The Progress 51P vehicle undocked from the ISS on GMT 11-June-2013 at about 13:59. Ancillary info on last page shows separation at 13:58:13, while SAMS measurements show the time to be closer to about 13:58:45.

This spectrogram shows the transient impact of the contact event as an orange-to-red vertical streak at 13:58:45. Note the elevated structural excitation from this vehicle push-off as the horizontal red streak starting at time of separation.

**Notes:**

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Progress 51P Undocking

Notes:
• This 3-axis plot of acceleration versus time shows filtered SAMS measurements to reveal the primary impact of the Progress undocking event was registered on the X-axis with a peak amplitude value of just over 1 mg.
• In addition to the X-axis push-off impact, there was a noticeable amount of jostling on the Y-axis.
Progress 51P Undocking
Ancillary Information

The Progress 51P vehicle (M-19M, No. 419) successfully undocked from the ISS Russian Segment Service Module (SM) aft docking port at GMT 162/13:58:13 after the command to open the vehicle hooks was issued at 162/13:56:00. The separation appeared smooth with no vibrations noted [this was likely from video capture...the previous pages of this handbook show that SAMS did register this event]. Video from the Progress vehicle showed that the docking ring surface appeared nominal and free of debris. Telemetry indicated that the ACФ-02 deployed post hook opening. Pre-undocking analysis by the CAMMP group indicated that during this antenna deployment a nominal clearance of 2 mm between the antennae and in other SM obstructions should have existed. The first separation burn [by the Progress vehicle?] was initiated at approximately 162/14:01:13 and was completed at approximately 162/14:01:28. Following several days of the Russian Radar-Progress experiment, the deorbit of the vehicle is planned for GMT 170 (June 19th, 2013) starting at approximately 7:52 a.m. Houston time. No prop consumed during 51P Undocking. The undocking was conducted solely via CMGs.

The Progress Cargo Ship Departing the ISS