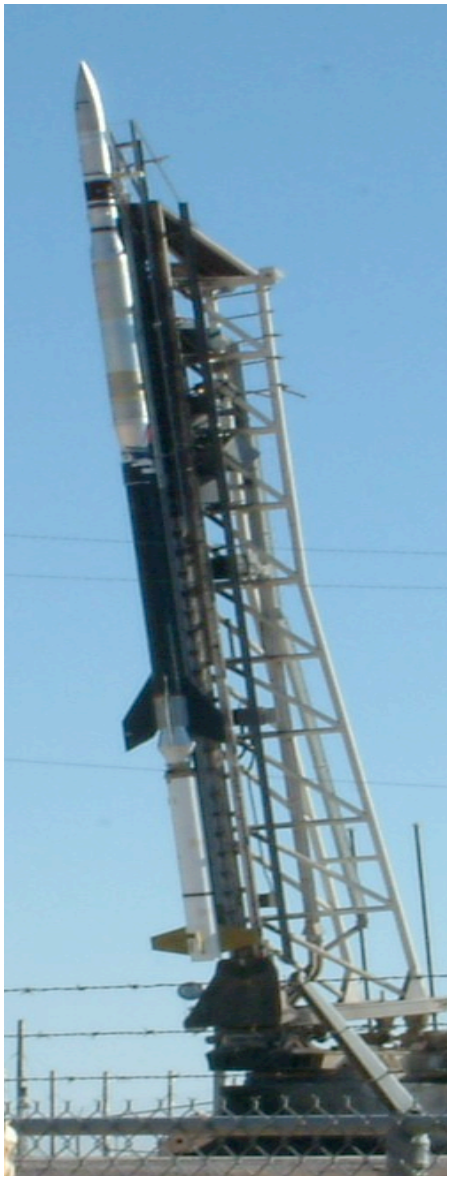
NASA Sounding Rocket Export Control Program

January 24, 2008



Export Control Plan

The NASA Sounding Rocket Program is committed to compliance with U.S. Export Control Laws and Regulations

- NASA will obtain export licenses for rocket vehicles and payloads
- Support equipment will be exported consistent with 22 CFR 126.4(a)
- Foreign nationals from 22 CFR 126.1 Countries will not participate in these programs
- The NSROC contractors will obtain Technical Assistance Agreements (TAA's) for all defense services performed in foreign countries
- The NSROC contractors will obtain TAA's for all missions involving foreign national science team members
  - In the event that a TAA can not be obtained foreign nationals will not be allowed to witness defense services (controlled via a Technology Control Plan)

Motor Shipments

- Rocket motors are placed in separate certified shipping boxes which are then place in a 20’ container
  - A DOT seal is placed on the container when commercial shipping is used
  - Individual motor containers will be sealed with a tamper seal
- When secure storage for the entire shipping container is not possible, the foreign range personnel will break the external seal
  - The individual sealed motor containers will be placed in the secure hazardous storage facility
- The motor containers are opened (seals broken) by NSROC personnel upon arrival at the range
- Rocket motor ignition systems are shipped separately (with the payload hardware)

MTCR Category I; Item 1

Category	Item	Description
I	1	COMPLETE DELIVERY SYSTEMS
	1.A.1.	Complete rocket systems (including ballistic missile systems, space launch vehicles, and sounding rockets) capable of delivering at least a 500 kg "payload" to a "range" of at least 300 km.
		Black Brant IX ; Black Brant X ; Black Brant XI ; Black Brant XII Stages shipped in separate containers. Upper stage ignition systems are shipped separately as part of the payload shipment. Complete rocket system never shipped as a complete assembly.
	1.B.1.	“Production Facilities" specially designed or modified for the systems specified in 1.A.
		Rocket motors are not produced at the Wallops Sounding Rocket facility, but payload hardware is built and motors are processed.
	1.E.1.	"Technology", in accordance with the General Technology Note, for the "development", "production" or "use" of equipment or "software" specified in 1.A., 1.B., or 1.D.
		Applies to SRs providing defense services for the above

MTCR Category I; Item 2

I	**2**	COMPLETE SUBSYSTEMS USABLE FOR COMPLETE DELIVERY SYSTEMS
	2.A.1.	Complete subsystems usable in the systems specified in 1.A., as follows:
	2.A. 1.a.	Individual rocket stages usable in the systems specified in 1.A.;
		Talos, Taurus, Black Brant VC, Terrier, Nihka
	2.A. 1.c.	Solid propellant rocket motors or liquid propellant rocket engines, usable in the systems specified in 1.A., having a total impulse capacity equal to or greater than 1.1×10^6 Ns;
		Black Brant VC, Talos, Taurus, Terrier Mk70

Notes:

- **Recovery systems do not use specially designed electronics. The parabay cover consist of an aluminum plate and AvCoat thermal coating. 2.A.1.b not applicable.**

MTCR Category I; Item 2

2.A.1.d.	Guidance sets', usable in the systems specified in 1.A., capable of achieving system accuracy of 3.33% or less of the "range" (e.g. a 'CEP' of 10 km or less at a "range" of 300 km), except as provided in the Note below 2.A.1. for those designed for missiles with a "range" under 300 km or manned aircraft;
	S-19 Boost Guidance (1-sigma dispersion is ~2.5% based on apogee altitude, ~6km 1-sigma radius for SR trajectory) S-19 in the full guidance mode can reduce dispersions even further (function not used by the Sounding Rocket Program)
2.D.3	“Software”, specially designed or modified for the “use” of ‘guidance sets’ specified in 2.A.1.d
	S-19 Boost Guidance Software (used only at White Sands Missile Range)
2.E.1.	"Technology", in accordance with the General Technology Note, for the "development", "production" or "use" of equipment or "software" specified in 2.A., 2.B. or 2.D.
	Applies to rocket motors (2.A.) used in conjunction with the sounding rocket program – key word “use”

Notes:

- Thrust vector control not used thus 2.A.1.e does not apply to sounding rockets
- 2.B does not apply because the program does not produce the rocket motors. “Specially Designed” does not apply