

NASA/Launch Services SMA Involvement



NASA ELV PAYLOAD SAFETY & MISSION SUCCESS CONFERENCE

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November 16-18, 2004

Santa Barbara, California

Agenda



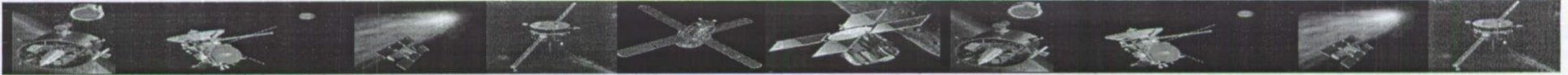
- NASA/KSC Launch Services Safety roles & responsibilities
- Payload Safety Working Group
- What we like to see
- The future

Safety Roles & Responsibilities



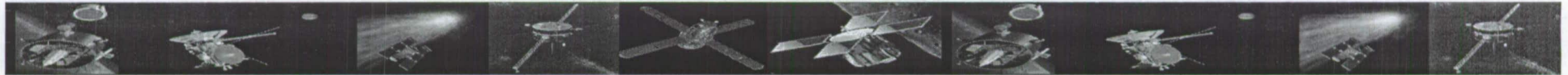
- **SA-D services include...**
 - Assessing the safety of the launch vehicle
 - Assessing the safety of NASA ELV spacecraft (S/C) / launch vehicle (LV) interfaces
 - Safety activities for spacecraft processing in:
 - KSC Launch Services Program (LSP) facilities
 - NASA assigned facilities at VAFB
 - Resource protection of:
 - NASA personnel
 - SLC-2
 - Other NASA assets

Safety Roles & Responsibilities



- **SA-D services include...**
 - Interfacing with payload organizations to review spacecraft for adequate safety implementation and compliance for integrated activities
 - Assisting in the integration of safety activities between the payload, launch vehicle, and processing facilities.
- All organizations are responsible for the safety of their personnel in all facilities

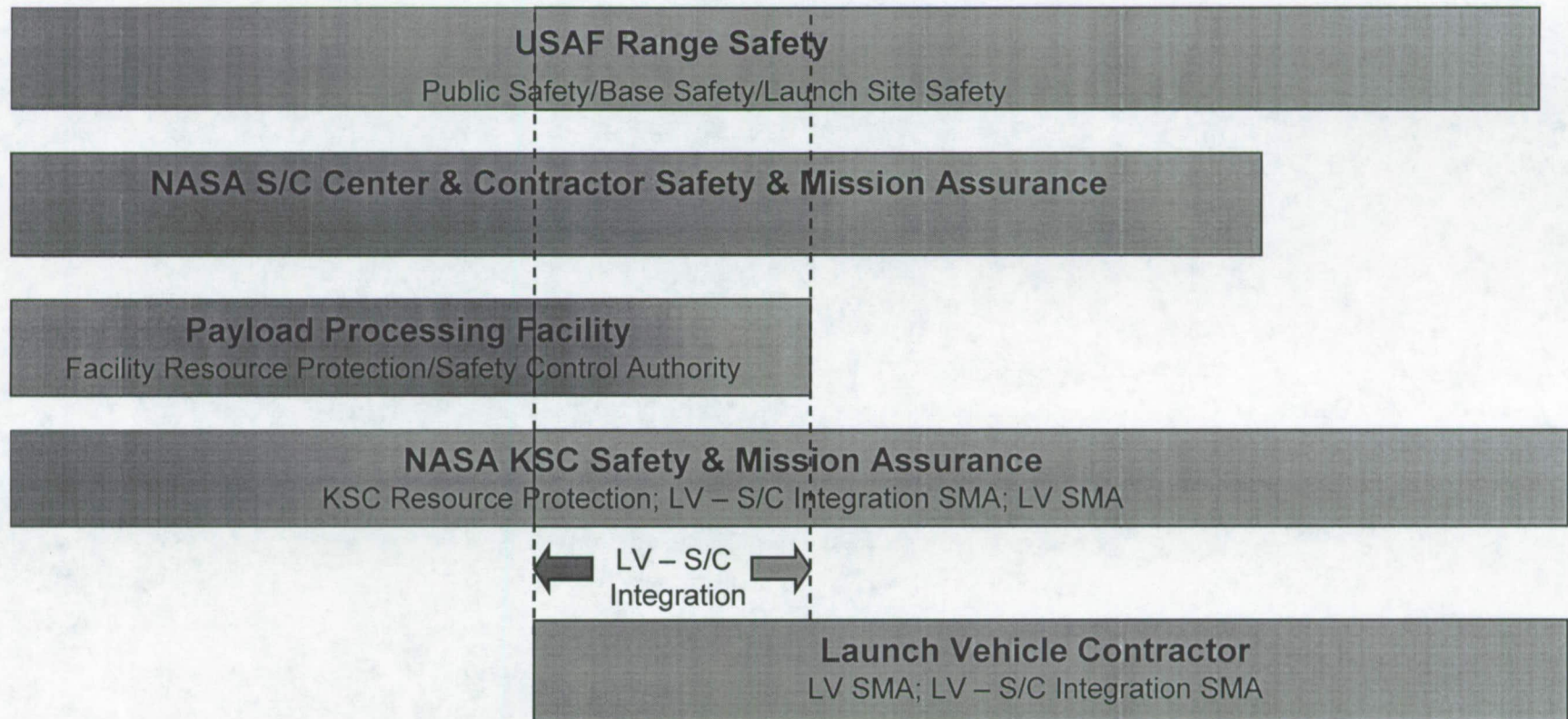
Safety Responsibilities at the Launch Site - Typical



S/C Processing Facility



Launch Complex

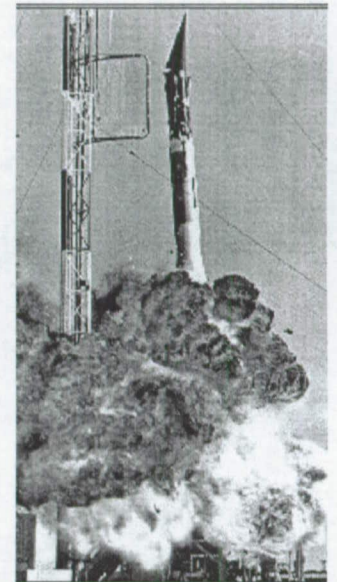


Contingency Planning

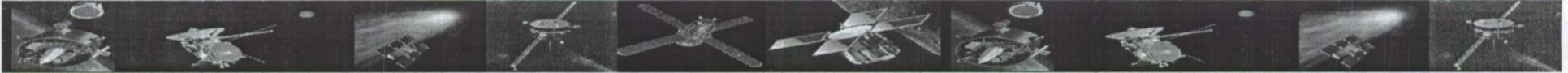


- **KSC ELV Contingency Action Plan (CAP)**

- Developed by SA-D for each mission.
- Identifies specific, immediate actions that NASA/KSC personnel take in response to a launch contingency including:
 - Mishap contingency notification
 - Coordination and release of public information
 - Mishap response, contingency reaction teleconferences coordination
 - Data impoundment
 - Establishment of an interim mishap investigation team



The Payload Safety Working Group (PSWG) ...The “Safety Round Table”



- The Payload Safety Working Group (as chartered by NASA-STD-8719.8), is the “Round Table” of ELV Payload Safety
- Provides common, uniform ELV payload safety process
 - All members have an equal say (vote)
 - The chair does not have an overriding veto
 - Not just one organization chairs all the time
 - Not as regimented as many safety panels
 - Informal atmosphere
 - All welcome to speak at any time about any relevant safety topic



The Payload Safety Working Group (PSWG) ...The “Safety Round Table”



- The Payload Safety Working Group...
 - Is a “One shop” safety
 - Requirements tailoring
 - Approvals
 - Aids development of
 - Safety Plan
 - MSPSP
 - MSPSP review
 - Specialized safety working groups
 - General safety topics discussion
 - Safety action items



The Payload Safety Working Group (PSWG) ...The “Safety Round Table”



- “Functions as both a “panel” & as a “working group”
- Can be held anytime
- Has a very diverse membership
- Works on all types of ELV payloads & ELVs
- PSWG disbanded when payload is through process



The Safety Round Table ...Not Always “Camelot”



- Can be a sizeable number of diverse disciplines
 - Difficult to keep “working group” atmosphere with:
 - Too many disciplines
 - Too many “non-safety” managers
- Not all disciplines attend
 - Lack of resources
 - Personnel
 - Basic required safety
 - Technical support
 - Administrative support
 - Travel money



The “Real” Safety Round Table ...Not Always “Camelot”



- There is no “one” authority to approve everything
 - Panel comprised of several approving authorities
 - Decisions may differ based on different organizations’ unique philosophies
- Presently, no “official” method for voicing “dissenting” opinions to the PSWG’s decisions
- Not all aspects of NASA-STD-8719.8 have been followed:
 - Tailoring
 - MSPSP development
 - Panel hosting duties
 - Voting



Things We (SA-D) LIKE To See...



- Plastic films, foams, and adhesive tapes (PFAs) to be used identified & submitted as soon as they are known
- Hazard reports in MSPSP/ARAR
 - Timely submittal of verification tracking log (VTL) statuses
- Safety analyses addressing KSC lessons learned
 - “Tip over” analyses, “scoop-proof” connectors, etc.
- A Payload Organization safety representative at the launch site during S/C hazardous operations
- Access to spacecraft propellant fill & drain valves through the payload fairing

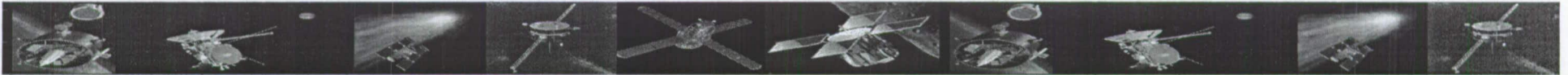
Things We DON'T LIKE To See...



- Safety variances stating “schedule” and/or “cost” as the only “driving factor(s)”
- GSE, PFAs, test plans, etc. that show up at the launch site that were not approved through the PSWG (MSPSP) process
- Launch site processing being performed before approval
- “Non-safety” personnel performing safety assessments



Things We DON'T LIKE To See...



- Close calls/mishaps not reported in a timely manner (or at all)
- Treating safety requirements as though they were not “real”
- “...*but XYZ payload didn't have to...*”
- The use of “older” safety requirements because of “convenience”
- “Conflicting” statements



What We've Heard...



- **“Overall safety approval process too complex”**
 - Too many players
 - Don't know who is responsible for (i.e. approves) what ?
- **“What are the requirements ?”**
 - “Where do I find them ?”
- **Why does NASA use the USAF's safety requirements ?**



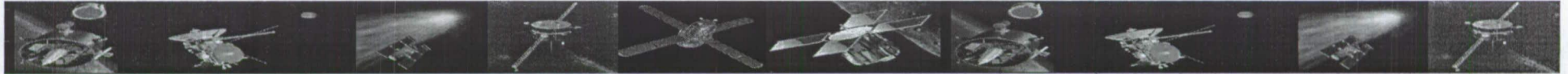
Ideas for the future...



- **A better SA-D website:**
 - Status of deliverables
 - Complete requirements list
 - POC listing of
 - Safety personnel
 - Subject matter experts



Ideas for the future...



- **One set of safety requirements**
 - One NASA document encompassing all ELV applicable (USAF, NASA, etc.) safety requirements OR
 - “Delta change” documents
 - Highlighting the differences between all applicable ELV safety requirements

