

# Paint Removal in the Netherlands Ministry of Defence

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**Presentation to**  
***AVT-302 RWS-031***  
***“Paint Removal Technologies for Military Vehicles”***

# Outlook

- **Current practices & concerns with current technologies**
  - Air Force
  - Navy
  - Army
- **Future directions**

# Air Force paint removal practice

- **Application determines:**
  - Technology to be used
  - Location (air base, depot or industry)
- **Reasons for paint removal:**
  - (Corrosion) inspection
  - Occurrence of corrosion under paint
  - Poor paint condition
  - Recently: reduction of chromates

# Air Force paint removal practice

- **PMB:**

- F-16 aircraft (fuselage, wings)
- Off-aircraft aluminium panels
- @ industry



- **Hand sanding:**

- Composite parts
- Rotor blades
- @ depot and air base
- @ industry (additional to other stripping technologies)



# Air Force paint removal practice

- **Chemical stripping:**
  - Off-aircraft aluminium panels
  - Tanker/transport aircraft
  - Helicopters
  - @ depot (off-aircraft components and helicopters)
  - @ industry (fixed wing aircraft)



# Concerns regarding PMB

- **PMB results in large amounts of dust**
  - Risk for aircraft
    - Dust in avionics
    - Damage to thin skin
  - Costly waste disposal
- **Not allowed for composite materials**
- **Time-consuming preparation**
  - Protection of interior required
- **Time-consuming cleaning after PMB**
- **Large investment costs for facility (equipment + hangar)**



## Concerns regarding PMB

- **Chromate containing paints → chromate containing dust!**
- **Dust may remain in hangar after stripping → risk for personnel health and safety**
- **Personnel protection required when personnel is in hangar, not only during stripping**



# Concerns regarding hand sanding

- **Large amounts of waste (dust)**
  - Costly waste disposal
- **Time consuming**
- **Protruding rivets should not be sanded**
- **Care must be taken to prevent over-sanding**
- **Dust removal required, especially with chromate containing paint**
  - More complex for sanding on-aircraft
- **Personnel protection required**
- **Relatively low investment costs**



# Concerns regarding chemical stripping

- **Time-consuming preparation**
  - Protection of all parts that should not come into contact with chemical stripper, like windows and composite parts
  - Allowance for drainage of stripper
- **Time consuming cleaning after stripping**
- **Large amounts of waste**
  - Costly waste disposal
- **Low additional risk for chromate-containing paint**
- **Personnel protection required**
- **Large investment costs for hangar**



# Navy paint removal technologies

- **Reasons for paint removal**

- Opportunity

- Ship is in dry dock for other maintenance tasks → exterior can be recoated at relatively low additional costs and time

- Poor paint condition

- Corrosion or damage under paint

- **Paint removal technologies:**

- Grit blasting

- Water jetting (high pressure or ultra-high pressure)

- Sponge media blasting



# Concerns regarding grit blasting

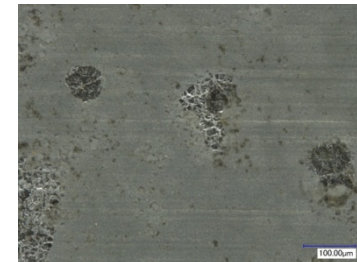
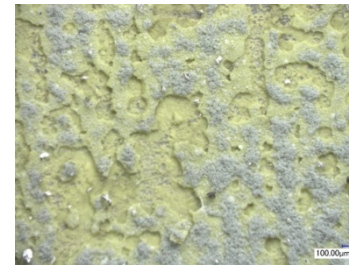
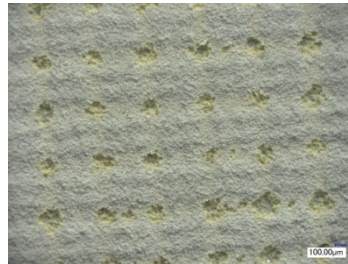
- **Large amounts of dust containing biocides (copper, DCF) from anti-fouling coating**
- **Costly waste disposal**
- **Personnel protection required**

# Army paint removal technologies

- **Grit blasting**
- **Concerns regarding grit blasting:**
  - Blasting cabins
  - Air suction
  - Waste disposal

# Investigation into future paint removal technologies

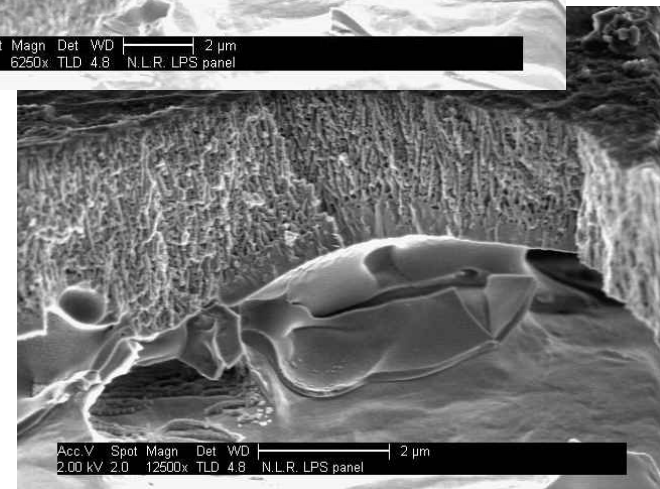
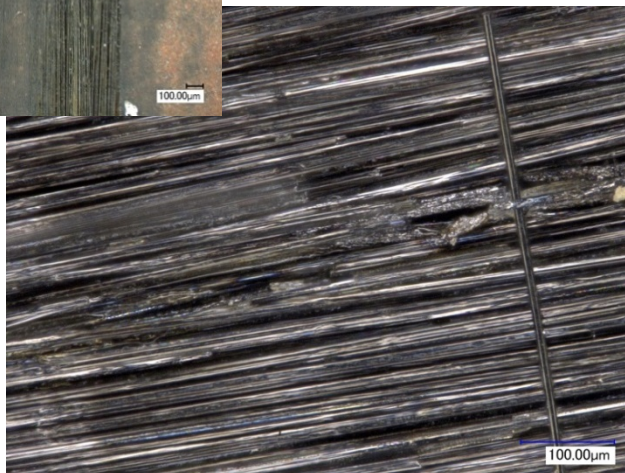
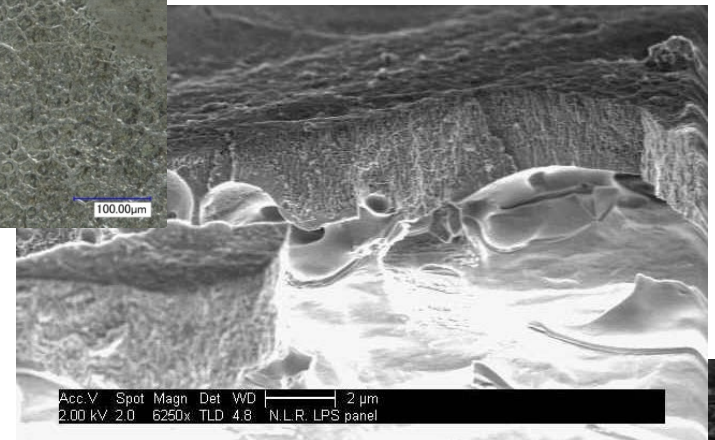
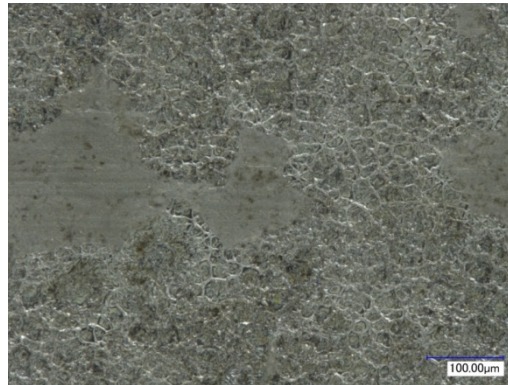
- **Wish-list of weapon system owners:**
  - Faster
  - Cheaper
  - Easier to handle
  - Lower risk of damage to weapon system
- **Several new technologies investigated in the past years**
  - Aircraft:
    - Water jet
    - Laser
    - Flashjet/CO<sub>2</sub>
    - Sponge jet



# Future paint removal technologies

- **Laser paint stripping**
  - Allows partial stripping (topcoat only)
  - Can be very fast with high power laser
  - Needs to be automated to prevent over-exposure of skin materials to laser that will lead to damage
  - Small amounts of waste
  - Thorough air filtering required
  - Large investment costs for equipment

# Surface integrity after laser paint stripping



# Questions?