CHAPTER 3 & 7

TOOLS & EQUIPMENT

POINTS TO PONDER REGARDING EQUIPMENT:

- **Food equipment can be dangerous**. Become familiar with equipment.
- **Not all models are alike**. Check operating manuals.
- **Cleaning is part of the operating procedure**. This is labor cost.
- **Conserve energy** – buy energy efficient equipment; don't turn on equipment 'til needed; know preheat times.
- **Your hands are your best tools**. Develop good manual skills.

YOUR JOB FOR EACH OF THE PIECES OF EQUIPMENT:

Look at the nice picture!

Review the **Do's & Don't's** section.

Review the **Cleaning** section.

These will not be covered in class due to extreme time constraints.

They are, however, testable!

Tools & Equipment

- Cooking Equipment
- Processing Equipment
- Holding and Storage Equipment
- Pots, Pans and Containers
- Measuring Devices
- Knives, Hand Tools and Small Equipment

Tools & Equipment

- PURCHASING LARGE EQUIPMENT:
  - Initial purchasing dollars $$$$
  - Operating cost dollars $$$$
  - Maintenance $$$$
  - Labor cost/skills to operate $$$$

Power Sources

- HEAT SOURCES:
  - Gas
  - Steam
  - Electric
- HEAT TRANSFER:
  - Convection – heat – liquid or gas
  - Conduction – heat - touching
  - Radiation – heat – infrared or light waves
  - Infrared – see above
  - Induction – heat - magnetic energy

Range - Stove tops – p 33

- **Open elements**: Spiders & Coils
- **Closed elements:**
  - Steel plate
  - Griddles/flat tops
- **Induction** – works by magnetically agitating the molecules in steel or iron cookware. Cookware becomes hot, the heating unit does not.

Range – Vulcan-Hart

Ovens – Page 34

- **CONVENTIONAL**– Heats air in an enclosed space
- **CONVECTION** – Fans circulate air & distribute heat more evenly. Cook more quickly
- **COMBI** – convection & convention steamer & conventional!

- **STACK/DECK OVEN** (Baking)
  - stationary
  - Rotary
  - P. 34

Convection Oven-Vulcan-Hart

Ovens, cont.

- **Microwave Oven –** microwave radiation creates heat inside
- **Revolving Oven** – reel oven. Ferris wheel type shelving. Used in bakeries. Set sheet pans on revolving shelves. High volume.
- **Slow Cook & Hold Ovens** – useful for low-temp roasting, banquet work. Can be convection or conventional.
- **Barbecue or Smoke Ovens** – Like a conventional oven but are able to produce wood smoke.

Is It A Broiler or A Grill? P. 35

Heat source:

- Overhead – Broiler
- Below – Grill P. 36
  - Charcoal
  - Infrared
- Salamander – small overhead broiler.
- Rotisseries

Broiler-Vulcan-Hart

Steam Jacketed Kettle – P. 38

- Kettles
- PSI – measure of steam pressure circulating through the jacket.
- Tilt models & stationary models.

Steam kettle-Vulcan-hart

Steam Cookers P. 38

- Cook foods very quickly. Ideal for vegetables.
- **Pressure steamers** – cook foods under pressure. Low & High pressure models.
- **Pressure-less or convection steamers**. Jets of steam are directed at the food to speed the heat transfer.
- Care and caution when using.

Steam jacket-Vulcan-hart

Tilt skillet – P. 37

- Tilting brazier or tilting fry pan.
- It is a large, shallow flat-bottomed pot.
- Used as a griddle, fry pan, brazier, stew pot, stock pot, steamer or steam table.
- Pressure fired or direct fire

Tilt skillet-Vulcan-Hart

Deep Fat Fryers

- Cooks foods in hot fat.
- Direct Fire – powered by gas or electricity. Thermostat controls temp.
- Pressure Fryer – covered fry kettles that fry food under pressure. Foods cook faster at a lower fry temperature.
- Never put liquids anywhere near a fryer.

Deep fat fryer-vulcan-hart

Large / Heavy Equipment Cold Generating

- Refrigeration Units
  - Walk-ins
  - Reach-in
  - Pass-throughs
  - Under counters
  - Doors - opening, see through
  - Temperature indicators – built into the door.

Reach in Refrig-Norlake

Cold Generating

Freezer Units

- See previous slide. All types, sizes and styles

Walk-In Unit

Thermometer

Walk in refrig-Norlake

Processing Equipment

Mixers P. 39

- Floor models
- Bench models
- Mixing bowl & guard
- Slicer attachments
    - Slicer/shredder/dicer
    - Grinder
- Agitator attachment
    - Whips
    - Paddles
    - Dough Hook
    - Batter Beater

Mixer -Hobart

Processing Equipment

- There is an endless variety of processing equipment. What you have just seen are the primary types used in most commercial kitchens.
- You will see other types during your internship.

SMALL EQUIPMENT

Pots, Pans, Etc - Metals

Good cooking equipment should distribute heat evenly & uniformly. This is a function of the kind of metal it is made from and the thickness of the metal.

- **Aluminum** – good conductor; light weight; relatively soft.
- **Stainless Steel** – poor heat conductor; does not react with acids; burns easily.
- **Copper** – the best heat conductor; expensive; lots of care; reacts with many foods to form poisonous compounds!
- **Cast Iron** – distributes heat very evenly; maintains high temperatures; very very heavy! Rusts; cracks if dropped.
- **Nonstick Plastic Coatings** – Teflon/Silverstone; scratches easily
- **Glass** – very breakable; not used much in commercial operations

TYPES OF POTS

- Stock Pot
- Stock Pot with Spigot
- Sauce Pot
- Brazier
- Sauce Pan
- Straight sided saute pan
- Slope-sided saute pan
- Cast Iron Skillet
- Double Boiler
- Bain Marie & Inserts

TYPES OF PANS

- Sheet Pan – full & halfs
- Bake Pan
- Roasting Pan
- Hotel Pan (Steam Table Pan)

Types of Hotel Pans:

- Full
- Half
- Quarters
- Eights
- Shallow
- Deep

Pots, Pans, Etc. – p. 43

- Stock Pots
  - Materials – Aluminum or Stainless Steel
  - Sizes – listed in quarts on the bottom of the pan.

International Equip.

Pots, Pans, etc

- Saute Pans
  - Materials
  - Sizes

- International equip

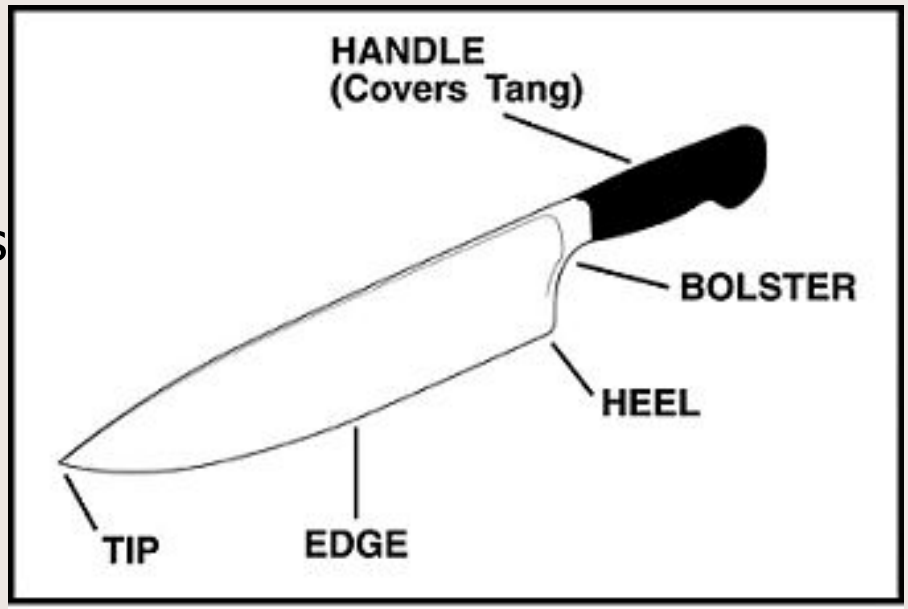
Pots, Pans, etc

- Steam Table Pans
  - Names
  - Sizes
- Sheet pans
  - Names
  - sizes

BIGTRAY SM

THE KNIFE (CH. 7)

- Materials blade
  - Carbon Steel
  - Stainless Steel
  - High Carbon Stainless
- Edge
  - Serrated
  - Straight Edge
- Handle - Materials
  - Rosewood
  - Sani-handle
  - Composition



Typical kitchen knife

EdgeCraft
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Chef's Choice®

PARTS OF A KNIFE DEFINED

HANDLE

- Where to hold with your hand

BOLSTER

- Area where the blade enters the handle
- Used as a thumb guard

EDGE/BLADE

- The cutting surface

HEEL

- End of the cutting surface

TIP

- Farthest point from the handle
- Used to pierce food

SPINE

- Unsharpened side of the blade
- Used to scrape the board

TANG

- Balances the tool
- Full, partial or rat-tailed

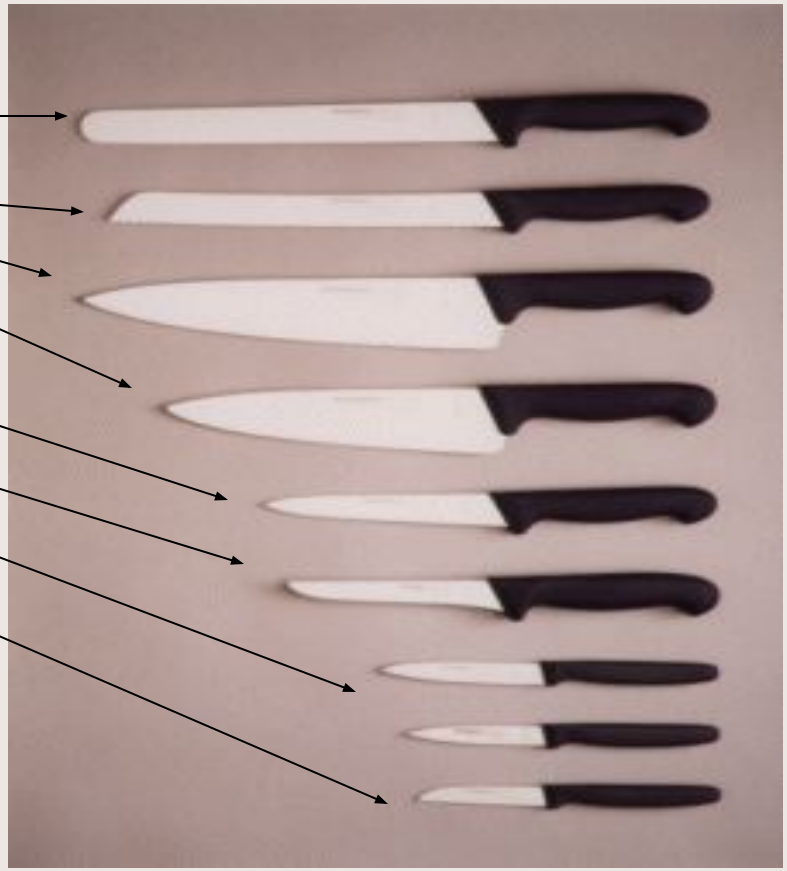
FULL– runs the entire length from tip to the end of the handle

PARTIAL – ends inside the handle - visible from the handle

RAT-TAILED – the blade ends as a post of metal; the handle is molded around it.

THE KNIFE – CH. 7 (Page 110)

- **TYPES OF KNIVES:**
  - Slicer
  - Serrated Slicer
  - French Knife or Chef's Knife
  - Utility Knife
  - Boning Knife
  - Paring Knives
  - Grapefruit Knife
  - Butcher Knife
  - Scimitar or Steak Knife
  - Cleaver
  - Oyster Knife
  - Clam Knife
  - Steel



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A SHARP KNIFE IS A THING OF BEAUTY!

- Sharpen
  - Use a 3-way stone
    - Course
    - Medium
    - Fine
    - Honing oil
- Steel
  - True the edge
  - Remove metal slivers
- Safety

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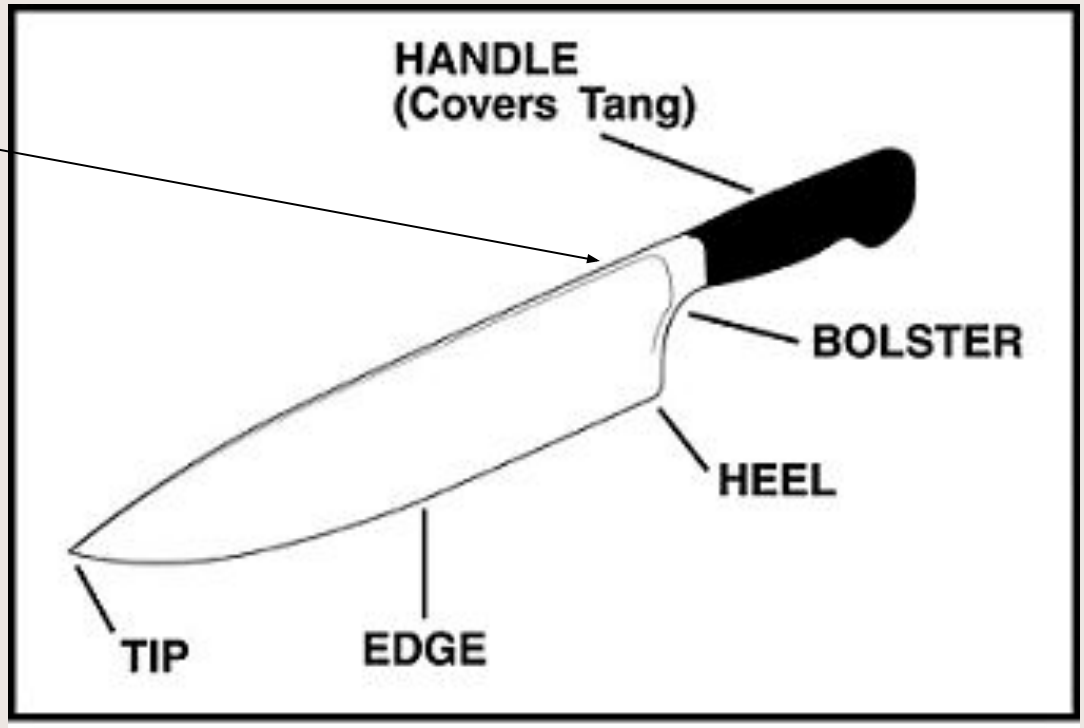
SAFELY USING THE KNIFE!

- Holding – thumb and forefinger on the blade at all times
- Guiding Hand
- The Guiding Hand is always always always presented with curved fingers.



Typical kitchen knife

EdgeCraft home of Chef'sChoice®

Basic Cuts and Shapes – P. 115

"Even cooking and appearance."

- Brunoise
  - 1/8" x 1/8" x 1/8"
- Small dice
  - ¼ " x ¼ " x ¼ "
- Medium dice
  - ½ " x ½ " x ½ "
- Large dice
  - ¾ " x ¾ " x ¾ "

CONT'D

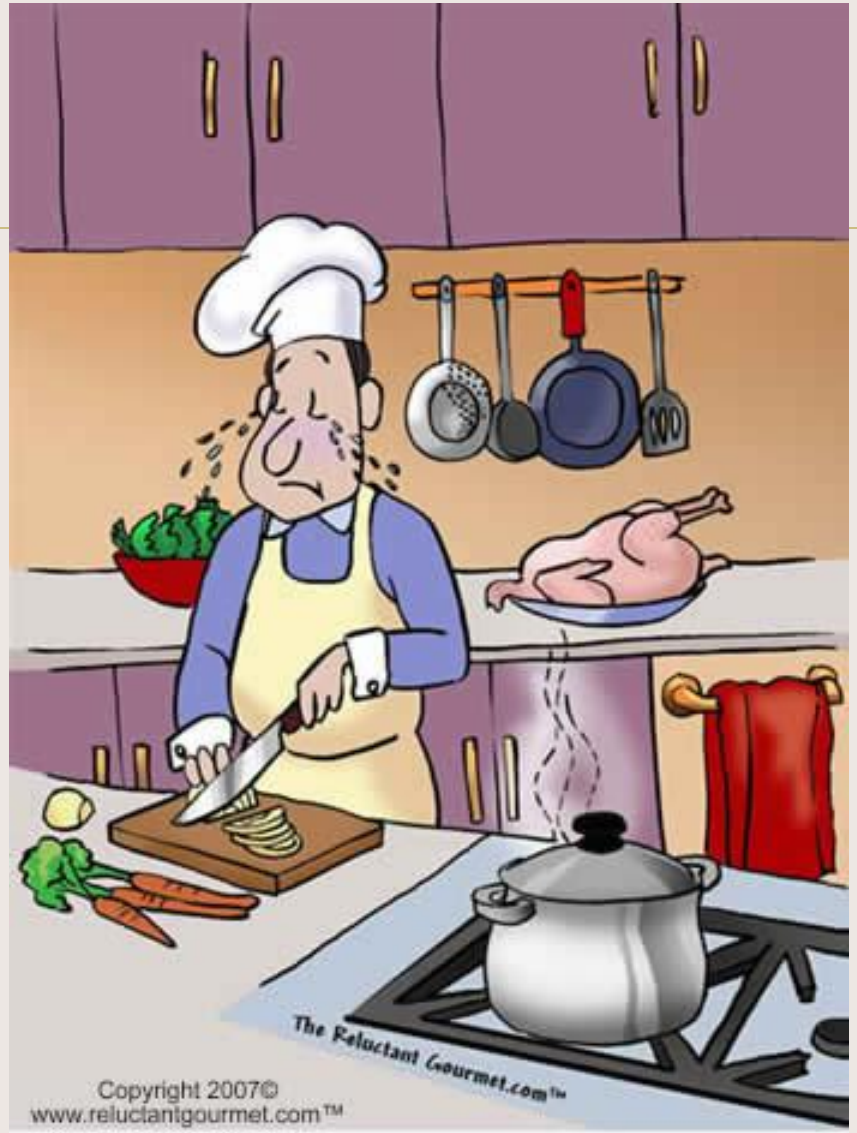
- Julienne
  - 1/8″ x 1/8″ x 2 ½″
- Batonnet
  - ¼″ x ¼″ x 2 ½″ - 3″

EVEN COOKING & APPEARANCE

Basic Cuts And Shapes

"Even cooking and appearance."

- **Concasse** – Rough chop for tomatoes
- **Mince** – Very finely chop
- **Emincer** – Very thin slices like potato chips; so thin you can see through it.
- **Shred** – Cut into large strips
- **Rough Chop** – Used when no specific size is needed or will not matter.
- **Chiffonade** – Cutting leaves into fine shreds
- **Zest** – Cutting strips from the citrus peel – only cut the peel off, no white part.



Sometimes cutting an onion can be so emotional!

Hand tools

- Kitchen spoons
  - Solid
  - Slotted
  - Perforated

- Scoops – Check your textbook
- Ladles – Check your textbook
- Wire Whips – Heavy & Balloon Whips
- Tongs – Spring or Scissor

WHAT'S MISE EN PLACE?

- "EVERYTHING IN ITS PLACE"
- PRE-PREPARATION

TO **"MISE EN PLACE" A RECIPE:**

1. Assemble your tools.
2. Assemble your ingredients.
3. Wash, trim, cut, prepare & measure raw materials.
4. Prepare your equipment.
5. Begin actual production.