M	140	55	FFT2				
10.	Roger Torez		M	135	55	FFT2				
11.	Mac Sanchez		M	243	55	FFT2				
12.	Susie Campbell		F	200	55	FFT2				
13.	Megan Christy		F	123	55	FFT2				
14.	Mike Yee		M	170	55	CRWB (t)				
15.	Mica Goldstein		F	155	55	FFT2				
16.	Mohamed Smith		M	255	55	FFT2				
17.	Jon Johnson		M	176	55	FFT2				
18.	Toy Kim		F	110	55	FFT1				
19.	Yuk Yee		M	150	55	FFT2				
20.	Robert Stoprunning		M	167	55	FFT2				
21.	Saw Pack				50					
22.	Saw Pack				50					
SIGNATURE OF AUTHORIZED REPRESENTATIVE							DATE 8/20/XXXX			

CHIEF OF PARTY COPY

COURSE: Crew Boss (Single Resource), S-230

UNIT 2: Exercise 3 - **SOLUTION**

1. It is now 0600 the following morning and the last of the crew has just arrived. What should the Crew Boss do now?

- **Check the crewmember's red card qualifications and other specialized qualifications (EMT, sawyer, bilingual).**
- **Establish his or her authority and standard operating procedures.**
- **Ensure that each crewmember has the proper personal protective equipment.**
- **Break the crew into squad configurations.**
- **Brief the crew on all aspects of the assignment.**
- **Evaluate the crew's mental and physical condition.**
- **Find out if any crewmembers have medical conditions.**
- **Facilitate trainee assignments.**

2. Two crewmembers arrive in shorts and tennis shoes. They explain that their fire gear is in their red bags and they will change at the incident. What should the Crew Boss do?

- **Make them change.**
- **Don't allow them to go.**
- **Perform crew conduct briefing.**

3. What items should the Crew Boss include in a crew conduct briefing?
- **Advise personnel of weight limitations and hazardous materials.**
 - **Emphasize a professional attitude.**
 - **Explain that clean, professional clothing should be worn at all times during travel status.**
 - **Tell crew members to keep squad bosses informed of their location at all times.**
 - **Do not tolerate fighting, stealing, alcohol, drugs, and sexual harassment.**
 - **Discourage horseplay.**
 - **Tell crew to respect private property and provide for your own equipment security.**
 - **Discuss respect for others.**
 - **Advise Crew Boss/squad boss of any unsafe or illegal activities.**
 - **Insist on courtesy to other crews, i.e., noise in sleeping areas.**
 - **Discuss appropriate attire during out-of-service hours.**
 - **Discuss agency procedures pertaining to inmate crews.**

4. The crew has just arrived at the airport. What are the Crew Boss's responsibilities at this time?

- **Ensure the crew remains together.**
- **Check in with the appropriate personnel (ramp manager, dispatcher, airport manager or airport personnel) and provide them with a copy of the crew Passenger and Cargo Manifest and the crew's request number.**
- **Minimize impact on facilities.**
- **Prepare crew and equipment for flight, purge saws, remove fuses, and dump water. Stage crew and equipment together.**
- **Perform personnel head count and equipment inventory.**
- **Prepare for crew and equipment weigh-in.**
- **If departure is not imminent provide for food and rest rooms.**
- **Ensure provision is made to store vehicles if applicable.**

5. A ramp manager informs the Crew Boss that his/her crew will be flying with three more crews and that his/her crew will be the first crew to load. What should the Crew Boss consider?
- **Determine who will load the equipment and how should it be loaded.**
 - **Advise personnel to wear hearing protection.**
 - **Caution personnel about propellers and jet engine hazards.**
 - **Decide on personnel loading procedures - back to front or right side of the aisle or left.**
 - **Do a final head count.**
6. What items should the Crew Boss consider when loading and transporting people and equipment via ground transportation?
- **Personnel loading procedures - back to front or right side of the aisle or left.**
 - **Vehicle type and condition.**
 - **Driver condition/qualifications.**
 - **Need for an additional vehicle (gear and equipment transportation).**
 - **Complete destination instructions (guide or map).**
 - **Estimated time of travel.**
 - **Crew welfare (food and rest).**
 - **Maintain communications with all vehicles.**
7. The crew has worked 10 hours and is being released to go home. It is a 5 hour drive to their home unit and some crewmembers have an additional 2 hour drive to their duty station. What should the Crew Boss do?
- **Adhere to agency work/rest guidelines.**
 - **Request to stay overnight at the fire and leave in the morning.**
 - **Consider a short drive towards the home unit if it would increase quality sleep.**

UNIT 2 QUIZ SOLUTION

Circle the most correct item.

1. If a rotation list at the local unit is in place and the Crew Boss is placed on call for an incident assignment, what should the Crew Boss do?
 - a. Prepare an appropriate list of dispatch office and dispatcher phone numbers.
 - b. Clear schedule to honor the commitment to a potential assignment.
 - c. Have transportation available to the dispatch center.
 - b. Keep dispatch informed of his or her location.
 - d. All of the above.**

2. Miscellaneous optional items a Crew Boss may need include:
 - a. Compass
 - b. Belt Weather Kit
 - c. Signal Mirror
 - d. All of the above**
 - e. None of the Above

3. Which item is most important when preparing a crew for a helicopter flight?
 - a. Crew manifest**
 - b. Handheld radio
 - c. ICS-214, Unit Log
 - d. After Action Review (AAR)

4. When the crew is assembled at dispatch, the Crew Boss should:
 - a. Check-out PPE items to the crewmembers.
 - b. Check and load all tools on the bus.
 - c. Administer the work capacity test to anyone that needs it.
 - d. Get with dispatch and review specific items for the assignment.**

5. Which item(s) is/are most important when evaluating crewmembers?
- a. Red card qualifications
 - b. Individual physical condition (fatigue)
 - c. Work capacity test score
 - d. Job description at the home unit
 - e. **a and b**
6. If a Crew Boss is dispatched to a different geographic area and gets lost in transit, he or she should have which of the following?
- a. Division supervisor's name
 - b. **Dispatch telephone numbers**
 - c. Map of the fire
 - d. Agency Administrator's name
7. Which piece of information received from dispatch upon mobilization is most important for a Crew Boss?
- a. Type of incident
 - b. Aircraft name
 - c. **Incident order number**
 - d. Jurisdiction/Agency
8. Which items are most important for a Crew Boss when filling out a crew manifest?
- a. Crew name, individual name, chief of party
 - b. Individual weights, cargo weight, demobilization destination
 - c. Aircraft type and number, pilot's name, date and time
 - d. **a and b**

9. A Crew Boss has been told to meet an assigned crew at the National Guard Armory. Beside introductions to the crewmembers and squad bosses, the Crew Boss should: (choose all that apply)
- a. **Ensure all personnel have protective footwear.**
 - b. **Establish authority.**
 - c. Leave the crew for long periods.
 - d. **Evaluate crewmember mental and physical condition.**
 - e. **Organize the crew into a configuration that will meet anticipated incident needs.**
10. List five important administrative items required for a Crew Boss kit.
- **ICS-214, Unit Log**
 - **ICS-226, Individual Performance Rating**
 - **Crew Time Report**
 - **Manifest, Passenger/Cargo blanks**
 - **Travel log**
 - **Agency specific forms**
 - **Accident forms**
 - **Fireline Handbook**
 - **Incident Response Pocket Guide**
 - **National Interagency Mobilization Guide**
 - **Interagency Incident Business Management Handbook**
 - **Interagency Standards for Fire and Aviation Operations**
 - **Radio frequency guide**
 - **Agency directives**
 - **Pocket calculator**
 - **Pens/pencils**
 - **Note pad**
 - **Atlas**
 - **Cell phone**
 - **Phone/credit card**

11. List eight pieces of information to request from dispatch prior to departure for an assignment.

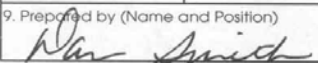
- **Incident/Project name**
- **Incident/Project order number**
- **Office reference number (cost code)**
- **Descriptive location/response area**
- **Legal location (township, range, section)**
- **Incident radio frequency (if available)**
- **Incident base/phone number**
- **Request number**
- **Reporting date/time and location**
- **Transportation arrangements/travel routes**
- **Special instructions**

12. A crew is released from the fire after a difficult 14-day assignment. It is an 8 hour drive to their home unit. They will depart the fire at 1400 hours and they will arrive home by 2200 hours. Some crewmembers have an additional 2 hour drive to their duty station. What should the Crew Boss do?
(Choose two answers)

- a. Drive straight home and request a motel at the home unit.
- b. Drive to dispatch and stay the night.
- c. **Request to stay overnight at the incident.**
- d. **Consider a short drive toward the home unit if it would increase quality sleep.**

COURSE: Crew Boss (Single Resource), S-230

UNIT 3: Exercise 1 - SOLUTION

UNIT LOG		
1. Incident Name	Rocky Point	2. Date Prepared 08/20
3. Time Prepared	2330	4. Unit Name/Designators Pecos River #1
5. Unit Leader (Name and Position)	D. Smith, Crew Boss	6. Operational Period 0600-1800
7. Personnel Roster Assigned		
Name	ICS Position	Home Base
D. Smith + 19		NM-NMS
		Sante Fe, NM
8. Activity Log		
Time	Major Events	
0430	Attended briefing. Assigned to Division D - cut and hold line.	
0645	Arrive at DP-3; walked to work site.	
0830	Arrived at work site.	
1000	DIVS advised she wanted a progress report at 1300. Notified of 1600 firing operation. This operation will be supported by a strike team of dozers and an engine strike team that is currently installing a hose lay.	
1200 - 1230	Lunch break	
1255	Sawyer cut swamper on the arm. Crew EMT handled - notified DIVS and the crew constructed a hellspot.	
1325	EMT and injured swamper airborne to the hospital.	
1330	DIVS requested progress report - on schedule. Should be able to meet the 1600 burn out ops timeframe.	
1350	WX - WB 62, DB 95, RH 12%, Winds SW at 11 mph.	
1430	Fire made run and crossed the line. Crew took appropriate action.	
1930	Contained the slopover.	
2000	Replacement arrived and crew en route to camp.	
2030	Bus had a flat tire 8 miles from camp; ordered a mechanic.	
2145	Mechanic arrived.	
2230	Crew arrived at camp. Crew got sack lunches and refurbished equipment.	
2330	Completed accident forms, time, ICS 214. Bedded down.	
9. Prepared by (Name and Position)		
		

COURSE: Crew Boss (Single Resource), S-230

UNIT 3: Exercise 2 - **SOLUTION**

1. Plumas Regulars (Division E):

- **Task Books as needed**
- **LCES addressed**
- **Qualified personnel for assignment**
- **Coordination with other crew and resources**
- **Special equipment needs**
- **Limitations on personal gear**
- **Re-supply SOPs**
- **Good map**
- **Proposed line location (and distance to cover)**
- **Tactical objective clearly understood**
- **Identification of gear drop points**
- **Expected number of operational periods before returning to base**
- **Any special instructions/concerns from management**

2. Lassen Regulars (Division E):

- **Task Books as needed**
- **LCES addressed**
- **Assigned to fire or hold**
- **Qualified personnel for assignment**
- **Coordination with other crews and resources**
- **Equipment needs**
- **Supply points and re-supply SOPs**
- **Good map**
- **Distance to cover**
- **Problem areas along line**
- **Relief crews assigned (“hotline hand-off,” extended shift for your crew, or abandon line at end of shift)?**
- **Air support available (and how quickly)?**

3. Modoc #12 (Division B):

- **Task books as needed**
- **LCES addressed**
- **Good map**
- **Coordination with other crew and engine**
- **Crew's assigned work area**
- **Exact location of pump site (likely near B/A break)**
- **Equipment needs**
- **Equipment and supply ordering SOPs**
- **Long line qualified personnel needed/available**
- **Bucket support available**
- **Special concerns (environmental)**
- **Will next operational period personnel be using the same equipment?**

4. Six Rivers #4 (Division C):

- **Task books as needed**
- **LCES addressed**
- **Map, preferably broken into grid location**
- **Coordinate with other crew and fallers**
- **Crew grid or spot patrol teams**
- **Backpack pumps on site? Take with? To be delivered?**
- **Long line qualified personnel available**
- **Bucket support available**

5. Taos #7 (Group H):

- **Task books as needed**
- **LCES addressed**
- **Specific objectives understood and work instructions received from group H supervisor, including location(s)**
- **Special equipment needs**

6. Pike Regulars (Ruth Helibase):

- **Task Books as needed**
- **Number of IA teams required**
- **Capabilities of IA teams**
- **Qualified ICT4s for each team**
- **Equipment needs**
- **Communication SOPs**
- **Good maps**
- **IA checklist**
- **Method(s) of transport**
- **Flight manifest(s)**
- **Re-supply SOPs**
- **Coordination needs with other assigned IA resources**
- **Available support (air tankers, buckets, etc.)**
- **Any special management concern/instructions from the IA division group supervisor**

COMMON THEMES THAT SHOULD BE CONSIDERED:

- **Have personnel welfare and life safety concerns been appropriately evaluated and planned for? (Stress safety zones and escape routes.)**
- **Is the need/concern viable? (Is it a true need/concern?)**
- **Can the need/concern be logistically satisfied or accomplished?**
- **What is the relative level of importance of the need/concern compared to other logistical activities occurring on the incident (high, medium, or low)?**
- **Are contingency plans developed for operating without needs/concerns being met?**

COURSE: Crew Boss (Single Resource), S-230

UNIT 3: Exercise 3 - **SOLUTION**

Situation

- Terrain
- Fuels
- Weather
- Fire behavior

Mission/Execution

- Assignment

Communications

- Frequency

Service/Support

- Other resources

Risk Management

- Identify hazards
- LCES
- Anchor points
- Trigger points

Any questions or concerns?

UNIT 3 QUIZ SOLUTION

1. A crew has just arrived at the incident base. What should the Crew Boss do now?
 - a. Hold a short briefing and delegate appropriate authority.
 - b. Tell them you are going to find out what's going on and that you'll find them later.
 - c. Designate certain crewmembers to help you obtain information and decide on a meeting time and place.
 - d. a and c**
 - e. All of the above

2. En route to the Huck Finn Fire, the Mark Twain Dispatch Center informs a Crew Boss to check in on Division A. What factors would the Crew Boss need to know at this time?
 - a. Radio frequency
 - b. The operations section chief's name
 - c. Location of the drop points
 - d. Specific travel directions
 - e. a and d**

3. List five important questions that need to be answered when receiving a briefing or assignment.
 - **Who**
 - **What**
 - **When**
 - **Where**
 - **Why**

4. Upon arrival at an incident, a Crew Boss is told to go to Division B and meet with the DIVS Smith on road No. 211 at the Beaver Dam. What should the Crew Boss do?
 - a. Get supplies and head for the dam.
 - b. Ask for a map and radio frequencies.
 - c. **Request more information specific to the assignment.**
 - d. a and b.

5. This morning's inversion will not allow the OSC1 to fly into camp for a briefing. The DIVS informs everyone in camp to go on the line and use yesterday's Incident Action Plan (IAP). What should be the Crew Boss's primary concern?
 - a. **Current situation status**
 - b. Expected duration of assignment
 - c. Human resource message
 - d. Long range weather forecast

6. What components of the IAP are most important to the Crew Boss?
 - a. Organization assignment list and weather message.
 - b. Incident objectives, safety message and air operations plan.
 - c. Division assignment list and medical plan.
 - d. Communication plans and map.
 - e. **All of the components of the IAP are equally important.**

7. Why should division assignment lists for other crews be of interest to a Crew Boss?
 - a. To see if work is fairly divided among crews.
 - b. To locate other crews from your own region.
 - c. To get radio frequencies and contact names.
 - d. **To coordinate with adjoining forces.**

8. What significance are the special instructions to the Crew Boss on the division assignment list?
- a. Can help plan intra-crew assignments.
 - b. Give items for consideration in crew briefing.
 - c. Can help in tactical planning.
 - d. All of the above**
 - e. a and c
9. After the morning briefing, you are informed that your assignment has changed. Instead of patrolling completed fireline in Division A, you will be assigned to Division B as part of a large firing operation. What is the first thing you will need to do?
- a. Meet with the DIVS of an adjoining division to discuss your new assignment.
 - b. Reassess your equipment needs and adjust accordingly.
 - c. Meet with your new DIVS for briefing.**
 - d. All of the above.
10. While en route to DP5 on Division A for an assignment, the OSC1 calls a Crew Boss on the radio and requests the crew to divert to Division C, DP10. Prioritize the following actions the Crew Boss should take:
- a. Ask OSC1 if Division A is aware of this change.
 - b. Pull out IAP map and figure out how to get to DP10.
 - c. Look up the radio frequency for Division C and make contact with the DIVS.
 - d. Brief the crew.
- 1. a**
 - 2. c**
 - 3. b**
 - 4. d**

11. During the morning briefing, a Crew Boss learns the crew will burn out a large area of completed fireline. The crew has only one case of fuses. What should the Crew Boss do?
 - a. Request a different assignment more suited to the crew's ability.
 - b. Take the fuses available and try to get re-supplied on the fire line.
 - c. **Assess the assignment with the DIVS and obtain the appropriate supplies.**
 - d. Continue rehabilitating the fireline previously built on the division.

12. After assessing the proposed assignment (from the scenario above), the Crew Boss feels the crew does not have the expertise to accomplish this firing operation. What should the Crew Boss do?
 - a. **Consult with the DIVS and request a different assignment more suited to the crew's ability.**
 - b. Use the available supplies to burn out a small section of line on the division.
 - c. Accept the assignment even with the lack of expertise and use it as a training opportunity.
 - d. Have the crew group up together until the DIVS makes a decision on what the assignment will be.

13. List the six essential items a Crew Boss should pass on to the crew during an initial briefing, prior to going to the line:
 - **Situation**
 - **Mission/Execution**
 - **Communications**
 - **Service/Support**
 - **Risk Management**
 - **Any questions or concerns?**

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LESSON 4C: Exercise 1 - **SOLUTION**

A crew is assigned to Division A on a wildland fire incident. The crew is to fly to H-1 and then to construct direct line from H-1 to the A-B Division boundary.

1. Before the flight to H-1, what can the Crew Boss do to prepare for this assignment?
 - **Have a copy of the crew manifest for the helitack crew.**
 - **Fiber tape tools in small bundles or box them up for transport.**
 - **Ensure that all crewmembers have chinstraps, earplugs, and gloves.**
 - **Ensure the first load includes the Crew Boss, one squad boss, a saw team, and tools/equipment.**
 - **Ensure the other load(s) include a squad boss.**
 - **Request helitack to fly over the assigned work area.**
 - **Request flight helmet from helitack.**
 - **Ensure the Crew Boss's location on the aircraft allows visibility to see the fire area.**
 - **Have incident map available.**

2. During the flight to H-1, what can the Crew Boss do to improve situation awareness in this assignment?
 - **Get oriented by using the map**
 - **Fuel characteristics**
 - **Topographic characteristics**
 - **Present and predicted weather conditions**
 - **Present and predicted fire behavior conditions**
 - **LCES**
 - **Operational period - working during the day or working during the night**
 - **Overall size of area of responsibility**

3. After the crew has arrived at H-1, what actions should the Crew Boss take prior to making crew assignments?
 - **Assign a squad boss to brief the crew when they arrive.**
 - **Ensure squad bosses are briefed about LCES.**
 - **Brief squad bosses on the anchor location.**
 - **Initiate sizeup and flagging operations.**
 - **Discuss specific tactics - direct, indirect, cold trail, use barriers.**

4. In addition to fuels, weather and topography, what critical elements may influence line construction production?
 - **Biological/environmental hazards**
 - **Human caused hazards**
 - **Availability of critical support**
 - **Crew condition**
 - **Natural or constructed features**
 - **Sensitive resource areas**
 - **Accessibility**
 - **Coordination with adjoining forces**

5. The crew has been constructing direct line for one hour. The Crew Boss realizes that at this production rate, the crew will not tie in to Division B at the established time. What actions should the Crew Boss take?
 - **Notify DIVS of the situation and provide recommendations.**

COURSE: Crew Boss (Single Resource), S-230

LESSON 4C: Exercise 3 - **SOLUTION**

1. What helicopter/fixed wing issues should you and the DIVS discuss at this time?
 - **Transportation to helibase if appropriate.**
 - **What crew should fly first?**
 - **What procedure should be used to request helicopter bucket work or fixed wing retardant air support?**
 - **Is the Type 2 helicopter available for air support as soon as the crew is in place at H-3?**

2. What other incident personnel can you place orders with?
 - **Air tactical group supervisor (ATGS)**
 - **Relay through an adjacent DIVS**
 - **Relay through an airborne helicopter pilot**

3. Describe the information you would provide when ordering air support.
 - **Type of air support needed**
 - **Amount of air support needed**
 - **Recommended length of lead time if appropriate**
 - **Size and condition of spot fire (If there is a spot fire)**
 - **Hazards in the area**
 - **Possible water sources in your area**
 - **Ground contact and general location in relation to the target**

4. What information should you request from the individuals you listed in question two when placing your order?
 - **Frequency aircraft will use**
 - **ETA**
 - **Aircraft identifier**
 - **Turn around time**

5. Describe any safety concerns you have regarding your crew in relation to the incoming air support and the appropriate actions you should take.

- **Squad personnel being exposed to bucket drop. Have squad boss move all personnel on the spot to a safe location parallel to the spot fire.**
- **Hazards may include:**
 - **Rolling rocks and debris.**
 - **Broken tree tops falling to the ground, broken limbs left in the canopy.**
 - **Burning material being swept away with water from bucket drop into unburned fuel outside the spot.**
 - **Dust and other airborne debris created from the rotor wash.**
 - **Pilot releasing the load early or late over crew personnel.**
 - **Excessive noise from the helicopter.**
 - **Flare up of spot fire from rotor wash.**

6. Describe the procedures and any equipment you will use to guide the responding aircraft to the target.

- **Monitor air to ground radio frequency.**
- **Be prepared to direct the helicopter initially to your location using only the noise from the helicopter.**
- **Use the clock method in conjunction with a signal mirror, strobe light, topographic features, and/or the fire's behavior (smoke column, flare-ups).**
- **Identify the target location using a combination of flagging, standing in the drop location, wave arms/hard hat.**

7. Describe the information that should be communicated to the pilot after the drop is completed.
 - **Effectiveness (long, short, wide penetration) through the canopy.**
 - **Do you need the pilot to reload and return?**

8. What actions should you take?
 - **Inform the other two crews in your division of your situation.**
 - **Advise them that you will be placing an order through the DIVS for sling loads of drinking water, saw gas and bar oil.**
 - **Ask if they want to be included in the order.**
 - **Determine where the sling load should be delivered. Normally this is determined by the lead Crew Boss in a leapfrog operation and is a site that the other crews can re-equip at as they bump ahead.**
 - **Determine who will be the ground contact.**
 - **Order logistical support through DIVS or communications unit if appropriate.**

9. What are your safety concerns during the construction of the helispot?
 - **Adequate reconnaissance of the proposed helispot must be accomplished prior to the deployment of your crew.**
 - **Consider using ATGS or an available helicopter to assist in the selection of the proposed helispot.**
 - **Ensure the site is secure from the main fire's advance.**
 - **Ensure LCES walking into the proposed site and throughout construction phase.**
 - **Follow Standard Firefighting Orders and Watch Out Situations.**
 - **Ensure the fire's edge or any burn out operations do not advance close enough to create adverse smoke or flare-up conditions during crew movement.**

10. List the minimum distances to accommodate overall length, rotor blade diameter and safety allowance for a two way helispot. Include touch down pad, safety circle dimensions and firmness requirements.

- **See IRPG**

11. What procedures do you take when the helispot is complete and ready for operation?

- **Advise the DIVS or ATGS that the helispot is complete and recommend the spot be inspected and approved for use.**
- **Be prepared to make any final improvements as per the ATGSs or helicopter coordinator's inspection.**
- **Tie flagging onto a nearby tree or branch to be used as a wind indicator.**

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LESSON 4C: Exercise 4 - **SOLUTION**

1. What should you consider regarding equipment and supplies prior to leaving the base?
 - **Contact the DIVS and ascertain if the Type 1 crews need any additional burning equipment or supplies from the incident base in support of the assignment (equipment, food, or water).**
 - **Anticipate involvement in firing and holding operations and obtain the necessary equipment needed prior to leaving the incident base (extra fusees, drip torches/fuel, and back pack pumps).**
 - **Anticipate working an extended shift and obtain extra sack lunches and/or rations.**

2. What information should you discuss with the Type 1 Crew Bosses upon arriving at Drop Point 1?
 - **How should your crew be deployed in conjunction with their crews?**
 - **What recommendations do they have?**
 - **What information can they add concerning the current conditions relating to fire behavior, terrain, fuels, and general hazards in the immediate area?**
 - **Are there lookouts in place; names and locations?**
 - **Have escape routes and safety zones been established?**
 - **What radio frequencies are the Type 1 crews working on?**

- **Communicate your crew's limitations and capabilities with the Type 1 Crew Bosses.**
3. What procedures should you consider prior to deploying your crew?
- **Size up the line personally or rely on the information provided by the Type 1 Crew Bosses to base your decisions upon.**
 - **Determine how the crew will be deployed and discuss with squad bosses. (This general determination will be based on the crew's experience levels and capabilities in relation to current fire behavior, fuels, weather, and topographic conditions. The number of radios and saw teams will also play a significant role in this decision.)**
 - **Perform a crew briefing on the general fire situation and objectives, designate the intra-crew and other pertinent communication frequencies. Discuss personnel assignments and safety issues.**
 - **Size up the situation and identify LCES for all crew personnel.**
 - **Discuss spot fire and slopover procedures.**
 - **Assign appropriate personnel to spot fire patrol duties.**
4. What are your concerns regarding your firing operation in relation to the Type 1 crew ahead of your crew?
- **Establishing and maintaining constant communications with the Type 1 crew concerning your progress and their situation.**
 - **Developing, maintaining and controlling an adequate level of firing intensities and keeping the exposure to the Type 1 crew to a minimum.**

- **Providing a clean black edge as a safety zone for the Type 1 crew and your crew to retreat to if necessary.**
 - **Coordinating your firing/holding operation with the line building operation in order to maintain the appropriate distance between the two crews. A primary safety consideration for you and the other Crew Boss is that what is fired can be held and the lead line building crew does not continue to build line away from the firing operation unless it is safe to do so.**
5. How would you set up your firing team organization?
- **Use one of your most experienced squad bosses to directly supervise the operation.**
 - **Use a minimum number of lighting personnel. The smaller the organization, the easier to control.**
 - **Make sure the firing team uses the proper radio and intra-crew communications necessary to safely conduct the operation.**
 - **Provide lookouts, escape routes, and safety zone procedures and make them known to all personnel.**
 - **Describe the roles of each member of the firing team including the firing techniques and procedures that will be followed during the operation.**
 - **Discuss your role and location during the operation with all squad bosses on your crew.**
6. Describe the firing team configuration you would use and the equipment you would need to perform under the current conditions.
- **Use 1 to 3 lighters.**

- **Use a 3, 2, 1, configuration with lighter #3 being uphill and out in front of lighters #2 and the edge lighter #1 position. When appropriate, adjust the number of lighters to safely meet the conditions and tactical considerations.**
- **The squad boss in charge should be mobile and in full view of all lighters to maintain safety and appropriate fire intensities.**
- **The Crew Boss's location should be in a position where the individual can monitor and coordinate both the firing and holding operations.**
- **Fusees, drip torches and natural fire should be adequate equipment under these conditions. Anticipate need for additional supply of firing equipment.**

7. What procedures and adjustments would you take regarding your holding operation?

- **Request through your DIVS that additional resources be assigned to the division to support the holding and line construction operations (hand crews, hose lays, helicopters for bucket operations).**
- **Assign one squad boss with a radio to patrol back behind the crew for spots or slopovers and to supervise the remaining holding personnel.**
- **Make sure holding crew uses the proper radio and intra-crew communications and does not disrupt or endanger the firing team operation.**
- **Designate lookouts, provide and discuss escape routes and safety zone procedures, and make them known to all personnel.**
- **Describe the roles of each member of the holding crew including the holding procedures that will be followed during the event of spot fires or slopovers.**

- **Discuss your role and location during the operation to all squad bosses on your crew.**
8. What action should you consider at this time?
- **Ensure LCES is not compromised.**
 - **Determine whether or not you have the confidence in the squad boss's ability to safely and effectively size up this situation.**
 - **Send the squad boss with an additional crew member to the area in question to obtain an accurate sizeup.**
 - **Adjust crew organization to ensure crew safety and supervision.**
 - **Adjust the speed of the firing operation until adequate sizeup information is provided by the squad boss.**
9. What actions should you consider at this time?
- **Determine how long the squad boss will be committed.**
 - **Maintain LCES with the squad boss.**
 - **Notify DIVS of your situation.**
 - **Remember to monitor the spot fire throughout the operational period as necessary.**
 - **Notify relief crew and/or adjoining forces of the spot fire location.**
 - **Continue patrolling for additional spots.**

10. Describe the appropriate suppression action that the squad boss should implement.
- **Extinguish the fire in the base of the snag promptly. Use dirt and/or water if available to cool the fuel. Construct a direct fireline around the fire area by scraping and/or separating burning material with a shovel and/or a pulaski.**
 - **Observe snag for falling bark and/or limbs.**
 - **After accomplishing full containment of the spot fire the squad boss should radio the Crew Boss and provide a progress report.**
 - **Squad boss should flag the location of the spot fire back to the main fireline. A note describing following essential information should be tied to the last flag at the main fireline location.**
 - **Spot Fire Note Information:**
 - **Date and time found**
 - **Size of spot (i.e., 10 ft. x 10 ft.)**
 - **Distance to spot (100 yards north)**
 - **Direction to spot (follow pink flagging)**
 - **Lined or unlined**
 - **Name of the resource**

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LESSON 4C: Exercise 5 - **SOLUTION**

1. What are some safety considerations that must be identified during the mopup phase of this fire suppression effort by the Crew Boss?
 - **Continue to provide for LCES**
 - **Unburned islands/areas of fuel**
 - **Snags and limbs hanging in tree tops**
 - **Rolling debris**
 - **Burned out stump holes**
 - **Crew member awareness and morale**
 - **Inform personnel of projected weather/fire behavior conditions**
 - **How to handle spot fires and flare ups**
 - **Special concerns with night operations**
 - **Overconfidence, complacency, and cumulative fatigue**

2. In addition to safety responsibilities, Crew Bosses must ensure that crew members function as effectively as possible. How can a Crew Boss ensure mopup is accomplished efficiently?
 - **Obtain the proper mopup support equipment (pumps, hose, air support).**
 - **Work the area in an organized, methodical fashion.**

- **Identify and initiate saw work early to prevent problems with large fuels later.**
 - **Work the crew in pairs.**
 - **Ensure that handtools are used in conjunction with nozzles and that water is stirred and mixed with the soil and ash.**
 - **Use infrared heat detectors when available.**
 - **Provide crew members with adequate rest periods.**
 - **Coordinate actions with adjoining forces.**
 - **Ensure novice firefighters receive on the job training.**
3. It is often extremely challenging for Crew Bosses to keep crew members motivated during mopup operations. How could a Crew Boss in this situation mitigate this challenge and guard against morale letdowns?
- **Lead by example.**
 - **Provide crew members with adequate rest periods.**
 - **Provide crew members with timely, thorough briefings.**
 - **Take advantage of training opportunities.**
 - **Share the hazards and hardships with your subordinates.**

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LESSON 4C: Exercise 6 - **SOLUTION**

1. As the Crew Boss, what can you do to prepare the crew for this assignment?
 - **Obtain a situation briefing from local personnel for all crew members.**
 - **Establish a communication procedure with the local unit and obtain radios, area frequencies, organization charts and local area maps.**
 - **Arrange for logistical support to include:**
 - a. **food/water**
 - b. **tools/saws, mixed fuel, and bar oil**
 - c. **maps/compass, belt weather kits**
 - d. **radio communications with extra batteries**
 - e. **back pack pumps/firing equipment**
 - f. **transportation**
 - **Organize the crew into module sizes that meet the local unit needs (2, 3, 4, or 10 person modules).**
 - **Ensure a qualified Initial Attack Incident Commander is assigned to each module.**
 - **Ensure crew members are prepared for field assignments of up to 48 hours without re-supply.**

2. How should the Crew Boss organize the crew to meet the FMO's request?
 - **Ensure that the Crew Boss/squad boss be placed in the last module assigned and that each module have a qualified Initial Attack Incident Commander with a qualified sawyer (when appropriate).**
 - **Mix the individual experience levels in each module.**
 - **Ensure each module has communications.**
3. What options does the Crew Boss have if there are only five crew members who are Initial Attack Incident Commander qualified?
 - **Inform the FMO that the crew cannot be broken into modules smaller than four people.**
 - **Find out if the FMO can locate two qualified Initial Attack Incident Commanders to use in conjunction with the remaining crew members.**
4. What items would you brief your crew about in this situation?
 - **Possible restructure of modules**
 - **Rotation list procedures**
 - **LCES**
 - **Anticipated fire behavior at night**
 - **Precautions to take to avoid being struck by lightning**
 - **Lack of air support for night activities**
 - **Possibility of using coyote tactics**

- **Extra food and water requirements**
- **Environmental and biological hazards**
- **Transportation arrangements**
- **Reinforcement and re-supply procedures**
- **Sizeup report utilizing IRPG**
- **Ensure the work/rest guidelines are followed**

UNIT 5 QUIZ SOLUTION

1. What duties should the Crew Boss consider accomplishing prior to returning to the incident base from a tactical assignment?
 - **Maintain tools and saws.**
 - **Fill canteens.**
 - **Top off saw gas/oil if available (unless traveling by aircraft).**
 - **Generate equipment needs list (personal and crew).**
 - **Determine medical issues and needs.**
 - **Evaluate performance (physical and mental).**

2. What other personnel does the Crew Boss have available on the crew to accomplish these duties?
 - **Squad bosses.**
 - **Crew EMTs.**
 - **Intra-crew managers (saw boss, supply person, vehicle manager, etc.)**

3. List five items a Crew Boss should consider as responsibilities following tactical assignments before arriving at base or camp:
 - **Arrange transportation through DIVS.**
 - **Ensure drivers are rested and vehicles are in proper working order.**
 - **Perform tool and or saw maintenance on line or at drop point when possible.**
 - **Notify base of crew's ETA to arrange for meals or commissary if necessary.**
 - **Solicit crew needs; consider medical equipment and commissary items.**
 - **Brief relief crew on line if possible.**
 - **Take head count before leaving work area.**

4. When flying by helicopter back to the incident base the Crew Boss should normally make sure he or she is manifested on the:
 - a. First load
 - b. Second load
 - c. **Last load**
 - d. Does not matter which load.

5. What Crew Boss responsibilities can be delegated to a subordinate supervisor following a tactical assignment, while at the incident base or camp? List four.
 - **Feed crew**
 - **Water crew**
 - **Re-supply crew**
 - **Fuel vehicles if dedicated or assigned to a crew.**
 - **Turn in tools as required.**
 - **Communicate crew wake up time for next operational period.**

6. List three key responsibilities a Crew Boss has prior to going out-of-service.
 - **Debrief situation unit.**
 - **Refurbish and or re-supply equipment.**
 - **Turn crew time in to finance/administration.**
 - **Notify facility unit leader of sleeping area location.**

7. Crew welfare and crew conduct should both be considered Crew Boss responsibilities while the crew is out of service. Circle two other primary responsibilities.
 - a. **Administrative responsibilities**
 - b. **Communication of crew status**
 - c. Communication through home unit supervisor
 - d. Develop Incident Action Plan (IAP)
 - e. Secure line assignments that will meet crew training needs.

8. During out-of-service periods what responsibilities does a Crew Boss have for providing medical attention to his or her crew? List three.
- **Providing escort for crewmembers with injuries or illness.**
 - **Providing proper documentation through agency specific accident report forms.**
 - **Obtaining necessary crew first aid supply.**
 - **Considering and arranging light duty assignments for injured crewmembers.**
9. When completing forms involving claims for lost, stolen or damaged property, what incident personnel may the Crew Boss coordinate with?
- a. Division group supervisor
 - b. Compensation/claims unit leader
 - c. Security manager
 - d. All of the above**
 - e. A and C only
10. Explain why it is important for the Crew Boss to ensure that medical forms are promptly completed for any crew member injured on-the-job and requiring medical attention.
- **Protection of the individual**
 - **Protection of the agency**

UNIT 6 QUIZ SOLUTION

1. Expended items that cannot be replaced by the incident supply unit should be:
(Choose the best answer.)
 - a. Justified by the division supervisor prior to demobilization.
 - b. Inventoried and signed off by the supply unit leader prior to demobilization.
 - c. Ordered before demobilization through dispatch.
 - d. Justified or approved by the Incident Commander.**
 - e. Purchased on the way home.

2. List two sources of information a Crew Boss has available to keep informed of demobilization process.
 - **Watch bulletin board for demobilization list.**
 - **Obtain instructions from planning section.**
 - **Attend operational period briefings.**

3. Why should a critique of the incident be done with the crew prior to disassembly? List three reasons.
 - **Time factor/things fresh in mind.**
 - **Group evaluation and impressions.**
 - **Identify improvements to make for next assignment.**
 - **Follow up on critique items requiring further action.**
 - **Organize for next assignment.**
 - **Improve overall safety awareness.**
 - **Improve group performance.**

4. Whenever possible the Crew Boss should try to replace any fire expended items prior to leaving the incident.
 - a. **True**
 - b. **False**

5. Circle the items during return travel status that a Crew Boss is responsible for:
 - a. **Arranging meals for crew personnel.**
 - b. **Providing lodging.**
 - c. **Checking in with agency dispatch office, regarding travel status.**
 - d. **Crew conduct.**
 - e. **Providing telephone use at scheduled rest stops.**
 - f. **All the above**

6. List the steps necessary for demobilization of a crew from an incident.
 - **Obtain ICS 221 form from demobilization or planning unit.**
 - **Check out with each functional unit indicated on the ICS 221 and obtain the unit leader's signature.**
 - **Return ICS 221 form to appropriate unit.**

S-230 FINAL EXAMINATION

1. Match the following terms with the correct definition.
 - a. Backfire
 - b. Burn out
 - c. Indirect attack
 - d. Direct attack

___ A fire used as an indirect attack method to stop, slow or turn a wildfire. Must be approved by the Incident Commander.

___ A method of suppression in which the control line is located some considerable distance away from the fire's active edge.

___ A method of suppression applied directly to burning fuel such as wetting, smothering, or chemically quenching the fire or by physically separating the burning from unburned fuel.

___ A fire used as a direct attack method to secure and strengthen the control line. Is a responsibility of the Crew Boss.
2. What role does LCES have in the risk management process in the constantly changing fireline conditions?
3. You are on the local agency Crew Boss rotation list prior to an incident assignment, what should you do?
 - a. Have your gear packed and your Crew Boss kit complete.
 - b. Clear schedule to honor the commitment to a potential assignment.
 - c. Have transportation to the dispatch center.
 - d. All of the above.
 - e. a and c.

7. You and your crew have just arrived at the incident base. What do you as Crew Boss do now?
 - a. Immediately divide the priority duties.
 - b. Help the squad bosses unload all the gear.
 - c. Hold a short briefing and check-in crew.
 - d. Take a head count to make sure everyone is there.
 - e. Look for your supervisor.

8. List six pieces of information required from dispatch prior to departure from the home unit:

9. Upon arrival at the incident you are told to go to Division B and meet with the division supervisor (DIVS) Susan Hickman on road No. 211 at the Beaver Dam. What do you do?
 - a. Get supplies and head for the dam.
 - b. Ask for a map and radio frequencies.
 - c. Request a complete briefing.
 - d. a and b.

10. Of what significance are the special instructions to the Crew Boss in the Incident Action Plan division assignment list?
 - a. Can help you plan intra-crew assignments.
 - b. Gives items for consideration in crew briefing.
 - c. Can help in tactical planning.
 - d. Will note safety issues unique to your division.
 - e. All of the above.

11. After the morning briefing, you are informed that your assignment has changed. Instead of patrolling completed fireline in Division A, you will be assigned to Division B as part of a large firing operation. What is the first thing you will need to do?
 - a. Meet with the DIVSs of adjacent divisions to discuss your new assignment.
 - b. Reassess your equipment needs and adjust accordingly.
 - c. Meet with your new DIVS for briefing.
 - d. All of the above.

12. List the six essential items covered in a proper briefing prior to assignment:

13. Prior to building fireline downhill, specific guidelines need to be applied. Where are these guidelines found?

14. Name two assignments that the Crew Boss may need to plan for other than handline construction.

15. List four considerations while in staging areas.

16. What is the definition of a trigger point?

17. What should you do when a trigger point is hit?

18. Describe the steps to be taken when addressing serious fireline injuries.

19. When constructing fireline, what are the appropriate actions that would best facilitate site rehabilitation?
 - a. Flush cut stumps, stockpile debris for scattering over site later, use natural barriers, avoid archeological sites.
 - b. Flush cut stumps, scatter all the debris at least 100 feet from site, build roll trenches, build water bars.
 - c. Ensure that nobody walks back over completed fireline.
 - d. Let a resource specialist determine the actual line specifications.

20. Five items a Crew Boss must consider before requesting supplies be delivered to your crew on the line are:

21. If minimum impact suppression tactics are used, what are two safety concerns the Crew Boss should consider?

22. What are three things the Crew Boss should consider regarding departure from an tactical assignment?

23. List four items a Crew Boss should accomplish following tactical assignments while at base or camp:
24. Crew welfare is the responsibility of the Crew Boss while the crew is out of service. Circle two other primary responsibilities.
- a. Administrative responsibilities
 - b. Communication through home unit supervisor
 - c. Crew conduct
 - d. Develop IAP
 - e. Secure line assignments that will meet crew training needs.
25. When completing forms involving claims for lost, stolen or damaged property, what incident personnel should the Crew Boss coordinate with?
- a. Division group supervisor
 - b. Compensation/Claims unit leader
 - c. Security manager
 - d. All of the above
 - e. a and c
26. What methods can be utilized to re-supply fire expended items?
- a. Purchase with personal credit card from store
 - b. Re-supply at the incident
 - c. Get request numbers, signed approval, and re-supply at the home unit
 - d. All of the above
 - e. b and c

27. List six actions that must be completed prior to demobilization from an incident.

28. List three primary responsibilities a Crew Boss should complete prior to disassembly of the crew at the home unit.

29. Who should the Crew Boss always keep informed of problems and progress on the line?

30. Who has responsibility for crew time reports?
 - a. Each individual crew person
 - b. The squad boss
 - c. The Crew Boss
 - d. The personnel timekeeper

31. Who has authority to accomplish a planned burn out?
 - a. Division group supervisor
 - b. Squad boss
 - c. Strike team leader
 - d. Crew Boss

32. The three wildland fire leadership values are:

Based on the following scenario, answer the questions.

You are assigned to initial attack a fire with your Type 2 handcrew. You arrive on scene and size up the fire. As you are gathering your crew together for the initial briefing, a civilian approaches you with information on a new fire start two miles down the road. You tell your crew to take action on the first fire as you speed away to check out the second fire.

As you arrive on scene at the second fire, your squad leader informs you over the radio that one of your firefighters has been injured by a falling snag.

33. Who is responsible for ensuring the injured firefighter is taken care of properly?

- a. Injured firefighter
- b. Squad leader
- c. Crew Boss
- d. Saw boss

34. Why is this person responsible? (choose 3)

- a. The agency administrator was not on scene.
- b. You can delegate authority but not responsibility.
- c. The ICS organization always designates responsibility.
- d. No briefing was given to the crew.
- e. No one delegated as IC on first fire.

35. As the Type 2 Crew Boss, what should have been done differently?
Choose two answers.
- a. Ensure initial briefing is completed.
 - b. Assign a firefighter to scout the second fire.
 - c. Assign a squad boss to scout the first fire and brief the crew.
 - d. Stay at the first fire with the crew and let dispatch handle the second fire.
36. What is the foundation of the risk management process?
- a. Hazard assessment
 - b. LCES
 - c. Situation awareness
 - d. Hazard control
 - e. Decision point
37. As a Crew Boss, you evaluate firefighters on the line for: (list two)
38. What are three other levels of engagement in addition to engage and withdraw?
39. You are given a fireline assignment that you consider unsafe. Where do you find the protocol to properly turn down the assignment?

40. List three trigger points based on measurable factors:

41. The most essential element of successful wildland firefighting leadership is: