1960 FA Accessory File CH

SUMMARY REPORT

BURN INJURIES

OF

STEVE FROST, F.A.E.

AND

WAYNE WALKER, R.P.T.

JULY 26, 1981

CALIFORNIA DEPARTMENT OF FORESTRY
LAKE/NAPA RANGER UNIT
REGION I

On July 26, 1981, at approximately 1558 hours, FAE Steve Frost and RPT Wayne Walker were burned while working on the Grizzly Canyon Fire east of Clear Lake. Frost and Walker were involved in a backfiring operation in a saddle, when the fire made a sudden run at their location and engulfed them in flames. Walker received 2nd and possible 3rd degree burns over his lower extremities. Frost received 2nd degree burns on his left hand.

FIRE LINE CONDITIONS:

Weather: Temperature 100 degrees
Humidity 20%
Winds NE 10/15

Fuel: Short, dense, annual grasses and scattered star thistle.
1 Ton per acre
10 hour fuel moisure 4

Topography: Moderate slopes 12% to 19%, broken terrain, with saddles and ridges, south east aspect

SEQUENCE OF EVENTS:

Initial statements of witnesses indicated that at approximately 1550 hours, FAE Frost and his crew on Engine 1390 arrived at the saddle from the south. A backfiring operation was in progress in the saddle and was under the direction of the Fire Captain on Engine 1377. The Fire Captain made radio contact with Frost prior to his arrival in the saddle and gave him instructions to assist on the backfiring.

When Frost arrived, the backfiring had progressed part way down from hill "A" into the saddle. Engine 1375 was assisting in the firing operation and Dozer 1346 was improving the dirt ranch road. Parked in the lowest part of the saddle was a crew bus from which a crew was unloading.

Frost met with the operator of Dozer 1346 at point "E" and discussed the backfiring operation. The dozer moved south along the road, and Frost turned around and moved slowly along the road towards hill "B". His assignment was to watch for spot fires west of the road.

The main fire spread at this time was up the drainage toward the saddle. It had not yet enetered the bowl leading to the saddle. The firing crew had worked their way down to the crew bus, but the backfire had spread parallel to the road toward the south to point "C". As Frost and his crew reached point "C", a small spot fire started ahead of the engine in the grass in the middle of the road, at point "D".

Frost accelerated the engine and instructed Walker to extinguish the spot using the 3/4" hard line. After he had accomplished this, Walker walked back to the engine with the hard line. As Walker approached Frost on the driver's side of the engine, the fire suddenly swept up through the saddle to their position. Frost yelled at Walker to get in the cab of the engine. As Frost jumped in the driver's side door, Walker dropped the nozzle and ran around the front of the engine in an attempt to get in the passenger side. As he moved to the right side he was met by a wall of flames on both sides, trapping him in front of the engine. Fire blew under the engine burning his lower extremities.

Walker then stepped up on the front bumper. Frost, seeing this, quickly moved the engine ahead and out of the flames where he discovered he had also been burned on his hand. Walker was moved down off the ridge where first aid was given and he was transported to Chico Burn Center.

CONCLUSIONS:

From witness statements, weather observations, and fire behavior analysis of the scene, it appears that the fire was pushed up the drainage toward the saddle by convective winds. Because of late afternoon solar heating in the drainage, air flow was not only confined to the canyon, but also upslope.

When the fire reached the open bowl, leading to the saddle, it was suddenly influenced by the gradient level NE wind which increased fire spread and changed direction. The backfire established in the saddle contributed to the rate of spread by drawing the main fire up through the bowl.

Terrain with saddles and drainages pose additional operational problems to fire control personnel. Saddles and drainages will funnel winds, changing direction of spread. Solar heating increases rate of spread and can contribute to erratic fire behavior and fire whirls.

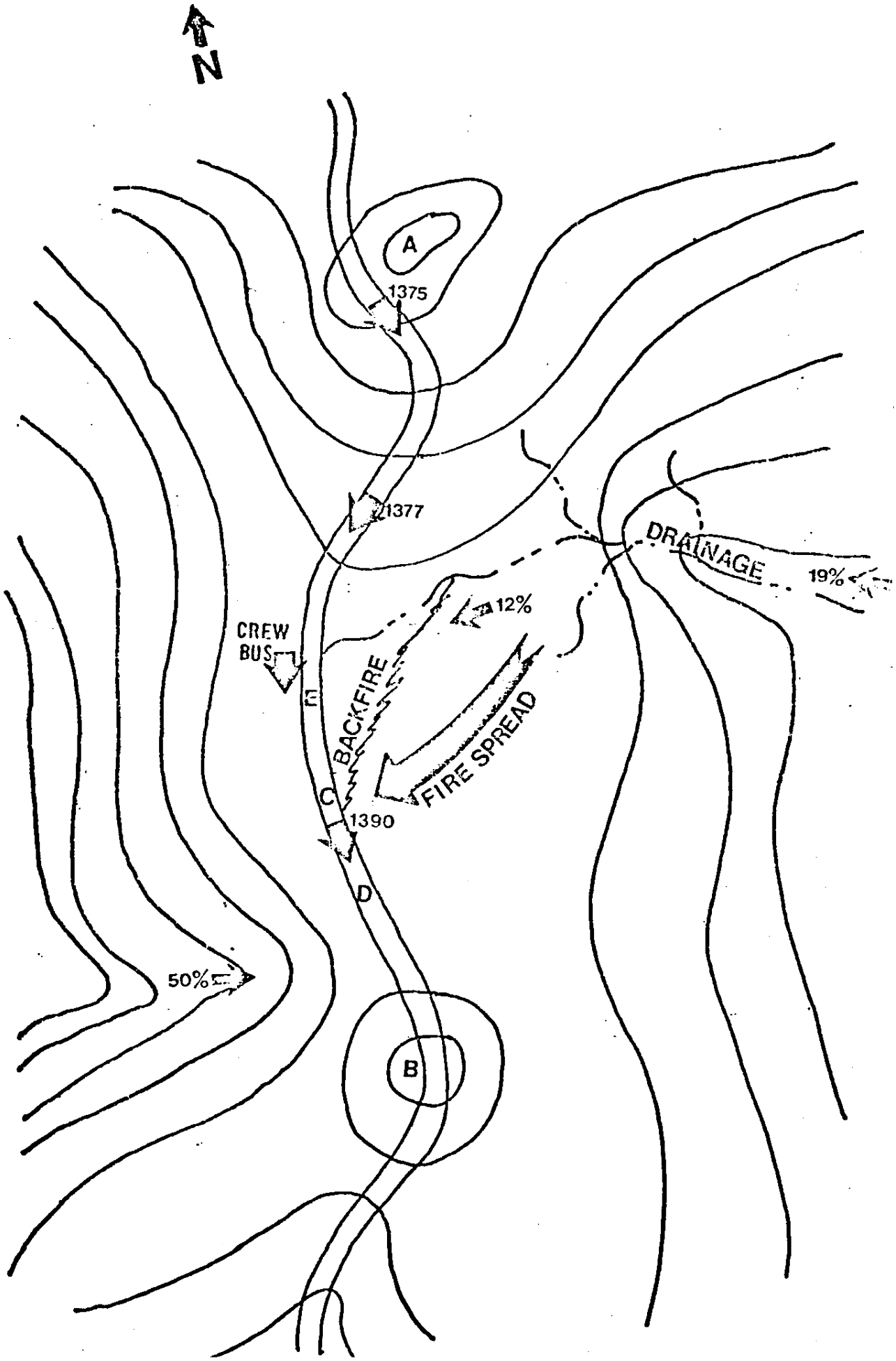
Potential fire spread was under-estimated by the Engineer of 1390, when he moved forward to pick up the spot fire. The crew moved to the extreme south end of the progressing backfire, which afforded little protection from the main fire because of its narrow width.

Lessons to be learned from this incident:

1. Fire control operations in saddles and drainages require special precautions as fire behavior may suddenly change.

2. Firing operations must progress slowly enough to create an adequate safety zone that can be quickly reached by personnel.

3. Emphasis must be placed on the dangers of fires burning in light flashy fuels. Fire behavior projections on this fire indicate that at the time of the accident, the fire spread was likely 276 feet per minute, producing flame lengths of 8 feet, and releasing 475 BTU's per foot per second.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