

# RUNWAY RUBBER REMOVAL

Chemicals & Detergents or Water?





# THE PROBLEM

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## Runway Rubber Build-Up

1

Created by constant take-off  
and touch-downs

2

Severe traction quality reduction

3

Extremely hazardous in damp  
or wet conditions



# THE QUESTION

Which runway cleaning method removes rubber, grease, oils & jet fuel buildup:

- the most effectively?
- the quickest?
- the most cost-effectively?
- the safest for personnel?
- the least amount of damage to the runway surface?



**CHEMICALS AND DETERGENTS**



**WATER**

# OPTION A

## Chemicals & Detergents

Requires a **7-step** process:

1. Preparation
2. Application
3. Penetration / Emulsification
4. Scrubbing
5. Rinsing
6. Vacuuming / Disposal
7. Clean-up





# OPTION A

## Chemicals & Detergents

### Step 1: Preparation

- Assemble all necessary equipment on runway
- Sweep runway (clear all debris)
- Spray runway surface to reduce evaporation
- Brush surface with snow broom to score rubber prior to application



# OPTION A

## Chemicals & Detergents

### Step 2: Application

- Run applicator truck with sprayjets at 50 PSI (4 bar)
- Completely saturate runway surface with chemical solution
- Brush surface with steel brush to work chemicals into rubber



# OPTION A

## Chemicals & Detergents

### Step 4: Scrubbing

- After rubber is dissolved, scrub runway surface with either brushes or water at high volume & low PSI (max 20,000 PSI [1,400 bar])





# OPTION A

## Chemicals & Detergents

### Step 5: Rinsing

- Run water truck down center of runway
- Follow with sweeper truck to force water to edge of runway
- Before water reaches soil or turf, sweep water back toward center





# OPTION A

## Chemicals & Detergents

### Step 6: Vacuuming

- Run vacuum truck behind rinse trucks to sweep chemical solution & debris
- Transfer used solution from vacuum holding tank to drums to await deposition by local sewer authority for disposal



# OPTION B

## Water (Hydroblasting)

### DISPOSAL

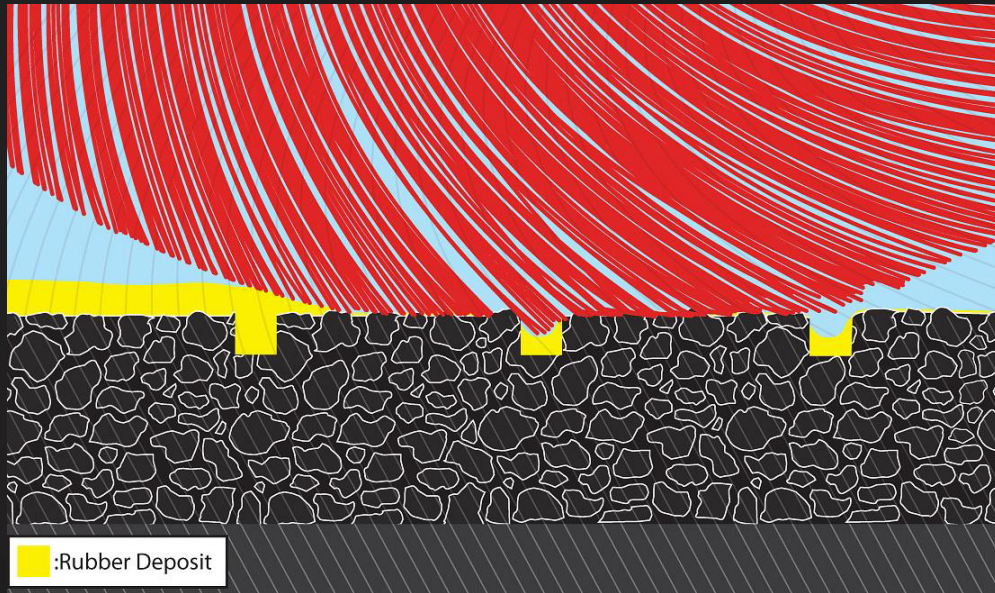
- Water and debris simultaneously recovered then separated
- Water is filtered to 100 micron & generally approved for dumping anywhere
- Solid debris block created that is easily transported off-site for disposal





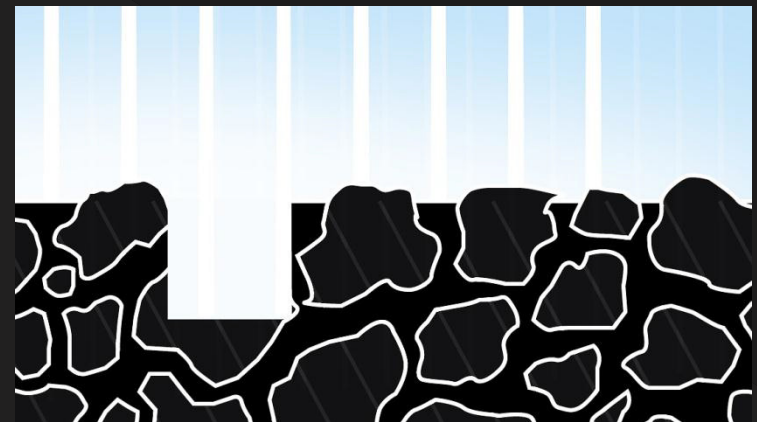
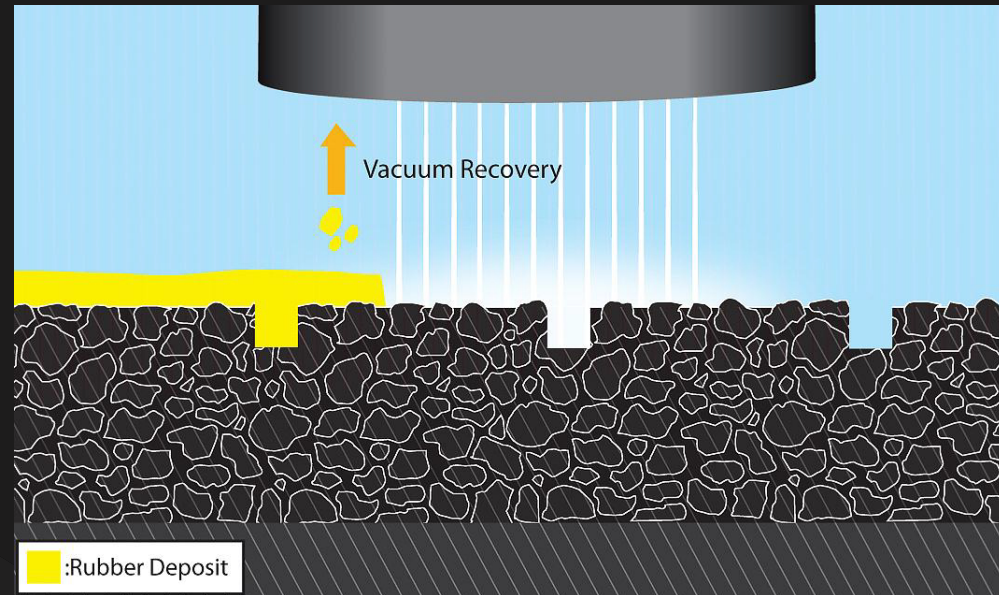
# OPTION A

Chemicals & Detergents



# OPTION B

Water



# OPTION A

## Chemicals & Detergents

7 Steps, multiple trucks (4 minimum), and several operators (4 minimum)

Multiple trucks, several operators, purchase, storage, or disposal of expensive detergents. Cleanings are required 2-3x more often due to depth of cleaning.

Operator and environment exposed to chemicals and detergents from run-off.

Must be closed for extended periods. Can not vacate for emergency landings.

Bitumen breakdown occurs over time, polishing of aggregate (reduced friction), grooved edge rounding and weakening of runway structure.

# OPTION B

## Water

1 step, 1 truck, 1 operator. Of airports surveyed, over 75% said they would use water blasting if they had the option

1 truck that uses water only. No run-off, rinsing, or secondary truck operations.

No risk for operator, runway, or environment.

Can vacate the runway in under 1 minute.

All microtexture left intact if done properly by a trained operator. Friction values 25% (2 mu points) higher with water blasting over chemicals and/or detergents.

### PROCESS

### COST

### SAFETY & ENVIRONMENT

### RUNWAY CLOSURE

### RUNWAY DAMAGE



# THE EVIDENCE

“The use of ultra-high-pressure water blasting for rubber removal eliminated an expenditure of approximately \$36,000 annually... it also reduced the manpower required from four operators to one. **Our friction Mu values increased an average of two points (25%) with water blasting** as compared to chemical rubber removal. The system collects the rubber into the debris collection tank and it is disposed of into a dumpster as opposed to sweeping the debris into the grass bays adjacent to the runways or taxiways.”

## DENNIS MCNAMEE

Heavy Equipment Supervisor  
Pittsburgh International Airport

“The water blasting removal truck’s ability to remove runway rubber and existing surface painted markings, retrieve debris and residue, and reclaim the water, while reducing pavement waiting time to paint make it an excellent piece of equipment. **Water blasting does not deteriorate the pavement or remove the grooving.** If you want to remove airport rubber and paint within minutes, this is the asset to have!”

## RICHARD L. GOOD

Airfield Maintenance Supervisor  
McGhee Tyson Airport  
Metropolitan Knoxville Airport Authority

“We used a water blasting truck to do a TOTAL rubber as part of the renovation of an 8,800 foot runway. In the process (with our FAA inspector as a witness) we essentially **brought the surface back to a “like new” condition.** I asked the Operations Manager when was the last time he saw this runway looking so good. he replied, ‘1984, when it was poured!’ Soon we will close the books and I intend to do a cost analysis. I strongly suspect when we back out labor alone, we will find that it had cost us nothing!”

## TIM SMITH

Airfield Maintenance Superintendent  
Dallas Airport System

# WHY STRIPE HOG?

**QUESTION:** "Why is the Stripe Hog the best choice?"

**ANSWER:**

**More Production** - The Stripe Hog is 50% more productive than 99% of other water blasting equipment. The Stripe Hog is on the scene quickly, works fast, cleans up after itself, and gets off the site.

**No Chemicals** - No harsh chemicals or operators, machinery, or environment. uses only water.

**No Damage** - Pavement marking removal and runway rubber removal without damaging the asphalt or concrete surfaces.

**Less Labor** - Requires 1 operator to operate the Stripe Hog. Consider the value of sending 1 individual for a stripe removal project to remove more than 700 sqft. of paint in less than 45 minutes.

**Fewer Closures** - The Stripe Hog's ability to deeply clean traction grooves reduces the frequency of cleaning while preserving runway traction. Additionally, having your own Stripe Hog gives you the ability to give the centerline a quick wash to increase reflectivity between scheduled rubber removals.

**More Applications** - The Stripe Hog makes quick work of runway rubber removal, pavement marking removal such as water-based paint, oil-base paint, and even thermoplastic markings. Cleaning or rejuvenation of existing markings and retexturing of pavement surfaces is also part of what the Stripe Hog is capable of.

**More Mobility** - If you are part of an Airport System with multiple airfields to maintain, the Stripe Hog is street-ready to move about quickly from site to site. No trailers, no caravans of manpower and equipment. Get in and go.

**World Leader** - Hog Technologies has more units working around the world than our top 5 competitors COMBINED!

# STRIPE HOG

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