

Fighting the

The Greatest Snow on Earth



The Greatest Snow on Earth®

◆ Utah Office of Tourism promotion slogan



The Greatest Snow on Earth





The **REAL** Key to Success in Fighting Snow

Snow Switch



This may sound like a
geography lesson – bear with
me for a moment



Setting

- ◆ Utah is a desert state
- ◆ Second Driest state
- ◆ As far south as Charleston, South Carolina



High Desert



9 9 2003

Colorado Plateau





Mountains



Salt Lake City



What does this have to do with snow fighting?

- ◆ Extreme climate variations
- ◆ Topography influences winter storms
- ◆ UDOT must provide service to keep commerce and people moving



I-15 I-80 I-70 I-84

- ◆ Canamex Corridor
- ◆ Major East-West traffic
- ◆ I-15 / I-80 Corridor

**How do we meet the
challenge?**



- ◆ **Training**
- ◆ **Preparation**
- ◆ **Snow Plan**
- ◆ **Equipment**
- ◆ **Technology**
- ◆ **Materials**



◆ Today I will concentrate on

- **Equipment**
- **Materials**



Our MOST important weapon



Equipment

- ◆ Match equipment to need
- ◆ Difficult with replacement budget
- ◆ Innovation



The way things were

**Modern equipment
enables us to deliver
better service**



30 5:28 PM

Equipment Philosophy

- ◆ Right-size vehicles
- ◆ Improve fuel economy
- ◆ Common systems and parts
- ◆ Reduce repairs by smart specifications
- ◆ Multipurpose







JOMA Plow Blades

Tow Plow



Tag Axle Truck



Double Wing Plow Truck





EXIT 205A (EXIT 305 B-D)
EXIT 2100
15 NORTH
Salt Lake

EXITS 305 A-D
WEST 2100 So.
West Valley 1300 So.
900 So.
EXIT ONLY

FINE IMPOSED FOR HOV/TOLL VIOLATION



Snow Blower

2 8:54 AM

“Tweener”





Winter Materials

- ◆ Salt
- ◆ Salt Brine
- ◆ Mag Chloride
- ◆ Calcium Chloride
- ◆ Deslicking Grit

Snow Fighting Facts

- ◆ 25 storms
- ◆ Snowfall varies from 6 in/yr to 600 in/yr
- ◆ \$22.6 Million snow budget
- ◆ 500 Plow Trucks
- ◆ 600 employees on SnowPlan including supervisors



Material Use (average)

◆ Solar Salt	110,000 tons
◆ Rock Salt	105,000 tons
◆ Brine	1.3 million Gallons
◆ Mag & Calcium	.3 million Gallons
◆ Grit	8,500 tons

- ◆ Salt use has declined by 10% over last ten years
- ◆ Lane Miles maintained has grown by 15%
- ◆ Actual Expenditures have remained constant for six years



Operational Philosophy

- ◆ Apply the right material at the right place at the right time.
- ◆ Extensive anti-icing and prewetting
- ◆ All-salt application
- ◆ No grit use except when needed
- ◆ Stay ahead of the storm



Colton Salt Shed



Technology

- ◆ UDOT makes it's own salt brine
- ◆ 23% salt by weight
- ◆ Ground Speed Spreader Controllers
- ◆ Annual Spreader Calibration





Brine Storage

Brine Mixing Tank



Latest Developments in Salt Purchasing

- ◆ Completely revised on salt specifications this year
- ◆ Introduced PERFORMANCE BASED Salt Spec



New Salt Specification

- ◆ Established a specific spec for brining salt
 - Finer gradation
 - No additives
 - High NaCl content



Solar Salt Stockpile

Other Deicing Salt

- ◆ Set up three classes of salt
 - Salt with YPS
 - Salt with YPS and Mag
 - Salt with YPS and Calcium

Rock Salt Stockpile



Why the different classes?

- ◆ We have diverse climates and environments
- ◆ One type salt does not fit all
- ◆ Problems with slick roads



NEW Performance based salt

- ◆ Set up “High Performance” Class of salt
- ◆ Vendors provide UDOT with performance values and we test against those values
- ◆ If product doesn't measure up to vendor promises we will reduce payment.



Performance Criteria

- ◆ Ice Melting Power at 5 degrees F
- ◆ Ice Penetration
- ◆ Corrossivity compared to plain salt

Process

- ◆ UDOT will have a consultant sample and test the salt
- ◆ Samples taken at vendors facility
- ◆ Samples taken represent all deliveries over a set period
- ◆ Failed samples = reduced payment



Matching materials to conditions

- ◆ Different salt specifications are used
- ◆ Use only deslicking grit when it is very cold
- ◆ Prewet with salt or mag brine
- ◆ Match application rate to storm





QUESTIONS?



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