BRUSH FIRE RESPONSES

Purpose:

This plan is intended to serve as an operational guide when serious dry vegetation fires are encountered. All normal standard operating procedures of the Kemah Fire Department are in effect for brush fire fighting except as amended or superceded by this plan.

Guidelines:

The following factors have a critical effect on the burning characteristics of a wildland fire. Command must maintain an awareness of these conditions and be prepared to react quickly, pessimistically, and well ahead of the fire.

The factors are:

- WEATHER
- FUEL
- TOPOGRAPHY

WEATHER:

Command must be aware of constantly changing weather conditions. During a normal day, local winds will change 180 degrees near midday and usually become gusty during the afternoon. Morning winds are normally East to West and afternoon winds are usually West to East. Fire spread will usually slow down in the evening and increase during the midmorning hours.

Command should always be aware of the fire conditions, weather conditions, and time of day. Remember that a large free burning brush fire can create dangerous convection currents that cause erratic fire behavior and spot fires far in advance of the fire head. Heavy winds also produce similar results.

Hot and dry conditions produce extremely rapid fire spread. A slight decrease in relative humidity will cause a significant increase in fire intensity. During extreme days surface-wetted fuel will dry in a few minutes.

FUEL:

Most of the fuel in the Galveston County area is relatively light and burns very rapidly. It is not expected to burn in any area for more than a few minutes and may not require extensive overhaul. Once an area has been burned, usually only the heavier fuel ***(tree stumps, etc.)*** needs to be overhauled. Overhaul is necessary to prevent embers from being blown into new fuel.

TOPOGRAPHY:

Fire burns uphill much more rapidly than downhill. On an uphill slope, the fire will tend to crown over the top and start spot fires a considerable distance down the receding slope. A large free-burning fire will tend to create its own convection currents and spot fires may be started. Access is often the most serious problem with topography. Companies with considerable brush fire potential should size-up areas with regard to fuel , topography and extent of exposure to structures. Particular attention should be paid to access roads and accessible areas where apparatus may travel . The incident commander should note natural firebreaks and potential exposure problems.

COMMAND:

On major incidents establish a Command Post and Geographic sectors as soon as possible. The Command Post should be in a location that will be safe and not have to move if the fire changes direction. Sectors must be mobile. Supporting elements should be able to set up at the Command Post. Select a site where a helicopter may land in close proximity to the Command Post.

The Command Post will need a set of maps to plot progress, exposures and access. The units in the field, particularly geographic sectors, will have to report this information back to Command via radio or personal contact. On fires involving large areas, the area (key maps) maps should be-used for this purpose.

TACTICS AND STRATEGY:

Brush fires often present a large area of rapidly spreading fire. The critical decision is often where to attack the fire to the best advantage.

The basic brush fire philosophy will be to aggressively stop the forward progress of fire whenever possible. Protection of exposures is the primary goal when immediate control is not possible.

A direct water attack is the fastest control evolution available to counteract wildfire spread. Clearly, many situations will not support this possibility and Command must be prepared to readjust strategy that may make it necessary to develop a defensive mode to protect exposures while allowing the fire to burn to a location better suited for control. In these cases, it may be best to use vehicle access to position apparatus to protect exposed structures and allow the main body of fire to pass by.

When water is in short supply, it is usually most effective when applied to burning material instead of wetting fuel in advance. Seriously exposed structures should be kept wet while exposed.

As fire spread becomes more critical , Command must be prepared to special call additional attack units by specific companies or to request assistance by standardized alarm responses. This determination must be made early.

On large open grass fires, Command must take advantage of natural fire barriers that will assist in control measures, such as : dry sandy washes, roads, trails, rock outcroppings, patch fuels, etc .

Command must quickly develop a firefighting plan. The following is a list of size-up considerations that greatly affect tactics and strategy.

- Location of fire head or heads. The fast moving part of the fire.
- Pertinent burning conditions - weather, time of day, etc.
- Type of fuel – light, heavy fuel load.
- Exposures – improvements, buildings, crops, etc.
- Size of fire and rate of speed
- Special hazards – hot spots, spot fires, developing heads.
- Manpower needs.
- Fuel continuity.
- Accessibility into fire area.
- Water resource – tankers, hydrants, etc.
- Line of retreat. How can I escape?

OVERHAUL:

Overhaul should start as soon as manpower is available. Don't wait until the fire is completely contained unless it is absolutely necessary. Overhaul must be through. If there is a very large fire area, overhaul at least 100 yards into the main burn from the perimeter. Use water as often as possible to mop-up. Dirt will also work well.

Remember that the perimeter fire control only contains the fire, it is not out until every ember is cold. Embers can be blown over the perimeter and quickly start a spot fire.

SPECIALIZED TOOLS:

When a direct tank water attack is not possible, due to terrain limitations, Command may utilize portable backpacks and hand firefighting tools to control the fire spread. These specialized tools are available on brush trucks and many of the responding volunteer fire department units.

SAFETY:

- Always provide for an escape route
- Do not allow firefighting personnel to become exhausted.
- Provide drinking water
- Wear proper protective clothing and shoes, consistent with brush firefighting.
- Use hand-tools correctly.
- Always post observers.

- Remember, fire can burn against the wind.
- Keep your equipment and yourself in good condition.

APPARATUS PLACEMENT:

- Never place apparatus directly in front of a brush fire.
- If you park in a brush area, remember that the exhaust system can start a fire below your truck.
- Provide protection for the engineer in case the wind changes direction.
- Beware of getting stuck.
- Know the limitations of your apparatus in rough terrain.
- Be alert to the possibility of puncturing your tires.