
GREENLAND INLAND TRAVERSE
'08
NATIONAL SCIENCE FOUNDATION
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What is a Traverse?

Who is Traversing?

- National Science Foundation
- CH2M Hill Polar Services
- Cold Regions Research & Engineering (CRREL)

* Dartmouth U. robotics students

Thule 76°31'55.19"N, 68°42'10.81"W • NEEM 77°30'0.00"N, 50°52'0.12"W • Summit 72°34'12.00"N, 38°28'48.00"W

Summit Station

Why Traverse?

- Lower environmental impact
- Suggested by DPC in 2004, Kangerlussuaq to Summit
- Fewer cargo constraints: Size, weight, availability
- Lower cost
- Other potential benefits to science

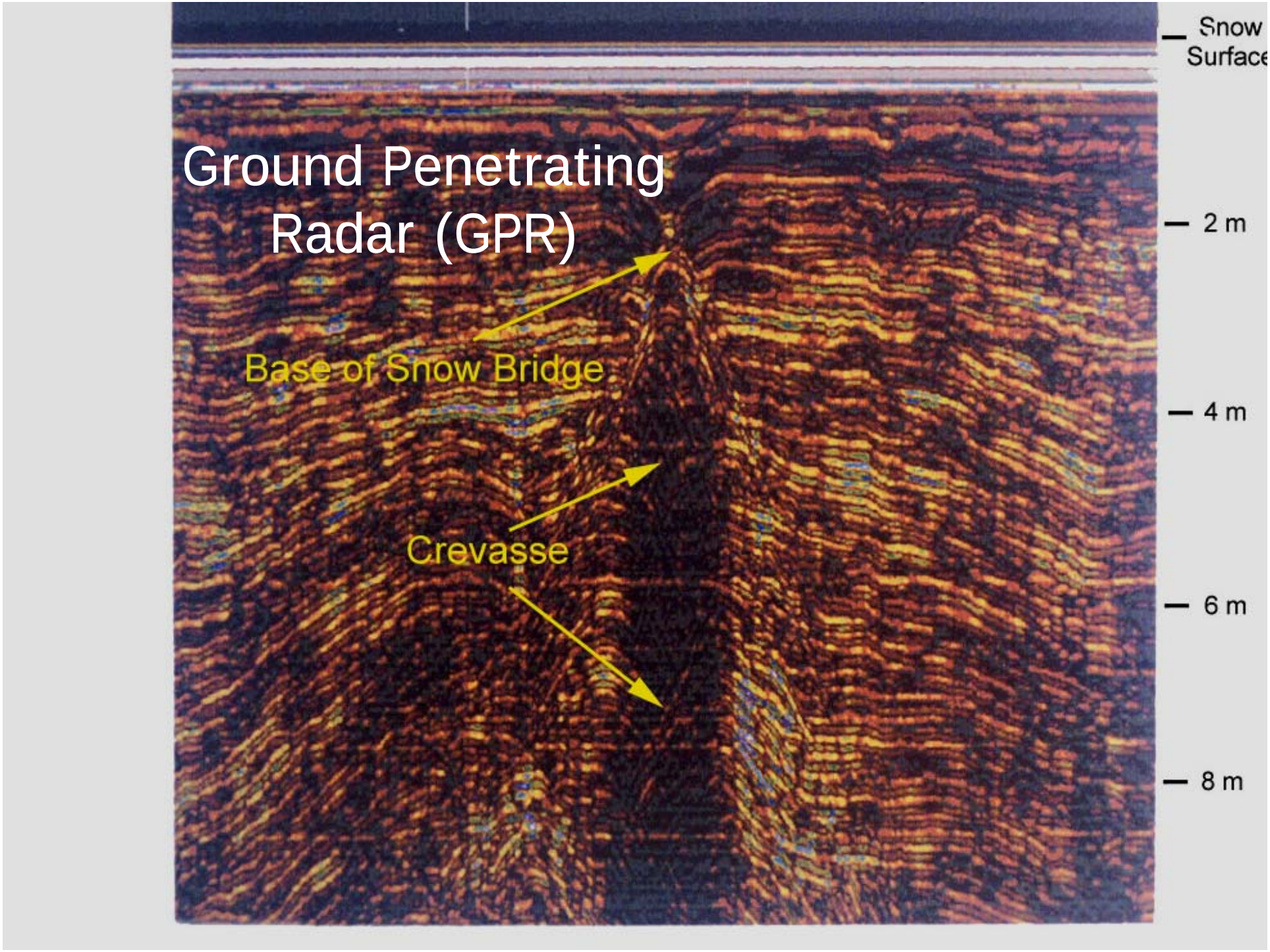
C-130 JATO

Why Traverse From Thule?

- Far North location
- Access to icecap
- Excellent cargo hub & support capabilities
- History of traversing (Camp Century/ Heavy Swing)

How will we do it?

Fuel Bladders & Tanks


Ground Penetrating Radar (GPR)
Base of Snow Bridge
Crevasse
Snow Surface
2 m
4 m
6 m
8 m

Crevasses


Cravasse Self-
Rescue Training

Snow Machines

Sled Structures

Case Quadtrac

Fuel Bladder Sleds

Tucker with GPR

Dartmouth Robotics

Method of Operation

- Sequential camps as the team moves up the glacier
- Tent camping
- Stop at NEEM where 2 team members depart
- 3 team members continue to Summit Station
- Return to Thule in June
- Future plans

08 GRIT Team

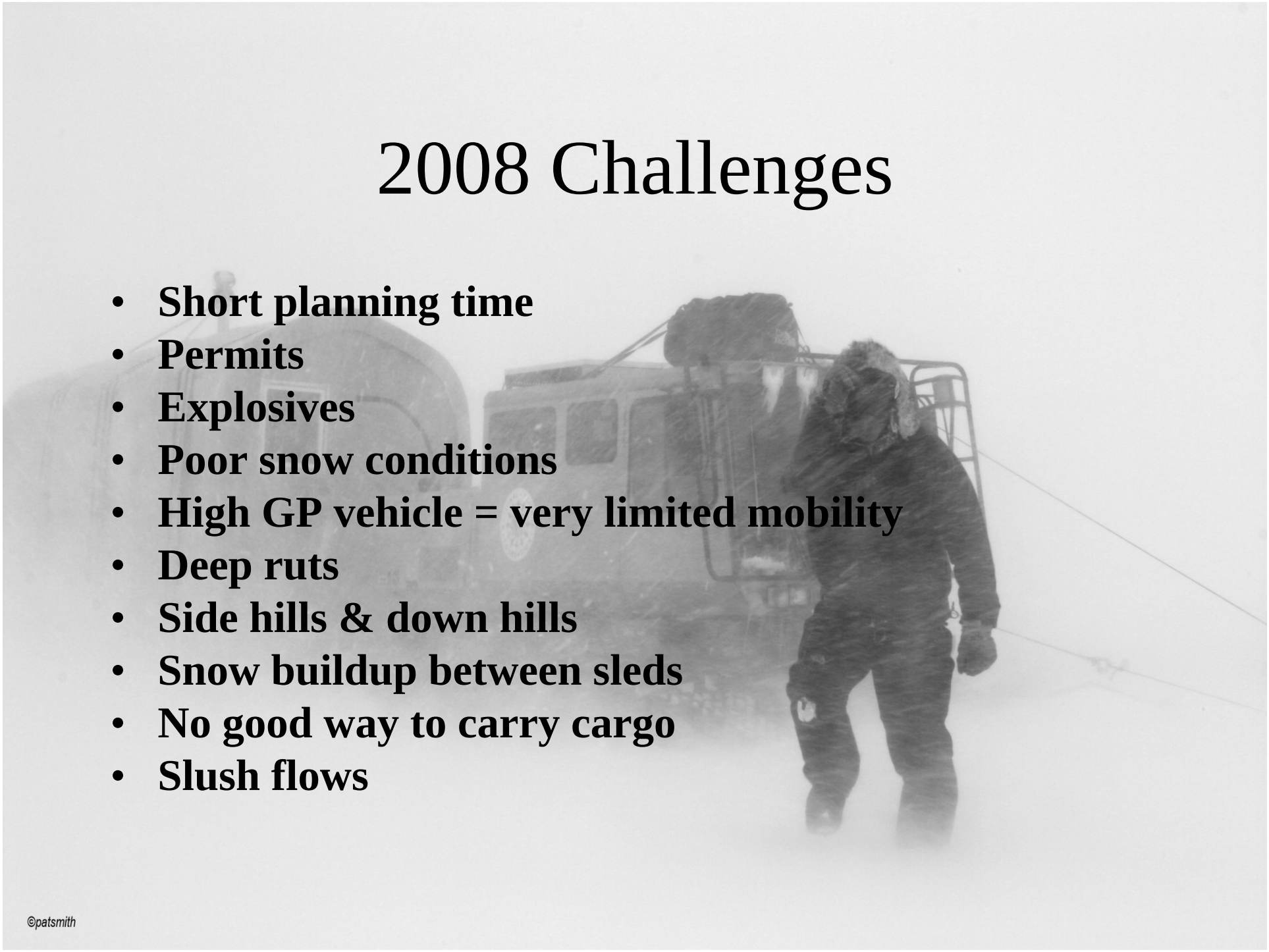
- Brad Johnson, Team Leader & Explosives Expert
- Pat Smith, Mechanic
- Allan Obannon, Mountaineer & Medic
- Jim Lever, Mobility Expert
- Allan Delaney, GPR Expert

Thule Support Group

- Jay Burnside, Project Manager
- Jason Weale, Mobility Engineer
- Susan Zager, Thule Liaison
- Larry Levin, Tech Specialist
- Tracy Dahl, Tech Specialist
- Brian Buckley, Carpenter
- Jim Latshaw, Carpenter
- Kevin Olds, Robotics Student
- Eric Trautman, Robotics Student

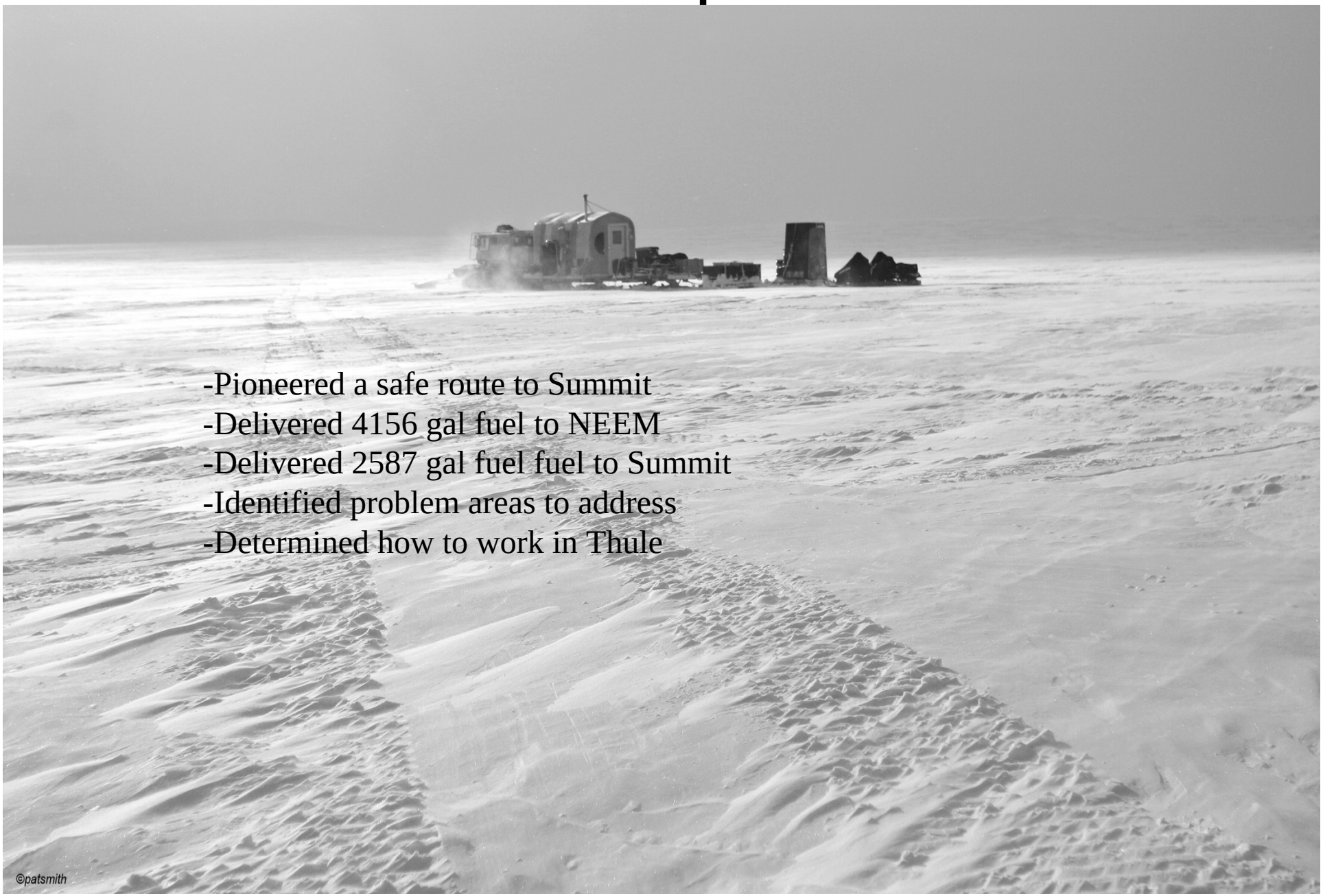
Alternative Crevasse Detection

2008 Challenges



- **Short planning time**
- **Permits**
- **Explosives**
- **Poor snow conditions**
- **High GP vehicle = very limited mobility**
- **Deep ruts**
- **Side hills & down hills**
- **Snow buildup between sleds**
- **No good way to carry cargo**
- **Slush flows**

2008 Accomplishments

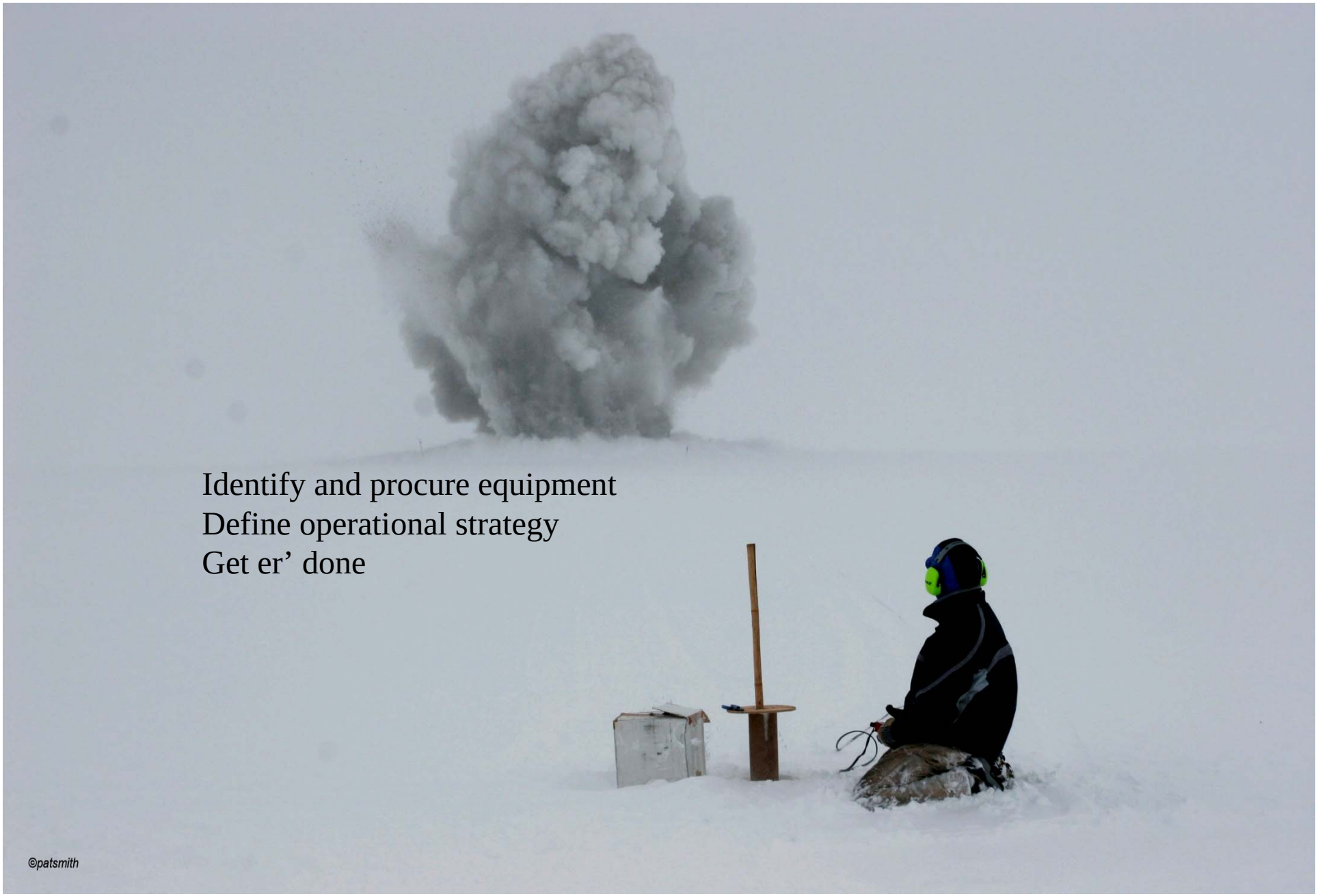


-Pioneered a safe route to Summit
-Delivered 4156 gal fuel to NEEM
-Delivered 2587 gal fuel fuel to Summit
-Identified problem areas to address
-Determined how to work in Thule

2009 Accomplishments:

- Mobility testing with load cell
-Tested different sled materials
-Some now structure modification work
-Identify ideal tractor weight, power and PSI ground pressure
-CRREL Report pending

What’s Next?


Identify and procure equipment
Define operational strategy
Get er’ done
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Questions?