

S-216

Driving for the Fire Service

Off Road Driving

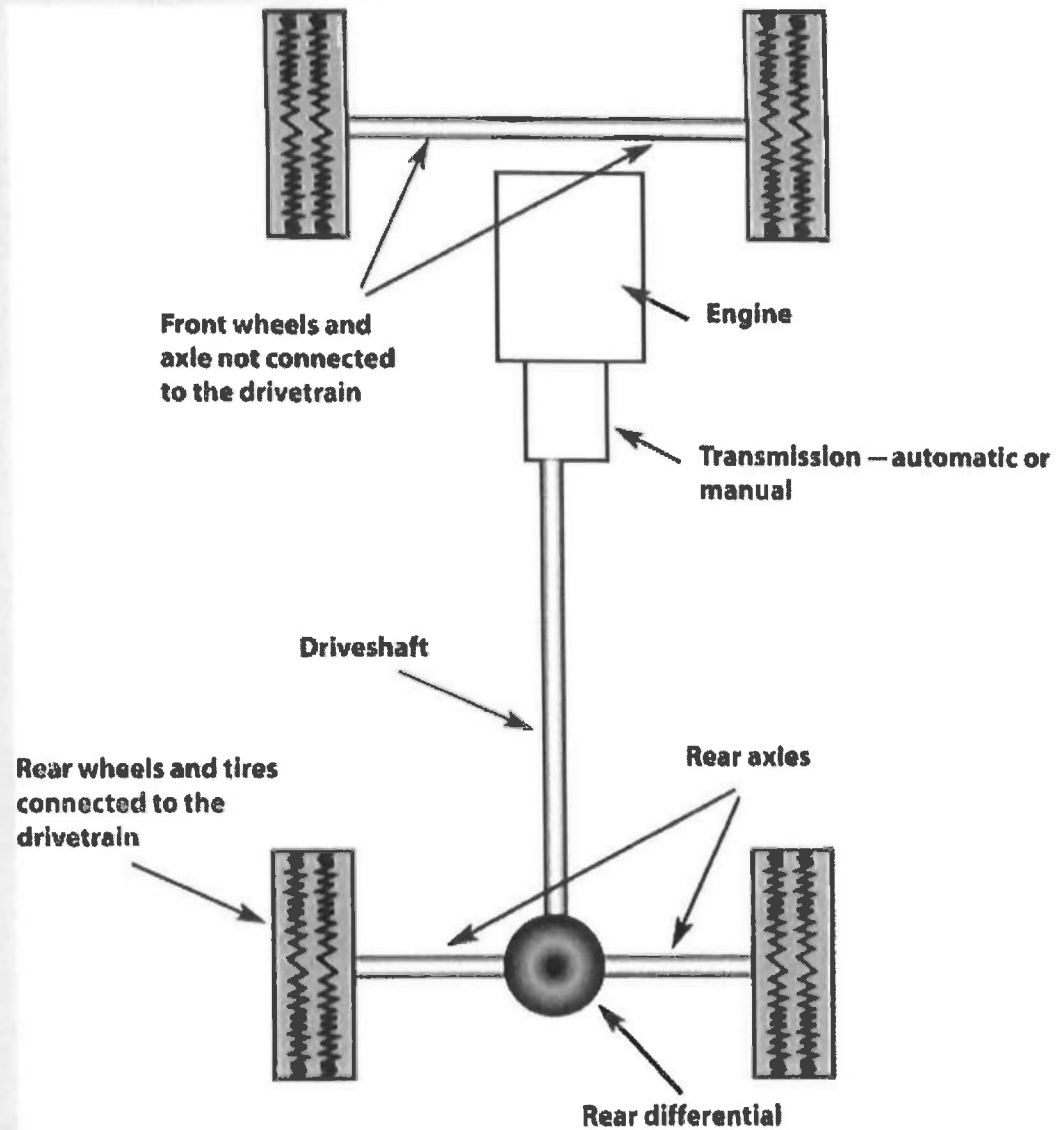


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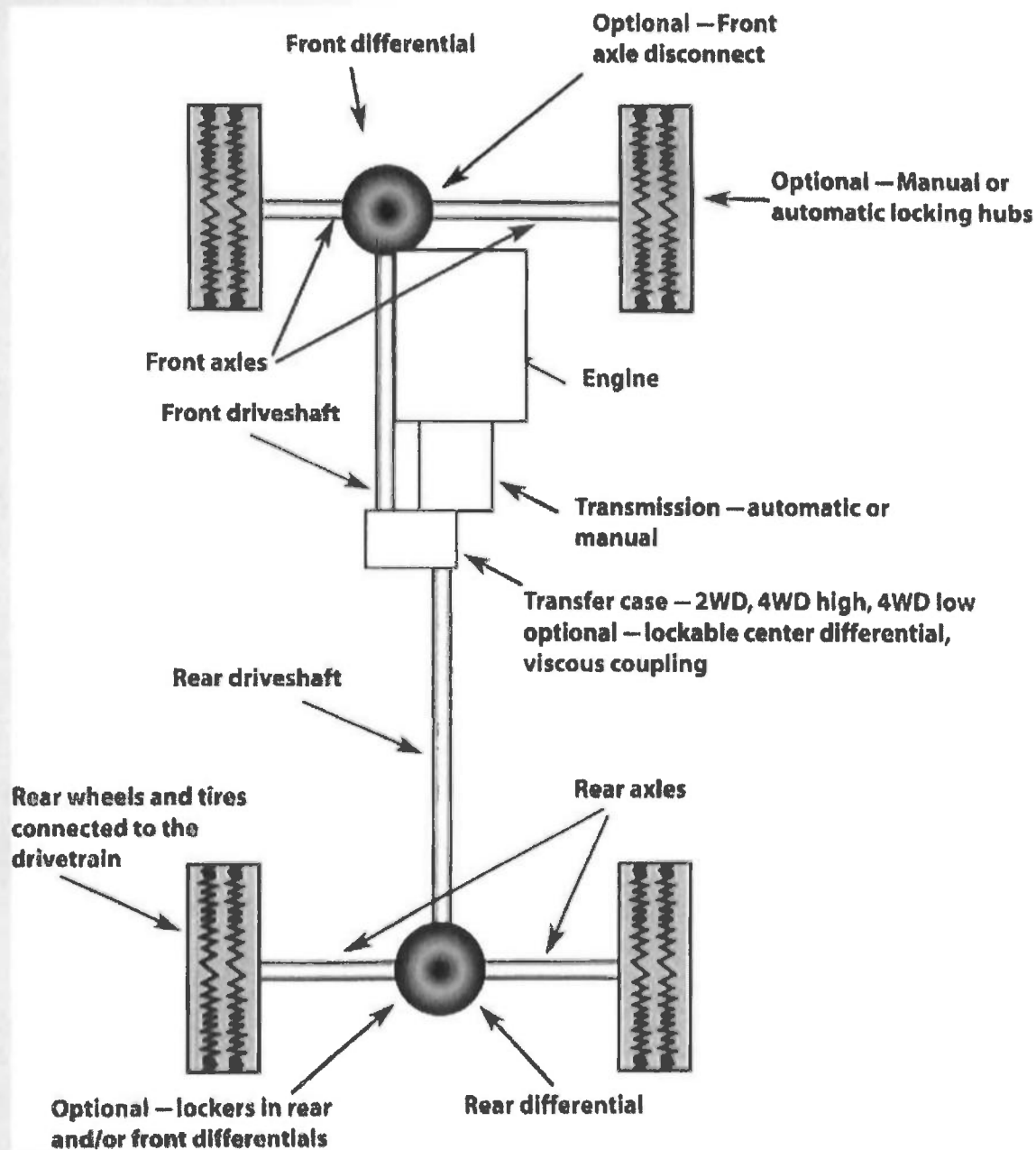
Objectives

- 1. Identify off-road hazards.**
- 2. Review the Go/No Go Checklist.**
- 3. List 5 tools needed when traveling off road.**

Typical 2-wheel drive drivetrain



Typical 4-wheel drive drivetrain



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Off Road Driving Procedures

Use spotters where appropriate.

- **Always use spotter if another person is available.**
- **Where vision is obstructed or route is uncertain**
- **When backing up**
- **Make sure vehicle operator can see spotter at all times.**
- **Operator and spotter need to be able to communicate either orally or by hand signals.**

Go/No Go Checklist

1. Can you safely cross this hazard?
2. If you cross the hazard once can you return on same path?
3. Is there another route you can use that is safer and easier on the environment?

Go/No Go Checklist

4. Do you need to cross at this location?
5. If you get stuck or break down will you be able to get out of this location without any other assistance?
6. Have you scouted the path you are going to take?

Go/No Go Checklist

7. Do you know what is on the other side of the hazard?
8. If you decide not to continue what effect will it have on completion of your assignment?
9. Does anybody know where you are? Do you have radio or cellular telephone communication?

Tools Needed for Off Road Driving

- A. Shovel
- B. Chain w/hooks
- C. Jumper cables
- D. Recovery strap
- E. Tool kit



Hand placement



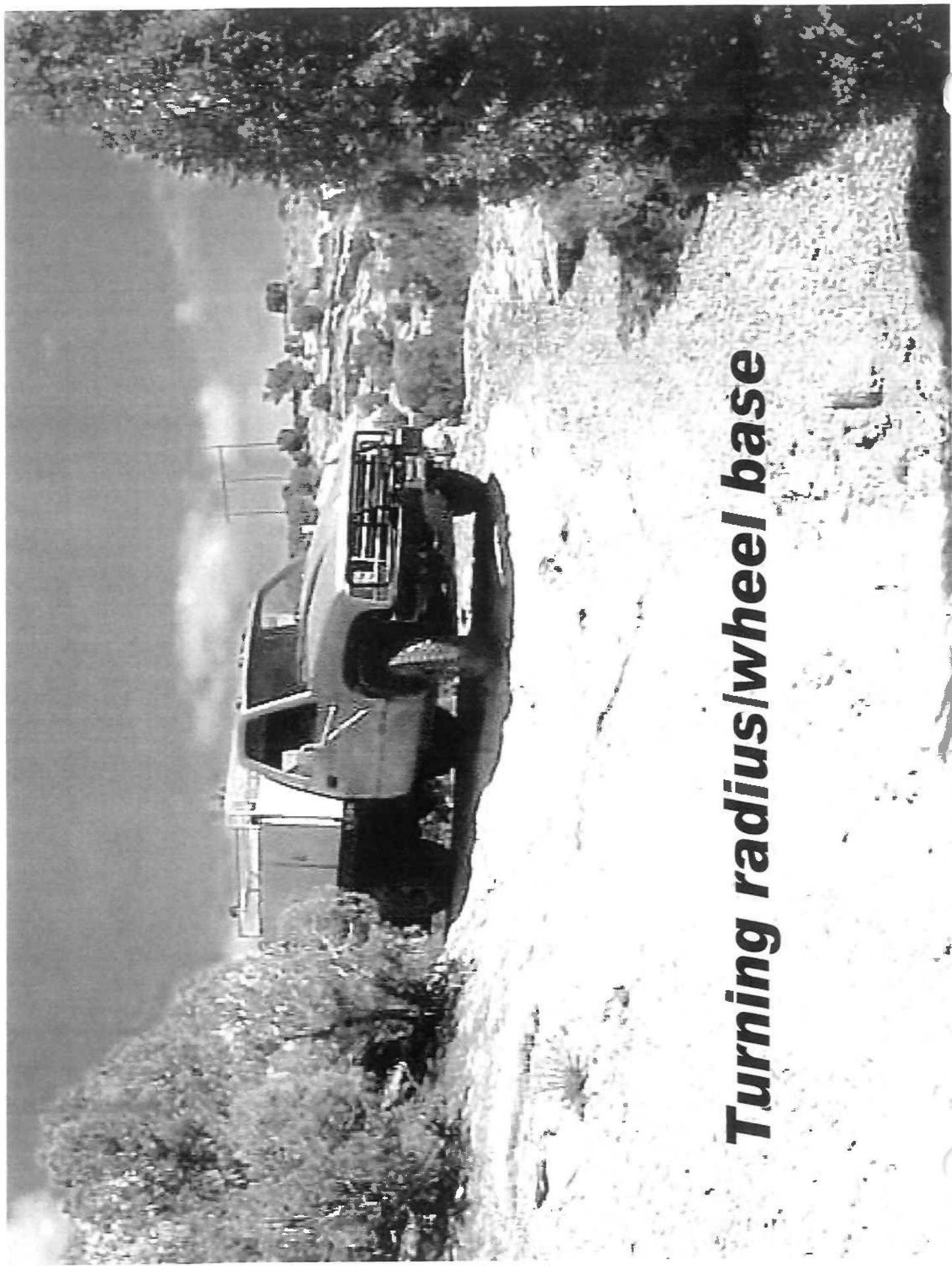
On steering wheel, place hands at the 9 and 3 o'clock position.

- **Thumbs on outside of wheel.**

Be aware- High Center of Gravity

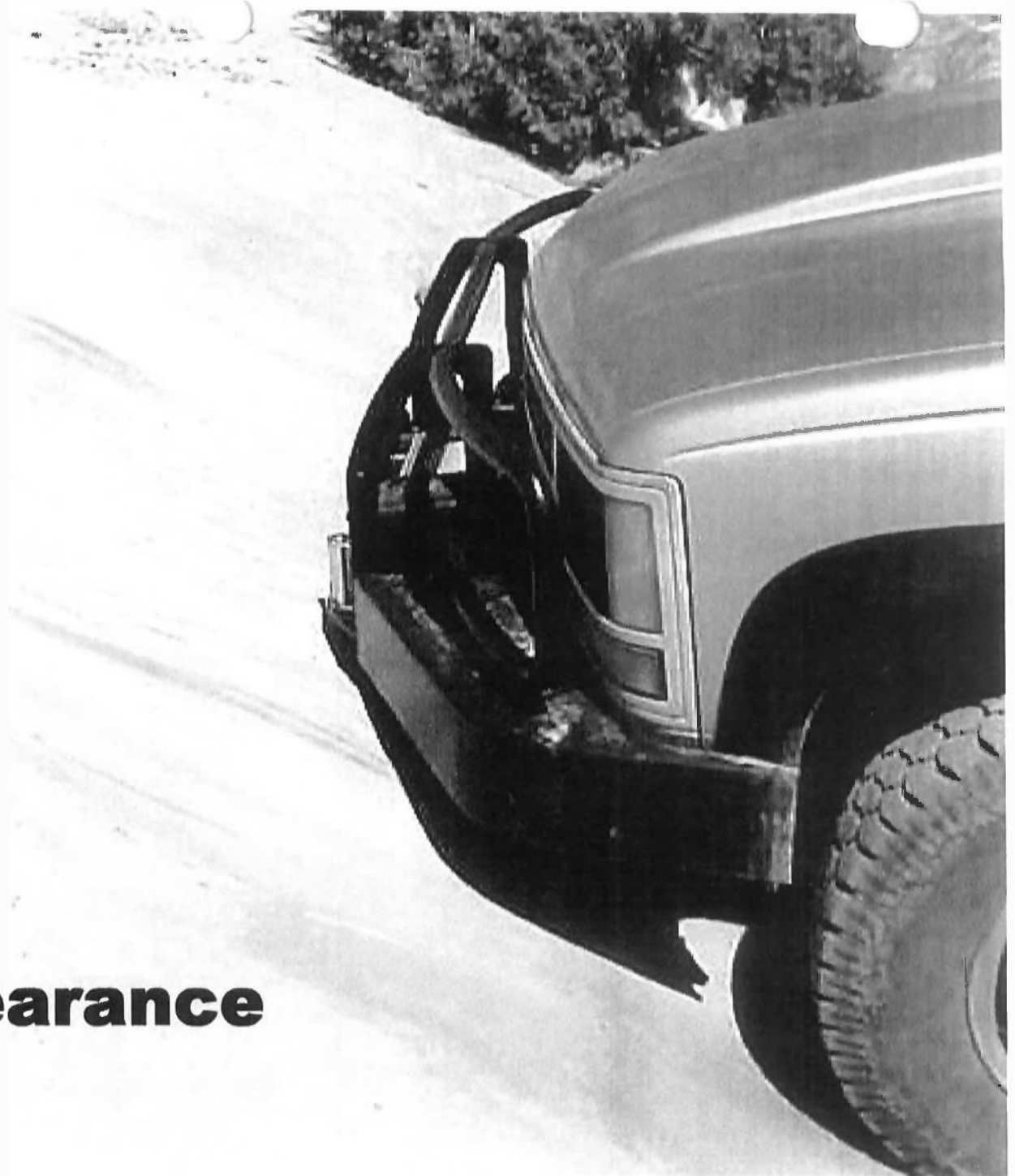


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Turning radius/wheel base

Ground Clearance



Tire Placement on Rocks



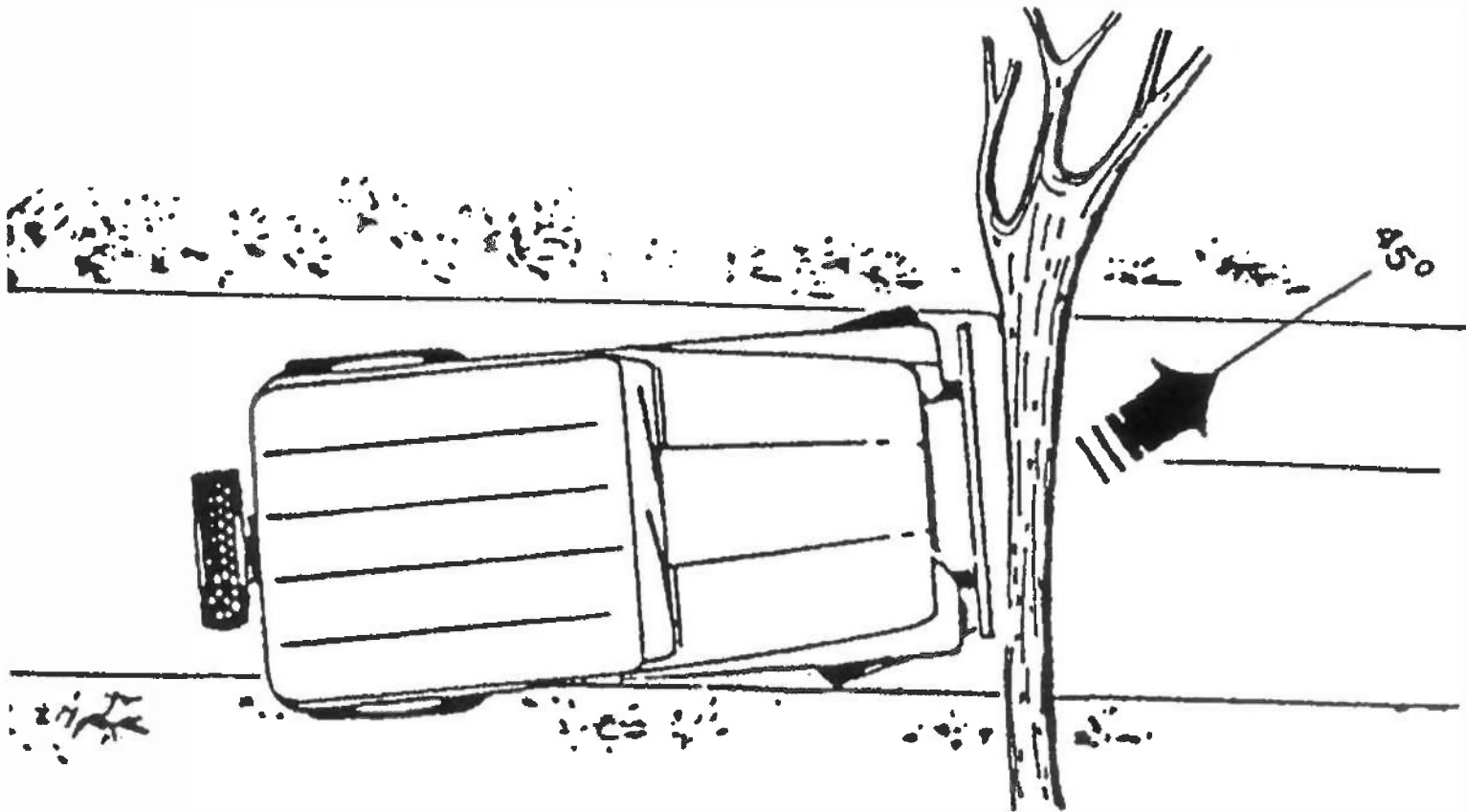
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Gullies/ditches/logs/windfalls and culverts



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Gullies/ditches/logs/windfalls and culverts



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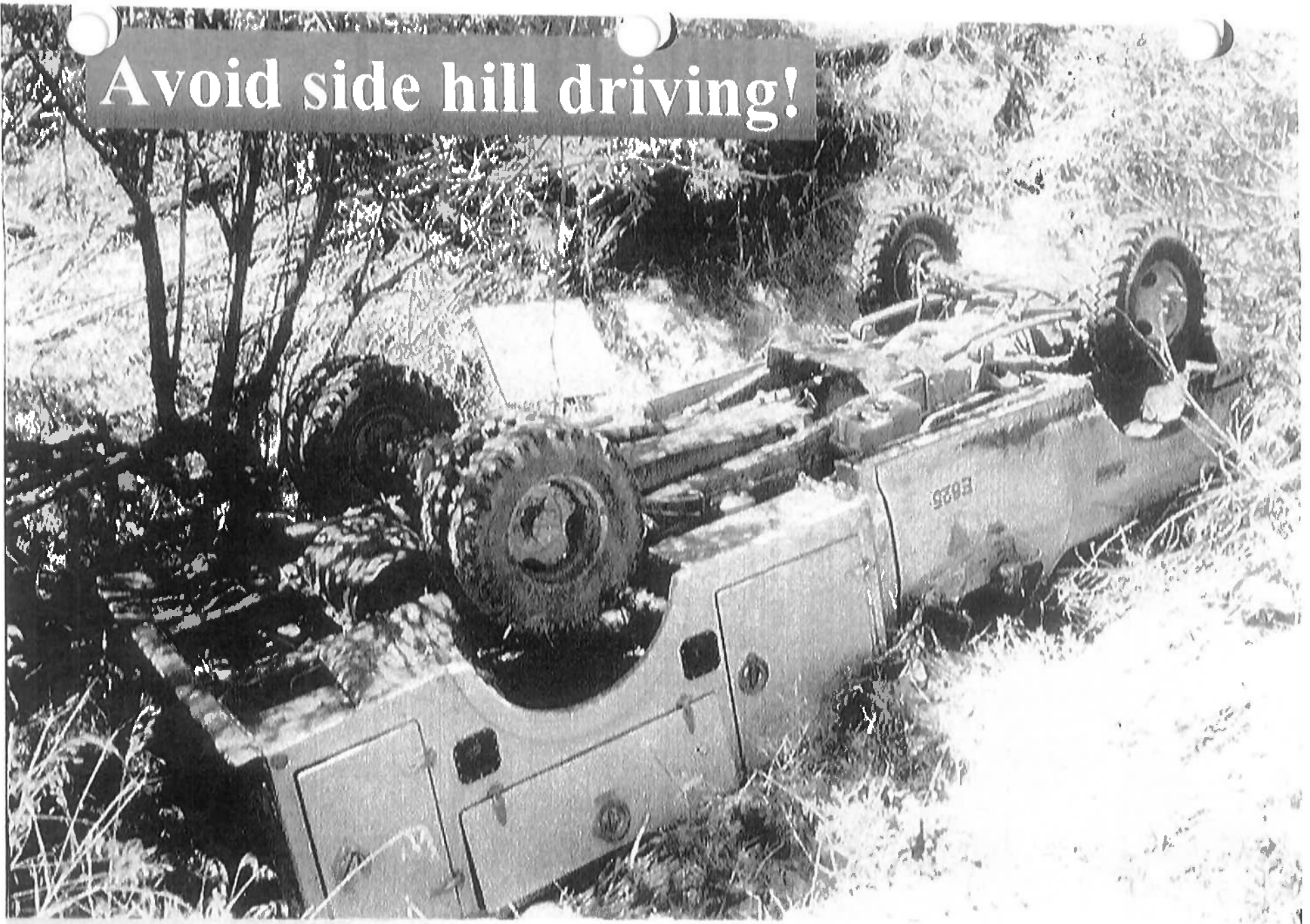
Straddle the “V” groove in gullies.

DRIVING THROUGH POOR TRACTION CONDITIONS

Side hills

- **Avoid whenever possible**
 - **Vehicle with high center of gravity**
 - **Less traction/control of vehicle**
- **Scout route**
 - **Use spotter**
 - **Avoid stumps and rocks with uphill tires.**
 - **Avoid placing downhill tires in holes.**

Avoid side hill driving!



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DRIVING THROUGH POOR TRACTION CONDITIONS

CLIMBING HILLS

- **Go/No-Go**
- **Scout route for hazards.**
- **Deep ruts**
- **Hidden objects**
- **Turn around spot on top**
- **Surface conditions**
- **Estimate slope**

DRIVING THROUGH POOR TRACTION CONDITIONS

Climbing hills

- **Drive straight uphill.**
- **Low range 4WD**
- **Start out in low gear.**
- **Slow and Steady**
- **Don't spin wheels.**
- **Just enough power to get up the hill**

DRIVING THROUGH POOR TRACTION CONDITIONS

Descending Hills

- **Go/No-Go**
- **Scout route for hazards.**
- **Deep ruts**
- **Hidden objects**
- **Dead end at bottom. No where to go.**
- **Turn around spot**
- **Estimate slope**



Downhill Driving

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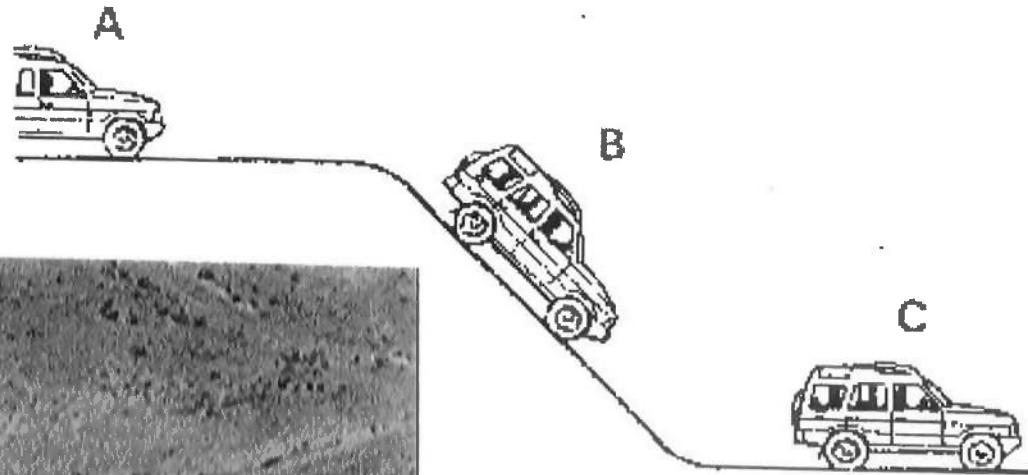
DRIVING THROUGH POOR TRACTION CONDITIONS

Descending Hills

- Go straight downhill.**
 - Low range 4WD**
 - Easy on the brakes, just enough to maintain desired speed and control.**

Descending Hills

On steep descents keep braking to a minimum. Keep the rear end from coming around by using light throttle.



- A. Stop; shift into first gear low range.**
- B. Engine compression; stay off the brakes, stay off the clutch.**
- C. Follow through with light throttle. Keep the front end from compressing, causing bottoming out.**

DRIVING THROUGH POOR TRACTION CONDITIONS

Negotiate water hazards

- **Go/No-Go**
- **Water depth**
- **Cross where others have crossed.**
- **Stream bed**
 - **Rock and gravel**
 - **Boulders**
 - **Mud or sand**
- **Use spotter**

Scout route for hazards



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WATER HAZARDS

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Sand



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Mud



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Brakes Checked?

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DRIVING THROUGH POOR TRACTION CONDITIONS

**Negotiate brush & trees, without
damaging vehicle.**

- **Go/No-Go**
- **Use spotter**
- **Proceed slowly**
- **Scout route**
- **Engage 4WD**

POST TRIP INSPECTION

- 1. Disengage 4WD**
- 2. Rock between dual tires**
- 3. Damage to body**
- 4. Damage to undercarriage**

POST TRIP INSPECTION

- 5. Leaking fluids**
- 6. Tire damage**
- 7. Debris in undercarriage**
- 8. Hanging wires**
- 9. Any others?**