



INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

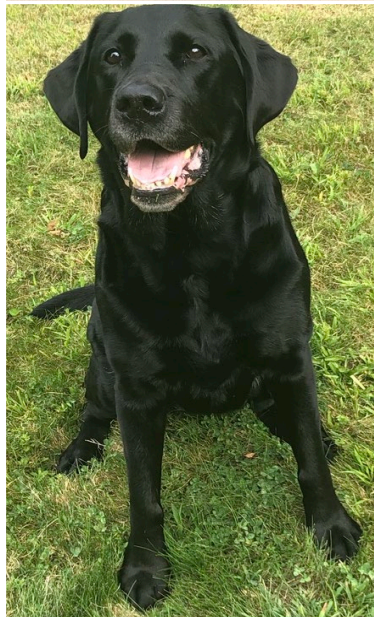
COORDINATING VENTILATION: SUPPORTING EXTINGUISHMENT & SURVIVABILITY

March 30, 2026



INTRODUCTION

- **2ND GENERATION**
- **18 YRS OTJ**
- **MARRIED 13 YRS**
- **FATHER OF 2**



NEW BRITAIN

- **13 SQ. MI.**
- **75,000/5,500 POP.**
- **6 ENG, 2 LAD, DC/AIDE**
- **28 PER SHIFT**



IT'S ON YOU...

ACTION → REACTION

- **DECISIONS**
- **CONSEQUENCES**
- **DUTY**



VENTILATION

SYSTEMATICALLY REMOVING HEAT &
SMOKE, WHILE INTRODUCING AIR, TO
SUPPORT FIREGROUND OPERATIONS &
VICTIM SURVIVABILITY



OBJECTIVES

THE WHY

- **VENT FOR EXTINGUISHMENT**
- **VENT FOR SEARCH**
- **VENT FOR ACCESS**



ELEMENTS

CREATING AN OPENING

- **LOCATION**
- **AMOUNT**
- **TIMING**



RULES OF ENGAGEMENT

DO NOT CREATE AN UNCONTROLLABLE OPENING UNLESS...

- 1) SUPPRESSION IMMINENT**
- 2) ISOLATION ACHIEVED OR IMMINENT**
- 3) AFFECTING RESCUE**



OUTLIERS

REQUIRE I.C. AUTHORIZATION

- **WIND-IMPACTED**
 - **HOARDING**
 - **DEEP-SEATED/BELOW-GRADE**
- ANNOUNCE**



COORDINATION

**ORCHESTRATING THE CRITICAL
FIREGROUND TASKS TO ACCOMPLISH
THE TACTICAL OBJECTIVES AND
ADDRESS THE STRATEGIC PRIORITIES**



COORDINATION

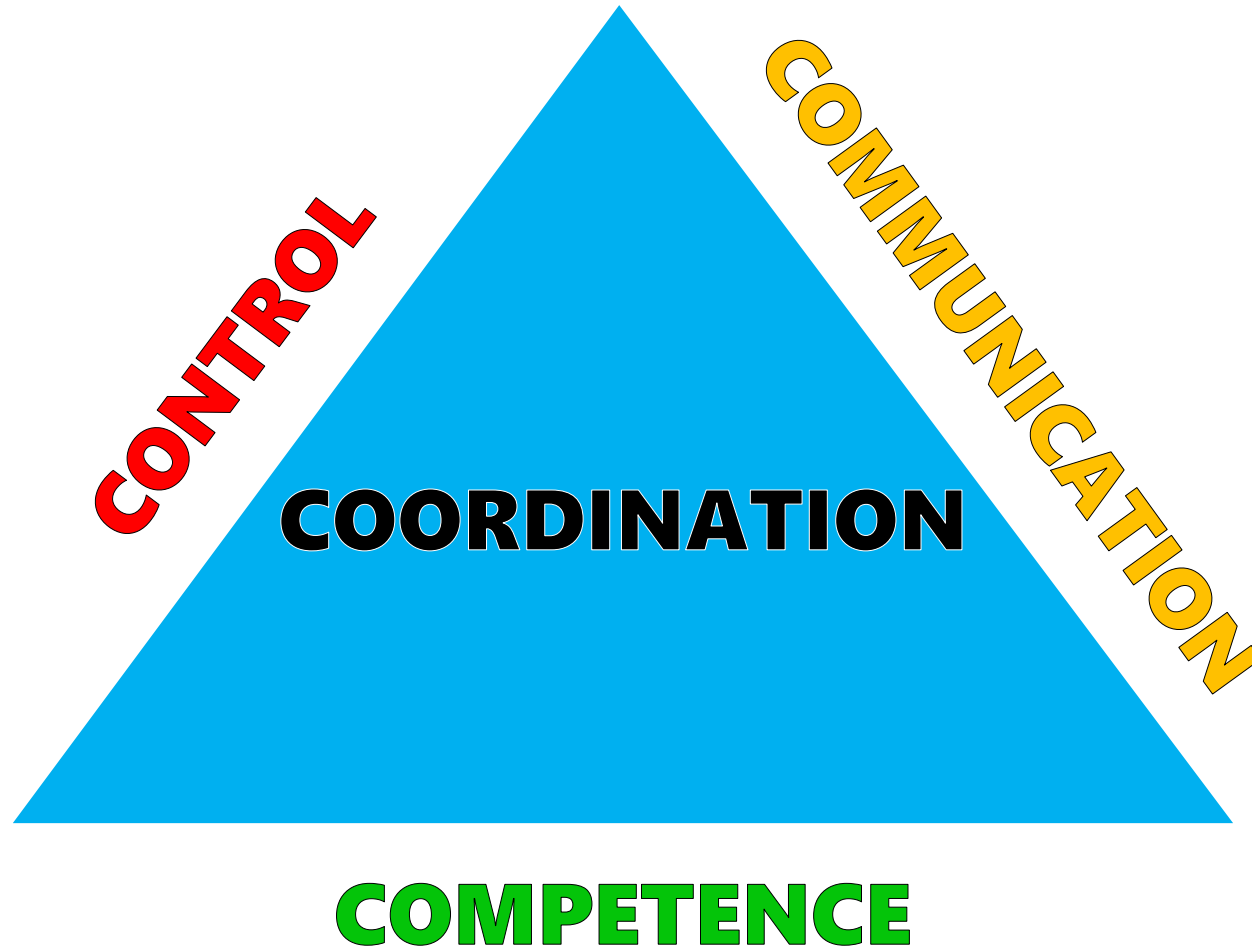
PREREQUISITES

- **DOCTRINE**
- **TRAINING**
- **ACCOUNTABILITY**





PRINCIPLES



CONTROL

FIREGROUND TEMPO

- **SELF**
- **ENVIRONMENT**
- **OUTMANEUVER**



COMMUNICATION

THE 3 C's

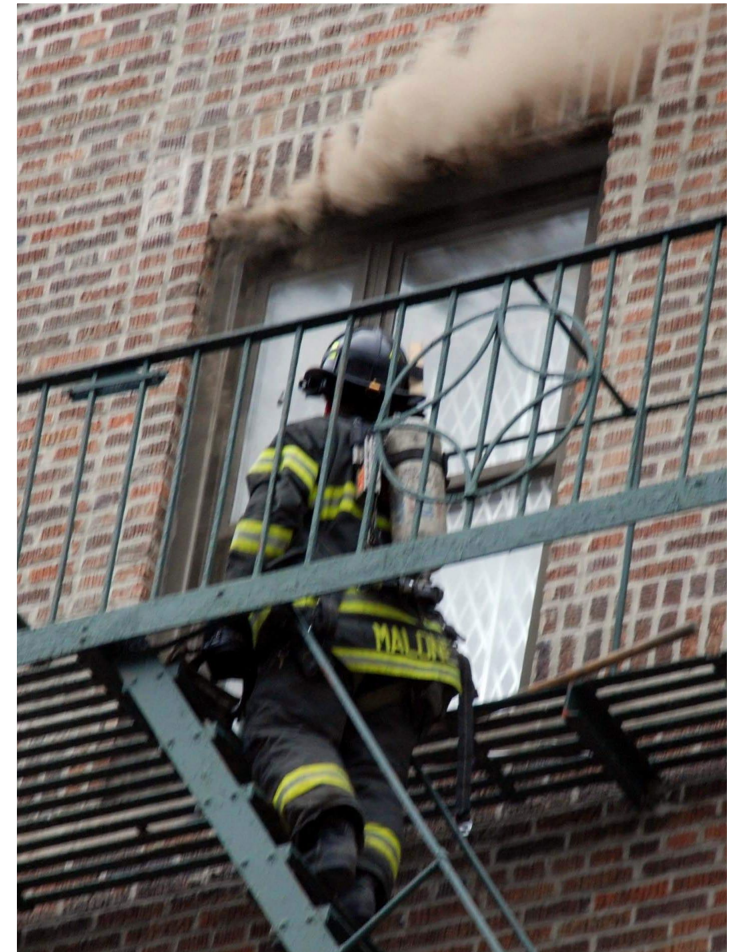
- **CLEAR**
- **CONCISE**
- **CALM**



COMMUNICATION

VENT PROMPTS

- **“IN POSITION.”**
- **“HOLD OFF.”**
- **“VENT. VENT.”**



COMMUNICATION

EFFECTIVE SUPPRESSION

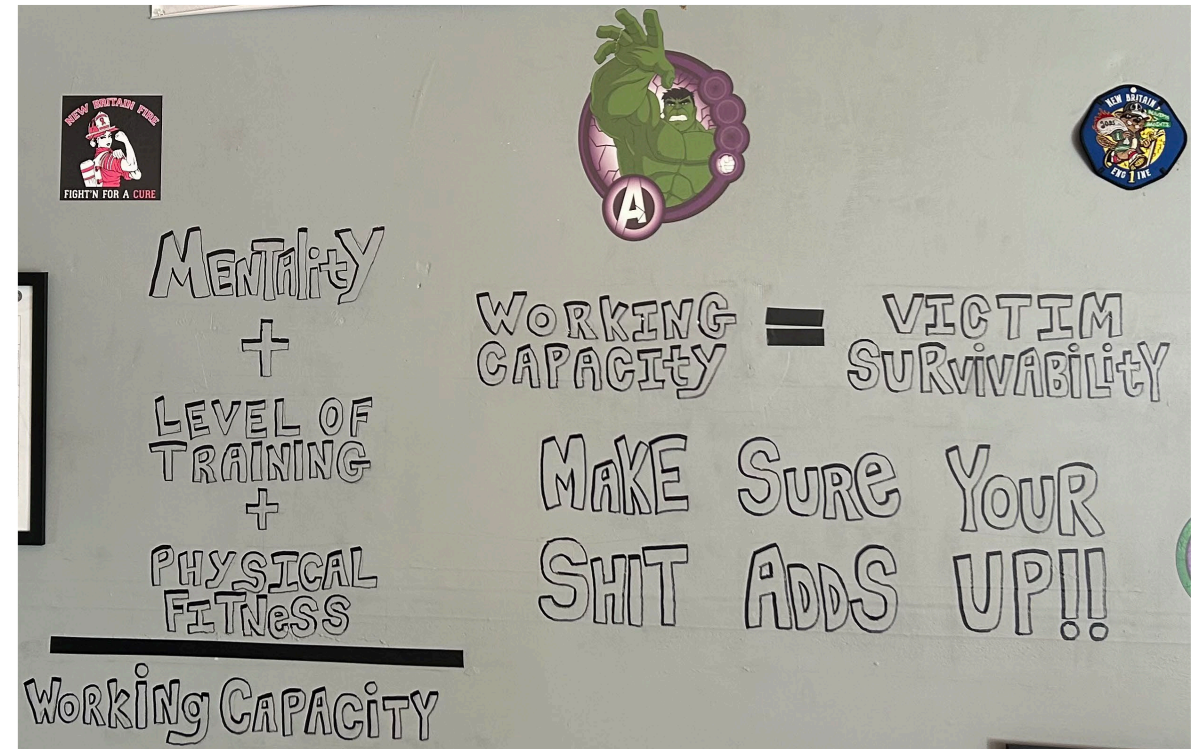
- **LINE FLOWING**
- **FIRE DARKENING**
- **SMOKE LIGHTENING**



COMPETENCE

DELIBERATE PRACTICE

- **MENTAL**
- **PHYSICAL**
- **TACTICAL**



COMPETENCE

PURSUIT OF MASTERY

- **SHOSHIN & KAIZEN**
- **BRILLIANCE IN BASICS**
- **PROFICIENCY & INTUITION**





FIRE DYNAMICS

EXOTHERMIC REACTION

- **GENERATES ENERGY**
- **HEAT ↑ GASES ← →**
- **PRESSURE ↑**



FIRE DYNAMICS

SMOKE & FIRE SPREAD

- **PRESSURE GRADIENT**
- **SEEKING EQUILLIBRIUM**
- **INVERSE REACTION**



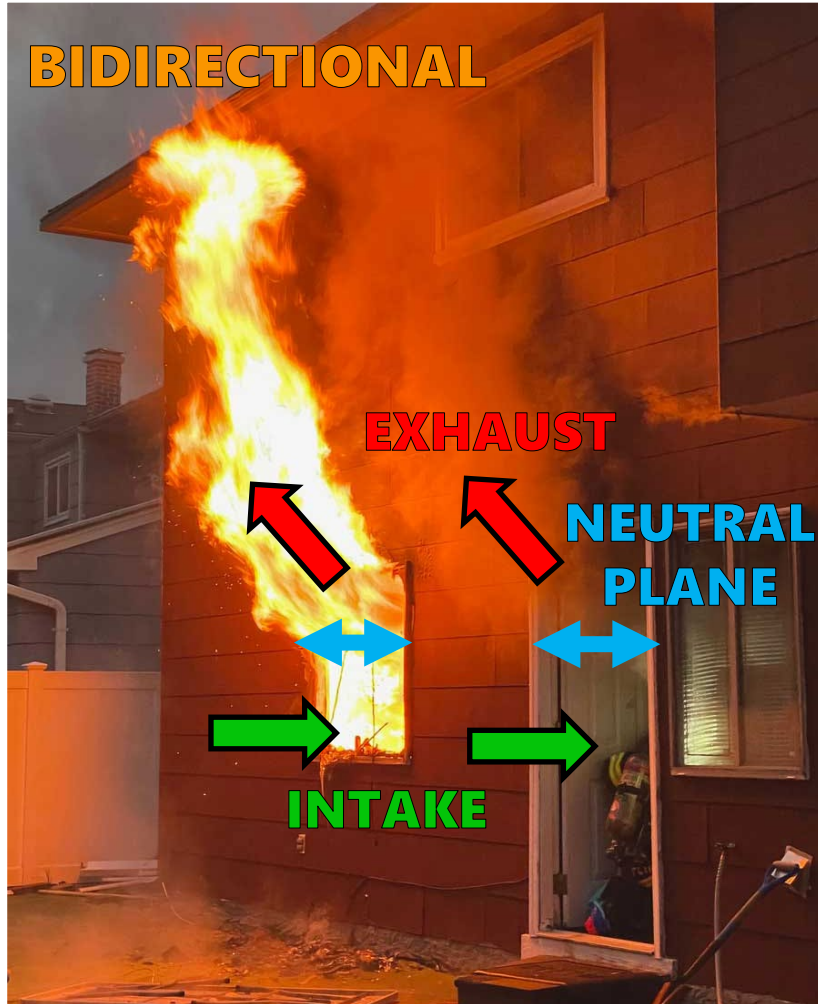
VENTILATION

EXHAUST & INTAKE

- **OPENING SIZE**
- **ORIENTATION TO FIRE**
- **WIND VELOCITY**



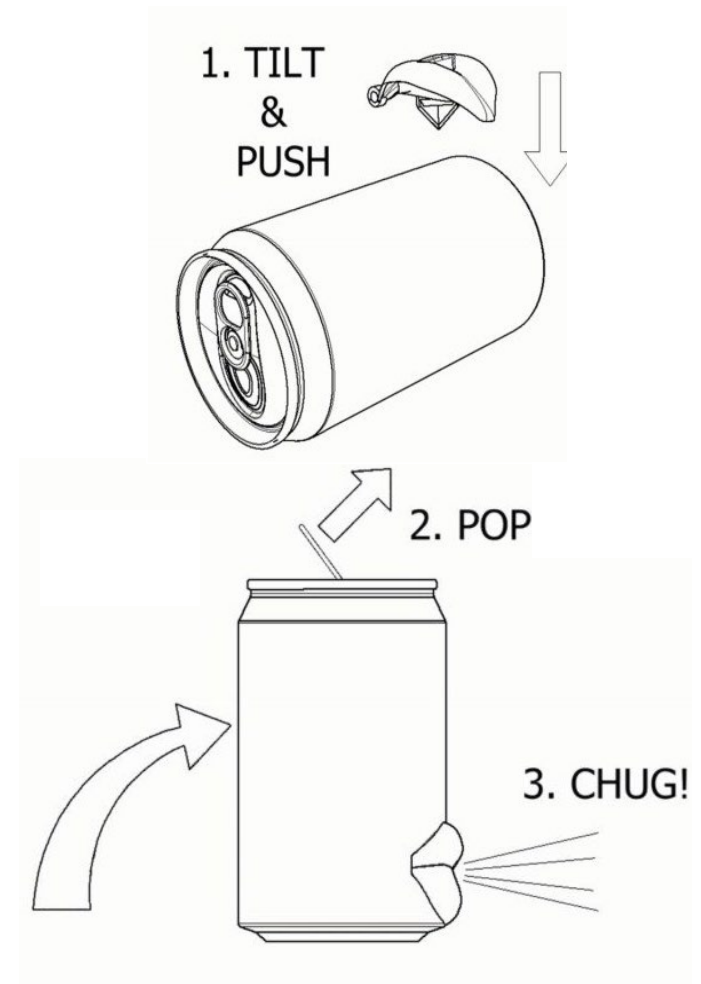
FLOW TYPES



FLUID DYNAMICS

“SHOTGUNNING” ANALOGY

- **DEDICATED OUTLET**
- **UNIDIRECTIONAL FLOW**
- **RATIO = LIMITING FACTOR**



FLUID DYNAMICS

“STRAW TRICK” ANALOGY

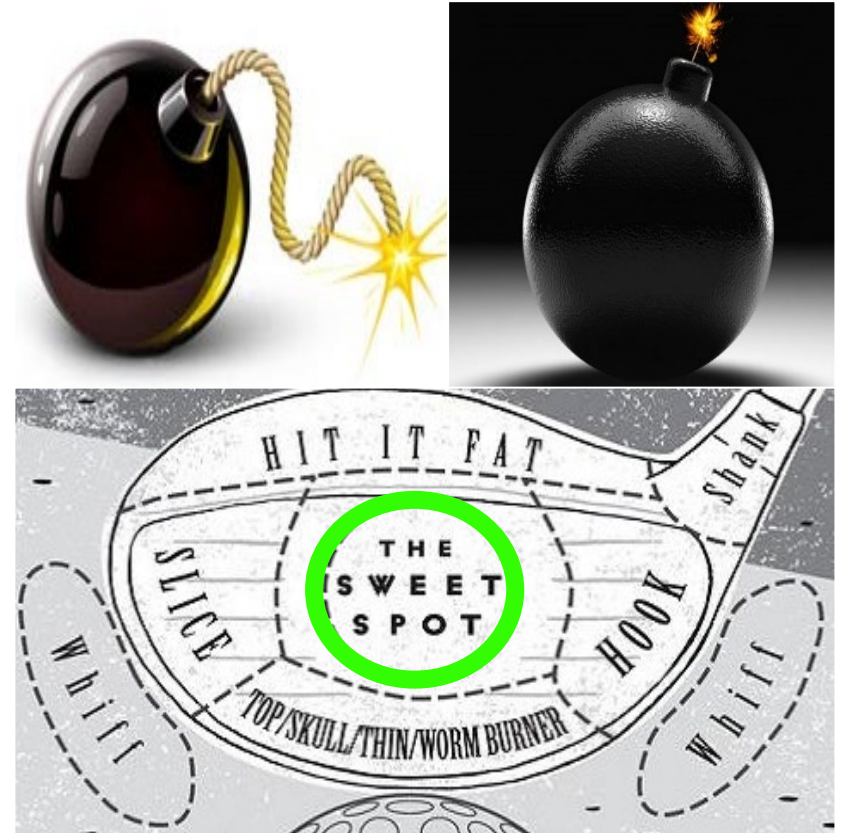
- **INLET BLOCKED**
- **NO INTAKE**
- **NO EXHAUST**



VENTILATION LIMITATIONS

BENEFITS LOCALIZED & TEMPORARY

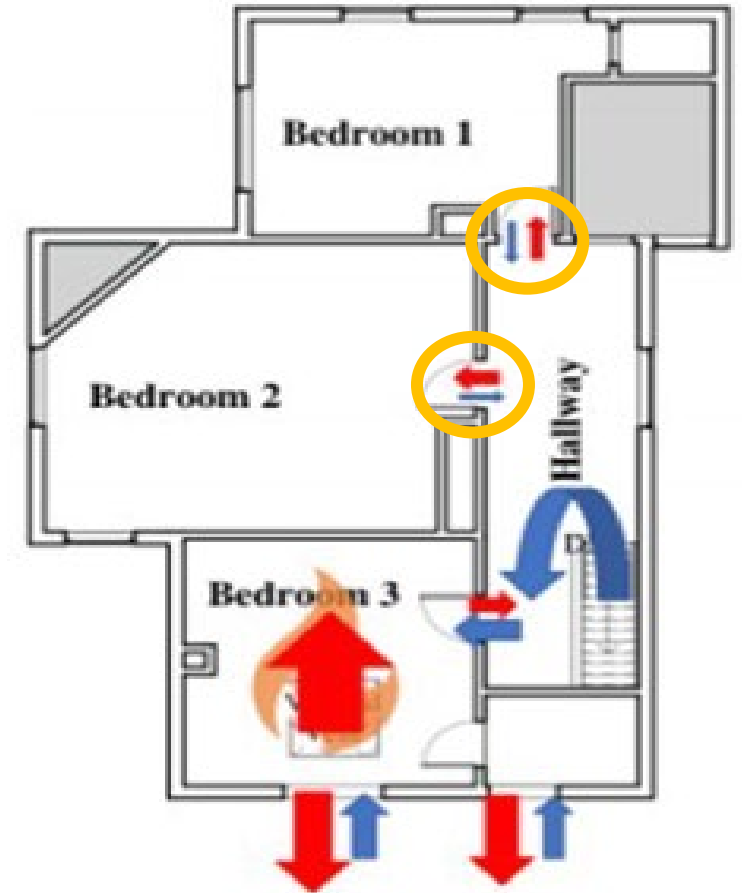
- **INTAKE PATHWAY ONLY**
- **LOW & INLET-SIDE**
- **EXCHANGE + CAPACITY = TIME**



VENTILATION LIMITATIONS

REMOTE SPACES UNAFFECTED

- **OUTSIDE INTAKE PATHWAY**
- **NO LOCAL INLET**
- **NO EXCHANGE → NO RELIEF**



VENTILATION LIMITATIONS

CONFINEMENT IS TEMPORARY

- **EXHAUST LIMITATION**
- **CAPACITY \geq OUTPUT**
- **EXPANDING = SELF-DEFEATING***



TODAY'S ENVIRONMENT

CONSTRUCTION & CONTENTS

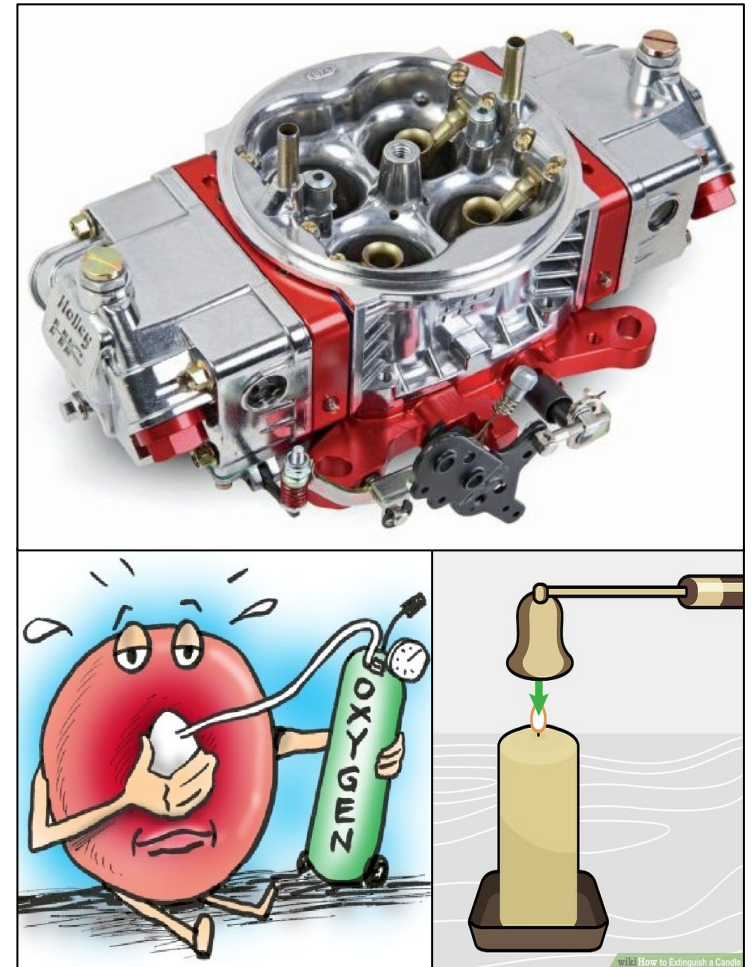
- **FUEL-RICH**
- **SEALED UP**
- **VENT-LIMITED FIRE**



VENT-LIMITED FIRE

RESTRICTED GROWTH

- **BURNS 'DIRTY'**
- **'HYPOXIC' COMBUSTION**
- **VENT-LIMITED FIRE**



VENT-LIMITED FIRE

“NOTHING SHOWING”

- **LACKING PRESSURE**
- **ODOR & DEFORMITIES**
- **CONDENSATION**





02:00
NLST



SIZE-UP

READ YOUR ABC's

- **A**CCESS
- **B**UILDING
- **C**ONDITIONS



CONDITIONS

B.A.G. THE FIRE

- **WHERE IT'S BEEN**
- **WHERE IT'S AT**
- **WHERE IT'S GOING**



CONDITIONS

LOCATE THE SEAT

- **FOLLOW IT DOWN**
- **CHARACTERISTICS**
- **FIND INTAKE**



VENT PROFILE

READ THE DOORWAY

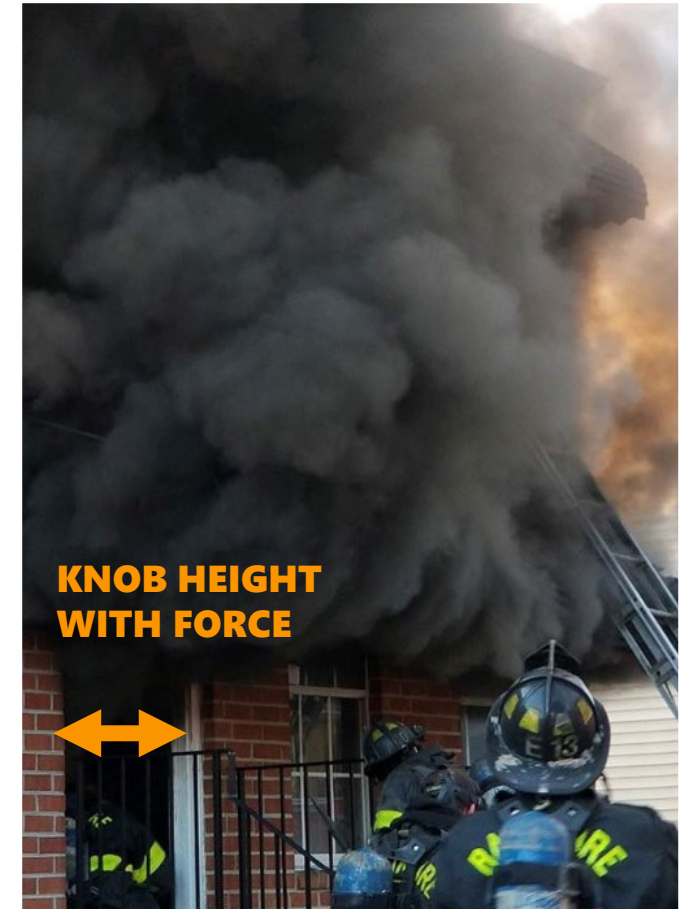
- **INTAKE = ABOVE**
- **BOTH = LEVEL**
- **EXHAUST = BELOW***



VENT PROFILE

READ SMOKE & NEUTRAL PLANE

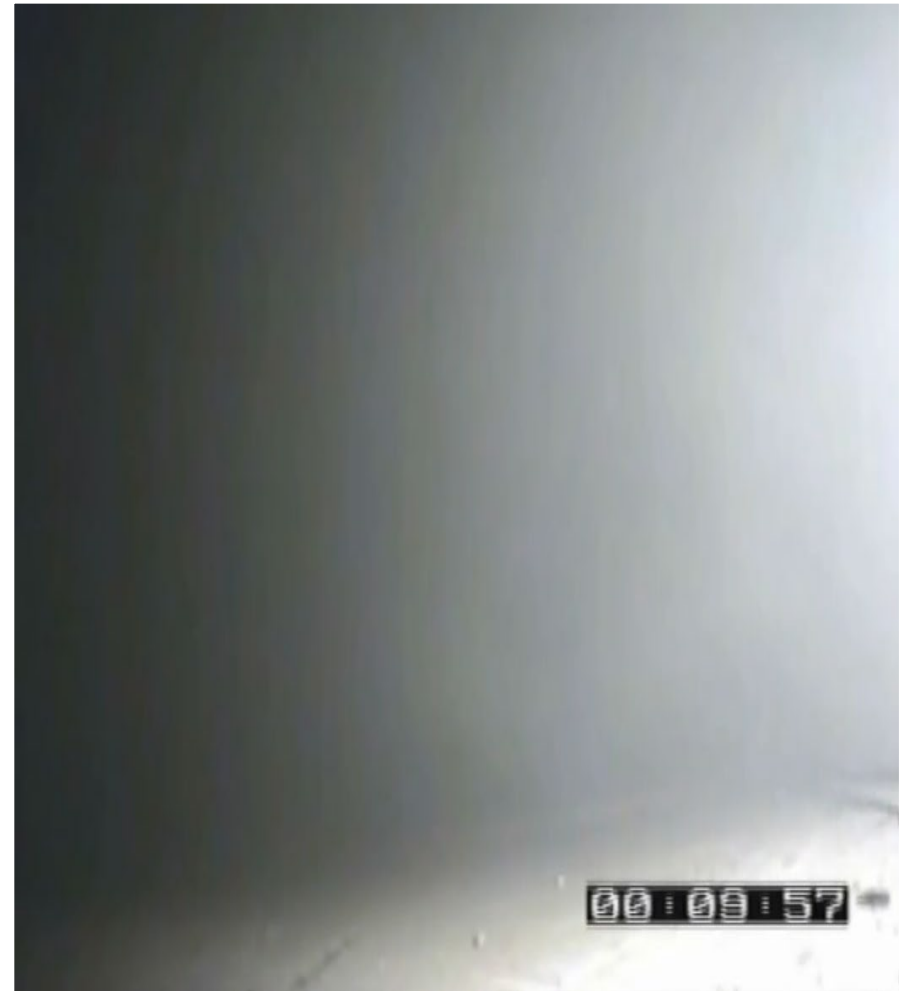
- **SLOW & LIGHT = EARLY**
- **MODERATE & DARK = MID**
- **FAST & BLACK = LATE**



ENTRY SCAN

GET UNDER SMOKE

- **LIFE**
- **LOCATION**
- **LAYOUT**



ENTRY SCAN

THERMAL IMAGER

- **ALONG FLOOR**
- **TRACE CEILING** ↶ 90°
- **SIDE-TO-SIDE**



COURTESY OF WEST COAST FIRE TRAINING



FINDING THE FIRE

OLD SCHOOL

- **PAUSE & HOLD BREATH**
- **LOOK – LISTEN – FEEL**
- **BELLY DOWN**



DOOR CONTROL

MAKE THE FIRE BEHAVE

- **RESTRICT**
- **CONFINE**
- **ISOLATE**













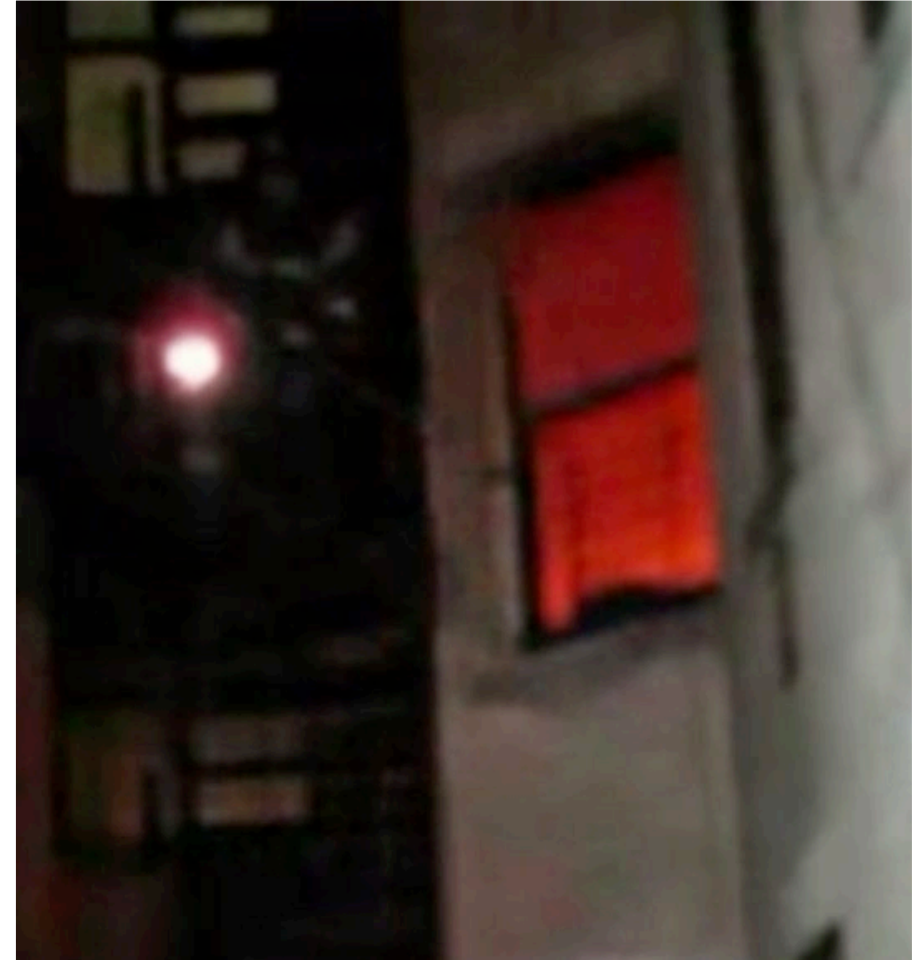




HORIZONTAL VENT

TAKING GLASS

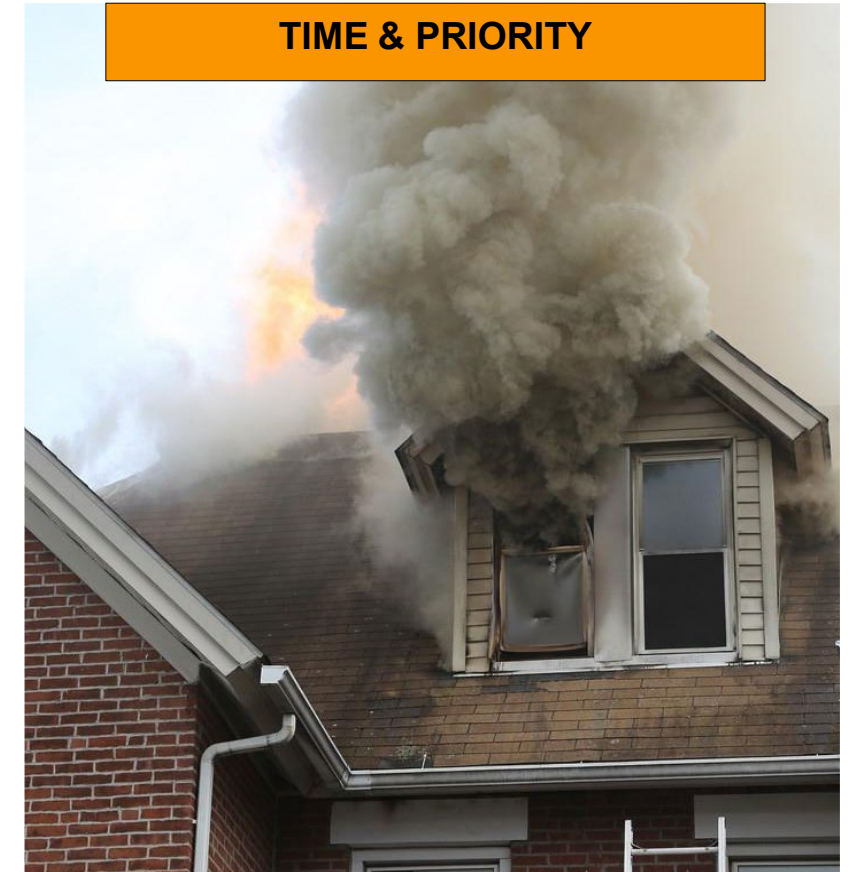
- ~~“CHARGE THE LINE”~~
- **PROMPT OR CUES**
- **TOP & TRIM**



VERTICAL VENT

CUTTING THE ROOF

- **ATTIC/COCKLOFT**
- **KNEE-WALL**
- **LIMITED NATURALS**



VERTICAL VENT

OPERATIONAL ZONE & SEQUENCE

- **TRAVEL LANE**



- **MOVE (LOCATE)**

- **ATTACK LANE**



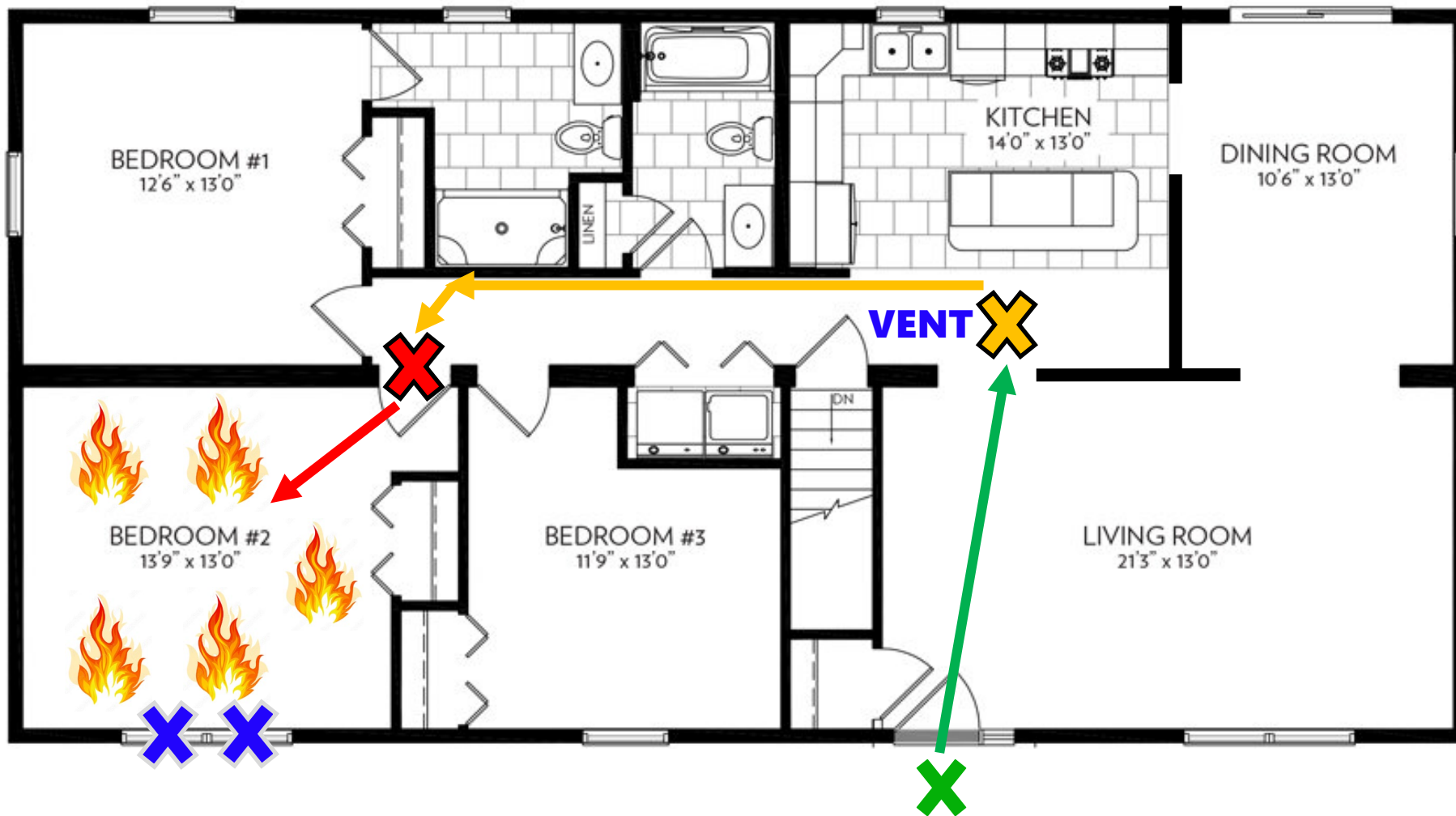
- **PUSH (CONFINE**

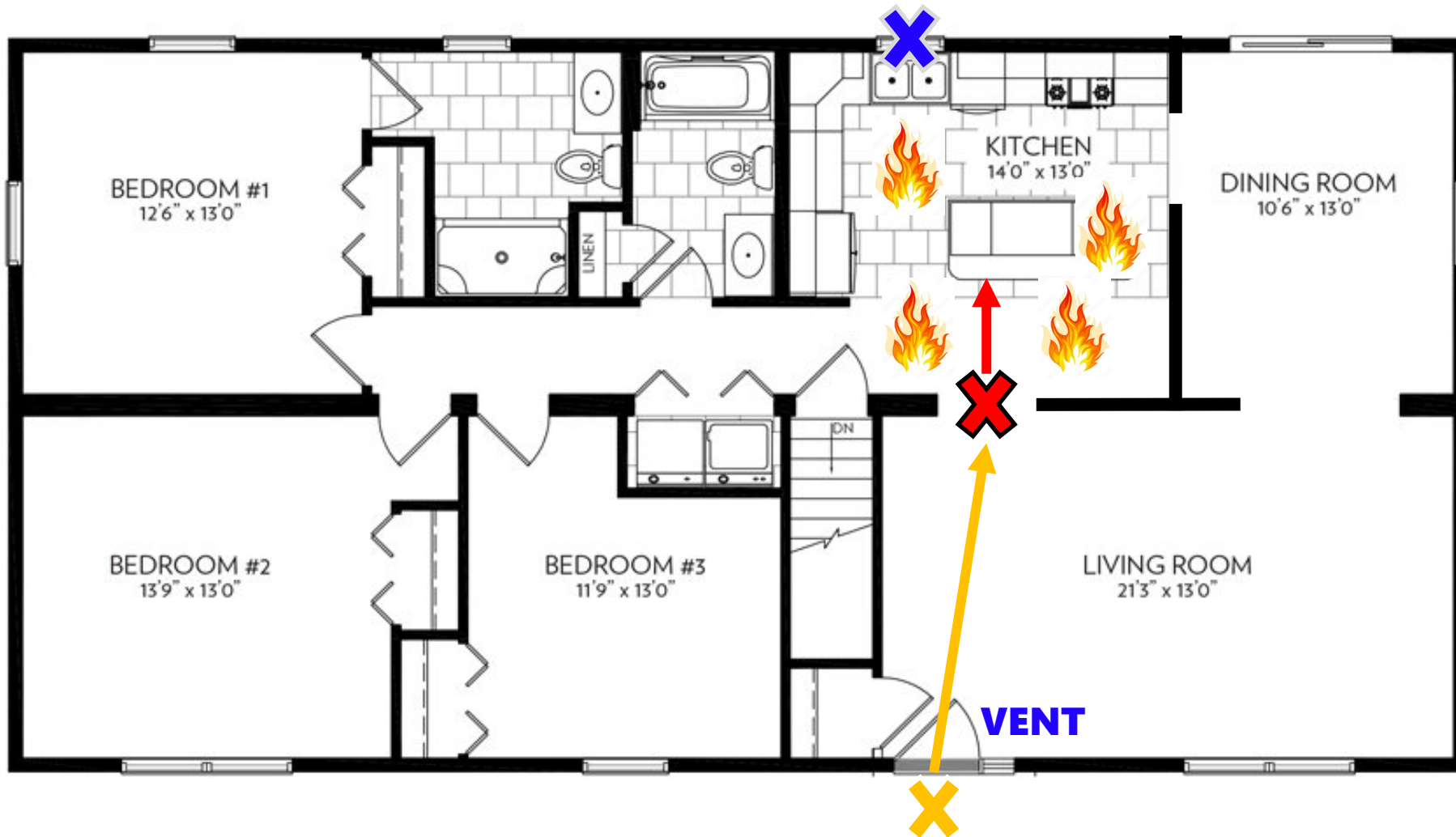
- **SEAT**



- **SEAT (EXTINGUISH)**











VENTING FOR EXTINGUISHMENT

STIPULATIONS

- **FIRE LOCATED**
- **DOMINANT POSITIONING**
- **OVERWHELMING FORCE**



SUPPRESSION

FLOW & MOVE

- **COOL** → **SPACE**
- **CONTRACT** → **GASES**
- **CONVERT** → **FLOW**



SUPPRESSION

FLOW & MOVE

- **REACH** → **DOWNRANGE**
- **COAT** → **SURFACES**
- **SEAL** → **APPROACH**



PRE-SCBA ERA

LEVEL-PLAYING FIELD

- **NEEDED COOLING**
- **NEEDED FRESH AIR**
- **SO DO VICTIMS...**



CLOSING

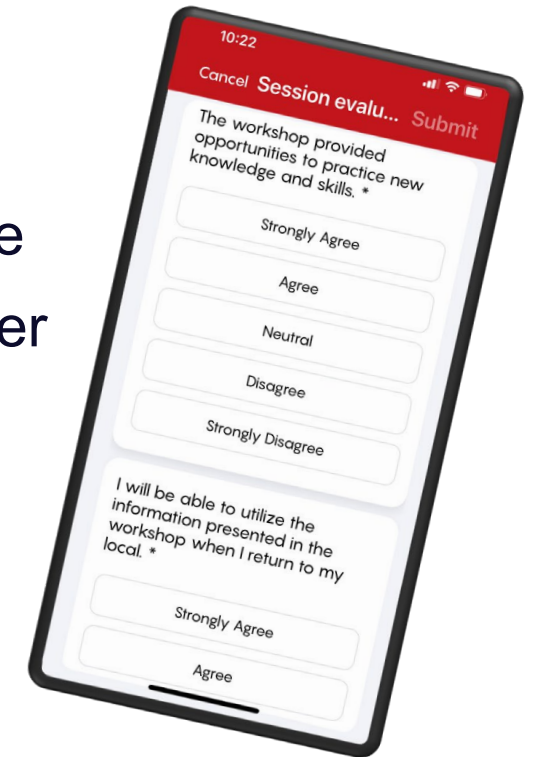
VENT IS SUPPORTIVE

- **PRIMARY CRITICAL TASKS**
- **THE MISSION**
- **PERFORMANCE = INFLUENCE**



EVALUATION AND WIN AN IPAD!

- **Submit your workshop and overall evaluations to be automatically entered in two drawings for a new iPad!**
- **Complete your evaluations using the IAFF app:**
 1. Download the IAFF app and sign in with your iaff.org username
 2. Tap the 2026 Strive for Excellence Summit event image to enter the event's dashboard
 3. Tap "Sessions" and tap on the workshops you attended
 4. Tap "Evaluation" and complete the evaluation
 5. Tap "Submit"



For the event's overall evaluation, follow steps 1 and 2, then tap "Event Evaluation" located in the event's Dashboard.





**THANK YOU!
ANY QUESTIONS?**



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