



Chronological History Fiscal Year 1981 Budget Submission

Prepared by:
Associate Administrator /
Comptroller
Budget Operations Division
Code BTF-3 Ext. 58466

August 14, 1981

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FISCAL YEAR 1981

Item	Statistics	LEGISLATIVE REFERENCE								
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		House Auth Comm	Senate Auth Comm	Conference Comm (Auth)	P.L. 96-316	House Approp Comm	Senate Approp Comm	Conference Comm (Appr)	P.L. 95-526	P.L. 96-576
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Physics and Astronomy.....	3	14	35	45						
Planetary Exploration.....	4	14	35	---						
Life Sciences.....	4	14	35	45						
Space Applications.....	4	14	35	45						
Technology Utilization.....	4	15	---	45						
Aeronautical Research and Technology.....	4	16	36	45						
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Jet Propulsion Laboratory.....	5	---	---	---						
Kennedy Space Center.....	5	---	---	---						
Langley Research Center.....	6	---	---	---						
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253 Space Transportation Systems										
254 Space Science, Applications and Technology										
255 Supporting Space Activities										
402 Air Transportation										

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FISCAL YEAR 1981

LEGISLATIVE REFERENCE

Item	Statistics	APPROPRIATION PAGE NUMBERS									
		House Comm. H.R. 3512 Rep. 97-29 5-4-81 Appd. 5-13-81	Senate Comm. H.R. 3512 Rep. 97-67 5-14-81 Appd. 5-21-81	Conf. Comm. Appd. 6-3-81 Rep. 97-124 P.L. 97-12 Appd. 6-5-81							
<u>Summary by Appropriation</u>	11	72	76	79							
<u>Research and Development</u>	11			81							
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1981 Budget Submission
(In thousands of dollars)

Page 1

I T E M	Initial Budget Submission to Congress	Amended Budget Submission	A U T H O R I Z A T I O N				A P P R O P R I A T I O N						
			House Comm. H.R. 6413 Rep. 96-899 4-22-80	Sen. Comm. S. 2240 Rep. 96-719 5-15-80	Conf. Comm. Appd. 6-27-80 H.R. 96-1142 P.L. 96-316	Difference from Amended Budget Submission	House Comm. H.R. 7631 Rep. 96-1114 6-19-80	Senate Comm. H.R. 7631 Rep. 96-926 9-4-80	Conf. Comm. Appd. 11-21-80, Rep. 96-1476 P.L. 96-526, Appd. 12-15-80		Difference from Budget Submission	Difference from Budget Authoriz'tn.	
			Appd. 6-13-80	Appd. 6-3-80	Appd. 7-30-80		Appd. 7-28-80	Appd. 9-23-80	Basic Appropriation	Effect of Gen. Prov. Sec. 412			
TOTAL APPROPRIATIONS:													
Research and Development Construction of Facilities.....	4,569,500	4,364,500	4,473,500	4,416,700	4,436,750	+72,250	a/	4,430,000	4,396,200	4,340,788	-23,712	-95,962	
Research and Program Management.....	120,000	120,000	115,500	120,000	118,000	-2,000	110,000	120,000	115,000	115,000	-5,000	-3,000	
	1,047,154	1,033,154	1,033,154	1,033,154	1,033,154	---	1,023,154	1,032,404	1,030,000	1,030,000	-3,154	-3,154	
GRAND TOTAL.....	5,736,654	5,517,654	5,622,154	5,569,854	5,587,904	+70,250		5,582,404	5,541,200	5,485,788	-31,866	-102,116	
R&D Appropriation:													
OSTS.....	2,738,200	2,696,200	2,703,200	2,708,200	2,708,200	+12,000		2,696,200	2,698,200	2,681,100	-15,100	-27,100	
OSS.....	668,000	561,000	600,000	575,500	577,500	+16,500		589,500	575,500	562,488	+1,488	-15,012	
OSTA.....	394,800	368,800	399,800	384,500	391,300	+22,500		384,550	373,750	365,350	-3,450	-25,950	
OAST.....	409,500	389,500	420,000	399,500	410,000	+20,500		410,000	399,750	390,750	+1,250	-19,250	
OSTDS.....	359,000	349,000	350,500	349,000	349,750	+750		349,750	349,000	341,100	-7,900	-8,650	
TOTAL, R&D.....	4,569,500	4,364,500	4,473,500	4,416,700	4,436,750	+72,250		4,430,000	4,396,200	4,340,788	-23,712	-95,962	
CoF Appropriation:													
OSTS.....	10,100	10,100	10,100	10,100	10,100	---	*	10,100	11,717	11,717	+1,617	+1,617	
OSS.....	1,617	1,617	1,617	1,617	1,617	---	*	1,617	---	---	-1,617	-1,617	
OAST.....	45,291	45,291	45,291	45,291	45,291	---	45,291	45,291	43,291	43,291	-2,000	-2,000	
OSTDS.....	2,150	2,150	2,150	2,150	2,150	---	2,150	2,150	2,150	2,150	---	---	
Comptroller.....	60,842	60,842	56,342	60,842	58,842	-2,000	60,842	60,842	57,842	57,842	-3,000	-1,000	
TOTAL, CoF.....	120,000	120,000	115,500	120,000	118,000	-2,000	110,000	120,000	115,000	115,000	-5,000	-3,000	
R&PM Appropriation - Total	1,047,154	1,033,154	1,033,154	1,033,154	1,033,154	---	1,023,154	1,032,404	1,030,000	1,030,000	-3,154	-3,154	
TOTAL, NASA.....	5,736,654	5,517,654	5,622,154	5,569,854	5,587,904	+70,250		5,582,404	5,541,200	5,485,788	-31,866	-102,116	

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* Undistributed.

a/ Deferred pending final action on the 1980 Supplemental Appropriation.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1981 Budget Submission
(In thousands of dollars)

Subfunction Code

	ITEM	Initial Budget Submission to Congress	Amended Budget Submission	AUTHORIZATION				APPROPRIATION					
				House Comm. H.R. 6413 Rep. 96-899 4-22-80	Sen. Comm. S.2240 Rep. 96-719 5-15-80	Conf. Comm. Appd.6-27-80 H.R. 96-1142 P.L. 96-316 Appd.7-30-80	Difference from Amended Budget Submission	House Comm. H.R. 7631 Rep. 96-1114 6-19-80	Senate Comm. H.R. 7631 Rep. 96-926 9-4-80	Conf. Comm. Appd. 11-21-80, Rep. 96-1476 P.L. 96-526, Appd. 12-15-80		Difference from Budget Submission	Difference from Budget Authoriz'tn.
				Appd.6-13-80	Appd. 6-3-80			Appd.7-28-80	Appd.9-23-80	Basic Appropriation	Effect of Gen. Provs. Sec. 412		
	RESEARCH AND DEVELOPMENT..	4,564,500	4,364,500	4,473,500 ^{a/}	4,416,700 ^{a/}	4,436,750	+72,250	d/	4,430,000	4,396,200	4,340,788	-23,712	-95,962
253	Space Shuttle.....	1,873,000	1,873,000	1,878,000	1,873,000	1,873,000	---		1,873,000	1,873,000	1,873,000	---	---
253	Space Flight Operations.	809,500	767,500	769,500	779,500	779,500	+12,000		767,500	769,500	753,700	-13,800	-25,800
253	Expendable Launch Veh...	55,700	55,700	55,700	55,700	55,700	---		55,700	55,700	54,400	-1,300	-1,300
254	Physics and Astronomy...	438,700	346,500	370,700	352,700	352,700	+6,100		352,700	352,700	344,700	-1,900	-8,000
254	Planetary Exploration...	179,600	175,300	179,600	179,600	179,600	+4,300		191,600	179,600	175,600	+300	-4,000
254	Life Sciences.....	49,700	39,100	49,700	43,200	45,200	+6,100		45,200	43,200	42,188	+3,088	-3,012
254	Space Applications.....	381,700	356,700	386,700	372,400	378,700	+22,000		371,550	361,650	353,550	-3,150	-25,150
254	Technology Utilization..	13,100	12,100	13,100	12,100	12,600	+500		12,600	12,100	11,800	-300	-800
402	Aeronautical Research and Technology.....	290,300	275,300	295,800	285,300	290,800	+15,500		290,800	282,550	276,150	+850	-14,650
254	Space Research and Technology.....	115,200	110,200	120,200	110,200	115,200	+5,000		115,200	113,200	110,700	+500	-4,500
254	Energy Technology.....	4,000	4,000	4,000	4,000	4,000	---		4,000	4,000	3,900	-100	-100
255	Tracking and Data Acq...	359,000	349,000	350,500	349,000	349,750	+750		349,750	349,000	341,100	-7,900	-8,650
	CONSTRUCTION OF FACILITIES	120,000	120,000	115,500	120,000	118,000	-2,000	110,000 ^{e/}	120,000	115,000	115,000	-5,000	-3,000
	Ames Research Center....	13,180	13,180	13,180	13,180	13,180	---	13,180	13,180	13,180	13,180	---	---
	Jet Propulsion Laboratory.....	3,500	3,500	2,000 ^{b/}	3,500	3,500	---	3,500	3,500	3,500	3,500	---	---
	Kennedy Space Center....	760	760	760	760	760	---	760	760	760	760	---	---
	Langley Research Center.	22,756	22,756	22,756	22,756	22,756	---	22,756	22,756	20,756	20,756	-2,000	-2,000
	Lewis Research Center...	12,355	12,355	9,355 ^{e/}	12,355	10,355 ^{e/}	-2,000	12,355	12,355	10,355	10,355	-2,000	---
	Michoud Assembly Facility.....	4,582	4,582	4,582	4,582	4,582	---	4,582	4,582	4,582	4,582	---	---
	Various Locations.....	2,150	2,150	2,150	2,150	2,150	---	2,150	2,150	2,150	2,150	---	---
	Space Shuttle Facilities	10,100	10,100	10,100	10,100	10,100	---	*	10,100	10,100	10,100	---	---
	Space Shuttle Payload Facilities.....	1,617	1,617	1,617	1,617	1,617	---	*	1,617	1,617	1,617	---	---
	Repair.....	15,000	15,000	15,000	15,000	15,000	---	15,000	15,000	15,000	15,000	---	---
	Rehabilitation and Modification.....	20,000	20,000	20,000	20,000	20,000	---	20,000	20,000	19,000	19,000	-1,000	-1,000
	Minor Construction.....	4,000	4,000	4,000	4,000	4,000	---	4,000	4,000	4,000	4,000	---	---
	Facility Planning and Design.....	10,000	10,000	10,000	10,000	10,000	---	10,000	10,000	10,000	10,000	---	---
	RESEARCH AND PROGRAM MANAGEMENT.....	1,047,154	1,033,154	1,033,154	1,033,154	1,033,154	---	1,023,154 ^{f/}	1,032,404	1,030,000	1,030,000	-3,154	-3,154
	TOTAL.....	5,736,654	5,517,654	5,622,154	5,569,854	5,587,904	+70,250		5,582,404	5,541,200	5,485,788	-31,866	-102,116

GPO 899-529

* Undistributed.

a/ See pages 3 through 5 for description of changes.

b/ Modifications to various buildings for energy conservation deleted (1.5M).

c/ Decommissioning of Plum Brook Station Reactor Facility (3M) deleted by House; Conference Committee recommended 1M for the project.

d/ Deferred pending final action on 1980 Supplemental Appropriation.

e/ Reduction to be applied to specific projects that can be deferred as a result of six month slip in Shuttle operational flight schedule.

f/ Net reduction to be applied on a priority basis to contractual services, travel and public affairs, and part of the reduction to be absorbed through higher lapse rate than in the budget.

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(In thousands of dollars)

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				Appd.6-13-80	Appd. 6-3-80	Appd.7-28-80		Appd.9-23-80	Basic Appropriation	Effect of Gen. Prov. Sec. 412			
	RESEARCH AND DEVELOPMENT..	4,569,500	4,364,500	4,473,500	4,416,700	4,436,750	+72,250	e/	4,430,000	4,396,200	4,340,788	-23,712	-95,962
	OFFICE OF SPACE TRANSPORTATION SYSTEMS..	2,738,200	2,696,200	2,703,200	2,708,200	2,708,200	+12,000		2,696,200	2,698,200	2,681,100	-15,100	-27,100
253	Space Shuttle.....	1,873,000	1,873,000	1,878,000	1,873,000	1,873,000	---		1,873,000	1,873,000	1,873,000	---	---
	Design, Development, Test and Evaluation.....	(683,000)	(683,000)	(683,000)	(683,000)	(683,000)	(---)		(683,000)	(683,000)	(683,000)	(---)	(---)
	Orbiter.....	320,900	320,900	320,900	320,900	320,900	---		320,900	320,900	320,900	---	---
	Main Engine.....	145,700	145,700	145,700	145,700	145,700	---		145,700	145,700	145,700	---	---
	External Tank.....	48,000	48,000	48,000	48,000	48,000	---		48,000	48,000	48,000	---	---
	Solid Rocket Booster....	14,000	14,000	14,000	14,000	14,000	---		14,000	14,000	14,000	---	---
	Launch and Landing.....	154,400	154,400	154,400	154,400	154,400	---		154,400	154,400	154,400	---	---
	Changes/System Upgrading..	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)	(---)		(150,000)	(150,000)	(150,000)	(---)	(---)
	Production.....	(1,040,000)	(1,040,000)	(1,045,000) ^{a/}	(1,040,000)	(1,040,000)	(---)		(1,040,000)	(1,040,000)	(1,040,000)	(---)	(---)
	Orbiter.....	768,200	768,200	773,200	768,200	768,200	---		768,200	768,200	768,200	---	---
	Main Engine.....	121,500	121,500	121,500	121,500	121,500	---		121,500	121,500	121,500	---	---
	Launch and Landing.....	40,400	40,400	40,400	40,400	40,400	---		40,400	40,400	40,400	---	---
	Spares and Equipment....	109,900	109,900	109,900	109,900	109,900	---		109,900	109,900	109,900	---	---
253	Space Flight Operations...	809,500	767,500	769,500	779,500	779,500	+12,000		767,500	769,500	753,700	-13,800	-25,800
	Space Transportation Systems Operational Capability.....	89,000	79,000	91,000 ^{b/}	91,000 ^{b/}	91,000	+12,000		79,000	*	*	*	*
	Development, Test and Mission Support.....	183,500	183,500	183,500	183,500	183,500	---		183,500	*	*	*	*
	Advanced Programs.....	10,800	8,800	13,800 ^{c/}	8,800	13,800	15,000		8,800	*	*	*	*
	Spacelab.....	151,700	149,700	134,700 ^{d/}	149,700	144,700	-5,000		149,700	*	*	*	*
	Space Transportation System Operations.....	374,500	346,500	346,500	346,500	346,500	---		346,500	*	*	*	*
253	Expendable Launch Vehicles	55,700	55,700	55,700	55,700	55,700	---		55,700	55,700	54,400	-1,300	-1,300
	Scout.....	2,200	2,200	2,200	2,200	2,200	---		2,200	2,200	900	-1,300	-1,300
	Centaur.....	5,600	5,600	5,600	5,600	5,600	---		5,600	5,600	5,600	---	---
	Delta.....	47,900	47,900	47,900	47,900	47,900	---		47,900	47,900	47,900	---	---
	OFFICE OF SPACE SCIENCE...	668,000	561,000	600,000	575,500	577,500	+16,500		589,500	575,500	562,488	+1,488	-15,012
254	Physics and Astronomy.....	438,700	346,600	370,700	352,700	352,700	+6,100		352,700	352,700	344,700	-1,900	-8,000
	Space Telescope Develop. International Solar Polar Mission.....	119,300	119,300	119,300	119,300	119,300	---		119,300	119,300	119,300	---	---
	Gamma Ray Observatory Development.....	82,600	39,600	39,600	39,600	39,600	---		39,600	39,600	39,600	---	---
	Shuttle/Spacelab Payload Development and Mission Management....	19,100	19,100	19,100	19,100	19,100	---		19,100	19,100	17,600	-1,500	-1,500
	Explorer Development....	72,100	29,100	47,100	29,100	29,100	---		29,100	29,100	27,400	-1,700	-1,700
		33,000	33,000	33,000	33,000	33,000	---		33,000	33,000	33,000	---	---

GPO 899-529

* Undistributed

a/ 5M added for 5th Orbiter long lead material.

b/ 12M added to amended budget for SEPS development.

c/ Initial budget increased 3M for PEP and 25KW.

d/ 2nd Spacelab reduced 15M.

e/ Deferred pending final action on 1980 Supplemental Appropriation.

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				Appd. 6-13-80	Appd. 6-3-80	Appd. 7-30-80		Appd. 7-28-80	Appd. 9-23-80	Basic Appropriation	Effect of Gen. Provs. Sec. 412		
	<u>OFFICE OF SPACE SCIENCE</u> (Cont'd.)												
	Mission Operations and Data Analysis.....	38,900	38,900	38,900	38,900	38,900	---		38,900	38,900	38,900	---	---
	Research and Analysis....	42,800	36,700	42,800	42,800	42,800	+6,100		42,800	42,800	38,000	+1,300	-4,800
	Suborbital Program.....	30,900	30,900	30,900	30,900	30,900	---		30,900	30,900	30,900	---	---
254	Planetary Exploration....	179,600	175,300	179,600	179,600	179,600	+4,300		191,600	179,600	175,600	+300	-4,000
	Galileo Development.....	63,100	63,100	63,100	63,100	63,100	---		63,100	63,100	63,100	---	---
	Mission Operations and Data Analysis.....	64,800	60,500	64,800	64,800	64,800	+4,300		64,800	64,800	61,800	+1,300	-3,000
	Research and Analysis....	51,700	51,700	51,700	51,700	51,700	---		51,700	51,700	50,700	-1,000	-1,000
	SEPS.....	---	---	---	---	---	---		12,000	---	---	---	---
254	Life Sciences.....	49,700	39,100	49,700	43,200	45,200	+6,100		45,200	43,200	42,188	+3,088	-3,012
	Life Sciences Flight Experiments.....	19,200	12,700	19,200	12,700	14,700	+2,000		14,700	12,700	12,700	---	-2,000
	Research and Analysis....	30,500	26,400	30,500	30,500	30,500	+4,100		30,500	30,500	29,488	+3,088	-1,012
	<u>OFFICE OF SPACE AND TERRESTRIAL APPLICATIONS</u>	394,800	368,800	399,800	384,500	391,300	+22,500		384,550	373,750	365,350	-3,450	-25,950
	Space Applications.....	381,700	356,700	386,700	372,400	378,700	+22,000		371,950 ^{a/}	361,650	353,550	-3,150	-25,150
	Resource Observations... Environmental	162,300	170,300	182,600 ^{a/}	180,300 ^{e/}	182,600	+12,300		*	175,300	*	*	*
	Observations.....	137,600	109,600	119,600 ^{b/}	109,600	112,600	+3,000		*	109,600	*	*	*
	Applications Systems....	18,100	18,100	18,100	18,100	18,100	---		*	11,350	*	*	*
	Technology Transfer.....	12,500	7,500	12,500	10,500	11,500	+4,000		*	11,500	*	*	*
	Materials Processing in Space.....	22,200	22,200	24,900 ^{c/}	24,900 ^{e/}	24,900	+2,700		*	24,900	*	*	*
	Space Communications....	29,000	29,000	29,000	29,000	29,000	---		*	29,000	*	*	*
254	Technology Utilization....	13,100	12,100	13,100	12,100	12,600	+500		12,600	12,100	11,800	-300	-800
	Technology Dissemination	4,100	4,100	4,100	4,100	4,100	---		4,100	4,100	4,000	-100	-100
	Technology Applications	4,800	3,800	4,800	3,800	4,300	+500		4,300	3,800	3,800	---	-500
	Program Evaluation and Support.....	1,600	1,600	1,600	1,600	1,600	---		1,600	1,600	1,500	-100	-100
	Civil Systems.....	2,600	2,600	2,600	2,600	2,600	---		2,600	2,600	2,500	-100	-100
	<u>OFFICE OF AERONAUTICS AND SPACE TECHNOLOGY</u>	409,500	389,500	420,000	399,500	410,000	+20,500		410,000	399,750	390,750	+1,250	-19,250
402	Aeronautical Research and Technology.....	290,300	275,300	295,800 ^{d/}	285,300	290,800	+15,500		290,800	282,550	276,150	+850	-14,650
	Research and Technology Base.....	131,100	131,100	131,100	141,100 ^{e/}	131,100	---		131,000	*	*	*	*
	Systems Technology Programs.....	159,200	144,200	164,700	144,200	159,700	+15,500		159,700	*	*	*	*

*Undistributed

a/ Partial restoration; Operational Land Observing System 9.3M; Applied Research and Data Analysis 3M.

b/ Partial restoration; Applied Research and Data Analysis 5M; Shuttle/Spacelab Payload Development 5M.

c/ 2.7M added for Analytical Float Zone Experiment.

d/ 20.5M added: Variable Cycle Engine High Temperature Validation 4.5M; High Performance Flight Experiments 5.5M;

High Speed Structures 4.0M; Alternative Fuels Utilization 4.0M; Alternate Alloys Studies 1.0M; and General Aviation Propeller 1.5M.

e/ Applied Research and Data Analysis increased 5M; Operational Land Observing System increased 5M for Multilinear Array Technology.

f/ For new initiatives such as technology for future fuels and scarce aerospace materials.

g/ Reduction of \$6,750,000 from Authorization due to NASA's failure to conform to reprogramming requirements established by committee in purchase of reconnaissance aircraft.

Prepared by:
Associate Administrator/
Comptroller
Budget Operations Division
Code BTF-3 Ext. 58466

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1981 Budget Submission
(In thousands of dollars)

Subfunction Code	I T E M	Initial Budget Submission to Congress	Amended Budget Submission	A U T H O R I Z A T I O N				A P P R O P R I A T I O N					
				House Comm. H.R. 8413 Rep. 96-899 4-22-80	Sen. Comm. S. 2240 Rep. 96-719 5-15-80	Conf. Comm. Appd. 6-27-80 H.R. 96-1142 P.L. 96-316 Appd. 7-30-80	Difference from Amended Budget Submission	House Comm. H.R. 7631 Rep. 96-1114 6-19-80 Appd. 7-28-80	Senate Comm. H.R. 7631 Rep. 96-926 9-4-80 Appd. 9-23-80	Conf. Comm. Appd. 11-21-80, Rep. 96-1476 P.L. 96-526, Appd. 12-15-80	Difference from Budget Submission	Difference from Budget Authoriz'tn.	
				Appd. 6-13-80	Appd. 6-3-80	Appd. 7-30-80		Basic Appropriation	Effect of Gen. Provs. Sec. 412				
	OFFICE OF AERONAUTICS AND SPACE TECHNOLOGY (Cond'd.)												
254	Space Research and Technology.....	115,200	110,200	120,200	110,200	115,200	+5,000		115,200	113,200	110,700	+500	-4,500
	Research and Technology Base.....	103,400	100,300	108,400	100,300	105,300 ^{a/}	+5,000		105,300	*	101,100	+800	-4,200
	Systems Technology Programs.....	9,700	7,800	9,700	7,800	7,800	---		7,800	*	7,500	-300	-300
	Standards and Practices	2,100	2,100	2,100	2,100	2,100	---		2,100	*	2,100	---	---
254	Energy Technology.....	4,000	4,000	4,000	4,000	4,000	---		4,000	4,000	3,900	-100	-100
	OFFICE OF SPACE TRACKING AND DATA SYSTEMS.....	359,000	349,000	350,500	349,000	349,750	+750		349,750	349,000	341,100	-7,900	-8,650
255	Tracking and Data Acq.....	359,000	349,000	350,500	349,000	349,750	+750		349,750	349,000	341,100	-7,900	-8,650
	Operations.....	271,500	270,000	271,500	270,000	270,750	+750		270,750	270,000	267,100	-2,900	-3,650
	Systems Implementation..	76,200	67,700	67,700	67,700	67,700	---		67,700	67,700	62,700	-5,000	-5,000
	Advanced Systems.....	11,300	11,300	11,300	11,300	11,300	---		11,300	11,300	11,300	---	---
	CONSTRUCTION OF FACILITIES	120,000	120,000	115,500	120,000	118,000	-2,000	110,000	120,000	115,000	115,000	-5,000	-3,000
402	AMES RESEARCH CENTER.....	13,180	13,180	13,180	13,180	13,180	---	13,180	13,180	13,180	13,180	---	---
	R-Construction of Man-Vehicle Systems Research Facility.....	7,480	7,480	7,480	7,480	7,480	---	7,480	7,480	7,480	7,480	---	---
402	R-Modification of Steam Ejector System and Thermal Protection Laboratory (N-234)....	2,300	2,300	2,300	2,300	2,300	---	2,300	2,300	2,300	2,300	---	---
402	R-Modification of the Unitary Plan Wind Tunnel (N-227).....	3,400	3,400	3,400	3,400	3,400	---	3,400	2,300	3,400	3,400	---	---
	JET PROPULSION LABORATORY.	3,500	3,500	2,000	3,500	3,500	---	3,500	3,500	3,500	3,500	---	---
255	B-Modifications to Various Buildings for Energy Conservation...	1,500	1,500	---	1,500	1,500	---	1,500	1,500	1,500	1,500	---	---
255	B-Modifications to Various Buildings for Seismic Protection....	2,000	2,000	2,000	2,000	2,000	---	2,000	2,000	2,000	2,000	---	---
	JOHN F. KENNEDY SPACE CENTER.....	760	760	760	760	760	---	760	760	760	760	---	---
255	B-Rehabilitation of High Temperature Hot Water System, Zone 2, Industrial Area.....	760	760	760	760	760	---	760	760	760	760	---	---

GPO 899-529

a/ Amended budget increased 3M to enhance advanced chemical propulsion technology activities and to accelerate expander cycle dual-thrust engine technology; and 2M for enhancements of space platform and large space structures advanced technology activities.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1981 Budget Submission
(In thousands of dollars)

Subfunction Code

Subfunction Code	ITEM	Initial Budget Submission to Congress	Amended Budget Submission	AUTHORIZATION				APPROPRIATION					
				House Comm. H.R. 6413 Rep. 96-899 4-22-80	Sen. Comm. S. 2240 Rep. 96-719 5-15-80	Conf. Comm. Appd. 6-27-80 H.R. 96-1142 P.L. 96-316 Appd. 7-30-80	Difference from Amended Budget Submission	House Comm. H.R. 7631 Rep. 96-1114 6-19-80	Senate Comm. H.R. 7631 Rep. 96-926 9-4-80	Conf. Comm. Appd. 11-21-80, Rep. 96-1476 P.L. 96-526, Appd. 12-15-80	Difference from Budget Submission	Difference from Budget Authoriz'tn.	
				Appd. 6-13-80	Appd. 6-3-80	Appd. 7-30-80	Appd. 7-28-80	Appd. 9-23-80	Basic Appropriation	Effect of Gen. Provs. Sec. 412			
	LANGLEY RESEARCH CENTER...	22,756	22,756	22,756	22,756	22,756	---	22,756	22,756	20,756	20,756	-2,000	-2,000
402	R-Modifications for Avionics Integration Res. Laboratory (1220)	5,756	5,756	5,756	5,756	5,756	---	5,756	5,756	5,756	5,756	---	---
402	R-Modifications to Aircraft Landing Dynamics Facility (1257).....	15,000	15,000	15,000	15,000	15,000	---	15,000	15,000	15,000	15,000	---	---
402	R-Rehabilitation and Modification of Gas Dynamics Lab. (1247)...	2,000	2,000	2,000	2,000	2,000	---	2,000	2,000	---	---	-2,000	-2,000
	LEWIS RESEARCH CENTER.....	12,355	12,355	9,355	12,355	10,355	-2,000	12,355	12,355	10,355	10,355	-2,000	---
255	B-Decommissioning of Plum Brook Station Reactor Facility.....	3,000	3,000	---	3,000	1,000	-2,000	3,000	3,000	1,000	1,000	-2,000	---
402	R-Modifications to Central Air System, Various Buildings.....	7,655	7,655	7,655	7,655	7,655	---	7,655	7,655	7,655	7,655	---	---
402	R-Rehabilitation of Electrical Switchgear, Engine Research Bldg. (5).....	1,700	1,700	1,700	1,700	1,700	---	1,700	1,700	1,700	1,700	---	---
	MICHOUD ASSEMBLY FACILITY..	4,582	4,582	4,582	4,582	4,582	---	4,582	4,582	4,582	4,582	---	---
255	B-Rehabilitation of Roof, Phase II, Building 103	3,800	3,800	3,800	3,800	3,800	---	3,800	3,800	3,800	3,800	---	---
255	B-Rehabilitation of Chilled Water System...	782	782	782	782	782	---	782	782	782	782	---	---
	VARIOUS LOCATIONS.....	2,150	2,150	2,150	2,150	2,150	---	2,150	2,150	2,150	2,150	---	---
255	T-Modification of 26-Meter Antenna, DSS-44 Canberra, Australia (JPL).....	1,200	1,200	1,200	1,200	1,200	---	1,200	1,200	1,200	1,200	---	---
255	T-Replacement of Azimuth Radial Bearing, DSS-14, Goldstone, CA (JPL)....	950	950	950	950	950	---	950	950	950	950	---	---
	SPACE SHUTTLE FACILITIES:	10,100	10,100	10,100	10,100	10,100	---	* a/	10,100	10,100	10,100	---	---
253	M-Modification of Manuf. and Final Assembly Facilities for External Tanks (MAF).....	5,400	5,400	5,400	5,400	5,400	---	* a/	5,400	5,400	5,400	---	---
253	M-Modifications to Solid Rocket Motor Manuf. and Assembly Facilities, Thiokol Plant, Wasatch, Utah.....	2,700	2,700	2,700	2,700	2,700	---	* a/	2,700	2,700	2,700	---	---

GPO 899-529

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a/ Reduction to be applied to specific projects that can be deferred as a result of six month slip in Shuttle operational flight schedule.

Prepared by:
Associate Administrator/
Comptroller
Budget Operations Division
Code BTF-3 Ext. 58466

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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Subfunction Code	ITEM	Initial Budget Submission to Congress	Amended Budget Submission	AUTHORIZATION				APPROPRIATION						
				House Comm. H.R. 6413 Rep. 96-899 4-22-80 Appd.6-13-80	Sen. Comm. S.2240 Rep. 96-719 5-15-80 Appd. 6-3-80	Conf. Comm. Appd.6-27-80 H.R. 96-1142 P.L. 96-316 Appd.7-30-80	Difference from Amended Budget Submission	House Comm. H.R. 7631 Rep.96-1114 6-19-80 Appd.7-28-80	Senate Comm. H.R. 7631 Rep.96-926 9-4-80 Appd.9-23-80	Conf. Comm. Appd. 11-21-80, Rep.96-1476 P.L. 96-526, Appd.12-15-80	Difference from Budget Submission	Difference from Budget Authoriz' tn.		
				Scale Appropriation	Effect of Gen. Provs. Sec. 412									
	<u>SPACE SHUTTLE FACILITIES</u> (Cont'd.)													
253	M-Minor Shuttle-Unique Projects (Various Locations).....	2,000	2,000	2,000	2,000	2,000	---	* a/	2,000	2,000	2,000	---	---	
	<u>SPACE SHUTTLE PAYLOAD FACILITIES:</u>	1,617	1,617	1,617	1,617	1,617	---	* a/	1,617	1,617	1,617	---	---	
254	S-Rehabilitation and Modification for Payload Ground Support Operations (KSC).....	1,617	1,617	1,617	1,617	1,617	---	* a/	1,617	1,617	1,617	---	---	
255	B-REPAIR OF FACILITIES....	15,000	15,000	15,000	15,000	15,000	---	15,000	15,000	15,000	15,000	---	---	
255	B-REHABILITATION AND MODIFICATION OF FACILITIES.....	20,000	20,000	20,000	20,000	20,000	---	20,000	20,000	19,000	19,000	-1,000	-1,000	
255	B-MINOR CONSTRUCTION OF NEW FACILITIES AND ADDITIONS.....	4,000	4,000	4,000	4,000	4,000	---	4,000	4,000	4,000	4,000	---	---	
255	B-FACILITY PLANNING AND DESIGN.....	10,000	10,000	10,000	10,000	10,000	---	10,000	10,000	10,000	10,000	---	---	
	<u>RESEARCH AND PROGRAM MANAGEMENT.....</u>	1,047,154	1,033,154	1,033,154	1,033,154	1,033,154	---	1,023,154 ^{b/}	1,032,404 ^{c/}	1,030,000	1,030,000	-3,154	-3,154	
	<u>BY INSTALLATION:</u>													
	Johnson Space Center....	170,688	168,433	168,433	168,433	168,433	---	*	*	*	*	*	*	
	Kennedy Space Center....	141,385	139,232	139,232	139,232	139,232	---	*	*	*	*	*	*	
	Marshall Space Flight Center.....	160,377	158,304	158,304	158,304	158,304	---	*	*	*	*	*	*	
	National Space Technology Laboratories...	5,108	5,042	5,042	5,042	5,042	---	*	*	*	*	*	*	
	Goddard Space Flight Center.....	139,335	137,575	137,575	137,575	137,575	---	*	*	*	*	*	*	
	Wallops Flight Center....	18,977	18,697	18,697	18,697	18,697	---	*	*	*	*	*	*	
	Ames Research Center....	71,469	70,550	70,550	70,550	70,550	---	*	*	*	*	*	*	
	Dryden Flight Research Center.....	21,681	21,386	21,386	21,386	21,386	---	*	*	*	*	*	*	
	Langley Research Center.	119,145	117,605	117,605	117,605	117,605	---	*	*	*	*	*	*	
	Lewis Research Center...	101,360	100,056	100,056	100,056	100,056	---	*	*	*	*	*	*	
	NASA Headquarters.....	97,629	96,274	96,274	96,274	96,274	---	*	*	*	*	*	*	

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a/ See note on page 6.

b/ Net reduction to be applied on a priority basis to contractual services, travel, and public affairs, and part of the reduction to be absorbed through higher lapse rate than is assumed in the budget.

c/ Reduction of \$750,000 represents a 50% reduction in SES bonuses because of the 50% reduction in the number of executives who will be eligible for bonuses.

Prepared by:
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Budget Operations Division
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1981 Budget Submission
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I T E M	Initial Budget Submission to Congress	Amended Budget Submission	A U T H O R I Z A T I O N				A P P R O P R I A T I O N					
			House Comm. H.R. 6413 Rep. 96-899 4-22-80	Sen. Comm. S.2240 Rep. 96-719 5-15-80	Conf. Comm. Appd.6-27-80 H.R.96-1142 P.L. 96-316 Appd.7-30-80	Difference from Amended Budget Submission	House Comm. H.R. 7631 Rep.96-1114 6-19-80 Appd.7-28-80	Senate Comm. H.R. 7631 Rep.96-926 9-4-80 Appd.9-23-80	Conf. Comm. Appd. 11-21-80,Rep. 96-1476 P.L.96-526,Appd.12-15-80	Difference from Budget Submission	Difference from Budget Authoriz'tn.	
			Appd.6-13-80	Appd. 6-3-80	Appd.7-30-80	Appd.7-28-80	Appd.9-23-80	Basic Appropriation	Effect of Gen. Prov. Sec. 412			
RESEARCH AND PROGRAM MANAGEMENT (Cont'd.)												
<u>BY FUNCTION:</u>												
Personnel and Related Costs.....	779,991	770,991	770,991	770,991	770,991	---	*	770,241	*	*	*	*
Travel.....	20,825	20,825	20,825	20,825	20,825	---	*	20,825	*	*	*	*
Facilities Services.....	124,971	122,434	122,434	122,434	122,434	---	*	122,434	*	*	*	*
Technical Services.....	47,496	46,532	46,532	46,532	46,532	---	*	46,532	*	*	*	*
Management and Operations Support....	73,871	72,372	72,372	72,372	72,372	---	*	72,372	*	*	*	*

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1981 Budget Submission
(In thousands of dollars)

ITEM	APPROPRIATION										
	Conf. Comm. Appd. 11-21-80, Rep. 96-1476 P.L. 96-526, Appd. 12-15-80		Agency Plan	Proposed Recission	Revised Estimate	House Comm. H.R. 3512 Rep. 97-29 5-4-81 Appd. 5-13-81	Senate Comm. H.R. 3512 Rep. 97-67 5-14-81 Appd. 5-21-81	Conf. Comm. Appd. 6-3-81 Rep. 97-124 P.L. 97-12 Appd. 6-5-81			
	Basic Appropriation	Effect of Con. Proc. Sec. 242				Appd. 5-13-81	Appd. 5-21-81	Appd. 6-5-81			
OFFICE OF SPACE											
TRANSPORTATION SYSTEMS..											
	2,698,200	2,681,100	2,681,100	+52,500	2,733,600	2,733,600	2,676,600	2,728,600			
253 Space Shuttle.....	1,873,000	1,873,000	1,943,000	+60,000	2,003,000	2,003,000	1,943,000	1,995,000			
Design, Development, Test and Evaluation.....	(683,000)	(683,000)	(958,000)	---	(958,000)	(958,000)	(958,000)	(958,000)			
Orbiter.....	320,900	320,900	521,000	---	521,000	521,000	521,000	521,000			
Main Engine.....	145,700	145,700	134,000	---	134,000	134,000	134,000	134,000			
External Tank.....	48,000	48,000	54,500	---	54,500	54,500	54,500	54,500			
Solid Rocket Booster....	14,000	14,000	44,500	---	44,500	44,500	44,500	44,500			
Launch and Landing.....	154,400	154,400	204,000	---	204,000	204,000	204,000	204,000			
Changes/System Upgrading..	(150,000)	(150,000)	---	(+60,000)	(60,000)	(60,000)	---	(52,000)			
Production.....	(1,040,000)	(1,040,000)	(985,000)	---	(985,000)	(985,000)	(985,000)	(985,000)			
Orbiter.....	768,200	768,200	727,500	---	727,500	727,500	727,500	727,500			
Main Engine.....	121,500	121,500	121,500	---	121,500	121,500	121,500	121,500			
Launch and Landing.....	40,400	40,400	34,000	---	34,000	34,000	34,000	34,000			
Spares and Equipment....	109,900	109,900	102,000	---	102,000	102,000	102,000	102,000			
253 Space Flight Operations...	769,500	753,700	683,700	-7,500	676,200	676,200	679,200	679,200			
Space Transportation Systems Operational Capability.....	*	*	81,000	-200	80,800	80,800	80,800	83,800			
Development, Test and Mission Support.....	*	*	183,500	---	183,500	183,500	183,500	183,500			
Advanced Programs.....	*	*	8,800	---	8,800	8,800	8,800	8,800			
Spacelab.....	*	*	139,700	---	139,700	139,700	139,700	139,700			
Space Transportation System Operations.....	*	*	270,700	-7,300	263,400	263,400	266,400	263,400			
253 Expendable Launch Vehicles	55,700	54,400	54,400	---	54,400	54,400	54,400	54,400			
Scout.....	2,200	900	900	---	900	900	900	900			
Centaur.....	5,600	5,600	5,600	---	5,600	5,600	5,600	5,600			
Delta.....	47,900	47,900	47,900	---	47,900	47,900	47,900	47,900			
OFFICE OF SPACE SCIENCE...	575,500	562,488	562,488	-24,000	538,488	538,488	553,088	541,488			
254 Physics and Astronomy....	352,700	344,700	344,700	-24,000	320,700	320,700	335,300	323,700			
Space Telescope Develop. International Solar Polar Mission.....	119,300	119,300	119,300	---	119,300	119,300	119,300	119,300			
Gamma Ray Observatory Development.....	39,600	39,600	39,600	-14,600	25,000	25,000	39,600	28,000			
Shuttle/Spacelab Payload Development and Mission Management....	19,100	17,600	17,600	-9,400	8,200	8,200	8,200	8,200			
Explorer Development....	29,100	27,400	27,400	---	27,400	27,400	27,400	27,400			
	33,000	33,000	33,000	---	33,000	33,000	33,000	33,000			

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1981 Budget Submission
(In thousands of dollars)

ITEM	APPROPRIATION									
	Conf. Comm. Appd. 11-21-80, Rep. 96-1476 P.L. 96-526, Appd. 12-15-80		Agency Plan	Proposed Recission	Revised Estimate	House Comm. H.R. 3512 Rep. 97-29 5-4-81 Appd. 5-13-81	Senate Comm. H.R. 3512 Rep. 97-67 5-14-81 Appd. 5-21-81	Conf. Comm. Appd. 6-3-81 Rep. 97-124 P.L. 97-12 Appd. 6-5-81		
	Basic Appropriation	Effect of Gen. Prov. Sec. 412								
OFFICE OF SPACE SCIENCE (Cont'd.)										
	Mission Operations and Data Analysis.....	38,900	38,900	38,900	---	38,900	38,900	38,900	38,900	
	Research and Analysis...	42,800	38,000	38,000	---	38,000	38,000	38,000	38,000	
	Suborbital Program.....	30,900	30,900	30,900	---	30,900	30,900	30,900	30,900	
254	Planetary Exploration.....	179,600	175,600	175,600	---	175,600	175,600	175,600	175,600	
	Galileo Development.....	63,100	63,100	63,100	---	63,100	63,100	63,100	63,100	
	Mission Operations and Data Analysis.....	64,800	61,800	61,800	---	61,800	61,800	61,800	61,800	
	Research and Analysis...	51,700	50,700	50,700	---	50,700	50,700	50,700	50,700	
254	Life Sciences.....	43,200	42,188	42,188	---	42,188	42,188	42,188	42,188	
	Life Sciences Flight Experiments.....	12,700	12,700	12,700	---	12,700	12,700	12,700	12,700	
	Research and Analysis...	30,500	29,488	29,488	---	29,488	29,488	29,488	29,488	
OFFICE OF SPACE AND TERRESTRIAL APPLICATIONS										
	Space Applications.....	361,650	353,550	353,550	-22,000	331,550	331,550	334,550	331,550	
	Resource Observations...	175,300	*	161,350	-10,000	151,350	151,350	151,350	151,350	
	Environmental Observations.....	109,600	*	111,100	-7,000	104,100	104,100	104,100	104,100	
	Applications Systems...	11,350	*	18,100	---	18,100	18,100	18,100	18,100	
	Technology Transfer.....	11,500	*	10,100	-2,000	8,100	8,100	8,100	8,100	
	Materials Processing in Space.....	24,900	*	21,700	-3,000	18,700	18,700	21,700	18,700	
	Space Communications....	29,000	*	31,200	---	31,200	31,200	31,200	31,200	
254	Technology Utilization....	12,100	11,800	11,800	-5,000	6,800	6,800	8,800	8,800	
	Technology Dissemination	4,100	4,000	4,000	-1,600	2,400	2,400	*	*	
	Technology Applications..	3,800	3,800	3,800	-1,000	2,800	2,800	*	*	
	Program Evaluation and Support.....	1,600	1,500	1,500	-1,100	400	400	*	*	
	Civil Systems.....	2,600	2,500	2,500	-1,300	1,200	1,200	*	*	
OFFICE OF AERONAUTICS AND SPACE TECHNOLOGY....										
402	Aeronautical Research and Technology.....	399,750	390,750	390,750	-6,000	384,750	384,750	388,750	384,750	
	Research and Technology Base.....	282,550	276,150	276,150	-4,000	272,150	272,150	276,150	272,150	
	Systems Technology Programs.....	*	*	134,300	---	134,300	134,300	134,300	134,300	
		*	*	141,850	-4,000	137,850	137,850	141,850	137,850	

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1981 Budget Submission
(In thousands of dollars)

ITEM	APPROPRIATION									
	Conf. Comm. Appd. 11-21-80, Rep. 96-1476 P.L. 96-526, Appd. 12-15-80	Agency Plan	Proposed Recission	Revised Estimate	House Comm. H.R. 3512 Rep. 97-29 5-4-81 Appd. 5-13-81	Senate Comm. H.R. 3512 Rep. 97-67 5-14-81 Appd. 5-21-81	Conf. Comm. Appd. 6-3-81 Rep. 97-124 P.L. 97-12 Appd. 6-5-81			
	Basic Appropriation	Rev. of Conf. Sec. 412								
<u>OFFICE OF AERONAUTICS AND SPACE TECHNOLOGY (Cont'd.)</u>										
254	Space Research and Technology.....	113,200	110,700	110,700	---	110,700	110,700	110,700	110,700	
	Research and Technology Base.....	*	101,100	101,100	---	101,100	101,100	101,100	101,100	
	Systems Technology Programs.....	*	7,500	7,500	---	7,500	7,500	7,500	7,500	
	Standards and Practices.....	*	2,100	2,100	---	2,100	2,100	2,100	2,100	
254	Energy Technology.....	4,000	3,900	3,900	-2,000	1,900	1,900	1,900	1,900	
<u>OFFICE OF SPACE TRACKING AND DATA SYSTEMS.....</u>										
255	Tracking and Data Acq.....	349,000	341,100	341,100	---	341,100	341,100	341,100	341,100	
	Operations.....	270,000	267,100	267,100	---	267,100	267,100	267,100	267,100	
	Systems Implementation.....	67,700	62,700	62,700	---	62,700	62,700	62,700	62,700	
	Advanced Systems.....	11,300	11,300	11,300	---	11,300	11,300	11,300	11,300	
	TOTAL, R&D.....	4,396,200	4,340,788	4,340,788	-4,500	4,336,288	4,336,288	4,302,888	4,336,288	
CoF Appropriation:										
	OSTS.....	11,717	11,717	11,717	---	11,717	11,717	11,717	11,717	
	OSS.....	---	---	---	---	---	---	---	---	
	OAST.....	43,291	43,291	43,291	---	43,291	43,291	43,291	43,291	
	OSTDS.....	2,150	2,150	2,150	---	2,150	2,150	2,150	2,150	
	Comptroller.....	57,842	57,842	57,842	---	57,842	57,842	57,842	57,842	
	TOTAL, CoF.....	115,000	115,000	115,000	---	115,000	115,000	115,000	115,000	
R&PM Appropriation.....										
	Basic submission.....	1,030,000	1,030,000	1,030,000	---	1,030,000	1,030,000	1,030,000	1,030,000	
	Proposed supplemental.....	---	---	51,400	-10,000	41,400	41,400	41,400	41,400	
	TOTAL, NASA.....	5,541,200	5,465,788	5,537,188	-14,500	5,522,688	5,522,688	5,489,288	5,522,688	

* Undistributed

Prepared by:
Associate Administrator/
Comptroller
Budget Operations Division
Code BTF-3 Ext. 58466

AUTHORIZING APPROPRIATIONS TO THE NATIONAL
 AERONAUTICS AND SPACE ADMINISTRATION

APRIL 22, 1980.—Committed to the Committee of the Whole House on the State
 of the Union and ordered to be printed

Mr. FURQUA, from the Committee on Science and Technology,
 submitted the following

REPORT

[To accompany H.R. 6413]

[Including cost estimate and comparison of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (H.R. 6413) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes, having considered the same, report favorably thereon with amendments (shown in italics in the bill accompanied by this report) and recommend that the bill, as amended, do pass.

The amendments are as follows:

Amend subsection 1(a) by changing the dollar amounts in the designated paragraphs as follows:

- (1) "Space Shuttle," strike "\$1,873,000,000" and insert "\$1,878,000,000";
- (2) "Space flight operations", strike "\$809,500,000" and insert "\$769,500,000";
- (4) "Physics and astronomy," strike "\$438,700,000" and insert "\$370,700,000";
- (7) "Space applications." strike "\$381,700,000" and insert "\$386,700,000";
- (9) "Aeronautical research and technology", strike "\$290,300,000" and insert "\$295,800,000";
- (10) "Space research and technology", strike "\$115,200,000" and insert "\$120,200,000"; and
- (12) "Tracking and data acquisition," strike "\$359,000,000" and insert "\$350,500,000".

Amend subsection 1(b), "Construction of facilities", by deleting paragraphs 4 and 10 and renumbering the other paragraphs accordingly. Other conforming amendments include: In section 2 "paragraphs (1) through (20)" should read "paragraphs (1) through (18)" and in section 3, "pursuant to paragraph (21)" should read "pursuant to (19)."

Amend subsection 1(c), "Research and program management", by striking out "\$1,047,154,000" and inserting "\$1,033,154,000".

In Section 1(d) on page 5, line 6, insert after the word "appropriations" the following "hereby authorized".

PURPOSE OF THE BILL

The purpose of the bill is to authorize appropriations to the National Aeronautics and Space Administration for fiscal year 1981 as follows:

Programs	Authorization, fiscal year 1981	Page No.
Research and development.....	\$4, 473, 500, 000	21
Construction of facilities.....	115, 500, 000	169
Research and program management...	1, 033, 154, 000	237
Total.....	\$5, 622, 154, 000	

COMMITTEE ACTIONS

RESEARCH AND DEVELOPMENT

SPACE SHUTTLE

NASA requested \$1,873,000,000 for the Space Shuttle program in fiscal year 1981. The funds will support the Shuttle design, development, test and evaluation activities, changes/system upgrading activities, and production activities for a four orbiter fleet. The Committee continues to believe that there is a requirement for a five orbiter fleet to accomplish critical civil and defense missions, to provide flexibility for exploitation of the orbiter capabilities and to provide a backup for any unforeseen loss of an orbiter vehicle. The traffic model for the early years is filled and as a result additional expendable launch vehicles are being required. Therefore, to maintain an option for the fifth space shuttle orbiter, the Committee recommends the addition of \$5,000,000 for procurement of long lead materials such as titanium resulting in a total recommended authorization for the Space Shuttle program of \$1,878,000,000 in fiscal year 1981.

SPACE FLIGHT OPERATIONS

In January 1980, NASA requested \$809,500,000 for Space Flight Operations programs in fiscal year 1981. The NASA FY 1981 Budget Amendment proposed reductions of \$42,000,000 as follows: \$10,000,000 reduction in Space Transportation System Operations Capability Development activities; \$2,000,000 reduction in Advanced Programs; \$2,000,000 reduction for Spacelab; and \$28,000,000 reduction for Space Transportation System Operations activities resulting in a revised request of \$767,500,000. The Committee disagrees in part and recommends a total authorization of \$769,500,000 for Space Flight Operations programs in fiscal year 1981 which reflects a net reduction of \$40,000,000 from the original request.

Space Transportation System Operations Capability Development.—The NASA revised fiscal year 1981 request for Space Transportation Systems Operations Capability Development activities is \$79,000,000. The budget amendment will reduce planned funding for the Inertial Upper Stage (IUS) from \$39,000,000 to \$29,000,000. This reduction is consistent with the deferral of the International Solar Polar Mission launch from 1983 to 1985. The first mission requiring a three-stage IUS will now be the Galileo Mission in 1984. The amended budget will support a revised development schedule consistent with the Galileo launch date. The revised schedule, however, will delay much of the NASA unique development activity until after the two-stage IUS development by the Department of Defense is completed, resulting in some loss of efficiency in the overall development effort.

The Committee has, for some time, supported the development of a

low thrust high specific impulse propulsion system. The Committee has included \$12,000,000 to begin the development of the Solar Electric Propulsion System, SEPS, to complement the capabilities of the space shuttle and the inertial upper stage. The solar electric propulsion system will substantially broaden the performance capabilities of current day chemical propulsion systems and should alleviate many of the schedule and performance problems associated with launch window constraints.

The Committee feels that this capability will enhance the integrity of the entire space program for applications such as orbital station keeping, orbital transfer, orbital debris cleanup and planetary transportation. However, the initiation of the SEPS development should not be viewed as a commitment to the Halley/Tempel II comet mission. The Committee included \$12,000,000 for initiation of the solar electric propulsion system resulting in a total recommended authorization of \$91,000,000 for Space Transportation System Operations Capability Development in fiscal year 1981.

Advanced Programs.—The NASA revised fiscal year 1981 budget request for Advanced Programs is \$8,800,000. The amended budget provides for definition activity on the highest priority potential near term space transportation system initiatives, but drastically reduces study effort on future systems, particularly those associated with operations in geosynchronous orbit. Reductions would delay effort on such areas as orbital transfer vehicle, advanced propulsion concepts, and geostationary platforms. This request reflects a significant decrease from \$13,000,000 in fiscal year 1980. The Committee continues to view with concern NASA's lack of emphasis on this activity which is vital to long range planning for future space opportunities. The Committee disagrees with the proposed reduction and recommends an additional increase of \$3,000,000 for advanced program studies in fiscal year 1981 and directs that these additional funds be used to support enhanced Phase B definition studies and technical development for the power extension package and the 25kw power module. The Committee notes that the solar electric propulsion system, the power extension package, and the 25kw power module use certain common technologies such as solar array and power processing technology and directs that conceptual studies and systems design should take advantage of this commonality in order to achieve program economies. The total recommended authorization for Advanced Programs is \$13,800,000 in fiscal year 1981.

Spacelab. The NASA revised fiscal year 1981 budget request for Spacelab is \$149,700,000. The amended budget will support development and delivery of the major Spacelab elements, but delivery of the Spacelab simulator will be delayed with resultant delay in crew training activities. Processing of Spacelab hardware, once it arrives from Europe will also be delayed. The Committee also notes that approximately 65 percent of the contract price for procurement of the second Spacelab is included in the fiscal year 1981 budget request. Although fully committed to procurement of the second Spacelab, the Committee recommends an additional reduction of \$15,000,000 resulting in a total authorization of \$134,700,000 for Spacelab in fiscal year 1981.

Space Transportation System Operations.— The NASA revised fiscal year 1981 budget request for Space Transportation Systems Operations is \$346,500,000. The budget amendment reflects deferral of procurement of hardware and of supporting activities consistent with delay of the International Solar Polar Mission and other planned flight schedule adjustments. The Committee recommends adoption of the revised budget request.

PHYSICS AND ASTRONOMY PROGRAM

NASA requested \$438,700,000 for Physics and Astronomy programs in fiscal year 1981. The Administration budget amendment reduced this request to \$346,600,000. The Committee reduced the original request by \$68,000,000 and recommends an authorization of \$370,700,000 for Physics and Astronomy in fiscal year 1981, in accordance with the following actions.

International solar polar mission (ISPM) development.—NASA requested \$82,600,000 for ISPM development in fiscal year 1981, and subsequently amended the request to \$39,600,000. The Committee agrees with the \$43,000,000 reduction for ISPM development activities which will result in approximately a two year delay in the launch schedule.

Shuttle/Spacelab payload development and mission management.—NASA requested \$72,100,000 for Shuttle/Spacelab payload development and mission management in fiscal year 1981, and amended the request to \$29,100,000. Agreeing in part with the amendment, the Committee reduced the original request by \$25,000,000 and recommends \$47,100,000 for these activities with direction that NASA assure continued effort in major facilities and equipment development and principal investigator instruments development.

Research and Analysis.—NASA requested \$42,800,000 for research and analysis in fiscal year 1981 and amended the request to \$36,700,000. The Committee disagrees with the amendment and recommends \$42,800,000 for research and analysis to assure effective support of flight projects.

PLANETARY EXPLORATION PROGRAM

NASA requested \$179,600,000 for Planetary Exploration in fiscal year 1981. Within this line item the Administration budget amendment reduced Mission Operations and Data Analysis by \$4,300,000. The Committee disagrees with the proposed amendment and recommends \$179,600,000 for planetary exploration in order to ensure continued collection and analysis of valuable scientific data from planetary spacecraft.

LIFE SCIENCES PROGRAM

NASA requested \$49,700,000 for Life Sciences in fiscal year 1981. Within this line item the Administration budget amendment proposed reductions in Life Sciences flight experiments by \$6,500,000 and Supporting Research and Technology activities by \$4,100,000. The Committee disagrees with the proposed amendment and recommends \$49,700,000 for Life Science in recognition of the importance of the United States resuming vital experimentation on the effects of spaceflight on humans.

SPACE APPLICATIONS

NASA originally requested \$381,700,000 for Space Applications programs in fiscal year 1981. The fiscal year 1981 NASA Budget Amendment proposed a revised budget request of \$356,700,000 with a number of increases and decreases as follows: Resource Observation Program—a \$30,000,000 increase for Landsat D, a deletion of \$16,000,000 for the Operational Land Observing System, and a reduction of \$6,000,000 for Resource Observations Applied Research and Data Analysis; Environmental Observations—a reduction of \$6,500,000 for Environmental Observations Applied Research and Data Analysis, a reduction of \$6,500,000 for Environmental Observations Shuttle/Spacelab Payload Development, a reduction of \$1,500,000 for the Operational Satellite Improvement Program, a reduction of \$12,000,000 for the Earth Radiation Budget Experiment, and a reduction of \$1,500,000 for the Halogen Occultation Experiment; and a reduction of \$5,000,000 for Technology Transfer activities. The Committee recommends a total authorization of \$386,700,000 for Space Applications programs in fiscal year 1981.

Resource Observations.—The NASA revised fiscal year 1981 budget request includes \$170,300,000 for Resource Observation programs which reflects an increase of \$8,000,000 over the original request of \$162,300,000. The Committee recommends a total authorization of \$182,600,000 for Resource Observation programs in fiscal year 1981.

—Landsat D: The revised budget request includes \$94,300,000 for Landsat D which reflects an increase of \$30,000,000 over the original budget request. The \$30,000,000 increase stems largely from projected increases in the cost of development of the Thematic Mapper at Hughes Aircraft Company and from projected increases in both the space and ground systems being developed by the General Electric Company. The Committee notes that total cost estimates for the Thematic Mapper instrument have more than tripled since initiation of the project and that total cost estimates for the space and ground systems are increasing. Continuing schedule delays of Landsat D threaten the President's commitment to provide data continuity to the user community. In approving this increase the Committee directs NASA to consider the negotiation of a total fixed price to completion for the thematic mapper development and to develop a plan for launch of Landsat D at an early date with the multispectral scanner only. This plan should address launch schedule, program costs, impact on ongoing programs such as AgRISTARS, and impact on the President's commitment to an operational Landsat system and should be presented to the Committee by June 15, 1980. However, launch of the Landsat D with the multispectral scanner only should not be viewed as lessening the importance of completing the thematic mapper development for launch at a later date. The Committee recommends approval of the increase of \$30,000,000 for Landsat D for a total recommended authorization of \$94,300,000 in fiscal year 1981.

—Operational Land Observing System: The fiscal year 1981 budget amendment would delete \$16,000,000 for an Operational Land Observing System. Deletion of these activities will defer planned improvements to the reliability of the existing and planned ground systems to

the level required for an operational system. It will also defer procurement of long lead items for a follow-on Landsat type spacecraft and increase the risk of losing continuity of coverage during the last half of the decade. The Committee recommends authorization of \$9,300,000 in fiscal year 1981 for Operational Land Observing System activities for improvements to the reliability of existing and planned ground systems, definition studies of an operational system including private sector involvement, and advanced sensor development activities.

—Resource Observations Applied Research and Data Analysis: The NASA revised fiscal year 1981 budget request includes \$12,800,000 for Resource Observations Applied Research and Data Analysis activities. The budget amendment would have major impacts on programs to develop and test remote sensing and information extraction techniques in both water and land resource management and would eliminate fundamental research related to understanding the effect of atmospheric conditions on remote sensing observations. The Committee recommends a total authorization of \$15,800,000 in fiscal year 1981 for Resource Observations Applied Research and Data Analysis.

Environmental Observations.—The NASA fiscal year 1981 revised request for Environmental Observation programs is \$109,600,000 which reflects a \$28,000,000 reduction from the original request. The Committee recommends a total authorization of \$119,600,000 for Environmental Observation Programs in fiscal year 1981 reflecting a \$18,000,000 reduction in the original request.

—Environmental Observations Applied Research & Data Analysis: The budget amendment reduction of \$6,500,000 would delay development of observing systems and models planned to aid in predicting global weather and climate patterns and severe storms; reduce activities in observing, modeling and predicting tropospheric and stratospheric air quality; and defer activities designed to study ocean processing. The Committee recommends a total authorization of \$54,900,000 for Environmental Observations Applied Research and Data Analysis recognizing the importance of the efforts to development observing systems and models to aid in predicting and forecasting weather and climate patterns and severe storms.

—Environmental Observations Shuttle/Spacelab Payload Development: The NASA fiscal year 1981 revised budget request includes \$1,700,000 for Environmental Observations Shuttle/Spacelab Payload Development. This budget change recognizes a new program direction in the atmospheric cloud physics lab activities which has occurred since the budget submission and which included termination of hardware development. In addition, development of such payloads as the microwave limb sounder and the high resolution doppler interferometer will be delayed by one year. The Committee recommends an authorization of \$6,700,000 in these activities in FY 1981.

—Operational Satellite Improvement Program: The NASA fiscal year 1981 revised budget request includes \$9,200,000 for the Operational Satellite Improvement Program. The reduction of \$1,500,000 will require a delay in demonstration activities for the visible and infrared spin scan radiometer atmospheric sounder related to severe storm prediction. It will also be necessary to delay activities to develop

new or improved user terminals for operational data. The Committee recommends adoption of the revised fiscal year 1981 budget request.

—Earth Radiation Budget Experiment: The NASA fiscal year 1981 revised budget request includes \$17,000,000 for the Earth Radiation Budget Experiment. The impact of the budget amendment is a slip of approximately one year in the availability of the spacecraft and instruments to measure temporal and spatial variations in the radiation balance over the globe. The Committee recommends adoption of the revised budget request which reflects a \$12,000,000 reduction from the original request.

—Halogen Occultation Experiment: The NASA fiscal year 1981 revised budget request includes \$4,500,000 for the Halogen Occultation Experiment (HALOE). The budget amendment slips HALOE development activities by approximately one year and, therefore, delays the measurement of Global Stratospheric concentration profiles of key chemical species involved in ozone destruction. The Committee recommends adoption of the revised budget request which reflects a \$1,500,000 reduction from the original request.

Technology Transfer.—The NASA fiscal year 1981 revised budget request includes \$7,500,000 for Technology Transfer activities which reflects a \$5,000,000 reduction from the original request. The budget amendment would terminate or lower funding for several application systems verification and transfer activities and defer initiation of new activities. Regional remote sensing applications projects underway or planned with 30 states would be reduced with stretchouts on some of the remaining 18 projects. User outreach and communications tasks would be reduced and some university grants cancelled. The Committee recognizes the importance of technology transfer activities and recommends approval of \$12,500,000 for Technology Transfer activities in fiscal year 1981.

Materials Processing in Space.—NASA requested \$22,200,000 in fiscal year 1981 for Materials Processing in Space Activities. Within this sub-line item, OMB reduced NASA's request by \$2,900,000, funds which would have been used to support development of an analytical float zone experiment to study the effect of convection flows on crystal growth. The Committee recognizes the potential large positive contribution to the Nation's economy from the manufacture in space of new, innovative, and better products. Floating zone crystal growth is the most promising method for producing large, highly perfect and uniformly doped semiconductor crystals. Therefore, the Committee recommends the addition of \$2,700,000 resulting in a total recommended authorization of \$24,900,000 for Materials Processing in Space programs.

TECHNOLOGY UTILIZATION

The original NASA fiscal year 1981 budget request included \$13,100,000 for Technology Utilization whereas the revised budget request includes \$12,100,000. The budget amendment would force a delay in new and attractive opportunities for biomedical applications. The Committee recommends a total authorization of \$13,100,000 for Technology Utilization activities in fiscal year 1981 recognizing the important contribution of the technology utilization program to innovation.

AERONAUTICAL RESEARCH AND TECHNOLOGY

NASA initially requested \$290,300,000 for Aeronautical Research and Technology. This amount represented a 5.8-percent decrease, in actual dollars, from the current plan for fiscal year 1980. A revised request for \$275,300,000 was submitted subsequently. This amount represents a further decrease, to 10.7 percent. The Committee understands that the first decrease is largely explained by the tail-off of certain elements in the Aircraft Energy Efficiency (ACEE) Program. The second decrease was caused by a need to balance the Federal budget.

The Committee strongly supports the need for a balanced budget and endorses the fact that NASA must take its share of the cuts. Tail-off of the ACEE Program, however, should be viewed as an opportunity to undertake certain new high priority research efforts, not as a means to further trim the budget.

Last year the Committee requested a White Paper on future program options. Several very worthwhile new thrusts were identified. Yet few were included in the fiscal year 1981 request. The Committee considers this regrettable given the twin concerns about national security and foreign competition in civil aircraft.

Therefore, the Committee increases the requested amount by \$20,500,000 for six high priority augmentations: Variable Cycle Engine High Temperature Validation (\$4.5 million), High Performance Flight Experiments (\$5.5 million), High Speed Structures (\$4 million), Alternate Fuels Utilization (\$4 million), Alternate Alloy Studies (\$1 million), and General Aviation Propeller (\$1.5 million). The total authorization for Aeronautical and Research and Technology is \$295,800,000 which is still 4 percent less than the fiscal year 1980 amount.

SPACE RESEARCH AND TECHNOLOGY

The NASA original fiscal year 1981 budget request included \$115,200,000 for Space Research and Technology. The NASA fiscal year 1981 Budget Amendment proposed reductions of \$5,000,000 as follows: a \$3,100,000 reduction in Research and Technology Base Activities and a \$1,900,000 reduction in Systems Technology Programs. The Committee recommends a total authorization of \$120,200,000 for Space Research and Technology programs in fiscal year 1981.

Research and Technology Base.—The NASA fiscal year 1981 revised budget request includes \$100,300,000 for Research and Technology Base activities. Research and technology activities in disciplines relevant to assuring future capabilities in space such as materials, information systems, power and propulsion will be reduced about three percent from the planned level, and in terms of real effort will be about ten percent below the FY 1980 level. At the request of the Committee, NASA is currently developing a plan to sustain a national chemical propulsion capability including an assessment of what portion of the existing industrial base that will be maintained by their plan. The Committee added \$3,000,000 to enhance advanced chemical propulsion technology activities and to accelerate

expander cycle dual-thrust engine technology. The Committee also added \$2,000,000 for enhancement of space platform and large space structures advanced technology activities. The Committee recommends a total authorization of \$108,400,000 for Research and Technology Base programs in fiscal year 1981.

Systems Technology Programs.—The NASA fiscal year 1981 revised budget requests includes \$7,800,000 for Systems Technology programs which reflects a reduction of \$900,000 in Information Systems Technology and a reduction of \$1,000,000 in Spacecraft Systems Technology. NASA's in-house 30/20 gigahertz and narrow band antenna design activities which support experimental communication satellite technology would be delayed. Launch of the Long-Duration Exposure Facility would be delayed by a minimum of one year with some resultant difficulties related to program management continuity due to loss of project and experiment personnel who are needed to complete final checkout, operations, data analysis, and integration. The Committee recommends adoption of the original budget request of \$9,700,000 for Space Technology programs in fiscal year 1981.

TRACKING AND DATA ACQUISITION

NASA's original request included \$359,000,000 for Tracking and Data Acquisition programs in fiscal year 1981. The NASA fiscal year 1981 revised request includes a reduction of \$1,500,000 in Operations and a reduction of \$8,500,000 in System Implementation activities. The Committee recommends the pending budget request of \$271,500,000 for Operations and adopts the \$8,500,000 reduction in funds for Systems Implementation activities resulting in a total recommended authorization of \$350,500,000 for Tracking and Data Acquisition programs in fiscal year 1981. The Committee disagrees with the \$1,500,000 reduction from operations in order to reduce the risk of interrupting in-orbit spacecraft support and agrees with the \$8,500,000 reduction from Systems Implementation which delays the replacement of elements of existing computer facilities.

CONSTRUCTION OF FACILITIES

NASA requested \$120,000,000 for Construction of Facilities projects in fiscal year 1981. The Committee deferred a request of \$1,500,000 for modifications to various buildings for energy conservation at the Jet Propulsion Laboratory and a request of \$3,000,000 to initiate decommissioning of a nuclear reactor facility at Plum Brook Station, Lewis Research Center, resulting in a total recommended authorization of \$115,500,000 for Construction of Facilities projects in fiscal year 1981.

RESEARCH AND PROGRAM MANAGEMENT

NASA's original budget request included \$1,047,154,000 for Research and Program Management in fiscal year 1981. The Administration's budget amendment proposed a reduction of \$14,000,000 which will delay the filling of civil service vacancies and will reduce installation support activities. The Committee recommends adoption of the revised budget request resulting in a total authorization of \$1,033,154,000 for Research and Program Management in fiscal year 1981.

LANGUAGE AMENDMENT

Section 1(d).

The committee amended this section to conform with rule 21, clause 5 of the Rules of the House of Representatives.

COMMITTEE VIEWS

FUTURE SPACE PROGRAMS

At the beginning of a new decade, the Committee considers it an appropriate time to review space policies and goals and our national planning for the space program. If the Nation is to realize the full potential of space science and technology, this review should aim at bringing about a long term approach to planning our space activities.

In 1974, NASA undertook a planning study, "Outlook for Space," to examine the civilian role of the U.S. space program until the year 2000. The report, "A Forecast of Space Technology 1980-2000" was an important element of that study and noted that "... we are entering a new space era wherein space activities and space science and technology are key elements in the survival, the dignity, and the aspirations of the human race." This Administration has made several recent partial efforts to unify space policy and give direction to the new space era, including PD-37 of June, 1978; the White House Fact Sheet on U.S. Civil Space Policy of October, 1978; and the President's November, 1979 statement on land remote sensing activities. Although these statements all address important issues in space policy, the Committee believes that they are insufficient and inadequate to provide a long-term perspective for a coherent space program.

The Committee notes two important characteristics of our future space activities which will require improved planning and coordination. The first is the increasing internationalization of space activities. The expense and technical complexity of many future space ventures will require that joint programs be conducted, and the emergence of new space capabilities abroad will make such cooperation feasible.

The second is the increasing diversity of applications of space technology, as reflected in a multidisciplinary approach to such activities as remote sensing which provide services to a more and more varied user community. This evolution of space applications calls for the development of integrated programs to serve user needs and to aggregate the user community and will require substantial interagency cooperation, possibly including new institutional arrangements. The Committee believes that NASA and the Administration need to take cognizance of these two trends in developing and implementing an enhanced long-range planning capability.

NASA should consider these issues in more depth during the NASA New Directions Symposium planned for June 1980.

EXPENDABLE LAUNCH VEHICLE

The Committee supports NASA's decision to extend Delta launch vehicle operations for backup and alternative launch capability dur-

ing the period of transition to Space Shuttle Operations. NASA has not established similar provisions for user payloads which require performance in excess of the planned upgraded Delta vehicle and which can be accommodated by the Atlas Centaur launch vehicle. The Atlas Centaur production will begin phasing-out early in 1980.

The Committee recommends that NASA review the needs of potential domestic and international Space Shuttle users, assess the impact of extending Atlas Centaur launch capability and Centaur upper stage capability and assess the need for revisions to existing launch vehicles reimbursement policy. NASA should give particular consideration to effects on user commitments to Space Shuttle, and to the overall impact on national launch vehicle capability and national economies. NASA should report these findings to the Committee by August 1, 1980.

PLANETARY EXPLORATION

Planetary exploration continues to be a vital component of the national space program. Substantial new scientific knowledge is being acquired of the chemical composition, geology and atmospheres of our neighboring planets which is providing insight into the origin and evolution of the solar system.

Following Voyager 2 encounter with Saturn in 1981 there is more than a 50 month gap in planetary imaging data until the Voyager 2 encounter with Uranus in early 1986. The Galileo is the only planetary program currently under development which due to the delay in Space Shuttle launch will not encounter Jupiter until mid 1986.

Although NASA's Planetary Exploration Program is currently funded at an adequate level to support ongoing programs, the Committee is concerned that further delays in planetary new starts will have detrimental effects on future national capabilities. NASA should provide additional efforts in new start definitions for fiscal year 1982 which ensure the continued vigor of the planetary exploration program. Particular consideration should be given to planetary options including definition of a cometary mission and a Venus Orbiting Imaging Radar (VOIR) mission.

CIVIL REMOTE SENSING SYSTEMS

The Committee commends the Office of Science and Technology Policy for their leadership in evolving the recent policy decisions related to civil remote sensing systems and applauds the designation of a lead agency to manage all civil operational satellite activities. The commitment to evolve an operational Landsat system, to further private sector opportunities in civil land remote sensing activities, to continue the policy of providing Landsat data to foreign users and

promoting development of complementary and cooperative nationally operated satellite systems are necessary and important aspects of this policy.

The Committee acknowledges the interagency programs including the National Oceanic Satellite System (NOSS) and AgRISTARS which reflects a continuing trend toward interagency cooperation as well as shared funding which should result in a more effective transition from experimental research and development systems to operational systems.

However, the Committee is concerned that our nation is not making maximum utilization of remote sensing technology for assisting developing countries. Increased emphasis is needed to assure that the competing remote sensing systems which are being developed by several nations are also complementary in that they provide information in data formats that can be used by all nations.

SPACE COMMUNICATIONS RESEARCH AND DEVELOPMENT

The Committee notes with satisfaction the recent re-entry of NASA into space communications research and development. The importance of extending existing frequency and orbit utilization is highlighted by the recently completed World Administrative Radio Conference. The Committee urges that NASA, in consultation with other appropriate agencies and departments, give careful attention to the development of a comprehensive strategy for the future international meetings in telecommunications which are to follow the WARC.

The Committee observes that a recent report of the National Academy of Science¹ pointed out a need for multi-beam, large antenna satellites, to be used in conjunction with low-gain inexpensive earth stations, in meeting public service needs in such areas as education, health care, and emergency services. The report concluded that "the technology to meet such needs is often not provided by the private sector because of the technical and cost risks involved." The Committee directs NASA to ensure, in appropriate actions with NTIA and other agencies, and with the private sector, that the needs of the public service sector are given sufficient consideration in its satellite communications research and development.

TECHNOLOGY UTILIZATION

The Committee supports continued and aggressive action by the NASA Technology Utilization program to demonstrate secondary applications of aeronautical and space technology through cooperative efforts with other agencies. These efforts should be further encouraged at Federal, State and local levels to ensure that the full potential of technology applications are assessed and incorporated for the broadest benefits to the public and private sectors.

The proven success of applications projects expressed in terms of social benefit and cost benefit analyses provides the recognition that expanding these activities will provide still further dividends from the technology developed on NASA programs. NASA should, therefore, consider new and innovative approaches to broadening contact

with public and private user needs. In this regard, the participation of Industrial Application Centers and State Technology Application Centers in application projects and cooperative programs should be reviewed and fully assessed by NASA.

The Committee is encouraged with successes during the past year of the Technology Utilization applications teams, particularly those of the bio-medical team. NASA has used this approach to address national problems with the appropriate NASA technology which might have application. However, recent White House policy papers have enunciated particular problems faced by small and minority businesses. In light of this new White House policy, the Committee suggests that the agency consider application team approaches to identifying NASA technologies which could address the needs of innovative small and minority firms located in rural, economically depressed regions and assist these firms in commercializing space technology.

Patent disclosures represent an important mechanism for transferring technology. Although NASA policy gives emphasis to licensing the agency's patents to small businesses and minority enterprises in economically depressed, low-income areas, very little is being done to actively promote licensing of NASA patents by this segment of private industry. Further, the agency has recorded a relatively poor performance in commercializing the patents it holds, even though the NASA licensing policy is more flexible than that of most other federal agencies. Consequently, the Committee recommends NASA develop new approaches for increasing the commercialization of the patents which the agency holds, particularly in the above cited areas of the economy.

NASA should provide to the Committee by December 15, 1980, a report on the progress of implementing these recommendations.

PILOT FATIGUE AND CIRCADIAN DESYNCHRONOSIS RESEARCH

The Committee feels that NASA should place added emphasis on its efforts to determine what research is needed on the effects of pilot fatigue and circadian desynchronization (jet lag) on aviation safety. Three recent air carrier accidents (with a total of 218 fatalities) may have been caused by a deterioration in pilot performance associated with these phenomena. NASA should examine existing knowledge and develop a research program plan aimed at providing a scientific basis for preventing future accidents of this type. The Administrator should report his findings and research plan to the Committee by September 30, 1980.

REIMBURSABLE ACTIVITIES

The Committee supports NASA's technology work for other agencies when such work has a high degree of commonality with their aeronautics and space activities. An example is development of advanced automotive propulsion systems for the Department of Energy.

To manage these efforts and to perform certain supporting research activities, NASA dedicates a substantial number of in-house civil service employees which in Fiscal Year 1981 is projected to reach 480 personnel. The funds to pay the salaries and benefits of these

¹ Committee on Satellite Communications—Federal Research and Development for Satellite Communications, 1977.

employees come from the benefitting agency although the personnel slots do not. NASA is still bound by the overall ceiling as established by the Office of Management and Budget.

This policy has adverse effects in that it requires that reimbursable work be done at the expense of other aeronautics and space research, and limits the amount of help that NASA can give to outside agencies.

Recognizing this, the Committee urges the Administrator of NASA to increase his future requests for personnel authorizations for this purpose. In addition, he should prepare advocacy packages jointly with the benefitting agencies to support these requests.

REPROGRAMMING AUTHORITY

During the past year several questions arose with regard to the interpretation of NASA's reprogramming authority including restructuring of the Galileo program, procurement of the manned maneuvering unit, procurement of a replacement aircraft, and upgrading of the Delta launch vehicle.

The Committee requests that NASA reassess existing agency policy with regard to reprogramming authority and submit revised policy guidelines as to what type of actions require reprogramming. This policy should address the need for written legal opinions by the General Counsel on all reprogramming actions and clarification of when new procurements and program restructuring constitute a reprogramming action.

Funds included in the Shuttle request under Changes/Systems Upgrading should not be used for other than Space Shuttle related activities. NASA should provide the Committee with a list of the Shuttle equipment which it feels could be procured under this authorization as well as Shuttle equipment which would require reprogramming action. NASA should keep the Committee informed on a quarterly basis with regard to the status of these Changes/Systems Upgrading funds.

FULLY AND CURRENTLY INFORMED

It has been the continuing position of the Committee that NASA should keep the Congress fully and currently informed as to the impact on the institutional base of major management and technical actions required to fulfill program goals and objectives as outlined in the Space Act of 1958, as amended, and as detailed in annual authorizations. It is the view of the Committee that NASA should review its current practices and procedures to assure that the full intent of this prior guidance is being accomplished.

EXPLANATION OF THE BILL

RESEARCH AND DEVELOPMENT

SUMMARY

Programs	Authorization, fiscal year 1981	Page No.
1. Space Shuttle.....	1, 878, 000, 000	21
2. Space Flight Operations.....	769, 500, 000	37
3. Expendable Launch Vehicles.....	55, 700, 000	52
4. Physics and Astronomy.....	370, 700, 000	54
5. Planetary Exploration.....	179, 600, 000	67
6. Life Sciences.....	49, 700, 000	74
7. Space Applications.....	386, 700, 000	77
8. Technology Utilization.....	13, 100, 000	115
9. Aeronautical Research and Tech- nology.....	295, 800, 000	117
10. Space Research and Technology..	120, 200, 000	142
11. Energy Technology.....	4, 000, 000	156
12. Tracking and Data Acquisition...	350, 500, 000	156
Total.....	4, 473, 500, 000	

CONSTRUCTION OF FACILITIES

SUMMARY

Projects	Authorization FY 1981	Page No.
1. Construction of Man-Vehicle Sys- tems Research Facility, Ames Research Center.....	\$7, 480, 000	172
2. Modification of Steam Ejector System and thermal protection Laboratory, Ames Research Center.....	2, 300, 000	173
3. Modification of Unitary Plan Wind Tunnel, Ames Research Center.....	3, 400, 000	174
4. Modification to various buildings for seismic protection, Jet Pro- pulsion Laboratory.....	2, 000, 000	175

CONSTRUCTION OF FACILITIES—Continued

SUMMARY—Continued

Projects	Authorization FY 1981	Page No.
5. Rehabilitation of High Temperature Hot Water System, Zone 2, industrial area, John F. Kennedy Space Center.....	760,000	176
6. Modifications for Avionics Integration Research Laboratory, Langley Research Center.....	5,756,000	177
7. Modifications to Aircraft Landing Dynamics facility, Langley Research Center.....	15,000,000	178
8. Rehabilitation and modification of Gas Dynamics Laboratory, Langley Research Center.....	2,000,000	180
9. Modification to Central Air System, various buildings, Lewis Research Center.....	7,655,000	181
10. Rehabilitation of electrical switchgear, Engine Research Building, Lewis Research Center.....	1,700,000	183
11. Rehabilitation of roof, phase II, building 103, Michoud Assembly Facility.....	3,800,000	184
12. Rehabilitation of chilled water system, Michoud Assembly Facility.....	782,000	184
13. Various locations as follows:		
(A) Modification of 26-meter antenna, Canberra, Australia.....	1,200,000	185
(B) Replacement of antenna azimuth radial bearing, Goldstone, Calif.....	950,000	186
14. Space Shuttle facilities at various locations as follows:		
(A) Modification of manufacturing and final assembly facilities for external tanks, Michoud assembly Facility.....	5,400,000	186
(B) Modifications to Solid Rocket Motor Manufacturing and assembly Facilities Thiokol Plant, Wasatch, Utah.....	2,700,000	188

CONSTRUCTION OF FACILITIES—Continued

SUMMARY—Continued

Projects	Authorization FY 1981	Page No.
(C) Minor Shuttle—unique projects (various locations).....	2,000,000	189
15. Space Shuttle Payload Facilities: Rehabilitation and modification for payload ground support operations, John F. Kennedy Space Center.....	1,617,000	189
16. Repair of facilities at various locations, not in excess of \$500,000 per project.....	15,000,000	190
17. Rehabilitation and modification of facilities at various locations, not in excess of \$500,000 per project.....	20,000,000	205
18. Minor construction of new facilities and additions to existing facilities at various locations, not in excess of \$250,000 per project.....	4,000,000	225
19. Facility planning and design.....	10,000,000	232
Total.....	\$115,500,000	

RESEARCH AND PROGRAM MANAGEMENT, \$1,033,154,000

The Research and Program Management appropriation funds the performance and management of research, technology and test activities at NASA installations, and the planning, management and support of contractor research and development tasks necessary to meet the Nation's objectives in aeronautical and space research. Objectives of the efforts funded by the Research and Program Management appropriation are to (1) provide the technical and management capability of the civil service staff needed to conduct the full range of programs for which NASA is responsible, (2) maintain facilities and laboratories in a state of operational capability and manage their use in support of research and development programs, and (3) provide effective and efficient technical and administrative support for the research and development programs. For FY 1981, an appropriation of \$1,033,154,000 is requested.

More than 22,500 civil service personnel at ten installations and Headquarters are funded by the Research and Program Management appropriation. This civil service workforce is NASA's most important resource, the strength on which the future of space and aeronautics research activities depend. Seventy-five percent of the Research and

Program Management appropriation is needed to provide for salaries and related costs of this civil service workforce. About two percent is for travel which is vital to manage successfully the Agency's in-house and contracted programs. The remaining amount of the Research and Program Management appropriation provides for the research, test and operational facility support, and for related goods and services necessary to operate successfully the NASA installations and to accomplish efficiently and effectively NASA's approved missions.

Each of the ten NASA installations are assigned certain principal roles of fundamental importance in meeting NASA's overall program goals. These roles reflect the intrinsic competence of the installations on the basis of demonstrated capabilities and capacities. They are summarized as follows:

Ames Research Center.—Principal roles are short haul aircraft and rotorcraft systems technology, computational fluid dynamics, planetary probes, and life sciences.

Dryden Flight Research Center.—Principal roles are aeronautical flight testing, research and operations, as well as providing a contingency landing site for Space Shuttle flights.

Goddard Space Flight Center.—Principal roles are the development and operation of earth orbital flight experiments and automated spacecraft to conduct scientific investigations and demonstrate practical applications; the management of the tracking and data acquisition activities for earth orbital missions; and management of the Delta launch vehicle program.

Johnson Space Center.—Principal roles are management of the integrated Space Shuttle program and the Orbiter development project; astronaut and mission specialist selection and training; Space Shuttle mission planning, operation and control; and application of remote sensing to agricultural assessments and other earth resources uses.

Kennedy Space Center.—Principal roles are the launch of payloads on expendable launch vehicles; the launch of Space Shuttle development and test flights; and preparation for the operational phase of the Space Transportation System.

Langley Research Center.—Principal roles are long haul aircraft systems technology, emphasizing fuel conservation, safety and environmental effects; aerospace structures technology; environmental quality monitoring by remote sensing; and advanced space systems technology.

Lewis Research Center.—Principal roles are aeronautical and space propulsion technology; space communications research and technology; space and terrestrial energy systems research and technology; and management of the Centaur expendable launch vehicle program.

Marshall Space Flight Center.—Principal roles are management of the Space Shuttle main engine, solid rocket booster and external tank projects; management of NASA's development activities on the Space-lab and Inertial Upper Stage projects; management of large automated spacecraft projects such as the Space Telescope and the High Energy Astronomy Observatory; experiments in materials processing in space; and solar heating and cooling technology development and verification for the Department of Energy.

National Space Technology Laboratories.—Principal roles are the support of Space Shuttle engine development and testing; regional earth resources research and technology transfer; and support functions for other Government agencies located there.

Wallops Flight Center.—Principal roles are management and launch of sounding rockets and balloons; and operation of an instrumented flight range for aeronautical and space research.

The 1981 budget provides the necessary resources to apply these in-house capabilities to appropriate program activities. Detailed data on funding requirements is provided in the section on each installation. A summary description of, and the funding required by functional category, are as follows:

SUMMARY OF THE FISCAL YEAR 1981 BUDGET PLAN BY FUNCTION

Personnel and related costs.....	\$779,991,000
Travel.....	20,825,000
Facilities services.....	124,971,000
Technical services.....	47,496,000
Management and operations support.....	73,871,000
Total.....	1,047,154,000
Budget Revision.....	-14,000,000
Total.....	1,033,154,000

SUMMARY OF THE FISCAL YEAR 1981 BUDGET PLAN BY INSTALLATION

Johnson Space Center.....	\$170,688,000
Kennedy Space Center.....	141,385,000
Marshall Space Flight Center.....	160,377,000
National Space Technology Laboratories.....	5,108,000
Goddard Space Flight Center.....	139,335,000
Wallops Flight Center.....	18,977,000
Ames Research Center.....	71,469,000
Dryden Flight Research Center.....	21,681,000
Langley Research Center.....	119,145,000
Lewis Research Center.....	101,360,000
Headquarters.....	97,629,000
Total.....	1,047,154,000
Budget Revision.....	-14,000,000
Total.....	1,033,154,000

SECTIONAL ANALYSIS

A BILL To authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes

Section 1

Subsections (a), (b), and (c) would authorize to be appropriated to the National Aeronautics and Space Administration funds, in the total amount of \$5,622,154,000, as follows: (a) for "Research and development," a total of 12 program line items aggregating the sum of \$4,473,500,000; (b) for "Construction of facilities," a total of 19 line items aggregating the sum of \$115,500,000; and (c) for "Research and program management," \$1,033,154,000. Subsection (c) would also authorize to be appropriated such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.

Subsection 1(d) would authorize the use of appropriations for "Research and development" without regard to the provisions of subsection 1(g) for: (1) items of a capital nature (other than the acquisition of land) required at locations other than NASA installations for the performance of research and development contracts; and (2) grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities. Title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Moreover, each such grant shall be made under such conditions as the Administrator shall find necessary to insure that the United States will receive benefit therefrom adequate to justify the making of that grant.

In either case, no funds may be used for the construction of a facility in accordance with this subsection, the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator notifies the Speaker of the House, the President of the Senate and the specified committees of the Congress of the nature, location, and estimated cost of such facility.

Subsection 1(e) would provide that, when so specified and to the extent provided in an appropriation Act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) contracts for maintenance and operation of facilities, and support services may be entered into under the "Research and program management" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

Subsection 1(f) would authorize the use of not to exceed \$25,000 of the "Research and program management" appropriation for scientific

consultations or extraordinary expenses, including representation and official entertainment expenses, upon the authority of the Administrator, whose determination shall be final and conclusive.

Subsection 1(g) would provide that of the funds appropriated for "Research and development" and "Research and program management," not in excess of \$75,000 per project (including collateral equipment) may be used for construction of new facilities and additions to existing facilities, and for repairs, rehabilitation, or modification of facilities.

Section 2

Section 2 would authorize upward variations of the sums authorized for the "Construction of facilities" line items (other than facility planning and design) of 10 per centum at the discretion of the Administrator or his designee, or 25 per centum following a report by the Administrator or his designee to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the circumstances of such action, for the purpose of meeting unusual cost variations. However, the total cost of all work authorized under these line items may not exceed the total sum authorized for "Construction of facilities" under subsection 1(b), paragraphs (1) through (18).

Section 3

Section 3 would provide that not more than one-half of 1 per centum of the funds appropriated for "Research and development" may be transferred to the "Construction of facilities" appropriation and, when so transferred, together with \$10,000,000 of the funds appropriated for "Construction of facilities," shall be available for the construction of facilities and land acquisition at any location if the Administrator determines (1) that such action is necessary because of changes in the aeronautical and space program or new scientific or engineering developments, and (2) that deferral of such action until the next authorization Act is enacted would be inconsistent with the interest of the Nation in aeronautical and space activities. However, no such funds may be obligated until 30 days have passed after the Administrator or his designee has transmitted to the Speaker of the House, the President of the Senate and the specified committees of Congress a written report containing a description of the project, its cost, and the reason why such project is necessary in the national interest, or each such committee before the expiration of such 30-day period has notified the Administrator that no objection to the proposed action will be made.

Section 4

Section 4 would provide that, notwithstanding any other provision of this Act—

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Technology or the Senate Committee on Commerce, Science, and Transportation;

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by subsections 1(a) and 1(c); and,

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee,

unless (A) a period of 30 days has passed after the receipt by the Speaker of the House, the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Section 5

Section 5 would express the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

Section 6

Section 6 would provide that the Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1981."

COST AND BUDGET DATA

The bill will authorize appropriations for fiscal year 1981 in the amount of \$5,622,154,000. In accordance with the requirements of Rule XIII, clause 7 of the Rules of the House of Representatives, the Committee's estimate for the next five years of the NASA budget request is as follows:

Fiscal year—	
1981	\$5,622,154,000
1982	5,534,500,000
1983	5,063,500,000
1984	4,163,300,000
1985	3,624,600,000

These estimates do not include provisions for any new program or program augmentation that may be recommended nor do they include any provisions for administrative adjustments that may be required.

EFFECT OF LEGISLATION ON INFLATION

In accordance with Rule XI, Clause 2(1)(4) of the Rules of the House of Representatives this legislation is assessed to have no adverse long-run inflationary effects on prices and cost in the operation of the national economy. NASA expenditures are labor intensive, with approximately 85 percent of spending directly for jobs and the remainder for materials. NASA employs about 29,000 civil servants and supports about 117,000 contractor employees. Assuming a multiplier effect of 2.5, the total, short-run employment effect on the U.S. economy is about 350,000 jobs. This represents less than one-half of one percent of the total civilian labor force in the U.S.—far too small to have a significant national effect, although there could be small industrial and regional employment and price changes influenced by NASA expenditures.

The most significant economic effects of NASA spending are the long-run productivity advances from new technologies developed for the space and aeronautics programs. Many direct advances in communications satellites, improved aircraft (including more energy efficient aircraft), remote sensing satellites, and other innovations have both improved the productive capacity of industry and stimulated the development and growth of many new businesses. Indirectly, through the development and dissemination of advanced technologies to U.S. firms, the spinoffs from the space and aeronautics programs have been applied in virtually every sector of the economy.

Although it is difficult to assess the results of the various macro-economic studies of the effects of NASA spending on GNP, it is clear from analyses done by the Midwest Research Institute, Chase Econometrics, Inc., and others, that NASA high technology expenditures have returned more to the economy in substantial and long-lasting productivity gains than has been spent. Since these gains are through spinoff commercial advances, they are "extra" returns above and beyond the primary goal of NASA programs: the successful completion of the various R&D mission assignments. Therefore, any gains which show positive returns to GNP in the long-run indicate a non-inflationary, significant return to the citizens of the U.S.

CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3 of rule XIII of the Rules of the House of Representatives the following statement is made with regard to changes in existing law made by the bill. The bill, as reported, makes no changes in existing law.

OVERSIGHT FINDINGS AND RECOMMENDATIONS

Pursuant to clause 2(1)(3)(A), rule XI, and under the authority of rule X, clause 2(b)(1) and clause (3)(f), of the Rules of the House of Representatives the following findings and recommendations are under consideration by the Committee on Science and Technology:

(EXCERPTED FROM PAGES (IX)-(XI), SPACE SHUTTLE 1980. COMMITTEE ON SCIENCE AND TECHNOLOGY, SERIES AA, JANUARY 1980

1. Supplemental funding for fiscal year 1980 is requisite to accomplishing a first manned orbital flight in 1980 and maintaining the production orbiter delivery schedule to meet currently defined national needs. The Space Shuttle fiscal year 1980 funding requirements including reserves is assessed to be \$1,851 million by the field centers compared to the headquarters funding assessment of \$1,801 million. The currently authorized funding level for the Space Shuttle program in fiscal year 1980 is \$1,586 million.

2. If fiscal year 1980 supplemental funding is not approved by June 1980, NASA will likely have to use production funding to support design, development, test, and evaluation activi-

ties which will result in additional production funding requirements in fiscal year 1981 and increased cost and schedule risk.

3. The total cost estimate for the NASA Space Shuttle design, development, test, and evaluation (DDT&E) program is now \$6.18 billion (in 1971 dollars) which is approximately \$1 billion more than the \$5.15 billion estimate made at the initiation of the program. This represents a cost growth of 20 percent as compared to a June 1979 projected growth of 15 percent.

4. The fiscal year 1981 budget must support basic program requirements and must contain adequate program reserves to support anticipated cost growth including:

(a) Orbiter structural modifications required as a result of the 54 loads analysis which have been identified but will not be implemented until after the first flight.

(b) Potential test failures and problems associated with qualification and certification of the main engine at full power level (109 percent thrust).

(c) Potential delay of the first manned orbital flight into fiscal year 1981.

(d) Any Space Shuttle modifications which may be required as a result of information gained during the orbital flight tests.

(e) Qualification and installation of new thermal protection system materials being considered for partial use on orbiter vehicle 099.

NOTE.—Fiscal year 1981 Space Shuttle funding figures were unavailable during the review because of the confidentiality of this information until after the President's budget is announced.

5. NASA has taken steps to correct the management deficiencies outlined in the various investigative reviews of the Space Shuttle program. One major change is the distribution of program reserves throughout the management levels rather than consolidation at NASA Headquarters: Level I (NASA Headquarters), Level II (Johnson Space Center lead center program office), and Level III (Space Shuttle Program Elements—orbiter, main engine, etc.).

6. Space Shuttle cost estimates for fiscal year 1980 appear to be realistic and not excessively conservative. Concern was expressed in the spring that due to the cost growths and schedule problems, future estimates of cost would be disproportionately conservative in an attempt to guarantee there would be no further cost or schedule overruns.

7. NASA and contractor Space Shuttle program officials continue to express a high degree of confidence in the integrity of the Space Shuttle system design. The Space Shuttle DDT&E certification test program has made significant progress in the past year. The detailed status is as follows:

Program element :	Percent complete
Orbiter	78
SRB	77
Et	97
Main Engine.....	81

However, major areas in the certification and verification program that could result in schedule slippage and additional cost increases include: remaining orbiter subsystem qualification and certification testing, thermal protection system tile installation and structural proof testing, main engine flight certification and main propulsion test completion, and combined system verification testing.

8. The requirement to remove one (engine 0008) of the two engines from the preliminary flight certification (PFC) program for use during main propulsion tests (MPT) has resulted in a scheduled delay for the PFC program which is now scheduled for a June 30, 1980, completion. Another engine (engine 2004) is scheduled to complete preliminary flight certification in February 1980. The requirement for a replacement engine with an accompanying delay in availability has resulted in a higher risk schedule for completion of the preliminary certification.

9. The main engine full power level (109%) certification program required for fully operational capability will be initiated in fiscal year 1980. A number of engine changes are required to satisfy the higher thrust level and meet engine life requirements.

10. The number of planned Space Shuttle development orbital flight tests has been reduced from six to four. Although NASA's current plans specify that the Space Shuttle will be considered operational on the fifth flight, in reality the orbiter will require research and development activities for some time. The NASA decision to create an office of STS operations and separate Space Shuttle responsibility for the development and production phase from the operational phase at the Associate Administrator level has met with mixed reviews and uncertainties. One major concern is the coordination of the activities during the next several years when operational commitments must be satisfied while significant R&D must be accomplished to achieve fully operational capabilities.

11. Rockwell has instituted a new cost/schedule performance management system for Increment 3 (production orbiters). Although, the new system should provide better visibility into accomplishments versus planned work, and provide a mechanism for working around obstacles in the program, it does not appear to provide significantly different insight into the impact of deferrals and flow through of work due to short falls in available funding.

12. Conscious efforts to constrain production orbiter activity cost in fiscal year 1980 is resulting in some inefficient procurement of materials and could result in a number of stop-start efforts at several orbiter subcontractors. Additionally, in order to provide an efficient procurement of a fifth orbiter vehicle, fiscal year 1981 funds will be required for long lead items. NASA should provide to the Congress an assessment of the tradeoffs between proceeding with a fifth Shuttle Orbiter on a least cost schedule versus the alternative of delaying the fifth Orbiter in order to incorporate flight experience improvements into the design.

13. The Space Shuttle system will require the addition of a thrust augmentation module to provide full performance capability and meet Department of Defense requirements for launches from the Western Test Range. NASA has selected the liquid boost module concept for thrust augmentation development using Titan engine derivative hardware.

14. Currently, because of the planned benign first flight environment, NASA does not plan to perform on-orbit inspection of the thermal protection system tiles. However, in the event an extra vehicular activity (EVA) inspection is required, the crew training schedule will be substantially impacted.

15. Final first flight configuration software has not been completed. The software delivery must take place at least four months prior to first flight in order for crew training to be completed.

16. The Space Shuttle launch cost has increased from early projections of \$10.5 million per flight to \$15.2 million per flight in 1971 dollars. To minimize these costs, NASA must place increased emphasis on producibility activities particularly with regard to reducing the unit costs of the external tank and the solid rocket boosters.

(EXCERPTED FROM PAGES 1-4, SPACE SHUTTLE PROGRAM COST, PERFORMANCE, AND SCHEDULE REVIEW, SERIAL U, AUGUST 1979)

1. The Subcommittee has serious reservations with regard to the adequacy of the funding request for fiscal year 1980 including the \$220 million budget amendment. NASA has underestimated Space Shuttle budget year funding requirements in fiscal year 1977, 1978, 1979 and 1980.

Recommendation.—On an annual basis in formulation of budget year funding requirements, NASA should utilize a financial assessment team above the level of the Office of Space Transportation Systems to assess the schedule and cost status of the Space Shuttle program.

2. There appears to be a high degree of confidence in the integrity of the Space Shuttle system design; however, there are major areas that could result in schedule slippage and additional cost increases. These areas include (1) system qualifications testing, (2) thermal protection system tile installation, (3) main propulsion test (MPT) completion, (4) auxiliary power unit (APU) design.

3. NASA failed to communicate in a timely manner that they would exceed the total program run-out cost for the design, development, test, and evaluation (DDT&E) effort and that the fiscal year 1979 Supplemental and fiscal year 1980 Budget Requests were inadequate to accomplish Space Shuttle program objectives. Observing that NASA has underestimated Space Shuttle budget year funding requirements in prior years; that the program reserves repeatedly had been depleted before the end of the fiscal year, that the schedules had been based on a success philosophy in spite of many deviations; and that enumerable work items had been deferred

until later in the program should have provided NASA with sufficient indications that the cost problems which were identified in the fall of 1978 were indeed real.

4. Consideration of the chronology of events indicates that information presented by NASA during the Subcommittee review of the Space Shuttle Program in the fall of 1978 and during hearings in February 1979, was less than candid with regard to serious funding problems which were under consideration within NASA.

Recommendation.—NASA should keep the Subcommittee fully and currently informed with regard to all events which may significantly affect the Space Shuttle cost and schedule commitments.

Recommendation.—NASA should reaffirm a cost and schedule commitment for the Space Shuttle design, development, test, and evaluation program. NASA should also establish and communicate to the Congress a firm schedule and cost commitment for completion of the Space Shuttle production activities.

5. When considering budget priorities, the Administration has not adequately recognized the urgent and critical National need of the Space Shuttle system for civil and military applications.

6. In recent years production funds, a separate source of funding, have provided a significant amount of the financial flexibility for DDT&E activities that was available to the Shuttle managers. This appears to have had the effect of making the program managers feel more comfortable with the level of DDT&E program reserves than was warranted despite the significant increase in orbiter unit production costs which resulted from this practice.

Recommendation.—The Subcommittee discourages the practice of routinely using production funds as a source of program reserves for DDT&E activities.

7. NASA's management technique of constraining the annual funding below requested levels and consolidating the program reserves at headquarters has been applied through the life of the program and has produced both good and bad results. In the early phases of the program this resulted in encouraging innovation and reassessment of program requirements. However, later in the program these techniques resulted in the establishment of an artificial managerial goal of making the cost meet the fiscal constraints without regard for the progress of the technical objectives. This was commonly referred to as "managing to get out of the year."

The effects of "managing to get out of the year" were twofold. First, to meet the immediate fiscal constraints required the deferral of work, drastic fluctuations in contractor and subcontractor manpower levels, and delays in material procurement which increased the program schedule and cost risk in future years. The second effect was to totally dominate the managerial attention of the program managers to the extent that they were unable to assess the future cost and schedule impacts of their short term decisions.

8. NASA and the Shuttle contractors have not developed the appropriate tools for implementing the "constraint management" technique. For example, they have not developed an accurate method for estimating the effects of "work deferral" and "roll-through". Nor have they been able to adequately project the program reserve requirements.

Recommendation.—NASA should develop financial planning methods that will size program reserves to be consistent with the program risk.

Recommendation.—NASA should make particular effort during the later phase of development to minimize changes and other actions affecting program cost and schedule which do not directly involve flight safety.

Recommendation.—NASA, prime contractors, and subcontractors should provide increased management emphasis at all levels in developing methods for assessing both the short and long term impact of "work deferral" and "roll-through" from one fiscal year to the next.

9. Completion of orbiter build and orbiter checkout activities are currently being conducted in parallel in the orbiter processing facility at Kennedy Space Center. These parallel activities involve two field centers, Johnson Space Center and Kennedy Space Center, and two Rockwell International organizations. Although both NASA and Rockwell have initiated management changes to accommodate these parallel activities, sustained management attention will be required to assure that any conflicts which may arise from these competing activities are resolved in a timely manner.

10. The new and different manufacturing and assembly operations required for the Space Shuttle may not be fully compatible with the Kennedy Space Center recordkeeping, inspection, and other control procedures which were originally developed to meet the requirements of final checkout and launch operations.

Recommendation.—The contractors and NASA should assure that Kennedy Space Center procedures will accommodate Space Shuttle operations involving manufacturing, assembly, refurbishment, and integration in a cost effective manner.

11. The financial management reporting system, which utilizes NASA form 533 and analogous contractor forms, is used for officially reporting the monthly, contracted program cost and schedule status. These reports have been used extensively by NASA for developing future funding requirements, although, they inadequately identify the costs associated with changes that have been authorized by the customer but not incorporated into the contract. Repeated under estimation of annual funding requirements indicates that sufficient attention has not been given by NASA nor the contractor to estimating the cost impact of anticipated changes to the contract.

Recommendation.—NASA, the prime contractors, and the subcontractors should implement the recommenda-

tions of the Budget Forecasting Review Team (referred to as the Day Report—See Appendix) as they relate to the financial reporting system.

12. During the early part of the Space Shuttle development program, work deferrals caused by OMB funding reductions resulted in changes to schedule and cost commitments. Similar assessments of the impact on cost and schedule have not always occurred when work was deferred through internal management decisions.

Recommendation.—NASA should assess the impact on cost and schedule of work deferrals caused by internal management decisions with the same rigor that is involved in assessing the impact of work deferrals resulting from OMB decisions.

13. Contractors are not always appraised by the responsible NASA project office of the funding allocations to their budget year work plan at the start of the fiscal year. This lack of information causes uncertainties in contractor planning and can contribute to over-optimistic scheduling of work load.

14. Subsystem cost growth has been a significant part of the total orbiter project growth. Forty percent of the orbiter subcontractor cost growth has resulted from fluctuations in manpower associated with fiscal year funding constraints. Another 38 percent has resulted from directed and approved changes to the subcontracts.

Recommendation.—NASA and Rockwell International should place increased emphasis on financial management at the orbiter major subsystem level. To achieve increased cost discipline, each major subsystem technical manager should have a clear understanding of the fiscal year and total runout cost target for the respective subsystems.

15. The delay in the date of the first operational shuttle flight will likely increase the cost associated with several payloads, ground tracking stations phase out, and expendable launch vehicles.

Recommendation.—NASA and DOD should coordinate and report to the Subcommittee a comprehensive assessment of the impact of Space Shuttle delays on civil and military space activities including but not limited to TDRS, ground tracking stations, and expendable launch vehicles.

16. The cost growth of approximately 15 percent for a program the magnitude and complexity of the Space Shuttle is not inconsistent with previous experience of high technology development programs.

17. NASA has employed a "lead center" concept in managing the Space Shuttle program. The important tasks of systems engineering and systems integration were assigned to Johnson Space Center while control of program reserves was retained at headquarters.

Recommendation.—NASA should assess what role, if any, the "lead center" concept has played in causing or contributing to program management problems.

CONGRESSIONAL BUDGET ACT INFORMATION

This bill provides for new authorization rather than new budget authority and consequently the provisions of section 308(a) of the Congressional Budget Act of 1974 are not applicable. No authorization for State or local financial assistance is included in the bill.

ESTIMATE AND COMPARISON, CONGRESSIONAL BUDGET ACT INFORMATION

Pursuant to clause (2)(1)(3)(C) of rule XI of the Rules of the House of Representatives the report of the Congressional Budget Office is included.

CONGRESSIONAL BUDGET OFFICE—COST ESTIMATE

April 18, 1980.

1. Bill number: H.R. 6413.
2. Bill title: National Aeronautics and Space Administration Authorization Act, 1981.
3. Bill status: As ordered reported by the House Committee on Science and Technology, April 16, 1980.
4. Bill purpose: This bill authorizes appropriations of \$5.62 billion for the National Aeronautics and Space Administration (NASA) for fiscal year 1981. This authorization is \$104.5 million higher than the President's amended budget for fiscal year 1981 and 13 percent above the current fiscal year 1979 appropriation (\$4.97 billion excluding a pending supplemental request of \$300 million).

In addition, the bill authorizes the appropriation of additional sums as may be necessary for increases in salary and employee benefits authorized by law.

5. Cost estimate (by fiscal years, in millions of dollars):

	1981	1982	1983	1984	1985
Estimated authorization level:					
Function 250	5,076.2				
Function 400	546.0				
Function 920	47.0				
Total	5,669.2				
Estimated outlays:					
Function 250	3,636.3	1,221.8	211.2	8.6	1.3
Function 400	322.3	170.1	35.5	13.6	4.5
Function 920	44.0				
Total	4,002.6	1,391.9	246.7	22.2	5.8

Including outlays from prior years' budget authority enacted to date, total fiscal year 1981 outlays for NASA activities will be \$5.3 billion, assuming the funding level authorized in this bill.

6. Basis of estimate: For the purpose of this estimate, it is assumed that this bill will be enacted and the entire amount authorized will be appropriated prior to fiscal year 1981. The estimated funding required

for the pay comparability increase is based on a 6.2 percent increase, effective October 1, 1980. This increase falls within budget function 920 in fiscal year 1981. The estimated outlays for fiscal year 1981 funds are based on historical spendout patterns of the major NASA programs.

7. Estimate comparison: NASA projects outlays of \$5.2 billion in fiscal year 1981 assuming enactment of this bill, but excluding the pending supplemental request.

8. Previous CBO estimate: None.

OVERSIGHT FINDINGS AND RECOMMENDATIONS, COMMITTEE ON GOVERNMENT OPERATIONS

No findings or recommendations on oversight activity pursuant to clause 2(b)(2), rule X, and clause 2(1)(3)(D), rule XI, of the Rules of the House of Representatives have been submitted by the Committee on Government Operations for inclusion in this report.

COMMITTEE RECOMMENDATIONS

A quorum being present, the Committee approved the bill by unanimous voice vote of those present.

NASA RECOMMENDATIONS

This is a National Aeronautics and Space Administration legislation item approved with the exceptions noted in this report by the Office of Management and Budget, as indicated by the following letter:

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,

OFFICE OF THE ADMINISTRATOR,

Washington, D.C., January 28, 1980.

HON. THOMAS P. O'NEILL, JR.,
Speaker of the House of Representatives,
Washington, D.C.

DEAR MR. SPEAKER: Submitted herewith is a draft of a bill, "To authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes," together with the sectional analysis thereof. It is submitted to the Speaker of the House of Representatives pursuant to Rule XL of the House.

Section 4 of the Act of June 15, 1959, 73 Stat. 75 (42 U.S.C. 2460), provides that no appropriation may be made to the National Aeronautics and Space Administration unless previously authorized by legislation. It is a purpose of the enclosed bill to provide such requi-

site authorization in the amounts and for the purposes recommended by the President in the Budget of the United States Government for fiscal year 1981. For that fiscal year, the bill would authorize appropriations totaling \$5,736,654,000 to be made to the National Aeronautics and Space Administration as follows:

- (1) for "Research and development" amounts totaling \$4,569,500,-000;
- (2) for "Construction of facilities" amounts totaling \$120,000,000; and
- (3) for "Research and program management," \$1,047,154,000.

In addition, the bill would authorize such sums as may be necessary for fiscal year 1982, i.e., to be available October 1, 1981.

The enclosed draft bill follows generally the format of the National Aeronautics and Space Administration Authorization Act, 1980 (Public Law 96-48). However, the bill differs in substance from the prior Act in several respects.

First, subsections 1(a), 1(b), and 1(c), which would provide the authorization to appropriate for the three NASA appropriations, differ in the dollar amounts and/or the line items for which authorization to appropriate is requested.

Second, section 6 of Public Law 96-48, which added a new section 308 to the National Aeronautics and Space Act of 1958 and amended section 203(c) (13) to increase the amount for which the Administration may settle or adjust claims, has been omitted since those amendments are now permanent law.

Third, in addition to providing authorization of appropriations in the amounts recommended by the President in his Budget for fiscal year 1981, the bill also would provide authorization for such sums as may be necessary for fiscal year 1982. It is specified that all of the limitations and other provisions of the bill applicable to amounts appropriated pursuant to section 1 shall apply in the same manner to amounts appropriated pursuant to section 6.

Finally, the last section of the draft bill, section 7, has been changed to provide that the bill, upon enactment, may be cited as the "National Aeronautics and Space Administration Authorization Act, 1981", rather than "1980".

Where required by section 102(2)(C) of the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4332(2)(C)), and the implementing regulations of the Council on Environmental Quality, environmental impact statements covering NASA installations and the programs to be funded pursuant to this bill have been or will be furnished to the Committee on Science and Technology as appropriate.

The National Aeronautics and Space Administration recommends that the enclosed draft bill be enacted. The Office of Management and Budget has advised that such enactment would be in accord with the program of the President.

Very truly yours,

ROBERT A. FROSCH, *Administrator.*

Enclosures.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
OFFICE OF THE ADMINISTRATOR,
Washington, D.C., April 1, 1980.

HON. THOMAS P. O'NEILL, JR.,
Speaker of the House of Representatives,
Washington, D.C.

DEAR MR. SPEAKER: On January 28, 1980, the National Aeronautics and Space Administration submitted a draft bill "To authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes". The bill was subsequently introduced in the House of Representatives as H.R. 6413 on February 5, 1980.

In accordance with amendments made by the President to the fiscal year 1981 Budget of the United States, NASA recommends that the following amendments be made to H.R. 6413:

Amend subsection 1(a) by changing the dollar amounts in the designated paragraphs as follows:

(2) "Space flight operations", strike "\$809,500,000" and insert "\$767,500,000";

(4) "Physics and astronomy", strike "\$438,700,000" and insert "\$346,600,000";

(5) "Planetary exploration", strike "\$179,600,000" and insert "\$175,300,000";

(6) "Life sciences", strike "\$49,700,000" and insert "\$39,100,000";

(7) "Space applications", strike "\$381,700,000" and insert "\$356,700,000";

(8) "Technology utilization", strike "\$13,100,000" and insert "\$12,100,000";

(9) "Aeronautical research and technology", strike "\$290,300,000" and insert "\$275,300,000";

(10) "Space research and technology", strike "\$115,200,000" and insert "\$110,200,000"; and

(12) "Tracking and data acquisition," strike "\$359,000,000" and insert "\$349,000,000".

Amend subsection 1(c), "Research and program management", by striking out "\$1,047,154,000" and inserting "\$1,033,154,000".

The foregoing amendments would authorize appropriations in the amounts requested by the President in the amended Budget. The Office of Management and Budget has advised that such amendments would be in accord with the program of the President.

Very truly yours,

ROBERT A. FROSCH,
Administrator.

96TH CONGRESS }
2d Session

SENATE

{ REPORT
No. 96-719

NASA AUTHORIZATION FOR
FISCAL YEAR 1981

REPORT

OF THE

COMMITTEE ON COMMERCE, SCIENCE,
AND TRANSPORTATION

ON

S. 2240

TO AUTHORIZE APPROPRIATIONS TO THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION FOR RESEARCH AND DEVELOPMENT, CONSTRUCTION OF FACILITIES, AND RESEARCH AND PROGRAM MANAGEMENT, AND FOR OTHER PURPOSES



MAY 15 (legislative day, JANUARY 3), 1980.—Ordered to be printed

U.S. GOVERNMENT PRINTING OFFICE

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WASHINGTON: 1980

96TH CONGRESS }
2d Session

SENATE

{ REPORT
No. 96-719

AUTHORIZING APPROPRIATIONS TO THE NATIONAL
AERONAUTICS AND SPACE ADMINISTRATION

MAY 15 (legislative day, JANUARY 3), 1980.—Ordered to be printed

Mr. CANNON, from the Committee on Commerce, Science, and
Transportation, submitted the following

REPORT

[To accompany S. 2240]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 2240) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes, having considered the same, reports favorably thereon, with an amendment in the nature of a substitute and recommends that the bill do pass.

COMMITTEE ADJUSTMENTS TO NASA REQUEST FOR FISCAL YEAR 1981

SUMMARY

Fiscal year 1981	Budget request	Revised budget request	Senate committee action
Research and development:			
Space Shuttle.....	\$1,873,000,000	\$1,873,000,000	\$1,873,000,000
Space flight operations.....	809,500,000	767,500,000	779,500,000
Expendable launch vehicles.....	55,700,000	55,700,000	55,700,000
Physics and astronomy.....	438,700,000	346,600,000	352,700,000
Planetary exploration.....	179,600,000	175,300,000	179,600,000
Life sciences.....	49,700,000	39,100,000	43,200,000
Space applications.....	381,700,000	356,700,000	372,400,000
Technology utilization.....	13,100,000	12,100,000	12,100,000
Aeronautical research and technology.....	290,300,000	275,300,000	285,300,000
Space research and technology.....	115,200,000	110,200,000	110,200,000
Energy technology.....	4,000,000	4,900,000	4,000,000
Tracking and data acquisition.....	359,000,000	349,000,000	349,000,000
Total.....	4,569,500,000	4,364,500,000	4,416,700,000
Construction of facilities.....	120,000,000	120,000,000	120,000,000
Research and program management.....	1,047,154,000	1,033,154,000	1,033,154,000
Grand total.....	5,736,654,000	5,517,654,000	5,569,854,000

PURPOSE OF THE BILL

The purpose of this bill is to authorize appropriations to the National Aeronautics and Space Administration totaling \$5,569,854,000 for fiscal year 1981 as follows:

Fiscal year 1981	Budget request	Revised budget request	Senate committee action
Research and development.....	\$4,569,500,000	\$4,364,500,000	\$4,416,700,000
Construction of facilities.....	120,000,000	120,000,000	120,000,000
Research and program management.....	1,047,154,000	1,033,154,000	1,033,154,000

LEGISLATIVE HISTORY

The budget request for fiscal year 1981 for the National Aeronautics and Space Administration (NASA) was introduced in the Senate as S. 2240 on January 30, 1980.

On March 31, 1980, the President submitted to the Congress revisions to the fiscal year 1981 budget request including a reduction of \$219 million in the amount originally requested for NASA.

The Committee held hearings on S. 2240 on February 6, 7, 20, 21, 27, and 29, 1980. Following receipt of the budget revisions, an additional hearing was held on April 3, 1980.

During its consideration of S. 2240, the Committee determined that amendments were required. The Committee, on May 8, 1980, marked up the bill and ordered S. 2240 reported with an amendment in the nature of a substitute.

SUMMARY

For fiscal year 1981, NASA in January 1980, requested a budget totalling \$5,736,654,000, of which \$4,569,500,000 was for Research and Development, \$120 million for the Construction of Facilities, and \$1,047,154,000 for Research and Program Management. However, due to the late March budget revision resulting from the Administration's effort to balance the fiscal year 1981 budget, the NASA fiscal year 1981 budget request is \$5,517,654,000, of which \$4,364,500,000 is for Research and Development, \$120 million for Construction of Facilities, and \$1,033,154,000 for Research and Program Management. Thus, the March budget revision resulted in a budget \$219 million below NASA's original budget request; to achieve this reduction \$205 million was cut from the January Research and Development request and \$14 million from the Research and Program Management request. However, the space shuttle program was not reduced. It is needed to meet critical national space launch needs, and a budget cut would have necessitated rescheduling both the development and production programs resulting in a substantial delay in shuttle readiness and in a substantial cost increase.

Space Science programs were reduced \$107 million to an amount \$40 million less than the fiscal year 1980 budget. This necessitated rescheduling of the International Solar Polar Mission and deferral of Shuttle/Spacelab payload development activities and a substantial cut in basic research, mission operations and data analysis; however, the new start, the Gamma Ray Observatory was retained in the revised request. Space applications projects were reduced \$25 million impacting weather and climate experiments, shuttle payload development, and applications technology transfer. The National Oceanic Satellite System (NOSS), a joint NASA/NOAA/DOD operational demonstration to monitor the ocean environment was retained as a new start. Space research and technology, already below the fiscal year 1980 budget plan, was reduced an additional \$5 million. Aeronautical research and technology in the January request was \$18 million below the fiscal year 1980 budget plan, requiring the delay of new aeronautical research initiatives but it also was reduced a further \$15 million. The Tracking and Data Acquisition Program, which provides the communications for tracking, command and control of spacecraft during launch and in orbit and acquires the data from space, was reduced \$10 million below the original request.

The Construction of Facility authorization request of \$120 million was not reduced. However, OMB had cut the original NASA request by \$70 million, reducing it \$36 million below the fiscal year 1980 program.

The reduced request for Research and Program Management will have its major impact on personnel costs. This reduction will be absorbed by deferral of new hires previously authorized and by delay in filling existing vacancies.

The major element of the NASA fiscal year 1981 budget request is the space shuttle development and production program. Development delays of the space shuttle development program have been due to problems in achieving the desired level of maturity in the high performance liquid hydrogen/liquid oxygen main engines and to difficulties with the thermal protection system. Recent engine test performance has been consistently good, and problems surrounding the installation and performance of the thermal protection system are now understood and good progress is being realized. However, additional funds are required to solve the problems and to accommodate the schedule delays. Submitted and closely coupled with the fiscal year 1981 space shuttle request is a fiscal year 1980 supplemental request of \$300 million for the space shuttle program. It is planned, if development progress continues at the current rate, that the first orbital test flight of the space shuttle will occur not later than the first quarter of 1981. This rate of progress would conclude the space shuttle development program in fiscal year 1981 except for changes resulting from flight tests and necessary systems upgrading which would continue through the life of the space shuttle.

The production of the 4 orbiter fleet to meet the operational needs of the Department of Defense (DOD) civil government, commercial, and industrial users is proceeding on the schedule established last year. Three new orbiters are scheduled to be delivered in June 1982, September 1983, and December 1984.

The Committee recommends a total of \$5,569,854,000 to be authorized to be appropriated to NASA for fiscal year 1981, an amount \$52,200,000 above the amended request. Of the amount recommended by the Committee, \$4,416,700,000 is for Research and Development, which is \$52,200,000 above the amended request; \$120 million is for Construction of Facilities, which is identical to the amended request; and, \$1,033,154,000 is for Research and Program Management also identical with the amended request.

The Committee recommendation is \$300,068,000 above NASA's budget plan for fiscal year 1980 (including 2 fiscal year 1980 supplemental requests—\$300 million for the space shuttle and \$46,286,000 for the October 1979 Federal employee pay increase)—an increase of only 5.7 percent over the maximum funds expected to be available to NASA for fiscal year 1980; with the inflation rate of at least 10-11 percent this results in a substantial net reduction in effective dollars in fiscal year 1981 for aeronautical and space activities.

The NASA budget request for fiscal year 1981 has been carefully reviewed by the Committee. While supporting two new initiatives—the Gamma Ray Observatory and the National Oceanic Satellite System—the amended budget request required that some important programs be reduced substantially. The Committee found that some of these reductions impaired the future needs of the Nation and there-

fore the Committee recommends additions directed to future national needs in space and aeronautics as follows:

- \$12 million to initiate the development of the Solar Electric Propulsion System to assure the availability of this capability in the post-1985 timeframe.
- \$14.5 million for space science to be applied to basic research and analysis activities and to mission operations and data analysis in the three program areas to provide program continuity.
- \$8 million for applied research, data analysis and technology transfer in space applications.
- \$5 million for multilinear array, solid state technology development for satellite remote sensing to meet public and private sector user requirements.
- \$2.7 million to initiate a materials processing experiment to study the effect of convection flows on crystal growth in space.
- \$10 million for aeronautical research and technology, a program designed to assure the continued leadership and industrial success of the Nation in aeronautics.

The bill provides authorization for appropriations in the three appropriation categories: Research and Development, Construction of Facilities, and Research and Program Management.

The 12 line items under Research and Development are fully described in the subsequent sections of this report.

The Construction of Facilities fiscal year 1981 program consists of 22 line items; of the total amount recommended, \$74,709,000 are for space related facilities and \$45,291,000 are for aeronautical research related activities. The Construction of Facilities program is more fully described in a subsequent section of this report.

The Committee recommendation for Research and Program Management reflects a personnel level of 22,713 at the end of fiscal year 1981—an increase of 100 over the fiscal year 1980 budget. However, because of the funding reduction of \$9 million in personnel costs imposed by the March budget amendment, NASA will defer additional hiring until that budget objective is met. Funding in this appropriations category for other than personnel and related costs is classified into several functional budget categories, such as travel, facilities, technical services, management and operations support amounting to \$262,163,000; consequently, approximately, three-fourths of the recommended authorization, or \$770,991,000 is to pay personnel salaries and related costs.

The Committee also considered two legislative amendments discussed in the report under Legislative Changes. One is technical in nature; the other deletes the authorization of appropriations for NASA for fiscal year 1982, which will be the subject of a separate authorization bill next year.

The Committee held 6 days of hearings on the contents of this bill

during February. On April 3, 1980, an additional day of hearings was held to take testimony on NASA's amended budget request. On May 8, 1980, the Committee on Commerce, Science, and Transportation met and marked up the bill S. 2240 and without objection ordered the bill reported.

RESEARCH AND DEVELOPMENT

SUMMARY

Fiscal year 1981	Budget request	Revised budget request	Senate committee action
Research and development:			
Space Shuttle	\$1,873,000,000	\$1,873,000,000	\$1,873,000,000
Space flight operations	809,500,000	767,500,000	779,500,000
Expendable launch vehicles	55,700,000	55,700,000	55,700,000
Physics and astronomy	438,700,000	346,600,000	352,700,000
Planetary exploration	179,600,000	175,300,000	179,600,000
Life sciences	49,700,000	29,100,000	43,200,000
Space applications	381,700,000	356,700,000	372,400,000
Technology utilization	13,100,000	12,100,000	12,100,000
Aeronautical research and technology	290,300,000	275,300,000	285,300,000
Space research and technology	115,200,000	110,200,000	110,200,000
Energy technology	4,000,000	4,000,000	4,000,000
Tracking and data acquisition	359,000,000	349,000,000	349,000,000
Total	4,569,500,000	4,364,500,000	4,416,700,000

SPACE SHUTTLE PROGRAM, \$1,873,000,000

The Space Shuttle, under development since 1972, is the key element of the future U.S. space transportation system. It will provide users, both national and international, with round trip access to low-Earth orbits, beginning in 1982. Higher orbits and planetary missions will be achieved using upper stages such as the inertial upper stage and spinning solid upper stages.

The Space Shuttle will be launched from both the Kennedy Space Center, Fla., and the Vandenberg Air Force Base, Calif.

The Space Shuttle consists of the following basic flight hardware elements: the orbiter and its main engines; the external propellant tank; and twin rocket boosters. In addition, there is a ground-based launch and landing system. It is a reusable system, except for the external propellant tank. Consequently, it will make possible multipurpose, economical space operations for applications, scientific, defense, and technological payloads. It will offer capabilities that cannot be achieved with today's launch vehicles. For example, the Space Shuttle will carry both men and women into space to operate equipment that requires the manual dexterity and logical judgments of humans. It will be able to retrieve payloads from space for reuse; to service and repair satellites in space; to transport materials and equipment into orbit; and to carry out rescue missions if needed. These capabilities of the Shuttle will greatly enhance the flexibility and productivity of space operations and reduce their cost.

The space shuttle will have a large payload volume of 285 cubic meters (370 cubic yards) and a weight-carrying capacity of up to 29,500 kilograms (65,000 pounds).

The space shuttle will have a crew of three: the commander, the pilot, and a mission specialist. On some missions, one or more payload specialists will be added to the crew to operate payloads. The crew will be able to perform their duties in a shirt-sleeve environment.

The DOD has scheduled its first space launch using the space shuttle for May 1982; the Department's transition from expendable launch vehicles to the space shuttle will be completed in 1985; and, national security space missions will be nearly totally dependent on the space shuttle. The Air Force is the designated agency for the Department of Defense for all space transportation system matters. Coordination between NASA and the DOD is achieved through the NASA/USAF space transportation system committee and through detailing personnel to serve on each others committees, boards and panels and in extensive day-to-day coordination.

In support of the space shuttle, the Air Force has undertaken the development of the inertial upper stage for the space shuttle, and the full scale construction of the Vandenberg Air Force Base space shuttle launch and landing facilities. Other efforts are under way in such areas as payload interfaces and integration, mission operations, data and software systems, and future uses of the space shuttle.

Summary of Resources Requirements

Design, development, test, and evaluation:	
Orbiter	\$320,900,000
Main engine	145,700,000
External tank	48,000,000
Solid rocket booster	14,000,000
Launch and landing	154,400,000
Changes/system upgrading	150,000,000
Subtotal	833,000,000
Production:	
Orbiter	768,200,000
Main engine	121,500,000
Launch and landing	40,400,000
Spares and equipment	109,900,000
Subtotal	1,040,000,000
Total	1,873,000,000

Milestone schedule

First orbital test flight	1st Quarter 1981.
Orbital test flights 2, 3 and 4	1981 and 1st Quarter 1982.
Initial operational capability	2nd Quarter 1982.
Delivery of 2nd Orbiter (099)	June 1982.
Delivery of 3rd Orbiter (103)	September 1983.
Delivery of 4th Orbiter (104)	December 1984.

Design, Development, Test, and Evaluation (D.D.T. & E.).—Space shuttle development, test and evaluation is in a period of peak effort with the first orbital flight test now planned for early 1981. Major activities planned for fiscal year 1981 are:

Conduct the first orbital test flight—manned—and continue subsequent orbital test flights.

Continue engine testing to achieve final flight certification.

Complete fabrication and delivery of the second set of flight engines.

Continue external tank design for light weight tank, producibility improvement, and thrust augmentation.

Refurbish and launch the first reusable solid rocket boosters (SRB).

Continue the SRB production efficiency and cost improvement plan.

During fiscal year 1980, the space shuttle D.D.T. & E. program encountered problems in the qualification and certification programs and additional effort is required to complete the development, testing, and evaluation of the space shuttle. This has resulted in a year's delay from the first quarter of 1980 to the first quarter of 1981 for the first manned orbital test flight, and raised the cost estimate for space shuttle design, development, test, and evaluation to \$8.813 billion. Total estimated cost in 1971 dollars is \$6.185 billion, which is 20 percent above the \$5.15 billion estimate given the Congress when the program was initiated in January 1972.

The reusable orbiter, approximately the size of a DC-9 jet transport will serve as the spacecraft to deploy and retrieve payloads, provide quarters for the personnel, and as a base for short duration on-orbit experiments. On completing its on-orbit task, the orbiter will reenter the atmosphere and land similar to an airplane, returning crew and payloads to the launch site. The first flight vehicle, Orbiter 102, is at the Kennedy Space Center undergoing final systems installation and checkout in preparation for the early 1981 launch. Four orbital test flights using Orbiter 102 are scheduled progressively to support the verification of the space shuttle for operational use, now scheduled to begin in the second quarter of 1981.

Three high pressure liquid hydrogen/oxygen engines, each with a 2,100,000 newtons (470,000 pounds) thrust—in vacuum—will be used to power the space shuttle. These engines represent a major advancement in propulsion technology. While these engines have incurred substantial problems during testing, significant progress has been made during the past year on the main engine development, test and evaluation. Although the main engine is still a pacing item in the program, it is expected that sufficient testing will be accomplished this year to provide the necessary confidence for the orbital test flights.

The external tank will carry all of the propellants—liquid hydrogen as a fuel and liquid oxygen as the oxidizer—for the orbiter's three main engines, which will burn from just before liftoff to cutoff just prior to

orbital insertion. The external tank will then be separated from the orbiter and put into a planned ballistic trajectory that will tumble and break up with the pieces landing in a designated remote ocean area.

Two reusable solid rocket boosters (SRB) attached to the external tank, will burn in parallel with the main engines to provide the necessary thrust for the space shuttle from liftoff to booster staging. Each SRB weighs approximately 583,600 kilograms (1.2 million pounds) and will deliver approximately 11.6 million newtons (2.6 million pounds) averaged thrust—in vacuum. The SRBs are approximately 3.6 meters (12.2 feet) in diameter and 45.5 meters (149 feet) long. After burnout, at an altitude of 45 kilometers (150,000 feet) the SRBs will separate from the external tank, descend by parachute, and land in the ocean about 260 kilometers (140 miles) from the launch site. They will be recovered by ship and returned to the launch site for refurbishment and reuse.

The launch and landing project includes the preparation of a series of space shuttle ground processing, launch and landing station sets at the Kennedy Space Center and the Dryden Flight Research Center, and the operation of these sets through the orbital flight tests. These station sets include landing, testing, and servicing systems and ground support equipment.

The 1979 space shuttle program management and cost reviews emphasize the need for adequate allowances for changes and system modification needed to meet performance goals, particularly as related to reliability, safety, and reducing operating costs. Areas in which changes in upgrading are likely to be required have been identified. As these changes in upgrading requirements are approved, they will impact the funding for either DDT&E or production. Accordingly, the need for funds for changing and upgrading are consistent with the program reviews and constitute a vital part of the fiscal year 1981 program request.

Production.—The purpose of the space shuttle production program is to build a national fleet of operational orbiters. As in his two previous budget requests, the President is again proposing a 4-orbiter fleet, retaining an option to buy a 5th orbiter at a later date. The 4-orbiter fleet will consist of the modification of the orbiter test article (Orbiter 099) to flight configuration, refurbishment of Orbiter 102 after the orbiter flight test program and early operational period and the fabrication and assembly of two additional orbiters, Orbiters 103 and 104.

In the last 2 years the Congress has supported a 5-orbiter fleet. If only 4 operational orbiters are built, an accident could leave the fleet with only 3 orbiters. After the middle 1980s, a 3-orbiter fleet cannot fly the expected number of missions. This would have serious repercussions for the United States' space program, including the DOD program, which will transition all of its missions to the space shuttle.

Committee comment

The Committee has supported consistently the need for five orbiters in the national fleet. Testimony presented on space activities this year has not altered that view. In fact, NASA witnesses testified that the shuttle already is booked completely for the first 3 years of operation. While shuttle development delays necessitate continued use of expendable launch vehicles to meet launch requests, payload demands for these vehicles support the predictions for growth in space traffic. Further, the Department of Defense is actively planning for intensive shuttle utilization with the development of its sortie support system in addition to its base payload projections.

The space shuttle remains the key to a viable space transportation system to enable the United States to maintain its leadership in space technology and the utilization of the space environment to meet national needs. Accordingly, the Committee authorizes NASA to initiate procurement of long lead materials for production of a fifth orbiter utilizing funds approved for the space shuttle program in fiscal year 1981.

SPACE FLIGHT OPERATIONS PROGRAM, \$779,500,000

The space flight operations program provides for space transportation system activities other than the Space Shuttle design, development, test, evaluation, and fleet production, and for common supporting functions at the NASA centers. It includes the activities listed in the following table.

Summary of Resources Requirements

Space transportation systems operations capability development...	\$91,000,000
Development, test and mission support.....	183,500,000
Advanced programs.....	8,800,000
Spacelab	148,700,000
Space transportation system operation.....	848,500,000
Total	779,500,000

Space transportation systems operations capability development provides for space transportation system development not funded under the Space Shuttle program. These development and support activities are necessary to facilitate an orderly transition to space transportation system operations and to provide the means for expanding space capabilities while reducing the cost of space operations. Principal areas of activity include space transportation system upper stages, multimission and payload support equipment, mission control center upgrading, payload and operations support, and thrust augmentation of the Space Shuttle.

Development, test, and mission support provides the common engineering, scientific and technical support required for the space transportation systems' research and development activities at the Johnson Space Center, the Kennedy Space Center, the Marshall Space Flight Center, and the National Space Technology Laboratories.

Advanced programs provide technical as well as programmatic data for the definition and evaluation of potential new initiatives so

that they can be considered for future development. These activities are conducted to develop new capabilities, to obtain significant performance improvements, and reduce future program risks and development costs through the effective use of new technology. An important new initiative in advanced programs recommended by the Committee is the Solar Electric Propulsion System.

Spacelab is a major element of the space transportation system. The program is being carried out jointly by the European Space Agency (ESA) and NASA. ESA has undertaken the development of Spacelab and has agreed to supply the first Spacelab to the United States without cost. NASA's support of ESA's Spacelab development effort includes development of support equipment not provided by ESA, the procurement of a second Spacelab, and system activation activities to assure Spacelab compatibility with the orbiter and an operational capability. To assist in balancing the fiscal year 1981 budget, the United States will defer planned payments to ESA for the procurement of the second Spacelab during that fiscal year. To permit production of the Spacelab to continue during fiscal year 1981, ESA's contractor will borrow the money. Therefore, it is vitally important that the funds for Spacelab be authorized and appropriated as it is the appropriation of the requested fiscal year 1981 funds by the Congress which will be accepted by the banks as the guarantee that the United States has negotiated with ESA in good faith.

Space transportation system operations provide the services and operational activities that integrate the Space Shuttle, the Spacelab, and the upper stages into a versatile and economic system; accomplish mission planning; provide the operational recurring hardware and consumables, and support all launch, flight, recovery, crew and related activities. This funding category increases significantly over fiscal year 1980 reflecting the preparations for the beginning of Space Shuttle operations.

Committee comment

The Committee understands the capabilities, for in-space propulsion and auxiliary power applications, of the solar electric propulsion system (SEPS) which has been under study and is now ready to proceed into development, and it recognizes SEPS as an essential part of a versatile national space transportation system. Therefore, to assure the availability of SEPS capabilities and the mission options it will provide in the post-1985 time frame, the Committee has added \$12 million to the bill to initiate its development in fiscal year 1981.

The initiation of this development is not to be viewed as a commitment to the Halley Flyby/Tempel 2 Rendezvous mission.

PHYSICS AND ASTRONOMY PROGRAM, \$352,700,000

Committee comment

This program was reduced a total of \$92.1 million in the revised budget request: \$43 million involving a 2-year delay in the joint NASA/European Space Agency international solar polar mission; \$43 million curtailing Shuttle/Spacelab payload development for future missions; and \$6.1 million planned for basic research and analysis activity, including new instrument development, ground based research, and data analysis and theory to support and complement past, current and future physics and astronomy program missions.

While the Committee recognizes the impact of solar polar mission and Shuttle/Spacelab payload development delays, it believes these are manageable. The research and analysis category represents activities that are fundamental to interpreting and understanding scientific data and to advancing the state of knowledge through research and careful planning for new initiatives. It is important for program continuity that this work continue. The Committee, therefore, restored \$6.1 million for research and analysis and recommends a total of \$352,700,000 for the physics and astronomy program.

PLANETARY EXPLORATION, \$179,600,000

Committee comment

The revised budget request made a \$4.3 million reduction in the planetary program assessed against mission operations and data analysis activities. Specifically, the reduction would preclude upgrading the increasingly unreliable Pioneer Venus computer risking the loss of scientific data, would defer analysis of Pioneer 6-11 spacecraft interplanetary data, and would discontinue further work on Helios mission data.

The Committee notes the large investment in these projects and disagrees that funding should be reduced now, thereby adversely impacting the ability to realize maximum returns on large prior year investments. Accordingly, the Committee restored the \$4.3 million reduction in this program and recommends a total of \$179,600,000.

LIFE SCIENCES PROGRAM, \$43,200,000

Committee comment

The life sciences program was reduced by \$10.6 million in the revised budget request. Of the reduction, \$6.5 million was applied to life sciences flight experiment development, deferring work on a vestibular research facility and delaying by 1 year readiness for the first dedicated life sciences Spacelab flight. While the Committee appreciates that some preparatory work for the Spacelab experiments has been initiated, a review of the Shuttle/Spacelab schedules indicates that

non-availability of these funds at this time may not be the controlling factor for this Spacelab flight.

The remainder of the reduction, \$4.1 million, was assessed against research and analysis activities which are fundamental to life science program objectives. Accordingly, the Committee, as in the other two space science programs, restored the reduction of funding in these activities.

It recommends a total of \$43,200,000 for the life sciences program.

SPACE APPLICATIONS, \$372,400,000

Committee comment

Resource Observations.—The Committee notes that NASA, in revising its fiscal year 1981 budget request, made significant changes in the resource observations category and formally identified through a proposed funding increase of \$30 million, technical and managerial problems in the Landsat D advanced remote sensing satellite development project. Cost increases and launch readiness delays not only involve additional costs, but also cause great concern with respect to the continuity of remotely sensed Landsat data and to the initiation, by NOAA, of an operational land remote sensing system. The budget revision, in fact, deletes \$16 million originally proposed to support the operational system. Testimony reflects that the Landsat D project, including the spacecraft, the thematic mapper and the ground system, is being reevaluated to determine what restructuring, if any, is necessary. Inasmuch as this assessment is still in progress, the Committee desires to be advised in writing of the following prior to commitment of the additional \$30 million to the Landsat D project: (1) selected course of action accompanied by an analysis of all the options proposed and considered, (2) remedial actions proposed to resolve technical and managerial problems, (3) purposes to which the additional funding is to be applied, (4) actions proposed to avoid or minimize a continuity-of-data gap in the Landsat system, and (5) impact of the selected course of action on the initiation of an operational system by NOAA and recommendations for recovering from the setback occasioned by diversion of the proposed operational system support funding to the Landsat D project.

Multi linear array technology.—The Committee believes it is essential to proceed as expeditiously as is technically feasible to the use of solid state technology in the operational remote sensing system. Therefore, the Committee has added \$5 million to the space applications program revised request to initiate a multi linear array technology development program directed to public and private sector user requirements to be conducted over a 3-year period.

National Oceanic Satellite System (NOSS).—The Committee notes that, while a joint NASA/NOAA/DOD organization has been developed and personnel assigned, a formal interagency agreement on the respective responsibilities for funding, development, and opera-

tion of NOSS has not been executed. Further, Phase B studies, a prerequisite to formal development have not been initiated and will not be completed until mid-fiscal year 1981. The Committee believes it is essential for all joint projects, and for one of this size and complexity in particular, to have estimated costs established and agency responsibilities clearly defined and agreed to prior to making major investment decisions. Therefore, while approving the NASA request of \$5.8 million for NOSS for fiscal year 1981, the Committee requests that NASA provide it with copies of the signed interagency agreement, and a report on estimated project costs, and the funding thereof, following completion of the Phase B studies and prior to entering into any contractual commitments for system development.

General.—Consistent with its view expressed in comments on space science programs, the Committee has restored \$8 million to ground-based activities designed to provide the applied research base necessary for applying space technology effectively. These are: \$5 million to resource observations applied research and data analysis which should emphasize identifying and formulating user requirements for remote sensing; and \$3 million to the technology transfer program which will preclude early termination of the Pacific Northwest Land Resources Inventory and allow continuation of other applications verification tests at the original level. In addition, the Committee added \$2.7 million to initiate the materials processing analytical float zone experiment to study the effect of convection flows on crystal growth.

The Committee recommends a total of \$372,400,000 for the space applications program, an amount \$9.3 million below the original request and \$15.7 million above the revised request.

AERONAUTICAL RESEARCH AND TECHNOLOGY PROGRAM, \$285,300,000

Committee comment

The Committee notes the reduction in proposed funding for the aeronautical research and technology program from \$308.3 million in the fiscal year 1980 budget plan to \$290.3 million in the original fiscal year 1981 request to \$275.3 million in the revised request. This is a \$33 million reduction, exclusive of inflationary impact, in activities designed to assure the continued leadership and industrial success of the Nation in aeronautics.

While the Committee recognizes that the aircraft energy efficiency program has passed its peak funding requirements, there are other initiatives that require urgent attention, such as aircraft technology for future fuels and decreasing U.S. dependence on scarce aerospace materials including cobalt, tantalum, columbium and chromium. For this reason, the Committee is dismayed by the reductions in this program and has restored \$10 million of the \$15 million reduction in the revised request to be applied to various new initiatives including those identified above.

The Committee recommendation for this program is \$285,300,000.

CONSTRUCTION OF FACILITIES

<i>Item</i>	<i>Amount</i>
1. Construction of man-vehicle systems research facility, Ames Research Center.....	\$7,480,000
2. Modification of steam ejector system and thermal protection laboratory, Ames Research Center.....	2,300,000
3. Modification of the unitary plan wind tunnel, Ames Research Center.....	3,400,000
4. Modifications to various buildings for energy conservation, Jet Propulsion Laboratory.....	1,500,000
5. Modifications to various buildings for seismic protection, Jet Propulsion Laboratory.....	2,000,000
6. Rehabilitation of high temperature hot water system, zone 2, industrial area, John F. Kennedy Space Center.....	760,000
7. Modifications for avionics integration research laboratory, Langley Research Center.....	5,756,000
8. Modifications to aircraft landing dynamics facility, Langley Research Center.....	15,000,000
9. Rehabilitation and modification of gas dynamics laboratory, Langley Research Center.....	2,000,000
10. Decommissioning of Plum Brook Station reactor facility, Lewis Research Center.....	3,000,000
11. Modifications to central air system, various buildings, Lewis Research Center.....	7,655,000
12. Rehabilitation of electrical switchgear, engine research building, Lewis Research Center.....	1,700,000
13. Rehabilitation of roof, Phase II, Building 103, Michoud Assembly Facility.....	3,800,000
14. Rehabilitation of chilled water system, Michoud Assembly Facility.....	782,000
15. Modification of 26-meter antenna, DSS-44, Canberra, Australia.....	1,200,000
16. Replacement of azimuth radial bearing, DSS-14, Goldstone, Calif.....	950,000
17. Space Shuttle facilities at various locations as follows:	
(a) Modification for manufacturing and final assembly facilities for external tanks, Michoud Assembly Facility.....	5,400,000
(b) Modifications to solid rocket motor manufacturing and assembly facilities, Thiokol plant, Wasatch, Utah.....	2,700,000
(c) Minor Shuttle-unique projects, various locations.....	2,000,000
18. Space Shuttle payload facility: Rehabilitation and modification for payload ground support operations, John F. Kennedy Space Center.....	1,617,000
19. Repair of facilities at various locations, not in excess of \$500,000 per project.....	15,000,000
20. Rehabilitation and modification of facilities at various locations, not in excess of \$500,000 per project.....	20,000,000
21. Minor construction of new facilities and additions to existing facilities at various locations, not in excess of \$250,000 per project.....	4,000,000
22. Facility planning and design not otherwise provided for.....	10,000,000
Total	120,000,000

The Committee is recommending approval of the NASA budget request of \$120 million, unchanged in the revised request, for the Construction of Facilities program for fiscal year 1981. The program consists of 22 line items, including 19 major facility projects and

provision for repair, rehabilitation and modification, minor construction, and facility planning and design activities. Of the total amount recommended, \$74,709,000 is for space-related facilities and \$45,291,000 is for the support of NASA's aeronautical research program. Capital investment in energy reduction measures is continued in fiscal year 1981 with three major projects totaling \$5,170,000, and with 10 minor projects estimated to cost \$3,270,000. The payback period is estimated to be less than 4 years in each project.

The fiscal year 1981 budget is \$36,100,000 below the fiscal year 1980 budget plan. The decrease reflects, in part, the completion of funding for major facilities requirements in both space and aeronautics: space shuttle facilities and the large aeronautical research facility projects at the Ames and Langley Research Centers.

Shuttle facilities funding is \$10,100,000, reduced from \$31,450,000 in fiscal year 1980, and provides for additional external tank production capability at the Michoud Assembly Facility, added solid rocket motor processing facilities at Wasatch, Utah, and for small shuttle-related projects at various locations not to exceed a total of \$2 million. Total shuttle facilities costs are within the original estimate of \$300 million (in 1971 dollars) established in 1972.

The funding for aeronautical research facilities will provide for the following: at the Ames Research Center, modification of steam ejector system and thermal protection laboratory, construction of a new man-vehicle systems research facility for human factors research, and modification of the Unitary Plan wind tunnel to improve operating efficiency; at the Langley Research Center, upgrading the avionics integration research laboratory, expansion of the existing landing dynamics facility to support landing gear research on higher landing speed, heavier aircraft, and rehabilitation of the gas dynamics laboratory; at the Lewis Research Center, accomplishment of phase II of the modification program to upgrade the central air system, and rehabilitation of electrical switchgear in the engine research building.

Other projects involve earthquake hazard reduction and energy modifications in buildings at the Jet Propulsion Laboratory; rehabilitation of the industrial hot water system and provision of shuttle payload facilities at the Kennedy Space Center; completion of the re-roofing project and rehabilitation of the chilled water system at the Michoud Assembly Facility; modification of antennas in the Deep Space Network at Goldstone, Calif., and Canberra, Australia; and decommissioning the nuclear reactor at the Lewis Research Center which has been shut down since 1973.

NASA has a plant and equipment investment of approximately \$6.4 billion. Therefore, this authorization bill continues, with individual line items, the annual programs for rehabilitation and modification, minor construction and major repair initiated in prior years. Each of these categories has individual project cost limits with those projects exceeding those limits presented as line items in the bill.

Rehabilitation and modification activities are designed to update the capabilities of existing facilities to support new technologies and

changing research needs. Minor construction projects provide stand-alone facilities or additions to existing facilities, with an estimated cost of less than \$250,000 each, to also support changing requirements. The "repair of facilities" line item was introduced in fiscal year 1980 to address the fact that a large segment of NASA facilities are now 16 to 30 years old, and have reached the point where major systems, particularly roofs, building walls and utilities, have deteriorated and require major repair and/or replacement. Repair work is distinguished from rehabilitation and modification activity in that repair emphasizes restoration to substantially the original configuration with the intent of preserving the facility's original capability. Rehabilitation is focused on improvements and thus enhancing the capabilities and usefulness of existing facilities. Projects in the repair line item, like those in the rehabilitation and modification and minor construction line items, are selected from a backlog of outstanding work, implemented on a priority-of-need basis, and centrally managed within NASA to provide the best response to agencywide needs. The bill provides \$39 million for these three line items.

Facility planning and design, for which \$10 million is provided, supports engineering studies; the preparation of reports, cost estimates, and construction schedules for proposed projects; the preparation of final construction contract plans, specifications, schedules, and cost estimates for approved projects; and the development and updating of master plans for field installations. The fiscal year 1981 recommendation is \$4 million below the fiscal year 1980 activity level.

RESEARCH AND PROGRAM MANAGEMENT

SUMMARY

Fiscal year 1981	Budget request	Revised budget request	Senate committee action
Personnel and related costs.....	\$779,991,000	\$770,991,000	\$770,991,000
Travel.....	20,825,000	20,825,000	20,825,000
Facilities services.....	124,971,000	122,434,000	122,434,000
Technical services.....	47,496,000	46,532,000	46,532,000
Management and operations support.....	73,871,000	72,372,000	72,372,000
Total.....	1,047,154,000	1,033,154,000	1,033,154,000

The research and program management appropriation includes funding for research in Government laboratories, management of programs, and other activities of NASA. Principally, it is intended to: (1) provide the civil service staff to conduct in-house research, and to plan, manage, and support the research and development programs; and (2) provide other elements of operational capability to the laboratories and facilities such as logistics support (travel and transportation, maintenance, and operation of facilities) and technical and administrative support.

The funding request for this appropriations category for fiscal year 1981 was reduced \$14 million in the revised budget submission. Per-

sonnel and related costs were reduced \$9 million with the remainder of the reduction, \$5 million, distributed to facilities services, technical services and management and operations support.

Approximately three-fourths of this authorization recommendation for fiscal year 1981, or \$770,991,000, is required for the salaries and related personnel costs of NASA employees. This amount will support 22,713 permanent positions, of which approximately 65 percent will be occupied by scientific, engineering, and supporting technician personnel. Programmatically, 18,941 employees will be assigned to space activities and 3,772 employees will be engaged in aeronautical research tasks. Annual Federal salary increases continue to be the major factor influencing funding requirements for research and program management. For example, the October 1979 Federal pay increase will necessitate a supplemental appropriation of \$46,286,000 for fiscal year 1980 even though the employment level is over 200 positions below fiscal year 1979.

The original staffing plan of 22,713 for fiscal year 1981 projected an increase of 100 permanent positions above the prior fiscal year to be allocated to space shuttle program management, augmenting that staff as recommended by program assessments in 1979, and to the newly-created Office of Inspector General. The small increase in NASA personnel was the first reversal in the annual decline in staffing that has prevailed since fiscal year 1968. These continuing reductions have made it exceedingly difficult to recruit young scientists and engineers to reinvigorate the work force, have endangered the agency's ability to effectively manage its complex research activities and utilize unique national research facilities, and have limited NASA's capability to apply its technical competence in support of other national needs such as energy research and development. For these reasons, the original staffing level is being retained with the subsequent revised budget funding reduction of \$9 million in personnel cost to be achieved by management of position vacancies during the fiscal year, i.e., deferral of hiring to cover attrition or for new positions until budget objectives are met.

The remaining funding in this appropriation category is classified into the functional budget categories of travel, facilities services, technical services, and management and operations support. A total of \$262,163,000 is recommended for these activities, the net amount following the \$5 million reduction included in the revised budget. This recommendation is approximately \$24 million above the budget plan for fiscal year 1980 principally due to wage increases for support contractor personnel, to additional man-years of effort at the Kennedy Space Center as the space shuttle approaches operational status, and to increases in the cost of supplies and equipment.

ESTIMATED COSTS

The NASA request for new budget authority for fiscal year 1981 was \$5,736,654,000. The request was revised on March 31, 1980, as a result of a Presidential budget review, to \$5,517,654,000, a reduction of \$219

million. This bill, as recommended by the Committee authorizes appropriations to NASA in the amount of \$5,569,854,000 for the fiscal year. This amount is \$52.2 million above the revised budget request.

In accordance with the requirements of paragraph 11(a), rule XXVI, of the Standing Rules of the Senate, the estimates for the next 5 years of NASA budget authority are as follows:

(In millions of dollars)

Fiscal year:	NASA estimate		Committee estimate	
1981.....	\$5,518		\$5,518	
1982.....	5,872		5,986	
1983.....	5,964		5,995	
1984.....	5,522		6,109	
1985.....	5,221		5,837	

The above estimates are future funding requirements for the continuation or completion of the NASA programs (including the development and production of the Space Shuttle) provided for in this bill. No provision is made for the initiation of new programs and projects after fiscal year 1983 except for the planned procurement of a fifth Space Shuttle orbiter. Further, these estimates do not provide for administrative adjustments that may be required, such as Federal employee pay increases required by law. Future year budgets must, of necessity, reflect the foregoing adjustments and in addition, will undoubtedly include requests for new programs and projects as currently approved activities are completed. The Congress will have an opportunity to exercise its judgment on these new programs and projects when authority and funds are requested to proceed with them. The Committee does expect, however, that the budgets for the fiscal years through 1985 will approximate \$5.9 to \$6.0 billion (in fiscal year 1981 budget dollars with allowance for inflation), as new initiatives are proposed from studies currently under way and as developments demonstrate the need for and the worthiness of new starts in space science, space applications, and aeronautics, building on and capitalizing on the data and experience already acquired.

With respect to section 308(a) of the Congressional Budget Act of 1974, a First Concurrent Resolution on the budget for fiscal year 1981 has not been agreed to. This bill, S. 2240, authorizes \$5.04 billion in new budget authority for space activities (within budget function 250), and \$0.54 billion in new budget authority for aeronautical research (within budget function 400). These amounts are \$40 million and \$10 million above the President's revised budget request for these activities in the respective budget function categories. H. Con. Res. 307, adopted by the House, provides new budget authority for each function in excess of that authorized in this bill. S. Con. Res. 86 agreed to by the Senate proposes budget authority for function 250 (Mission 2) that is about \$140 million below the amount provided in S. 2240 for those activities. It is expected that this deficit will be resolved when the differences between H. Con. Res. 307 and S. Con.

Res. 86, \$0.3 billion, are resolved. Similarly, it is expected that resolution of the difference in new budget authority between H. Con. Res. 307 and S. Con. Res. 86 for budget function 400, \$2.9 billion, will provide for the aeronautical research activities in this bill.

This bill contains no budget authority to provide financial assistance to State and local governments.

The Congressional Budget Office has submitted to the Committee its estimates of this bill pursuant to section 403 of the Congressional Budget Act of 1974. The CBO submission of May 12, 1980 follows:

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

MAY 12, 1980.

1. Bill Number: S. 2440.
2. Bill title: National Aeronautics and Space Administration Authorization Act, 1981.
3. Bill status: As ordered reported by the Senate Committee on Commerce, Science, and Transportation, May 8, 1980.
4. Bill purpose: This bill authorizes appropriations of \$5.57 billion for the National Aeronautics and Space Administration (NASA) for fiscal year 1981. This authorization is \$52.2 million higher than the President's amended budget for fiscal year 1981 and 12 percent above the current fiscal year 1979 appropriation (\$4.97 billion excluding a pending supplemental request of \$300 million).

In addition, the bill authorizes the appropriation of additional sums as may be necessary for increases in salary and employee benefits authorized by law.

5. Cost estimate:

[By fiscal years, in millions of dollars]

	1981	1982	1983	1984	1985
Estimated authorization level:					
Function 250.....	5,034.4				
Function 400.....	535.5				
Function 920.....	47.0				
Total.....	5,616.9				
Estimated outlays:					
Function 250.....	3,614.5	1,204.6	207.8	9.2	1.3
Function 400.....	317.9	165.0	34.8	13.3	4.5
Function 920.....	44.0				
Total.....	3,976.4	1,369.6	242.6	22.5	5.8

Including outlays from prior years' budget authority enacted to date, total fiscal year 1981 outlays for NASA activities will be \$5.3 billion, assuming the funding level authorized in this bill.

6. Basis of estimate: For the purpose of this estimate, it is assumed that this bill will be enacted and the entire amount authorized will be appropriated prior to fiscal year 1981. The estimated funding required for the pay comparability increase is based on a 6.2 percent increase, effective October 1, 1980. This increase falls within budget function

920 in fiscal year 1981. The estimated outlays for fiscal year 1981 funds are based on historical spendout patterns of the major NASA programs.

7. Estimate comparison: NASA projects outlays of \$5.2 billion in fiscal year 1981 assuming enactment of this bill, but excluding the pending supplemental request.

8. Previous CBO estimate: On April 18, 1980, CBO transmitted a cost estimate for H.R. 6413, as ordered reported by the House Committee on Science and Technology, April 16, 1980. S. 2240 authorizes \$52.3 million less than H.R. 6413, resulting in lower estimated outlays in fiscal year 1981 (\$26 million), 1982 (\$22 million), and 1983 (\$4 million).

9. Estimate prepared by: Mark Berkman.

10. Estimate approved by:

JAMES L. BLUM,

Assistant Director for Budget Analysis.

LEGISLATIVE CHANGES

The Committee considered two legislative amendments in its action on this NASA authorization bill.

The Committee redesignated two facility projects in section 1(b), originally identified as sub line items 1(b)(15)(A) and (B) under the heading "Various locations as follows:", as individual line items. The remaining line items in section 1(b) were renumbered to conform with this change. This change was made in accordance with the Committee's view that line item projects should be specified as such rather than set forth under a geographic heading.

The Committee deleted section 6 of the original bill, S. 2240, which would have authorized to NASA such amounts as may be necessary for each appropriations category for fiscal year 1982. Since separate legislative action will be undertaken on the fiscal year 1982 authorization request, no action is necessary at this time.

REGULATORY IMPACT STATEMENT

This bill authorizes the appropriation of funds for the conduct of space and aeronautical research and development activities to carry out the policy and purpose of the National Aeronautics and Space Act of 1958. These activities are conducted in NASA laboratories by NASA personnel and through contracts with industry, universities and research institutions for research and development and for supporting scientific and technical services. The Committee has concluded the nature of these activities is such that there is no regulatory impact on individuals and businesses and, therefore, it is impractical to include in this report a regulatory impact evaluation as set forth in paragraph 11(b), rule XXVI of the Standing Rules of the Senate.

SECTION-BY-SECTION ANALYSIS

Section 1

Subsections (a), (b), and (c) authorize to be appropriated to the National Aeronautics and Space Administration funds, in the total amount of \$5,569,854,000, as follows: (a) for "Research and development," a total of 12 program line items aggregating the sum of \$4,416,700,000; (b) for "Construction of facilities," a total of 22 line items aggregating the sum of \$120 million; and (c) for "Research and program management," \$1,033,154,000. Subsection (c) would also authorize to be appropriated such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.

Subsection 1(d) authorizes the use of appropriations for "Research and development" without regard to the provisions of subsection 1(g) for: (1) items of a capital nature (other than the acquisition of land) required at locations other than NASA installations for the performance of research and development contracts; and (2) grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities. Title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Moreover, each such grant shall be made under such conditions as the Administrator shall find necessary to insure that the United States will receive benefit therefrom adequate to justify the making of that grant.

In either case, no funds may be used for the construction of a facility in accordance with this subsection, the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator notifies the Speaker of the House, the President of the Senate and the specified committees of the Congress of the nature, location, and estimated cost of such facility.

Subsection 1(e) provides that, when so specified and to the extent provided in an appropriation Act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) contracts for maintenance and operation of facilities, and support services may be entered into under the "Research and program management" appropriation for periods not in excess of 12 months beginning at any time during the fiscal year.

Subsection 1(f) authorizes the use of not to exceed \$25,000 of the "Research and program management" appropriation for scientific consultations or extraordinary expenses, including representation and official entertainment expenses, upon the authority of the Administrator, whose determination shall be final and conclusive.

Subsection 1(g) provides that of the funds appropriated for "Research and development" and "Research and program management," not in excess of \$75,000 per project including collateral equipment may be used for construction of new facilities and additions to existing facilities, and for repairs, rehabilitation, or modification of facilities; however, of the funds appropriated for "Research and development," not in excess of \$250,000 per project, including collateral equipment, may be used for any of the foregoing to meet unforeseen programmatic needs.

Section 2

Section 2 authorizes upward variations of the sums authorized for the "Construction of facilities" line items (other than facility planning and design) of 10 percent at the discretion of the Administrator or his designee, or 25 percent following a report by the Administrator or his designee to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the circumstances of such action, for the purpose of meeting unusual cost variations. However, the total cost of all work authorized under these line items may not exceed the total sum authorized for "Construction of facilities" under subsection 1(b), paragraphs (1) through (21).

Section 3

Section 3 provides that not more than one-half of 1 percent of the funds appropriated for "Research and development" may be transferred to the "Construction of facilities" appropriation and, when so transferred, together with \$10 million of the funds appropriated for "Construction of facilities," (other than funds appropriated for facility planning and design), shall be available for the construction of facilities and land acquisition at any location if the Administrator determines (1) that such action is necessary because of changes in the aeronautical and space program or new scientific or engineering developments, and (2) that deferral of such action until the next authorization Act is enacted would be inconsistent with the interest of the Nation in aeronautical and space activities. However, no such funds may be obligated until 30 days have passed after the Administrator or his designee has transmitted to the Speaker of the House, the President of the Senate and the specified committees of Congress a written report containing a description of the project, its cost, and the reason why such project is necessary in the national interest, or each such committee before the expiration of such 30-day period has notified the Administrator that no objection to the proposed action will be made.

Section 4

Section 4 provides that, notwithstanding any other provision of this Act—

- (1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as origi-

nally made to either the House Committee on Science and Technology or the Senate Committee on Commerce, Science, and Transportation;

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by subsections 1(a) and 1(c); and,

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee.

unless (A) a period of 30 days has passed after the receipt by the Speaker of the House, the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Section 5

Section 5 expresses the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

Section 6

Section 6 provides that the Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1981."

SPACE BUDGETS OF OTHER AGENCIES

The following table, the source for which is the Office of Management and Budget, shows new budget authority of all Government agencies:

SPACE ACTIVITIES OF THE GOVERNMENT—HISTORICAL SUMMARY AND FISCAL YEAR 1981 BUDGET RECOMMENDATIONS¹

(In millions of dollars)

	NASA		Department					MSF	Total space
	Total	Space ²	Defense	Energy	Commerce	Interior	Agriculture		
1955.....	56.9	56.9	3.0						59.9
1956.....	72.7	72.7	30.3					7.3	117.3
1957.....	78.2	78.2	71.0		21.3			8.4	178.9
1958.....	117.3	117.3	205.6		21.3			3.3	347.5
1959.....	330.9	260.9	489.5		34.3				784.7
1960.....	523.6	461.5	560.9		43.3			.1	1,065.8
1961.....	964.0	926.0	813.9		67.7			.6	1,808.2
1962.....	1,824.9	1,796.8	1,298.2	147.8	50.7			1.3	3,294.8
1963.....	3,673.0	3,626.0	1,549.9	213.9	43.2			1.5	5,434.5
1964.....	5,099.7	5,016.3	1,599.3	210.0	2.8			3.0	6,831.4
1965.....	5,249.7	5,137.6	1,573.9	228.6	12.2			3.2	6,955.5
1966.....	5,174.9	5,064.5	1,688.8	186.8	26.5			3.2	6,969.8
1967.....	4,965.6	4,830.2	1,663.6	183.6	29.3			2.8	6,709.5
1968.....	4,587.3	4,430.0	1,921.8	145.1	28.1		.5	3.2	6,528.9
1969.....	3,990.9	3,822.0	2,013.0	118.0	20.0		.7	1.9	5,975.8
1970.....	3,745.8	3,547.0	1,678.4	102.8	8.0	1.1	.8	2.4	5,340.5
1971.....	3,311.2	3,101.3	1,512.3	94.8	27.4	1.9	.8	2.4	4,740.9
1972.....	3,306.6	3,071.0	1,407.0	55.2	31.3	5.8	1.6	2.8	4,574.7
1973.....	3,406.2	3,093.2	1,623.0	54.2	39.7	10.3	1.9	2.6	4,824.9
1974.....	3,036.9	2,758.5	1,766.0	41.7	60.2	9.0	3.1	1.8	4,640.3
1975.....	3,229.1	2,915.3	1,892.4	29.6	64.4	8.3	2.3	2.0	4,914.3
1976.....	3,550.3	3,225.4	1,983.3	23.3	71.5	10.4	3.6	2.4	5,319.9
TQ ⁴	931.8	849.2	460.4	4.6	22.2	2.6	.9	.6	1,340.5
1977.....	3,817.8	3,440.2	2,411.9	21.7	90.8	9.5	6.3	2.4	5,982.8
1978.....	4,060.1	3,622.9	2,728.8	34.4	102.8	9.7	7.7	2.4	6,508.7
1979.....	4,595.5	4,030.4	3,211.3	58.6	98.4	9.9	8.2	2.4	7,419.2
Budget:									
1980 estimate....	5,266.9	4,696.6	4,003.4	54.2	90.7	11.7	13.1	2.4	8,872.1
1981 estimate....	5,514.6	4,989.1	4,910.7	50.8	92.9	12.1	15.7	2.4	10,073.7

¹ Historical amounts are estimates based on best data available.

² Excludes amounts for aircraft technology in 1959 and succeeding years. Amounts for NASA-NACA aircraft and space activities not separately identifiable prior to 1959.

³ Adjusted for net offsetting receipts.

⁴ Transitional quarter.

AUTHORIZING APPROPRIATIONS TO THE NATIONAL
 AERONAUTICS AND SPACE ADMINISTRATION

JUNE 27, 1980.—Ordered to be printed

Mr. FUQUA, from the committee of conference,
 submitted the following

CONFERENCE REPORT

[To accompany S. 2240]

The committee of conference on the disagreeing votes of the two Houses on the amendment of the House to the bill (S. 2240) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its disagreement to the amendment of the House and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the House amendment insert the following:

That there is hereby authorized to be appropriated to the National Aeronautics and Space Administration to become available October 1, 1980:

(a) For "Research and development", for the following programs:

- (1) Space Shuttle, \$1,873,000,000;
- (2) Space flight operations, \$779,500,000;
- (3) Expendable launch vehicles, \$55,700,000;
- (4) Physics and astronomy, \$352,700,000;
- (5) Planetary exploration, \$179,600,000;
- (6) Life sciences, \$45,200,000;
- (7) Space applications, \$378,700,000;
- (8) Technology utilization, \$12,600,000;
- (9) Aeronautical research and technology, \$290,800,000;
- (10) Space research and technology, \$115,200,000;
- (11) Energy technology, \$4,000,000; and
- (12) Tracking and data acquisition, \$349,750,000.

(b) For "Construction of facilities", including land acquisition, as follows:

- (1) Construction of man-vehicle systems research facility, Ames Research Center, \$7,480,000;

(2) Modification of steam ejector system and thermal protection laboratory, Ames Research Center, \$2,300,000;

(3) Modification of the unitary plan wind tunnel, Ames Research Center, \$3,400,000;

(4) Modifications to various buildings for energy conservation, Jet Propulsion Laboratory, \$1,500,000;

(5) Modifications to various buildings for seismic protection, Jet Propulsion Laboratory, \$2,000,000;

(6) Rehabilitation of high temperature hot water system, zone 2, industrial area, John F. Kennedy Space Center, \$760,000;

(7) Modifications for avionics integration research laboratory, Langley Research Center, \$5,756,000;

(8) Modifications to aircraft landing dynamics facility, Langley Research Center, \$15,000,000;

(9) Rehabilitation and modification of gas dynamics laboratory, Langley Research Center, \$2,000,000;

(10) Decommissioning of Plum Brook Station reactor facility, Lewis Research Center, \$1,000,000;

(11) Modifications to central air system, various buildings, Lewis Research Center, \$7,655,000;

(12) Rehabilitation of electrical switchgear, engine research building, Lewis Research Center, \$1,700,000;

(13) Rehabilitation of roof, Phase II, Building 103, Michoud Assembly Facility, \$3,800,000;

(14) Rehabilitation of chilled water system, Michoud Assembly Facility, \$782,000;

(15) Modification of 26-meter antenna, DSS-44, Canberra, Australia, \$1,200,000;

(16) Replacement of azimuth radial bearing, DSS-14, Goldstone, California, \$950,000;

(17) Space Shuttle facilities at various locations as follows:

(A) Modification of manufacturing and final assembly facilities for external tanks, Michoud Assembly Facility, \$5,400,000;

(B) Modifications to solid rocket motor manufacturing and assembly facilities, Thiokol plant, Wasatch, Utah, \$2,700,000;

(C) Minor Shuttle-unique projects, various locations, \$2,000,000;

(18) Space Shuttle payload facility: Rehabilitation and modification for payload ground support operations, John F. Kennedy Space Center, \$1,617,000;

(19) Repair of facilities at various locations, not in excess of \$500,000 per project, \$15,000,000;

(20) Rehabilitation and modification of facilities at various locations, not in excess of \$500,000 per project, \$20,000,000;

(21) Minor construction of new facilities and additions to existing facilities at various locations, not in excess of \$250,000 per project, \$4,000,000; and

(22) Facility planning and design not otherwise provided for, \$10,000,000.

(c) For "Research and program management", \$1,033,154,000 and such additional or supplemental amounts as may be necessary for

increases in salary, pay, retirement, or other employee benefits authorized by law.

(d) Notwithstanding the provisions of subsection 1(g), appropriations hereby authorized for "Research and development" may be used (1) for any items of a capital nature (other than acquisition of land) which may be required at locations other than installations of the Administration for the performance of research and development contracts, and (2) for grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities; and title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Each such grant shall be made under such conditions as the Administrator shall determine to be required to insure that the United States will receive therefrom benefit adequate to justify the making of that grant. None of the funds appropriated for "Research and development" pursuant to this Act may be used in accordance with this subsection for the construction of any major facility, the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator or his designee has notified the Speaker of the House of Representatives and the President of the Senate and the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate of the nature, location, and estimated cost of such facility.

(e) When so specified and to the extent provided in an appropriation act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) maintenance and operation of facilities, and support services contracts may be entered into under the "Research and program management" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

(f) Appropriations made pursuant to subsection 1(c) may be used, but not to exceed \$25,000, for scientific consultations or extraordinary expenses upon the approval or authority of the Administrator and his determination shall be final and conclusive upon the accounting officers of the Government.

(g) Of the funds appropriated pursuant to subsections 1(a) and 1(c), not in excess of \$75,000 for each project, including collateral equipment, may be used for construction of new facilities and additions to existing facilities, and for repair, rehabilitation, or modification of facilities: Provided, That, of the funds appropriated pursuant to subsection 1(a), not in excess of \$250,000 for each project, including collateral equipment, may be used for any of the foregoing for unforeseen programmatic needs.

Sec. 2. Authorization is hereby granted whereby any of the amounts prescribed in paragraphs (1) through (21), inclusive, of subsection 1(b)—

(1) in the discretion of the Administrator or his designee, may be varied upward 10 percent, or

(2) following a report by the Administrator or his designee to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the circumstances of such action, may be varied upward 25 percent.

to meet unusual cost variations, but the total cost of all work authorized under such paragraphs shall not exceed the total of the amounts specified in such paragraphs.

Sec. 3. Not to exceed one-half of 1 percent of the funds appropriated pursuant to subsection 1(a) hereof may be transferred to the "Construction of facilities" appropriation, and, when so transferred, together with \$10,000,000 of the funds appropriated pursuant to subsection 1(b) hereof (other than funds appropriated pursuant to paragraph (2) of such subsection) shall be available for expenditure to construct, expand, or modify laboratories and other installations at any location (including locations specified in subsection 1(b)), if (1) the Administrator determines such action to be necessary because of changes in the national program of aeronautical and space activities or new scientific or engineering developments, and (2) he determines that deferral of such action until the enactment of the next authorization act would be inconsistent with the interest of the Nation in aeronautical and space activities. The funds so made available may be expended to acquire, construct, convert, rehabilitate, or install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment. No portion of such sums may be obligated for expenditure or expended to construct, expand, or modify laboratories and other installations unless (A) a period of thirty days has passed after the Administrator or his designee has transmitted to the Speaker of the House of Representatives and to the President of the Senate and to the Committee on Science and Technology of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate a written report containing a full and complete statement concerning (1) the nature of such construction, expansion, or modification, (2) the cost thereof including the cost of any real estate action pertaining thereto, and (3) the reason why such construction, expansion, or modification is necessary in the national interest, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Sec. 4. Notwithstanding any other provision of this Act—

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Technology or the Senate Committee on Commerce, Science, and Transportation.

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by subsections 1(a) and 1(c), and

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee.

unless (A) a period of thirty days has passed after the receipt by the Speaker of the House of Representatives and the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Sec. 5. It is the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible, and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

Sec. 6. This Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1981".

And the House agree to the same.

DON FUQUA,
THOM HARKIN,
JIM LLOYD,
MARILYN L. BOUQUARD,
RONNIE G. FLIPPO,
WES. WATKINS,
JOHN WYDLER,
LARRY WINN, JR.,
BARRY M. GOLDWATER, JR.,
Managers on the Part of the House.

HOWARD W. CANNON,
ADLAI E. STEVENSON,
WENDELL H. FORD,
BARRY GOLDWATER,
HARRISON SCHMITT,
Managers on the Part of the Senate.

JOINT EXPLANATORY STATEMENT OF THE COMMITTEE OF CONFERENCE

The managers on the part of the House and the Senate at the conference on the disagreeing votes of the two Houses on the amendment of the House to the bill S. 2240 to authorize appropriations to the National Aeronautics and Space Administration for fiscal year 1981 for Research and Development, Construction of Facilities, and Research and Program Management, and for other purposes, submit the following joint statement to the House and the Senate in explanation of the disposition of the differences agreed upon by the managers and recommended in the accompanying conference report.

The NASA original request for fiscal year 1981 totaled \$5,736,654,000 and the revised request totaled \$5,517,654,000. The Senate authorized \$5,569,854,000 and the House amendment authorized \$5,622,154,000. The committee of conference agrees to a total authorization for fiscal year 1981 of \$5,587,904,000, as follows:

SUMMARY—ADJUSTMENTS TO FISCAL YEAR 1981 NASA AUTHORIZATION

	Budget request	Revised budget request	House action	Senate action	Committee of Conference
Research and development:					
Space Shuttle.....	\$1,873,000,000	\$1,873,000,000	\$1,878,000,000	\$1,873,000,000	\$1,873,000,000
Space flight operations.....	809,500,000	767,500,000	769,500,000	779,500,000	779,500,000
Expendable launch vehicles.....	55,700,000	55,700,000	55,700,000	55,700,000	55,700,000
Physics and astronomy.....	439,700,000	346,600,000	370,700,000	352,700,000	352,700,000
Planetary exploration.....	179,600,000	175,300,000	179,600,000	179,600,000	179,600,000
Life sciences.....	49,700,000	39,100,000	49,700,000	43,200,000	43,200,000
Space applications.....	281,700,000	256,700,000	286,700,000	272,400,000	278,700,000
Technology utilization.....	13,100,000	12,100,000	13,100,000	12,100,000	12,000,000
Aeronautical research and technology.....	290,300,000	275,300,000	295,300,000	285,300,000	290,000,000
Space research and technology.....	115,200,000	110,200,000	120,200,000	110,200,000	115,200,000
Energy technology.....	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000
Tracking and data acquisition.....	359,000,000	349,000,000	350,500,000	349,000,000	349,750,000
Total.....	4,569,500,000	4,364,500,000	4,473,500,000	4,416,700,000	4,436,750,000
Construction of facilities.....	120,000,000	120,000,000	115,500,000	120,000,000	118,000,000
Research and program management.....	1,047,154,000	1,033,154,000	1,033,154,000	1,033,154,000	1,033,154,000
Grand total.....	5,736,654,000	5,517,654,000	5,622,154,000	5,569,854,000	5,587,904,000

The points in disagreement and the conference resolution of them are as follows:

1. NASA requested \$1,873,000,000 for the space shuttle program.

The House authorized \$1,878,000,000, adding \$5 million to the request for the procurement of long lead materials to maintain the option to build a fifth space shuttle orbiter.

The Senate authorized the NASA request, \$1,873,000,000 with report language authorizing the procurement of long lead materials for a fifth orbiter from within the authorized amount.

The conference substitute adopts the Senate position but within the amount authorized, directs NASA to procure long lead materials necessary to maintain the most efficient production schedule for a fifth Space Shuttle orbiter.

2. NASA requested \$767,500,000, a reduction of \$42 million from the original budget request, for the space flight operations program.

The House authorized \$769,500,000 increasing the revised request by \$2 million, the net result of adding \$12 million for development of a solar electric propulsion system (SEPS) and \$5 million to advanced programs, and a reduction of \$15 million in Spacelab procurement funds.

The Senate authorized \$779,500,000 adding \$12 million to the revised budget request to initiate SEPS development.

The Conference substitute authorizes \$779,500,000 including \$13.8 million for advanced programs and \$144.7 million for Spacelab.

3. The NASA request for the physics and astronomy program was \$346,600,000 following a reduction of \$92.1 million in the revised budget.

The House authorized \$370,700,000 increasing the revised request by \$24.1 million, of which \$18 million restored in part, Shuttle/Spacelab payload development funding and \$6.1 million restored the research and analysis funding cut.

The Senate authorized \$352,700,000 increasing the revised request to restore the \$6.1 million research and analysis cut.

The Conference substitute adopts the Senate position.

4. NASA requested \$39,100,000 for the life sciences program, a reduction of \$10.6 million in the original budget request.

The House authorized the original request of \$49,700,000, restoring the budget revision reductions of \$6.5 million in flight experiments and \$4.1 million in research and analysis activities.

The Senate authorized \$43,200,000, increasing the revised request by \$4.1 million to restore the reduction in research and analysis funding.

The Conference substitute authorizes \$45,200,000 including \$14.7 million for flight experiments.

5. The NASA request for the space applications program was \$356,700,000, following a reduction of \$25 million in the budget revision.

The House authorized \$386,700,000, an increase of \$30 million in the revised request. Of the increase, \$9.3 million was applied to the operational land observing system (a partial restoration of the \$16 million deleted by the budget revision), \$3 million was a partial restoration of the budget reduction in resource observations applied research and data analysis, partial restorations of \$5 million each were made in the reductions in environmental observations applied research and analysis and Shuttle/Spacelab payload development, \$5 million represented a full restoration of the cut in technology transfer, and \$2.7 million was added to support development of the space processing analytical float zone experiment.

The Senate authorized \$372,400,000 for the space applications program, an increase of \$15.7 million in the revised request. Of the increase, \$5 million was a partial restoration of the budget reduction in resource observations applied research and data analysis, \$3 million was a partial restoration of the reduction in technology transfer funding, and the remaining \$7.7 million was for new initiatives—\$2.7 mil-

lion for the analytical float zone experiment (identical with the House) and \$5 million for a multilinear array technology program.

The Conference substitute authorizes \$378,700,000, an increase of \$22 million in the revised request. Of the increase, the Conferees agreed that \$9.3 million is to be allocated to the multilinear array technology and to definition studies of an operational system including private sector involvement. The funds authorized include \$15.8 million for resource observations applied research and data analysis, \$52.9 million for environmental observations applied research and data analysis, and \$11.5 million for technology transfer.

6. NASA requested \$12,100,000 for the technology utilization program, a reduction of \$1 million in the original budget request.

The House authorized \$13,100,000, restoring the \$1 million revised budget cut in biomedical applications activities.

The Senate authorized the revised budget request, \$12,100,000.

The Conference substitute authorizes \$12,600,000 for the technology utilization program.

7. The NASA revised budget request of \$275,300,000 for the aeronautical research and technology program reflected a \$15 million reduction in the original budget.

The House authorized \$295,800,000, an increase of \$20.5 million above the revised request. The increase was to be applied as follows: variable cycle engine high temperature validation, \$4.5 million; high-performance flight experiments, \$5.5 million; high speed aircraft structures technology, \$4 million; aircraft technology for future fuels, \$4 million; conservation of scarce aerospace materials, \$1 million; and general aviation and commuter propeller technology, \$1.5 million.

The Senate authorized \$285,300,000 for the aeronautical research and technology program, increasing the revised request by \$10 million for general research applications including work on future aircraft fuels and scarce aerospace materials.

The Conference substitute authorizes \$290,800,000 for the aeronautical research and technology program with the increase above the revised request to be used for aircraft technology for future fuels, conservation of scarce aerospace materials, variable cycle engine high temperature validation, high-performance flight experiments, high speed aircraft structures technology, and general aviation and commuter propeller technology.

8. The NASA request for the space research and technology program was \$110,200,000 after a reduction of \$5 million in the original budget submission.

The House authorized \$120,200,000, increasing the revised request by \$10 million, with the increase to be applied as follows: \$3.1 million restoring the revised budget cut in the research and technology base; \$1.9 million restoring the budget cut in systems technology activities; \$3 million to enhance chemical propulsion technology activities; and \$2 million for added effort on space platform and large space structure technologies.

The Senate authorized \$110,200,000, the revised budget request.

The Conference substitute authorizes \$115,200,000 with the \$5 million increase to the revised request to be used for advanced chemical propulsion technology and space platform and large space structure technologies.

9. The NASA revised budget request for the tracking and data acquisition program was \$349,000,000, a reduction of \$10 million in the original budget submission.

The House authorized \$350,500,000, an increase of \$1.5 million restoring the revised budget reduction in operations.

The Senate authorized the revised budget request for the program, \$349,000,000.

The Conference substitute authorizes \$349,750,000 for tracking and data acquisition activities.

10. NASA requested \$1,500,000 for a construction of facilities project for modifications to various buildings for energy conservation at the Jet Propulsion Laboratory.

The House deferred this request.

The Senate authorized the requested amount.

The Conference substitute adopts the Senate position.

11. NASA requested \$3,000,000 for a construction of facilities project to initiate decommissioning of the Plum Brook Station reactor facility at Lewis Research Center.

The House deferred this request.

The Senate authorized the requested amount.

The Conference substitute authorizes \$1,000,000 for this project and requests that NASA, in view of the necessity for a phased accomplishment of this project due to radiation hazards, provide the authorizing Committee of the House and the Senate with a project plan for work in ensuing fiscal years by December 31, 1980.

12. The House amendment added a clarifying provision to the bill to conform to the requirement of the Congressional Budget Act of 1974. The words "hereby authorized" were added to the second line of section 1(d) following the word "appropriations."

The Senate bill did not include the foregoing language.

The Committee of conference adopts the House provision.

13. The House amendment consolidated two construction of facility projects at various locations as items 13(A) and 13(B) in subsection 1(b)(13).

The Senate bill established each of these projects as an individual line item.

The conference substitute adopts the Senate position noting that the two projects are individual, unrelated, and separate undertakings and, therefore, should be presented accordingly.

DON FUQUA,
THOM HARKIN,
JIM LLOYD,
MARILYN L. BOUQUARD,
RONNIE G. FLIPPO,
WES. WATKINS,
JOHN WYDLER,
LARRY WINN, JR.,
BARRY M. GOLDWATER, JR.,

Managers on the Part of the House.

HOWARD W. CANNON,
ADLAI E. STEVENSON,
WENDELL H. FORD,
BARRY GOLDWATER,
HARRISON SCHMITT,
Managers on the Part of the Senate.

PUBLIC LAW 96-316—JULY 30, 1980

**NATIONAL AERONAUTICS AND SPACE
ADMINISTRATION AUTHORIZATION
ACT, 1981**

94 STAT. 960

PUBLIC LAW 96-316—JULY 30, 1980

Public Law 96-316
96th Congress

An Act

July 30, 1980
[S. 2240]

To authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes.

National
Aeronautics and
Space
Administration
Authorization
Act, 1981.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby authorized to be appropriated to the National Aeronautics and Space Administration to become available October 1, 1980:

(a) For "Research and development", for the following programs:

- (1) Space Shuttle, \$1,873,000,000;
- (2) Space flight operations, \$779,500,000;
- (3) Expendable launch vehicles, \$55,700,000;
- (4) Physics and astronomy, \$352,700,000;
- (5) Planetary exploration, \$179,600,000;
- (6) Life sciences, \$45,200,000;
- (7) Space applications, \$378,700,000;
- (8) Technology utilization, \$12,600,000;
- (9) Aeronautical research and technology, \$290,800,000;
- (10) Space research and technology, \$115,200,000;
- (11) Energy technology, \$4,000,000; and
- (12) Tracking and data acquisition, \$349,750,000.

(b) For "Construction of facilities", including land acquisition, as follows:

- (1) Construction of man-vehicle systems research facility, Ames Research Center, \$7,480,000;
- (2) Modification of steam ejector system and thermal protection laboratory, Ames Research Center, \$2,300,000;
- (3) Modification of the unitary plan wind tunnel, Ames Research Center, \$3,400,000;
- (4) Modifications to various buildings for energy conservation, Jet Propulsion Laboratory, \$1,500,000;
- (5) Modifications to various buildings for seismic protection, Jet Propulsion Laboratory, \$2,000,000;
- (6) Rehabilitation of high temperature hot water system, zone 2, industrial area, John F. Kennedy Space Center, \$760,000;
- (7) Modifications for avionics integration research laboratory, Langley Research Center, \$5,756,000;
- (8) Modifications to aircraft landing dynamics facility, Langley Research Center, \$15,000,000;
- (9) Rehabilitation and modification of gas dynamics laboratory, Langley Research Center, \$2,000,000;
- (10) Decommissioning of Plum Brook Station reactor facility, Lewis Research Center, \$1,000,000;
- (11) Modifications to central air system, various buildings, Lewis Research Center, \$7,655,000;
- (12) Rehabilitation of electrical switchgear, engine research building, Lewis Research Center, \$1,700,000;

Facilities,
construction.

- (13) Rehabilitation of roof, Phase II, Building 103, Michoud Assembly Facility, \$3,800,000;
- (14) Rehabilitation of chilled water system, Michoud Assembly Facility, \$782,000;
- (15) Modification of 26-meter antenna, DSS-44, Canberra, Australia, \$1,200,000;
- (16) Replacement of azimuth radial bearing, DSS-14, Goldstone, California, \$950,000;
- (17) Space Shuttle facilities at various locations as follows:
 - (A) Modification of manufacturing and final assembly facilities for external tanks, Michoud Assembly Facility, \$5,400,000;
 - (B) Modifications to solid rocket motor manufacturing and assembly facilities, Thiokol plant, Wasatch, Utah, \$2,700,000;
 - (C) Minor Shuttle-unique projects, various locations, \$2,000,000;
- (18) Space Shuttle payload facility: Rehabilitation and modification for payload ground support operations, John F. Kennedy Space Center, \$1,617,000;
- (19) Repair of facilities at various locations, not in excess of \$500,000 per project, \$15,000,000;
- (20) Rehabilitation and modification of facilities at various locations, not in excess of \$500,000 per project, \$20,000,000;
- (21) Minor construction of new facilities and additions to existing facilities at various locations, not in excess of \$250,000 per project, \$4,000,000; and
- (22) Facility planning and design not otherwise provided for, \$10,000,000.

(c) For "Research and program management", \$1,033,154,000 and such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.

(d) Notwithstanding the provisions of subsection 1(g), appropriations hereby authorized for "Research and development" may be used (1) for any items of a capital nature (other than acquisition of land) which may be required at locations other than installations of the Administration for the performance of research and development contracts, and (2) for grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities; and title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Each such grant shall be made under such conditions as the Administrator shall determine to be required to insure that the United States will receive therefrom benefit adequate to justify the making of that grant. None of the funds appropriated for "Research and development" pursuant to this Act may be used in accordance with this subsection for the construction of any major facility, the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator or his designee has notified the Speaker of the House of Representatives and the President of the Senate and the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and

Research and program management.

Research and development.

Transportation of the Senate of the nature, location, and estimated cost of such facility.

(e) When so specified and to the extent provided in an appropriation act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) maintenance and operation of facilities, and support services contracts may be entered into under the "Research and program management" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

(f) Appropriations made pursuant to subsection 1(c) may be used, but not to exceed \$25,000, for scientific consultations or extraordinary expenses upon the approval or authority of the Administrator and his determination shall be final and conclusive upon the accounting officers of the Government.

(g) Of the funds appropriated pursuant to subsections 1(a) and 1(c), not in excess of \$75,000 for each project, including collateral equipment, may be used for construction of new facilities and additions to existing facilities, and for repair, rehabilitation, or modification of facilities: *Provided*, That, of the funds appropriated pursuant to subsection 1(a), not in excess of \$250,000 for each project, including collateral equipment, may be used for any of the foregoing for unforeseen programmatic needs.

Sec. 2. Authorization is hereby granted whereby any of the amounts prescribed in paragraphs (1) through (21), inclusive, of subsection 1(b)—

(1) in the discretion of the Administrator or his designee, may be varied upward 10 percent, or

(2) following a report by the Administrator or his designee to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the circumstances of such action, may be varied upward 25 percent,

to meet unusual cost variations, but the total cost of all work authorized under such paragraphs shall not exceed the total of the amounts specified in such paragraphs.

Sec. 3. Not to exceed one-half of 1 percent of the funds appropriated pursuant to subsection 1(a) hereof may be transferred to the "Construction of facilities" appropriation, and, when so transferred, together with \$10,000,000 of the funds appropriated pursuant to subsection 1(b) hereof (other than funds appropriated pursuant to paragraph (22) of such subsection) shall be available for expenditure to construct, expand, or modify laboratories and other installations at any location (including locations specified in subsection 1(b)), if (1) the Administrator determines such action to be necessary because of changes in the national program of aeronautical and space activities or new scientific or engineering developments, and (2) he determines that deferral of such action until the enactment of the next authorization act would be inconsistent with the interest of the Nation in aeronautical and space activities. The funds so made available may be expended to acquire, construct, convert, rehabilitate, or install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment. No portion of such sums may be obligated for expenditure or expended to construct, expand, or modify laboratories and other installations unless (A) a period of thirty days has passed after the Administrator or his designee has transmitted to the Speaker of the House of

Scientific consultations or extraordinary expenses.

Report to congressional committees.

Transfer of funds.

Representatives and to the President of the Senate and to the Committee on Science and Technology of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate a written report containing a full and complete statement concerning (1) the nature of such construction, expansion, or modification, (2) the cost thereof including the cost of any real estate action pertaining thereto, and (3) the reason why such construction, expansion, or modification is necessary in the national interest, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

SEC. 4. Notwithstanding any other provision of this Act—

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Technology or the Senate Committee on Commerce, Science, and Transportation,

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by subsections 1(a) and 1(c), and

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee,

unless (A) a period of thirty days has passed after the receipt by the Speaker of the House of Representatives and the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

SEC. 5. It is the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible, and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

SEC. 6. This Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1981".

Federal research funds, geographical distribution. 42 USC 2459 note.

Short title.

Approved July 30, 1980.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 96-899 accompanying H.R. 6413 (Comm. on Science and Technology) and No. 96-1142 (Comm. of Conference).

SENATE REPORT No. 96-719 (Comm. on Commerce, Science and Transportation).

CONGRESSIONAL RECORD, Vol. 126 (1980):

June 3, considered and passed Senate.

June 13, H.R. 6413 considered and passed House; passage vacated and S. 2240 amended, passed in lieu.

July 2, House agreed to conference report.

July 21, Senate agreed to conference report.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT-INDEPENDENT AGENCIES APPROPRIATION BILL, 1981

JUNE 19, 1980.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. BOLAND, from the Committee on Appropriations, submitted the following

REPORT
 together with
 ADDITIONAL VIEWS

[To accompany H.R. 7631]

The Committee on Appropriations submits the following report in explanation of the accompanying bill making appropriations for the Department of Housing and Urban Development, and for sundry independent agencies, boards, commissions, corporations, and offices for the fiscal year ending September 30, 1981, and for other purposes.

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SUMMARY OF ESTIMATES AND NEW BUDGET (OBLIGATIONAL) AUTHORITY IN BILL

Department or agency (1)	Appropriations, 1980 (2)	Budget esti- mates, 1981 (3)	Recommended in bill (4)	Bill compared with—	
				Appropriations, 1980 (5)	Budget esti- mates, 1981 (6)
American Battle Monuments Commission.....	\$7,603,000	\$8,897,000	\$8,967,000	+\$1,364,000	+\$70,000
Cemeterial expenses, Army.....	8,326,000	5,135,000	5,135,000	-3,191,000	-12,000
Consumer Information Center.....	1,315,000	1,421,000	1,409,000	+94,000	-12,000
Consumer Product Safety Commission.....	40,600,000	43,489,000	43,489,000	+2,889,000	-
Council on Environmental Quality.....	3,126,000	3,400,000	3,200,000	+74,000	-200,000
Department of Housing and Urban Development.....	33,555,193,000	6,129,520,000	5,937,410,000	-27,617,783,000	-192,110,000
Department of the Treasury.....	6,911,233,000	4,666,639,000	4,666,389,000	-2,244,844,000	-250,000
Environmental Protection Agency.....	4,660,242,000	5,084,317,000	4,729,065,000	+68,823,000	-355,252,000
Federal Emergency Management Agency.....	441,930,000	1,250,738,000	1,195,937,000	+754,007,000	-54,801,000
Federal Home Loan Bank Board.....	(51,825,000)	(56,250,000)	(54,135,000)	(+2,310,000)	(-2,115,000)
National Aeronautics and Space Administration.....	4,923,500,000	1,153,154,000	1,133,154,000	-3,790,346,000	-20,000,000
National Commission on Air Quality.....	5,500,000	2,476,000	2,000,000	-3,500,000	-476,000
National Consumer Cooperative Bank.....	24,950,000	43,634,000	37,700,000	+12,750,000	-5,934,000
National Institute of Building Sciences.....	750,000	625,000	625,000	-125,000	-
National Science Foundation.....	996,250,000	1,074,000,000	1,074,000,000	+77,750,000	-
Neighborhood Reinvestment Corporation.....	12,000,000	13,426,000	12,000,000	-1,426,000	-149,000
Office of Consumer Affairs.....	1,861,000	2,457,000	2,308,000	+447,000	-
Office of Science and Technology Policy.....	2,625,000	2,921,000	2,712,000	+87,000	-209,000
Selective Service System.....	7,830,000	35,482,000	27,137,000	+19,307,000	-8,345,000
Veterans Administration.....	20,331,055,000	20,862,092,000	20,729,436,000	+398,381,000	-132,656,000
Total.....	71,935,889,000	40,383,823,000	39,612,073,000	-32,323,816,000	-771,750,000

¹ Limitation on corporate funds to be expended.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

1980 appropriation.....	\$3,807,500,000
Estimate, 1981.....	4,364,500,000
Recommended in bill.....	Deferred

The Committee recommends deferral of this account pending final action on the 1980 supplemental appropriation.

CONSTRUCTION OF FACILITIES

1980 appropriation.....	\$156,100,000
Estimate, 1981.....	120,000,000
Recommended in bill.....	110,000,000
Decrease below estimate.....	-10,000,000

The Committee recommends \$110,000,000 for construction of facilities in 1981. This is a decrease of \$10,000,000 below the budget request.

The Committee urges that the reduction be applied to specific projects that can be deferred as a result of the recent six month slip of shuttle operational flights from March 1982 to September 1982.

RESEARCH AND PROGRAM MANAGEMENT

1980 appropriation.....	\$859,900,000
Estimate, 1981.....	1,033,154,000
Recommended in bill.....	1,023,154,000
Decrease below estimate.....	-10,000,000

The Committee recommends \$1,023,154,000 for research and program management in 1981. This is a decrease of \$10,000,000 below the budget estimate. The reduction should be applied on a priority basis to contractual services, travel and public affairs. In addition, part of the reduction should be absorbed through a higher lapse rate than is assumed in the 1981 budget.

TITLE IV

GENERAL PROVISIONS

The Committee recommends, with two changes, that the general provisions applicable to the Department and agencies carried in the current fiscal year be continued in fiscal year 1981.

Section 401 of the bill has been clarified to apply to all travel expenses.

The section prohibiting contracts for plant care and watering has not been included in the bill.

In addition, the Committee recommends two new provisions as follows:

SEC. 409. No part of any appropriation contained in this Act for personnel compensation and benefits shall be available for other object classifications set forth in the budget estimates submitted for the appropriations without the approval of the Committees on Appropriations.

SEC. 410. None of the funds in this Act shall be used to pay the expenses of, or otherwise compensate, non-Federal parties intervening in regulatory or adjudicatory proceedings.

Section 409 has been included in the bill prohibiting agencies to use funds requested and appropriated for personnel costs for any other purpose. The Committee believes any overage in personnel compensation and benefit funds should be returned to the Treasury and not used for unbudgeted or lower priority items.

Section 410 prohibits the use of funds in the bill to compensate in any manner non-Federal intervenors in regulatory or adjudicatory proceedings. This limitation is similar to ones carried in other appropriation bills.

INFLATIONARY IMPACT STATEMENT

Clause 2(1)(4) of Rule XI of the House of Representatives requires that each committee report on a bill or resolution shall contain a statement whether enactment of such bill or resolution may have an inflationary impact on prices and costs in the operation of the national economy.

Critics of government spending suggest that practically any spending by government is inflationary. If that were true, then the funds proposed in this bill would be inflationary. However, all Federal spending is not inherently inflationary. It should be analyzed in the context of the economic situation in which it is occurring, the financial condition of the government at the time, and the sectors of the economy which the spending may affect.

The amount proposed for appropriation totals \$39,610,573,000. This is \$773,250,000 below the President's request. Included in the total recommended are funds for veterans benefits, community development grants, environmental programs and general revenue sharing. Other funds will support advanced technology and science that directly and indirectly increase productivity.

It is the considered opinion of the Committee that enactment of this bill will not have an inflationary impact on prices and costs in the operation of the national economy.

Further information on the purpose of the spending proposed in this bill can be obtained in other parts of the report. Also, a large amount of detailed statistical and financial information can be obtained in the hearings conducted in developing this bill.

CHANGES IN THE APPLICATION OF EXISTING LAW

The Committee submits the following statements in compliance with Clause 3, Rule XXI of the House of Representatives, describing the effects of provisions proposed in the accompanying bill which may be considered, under certain circumstances, to change the application of existing law, either directly or indirectly.

1. The Committee, in a number of instances, has found it necessary to recommend funding for ongoing activities and programs where authorizations have not been enacted to date. This includes some or all of the programs under the Department of Housing and Urban Development, the Environmental Protection Agency, the Federal Emergency Management Agency, the National Aeronautics and Space Administration, the National Science Foundation, the Neighborhood Reinvestment Corporation and the Department of the Treasury.

2. In many cases, the Committee has recommended appropriations which are less than the maximum amounts authorized for the various programs funded in the bill. Whether these actions constitute a change in the application of existing law is subject to interpretation, but the Committee felt this should be mentioned.

3. The bill provides that several appropriations shall remain available until expended for which the basic authorizing legislation does not presently authorize such extended availability. Most of these items have been carried in previous appropriation acts. The Committee deems such language desirable in order to provide for the effective use of the funds.

4. The Committee has included limitations for official reception and representation expenses for selected agencies in the bill.

5. The bill contains administrative provisions under the Department of Housing and Urban Development, the Environmental Protection Agency, the Federal Emergency Management Agency and the Veterans Administration. Some of these provisions could possibly be construed as changing the application of existing law.

6. Sections 401 through 410 of title IV of the bill are general provisions which place limitations on the use of funds in the bill and which might, under some circumstances, be construed as changing the application of existing law.

7. The bill includes, in certain instances, limitations on the obligation of funds for particular functions or programs. These limitations include restrictions on the obligation of funds for administrative expenses, the use of consultants, and programmatic areas within the overall jurisdiction of a particular agency.

8. The appropriation language on page 2, in connection with the rent supplement program, reduces the uncommitted balances of previously provided authority by not more than \$30,000,000.

9. The appropriation language on page 3, in connection with the uncommitted loan limitations from prior years for the housing for the elderly or handicapped fund, could be construed as changing the application of existing law.

10. The provision on page 4, in connection with housing for the elderly or handicapped, provides that the receipts and disbursements of the fund shall be included in the totals of the Budget of the United States Government.

11. The provision on pages 4 and 5, in connection with troubled projects operating subsidy, permitting, under certain circumstances, assistance payments to an owner of a multifamily housing project assisted but not insured under the National Housing Act could be construed as changing the application of existing law.

12. The appropriation language on page 5, in connection with the Federal Housing Administration Fund, limits additional commitments to guarantee loans.

13. The appropriation language on page 6, in connection with non-profit sponsor assistance, limiting direct loans could be construed as changing the application of existing law.

14. The appropriation language on page 6, in connection with the special assistance functions fund, limiting obligations could be construed as changing the application of existing law.

15. The appropriation language on page 7, in connection with guarantees of mortgage-backed securities, limits additional commitments to issue guarantees.

16. The appropriation language on page 7, in connection with assistance for solar and conservation improvements provides for a transfer of funds from another agency.

17. The appropriation language on page 8, in connection with community development grants, limiting expenses for planning and management development and administration activities could be construed as changing the application of existing law. Language has also been included limiting commitments to guarantee loans.

18. The appropriation language on page 9, in connection with the rehabilitation loan fund, limiting loans could, under certain circumstances, be construed as changing the application of existing law.

19. The appropriation language on page 9, in connection with urban homesteading, extends program eligibility to additional properties.

20. The provision on page 18, in connection with funds appropriated to the President, disaster relief, limits funding for certain permanent restorative work and debris removal.

21. The language on page 23, in connection with self-help development, limiting the amount of loans could be construed as changing the application of existing law.

22. The language on page 24, in connection with the National Consumer Cooperative Bank Fund, limiting the amounts of loans and guarantees could be construed as changing the application of existing law.

23. The provisions on page 24, in connection with the National Credit Union Administration, Central Liquidity Facility, limiting borrowing authority, direct loans and administrative expenses could be construed as changing the application of existing law.

24. The provisions on page 26, in connection with research and related activities, provide for the use of receipts from other research facilities, and could require proportional reductions in legislative earmarkings. These could be construed as changing the application of existing law.

25. The provision on page 27, in connection with science education activities, could require proportional reductions in legislative earmarkings. This could be construed as changing the application of existing law.

26. The provision on page 28, in connection with the Selective Service System, permits the President to exempt the agency from appropriation restrictions of the Budget and Accounting Act of 1921, as amended.

27. The appropriation language on page 29, in connection with the New York City loan guarantee program, limits commitments on loan guarantees and could be construed as changing existing law.

28. The provision on page 30, in connection with readjustment benefits, eliminates certain benefits.

29. The appropriation language for general operating expenses on page 32 provides for reimbursement to the Department of Defense for the cost of overseas employee mail. This language has been carried previously, and permits free mailing privileges for VA personnel stationed in the Philippines.

30. The appropriation language on page 35, in connection with direct loan revolving fund, limits loans and could, under certain circumstances, be construed as changing the application of existing law.

31. The provision on page 38, in connection with corporations, requires release in an appropriation act of loans and mortgage purchase authority not otherwise required by law.

32. The appropriation language on page 39, in connection with the limitation on administrative and nonadministrative expenses, Federal Home Loan Bank Board, provides for examination of Federal and state chartered institutions.

Calendar No. 1008

96TH CONGRESS }
2d Session }

SENATE

REPORT
No. 96-926

COMPARISONS WITH BUDGET RESOLUTION

Section 308(a)(1)(A) of the Congressional Budget Act of 1974 (Public Law 93-344) requires that a statement be included in the report showing comparisons between the new budget authority targets set forth in the first concurrent resolution on the fiscal year 1981 budget, as allocated by the Committee on Appropriations under section 302 of the Act, and the budget authority contained in the accompanying bill.

Because of the lateness in passage of the First Budget Resolution for fiscal 1981, together with the delay in the allocation of budget totals under Section 302(a) of the Budget Act, the Committee on Appropriations has been unable to report Subcommittee targets to the House in accordance with Section 302(b) of the Budget Act prior to reporting this bill. Therefore, the comparison required under Section 308(a)(1)(A) of the Budget Act is not possible at this time.

FIVE YEAR PROJECTION OF OUTLAYS

In accordance with Section 308(a)(1)(B) of the Congressional Budget Act of 1974 (Public Law 93-344), the following table contains five year projections of the outlays associated with the budget authority provided in the accompanying bill:

Budget authority-----	\$39,612,073,000
Outlays:	
1981-----	27,910,011,000
1982-----	7,184,313,000
1983-----	2,733,143,000
1984-----	1,596,794,000
1985-----	187,812,000

ASSISTANCE TO STATE AND LOCAL GOVERNMENTS

In accordance with Section 308(a)(1)(C) of the Congressional Budget Act of 1974 (Public Law 93-344), the new budget authority and outlays provided by the accompanying bill for financial assistance to state and local governments are as follows:

Fiscal year 1981 new budget authority-----	\$9,445,828,000
Fiscal year 1981 outlays resulting therefrom----	2,687,961,000

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT—INDEPENDENT AGENCIES APPROPRIATION BILL, 1981

SEPTEMBER 4 (legislative day, JUNE 12), 1980.—Ordered to be printed

Reported, under authority of the order of the Senate of JANUARY 23 (legislative day, JANUARY 15), 1979 by Mr. PROXMIRE with amendments

Mr. PROXMIRE, from the Committee on Appropriations, submitted the following

REPORT

[To accompany H.R. 7631]

The Committee on Appropriations, to which was referred the bill (H.R. 7631) making appropriations for the Department of Housing and Urban Development, and for sundry independent agencies, boards, commissions, corporations, and offices for the fiscal year ending September 30, 1981, and for other purposes, reports the same to the Senate with various amendments and presents herewith an explanation of the contents of the bill.

AMOUNT OF NEW BUDGET (OBLIGATIONAL) AUTHORITY

	<i>Fiscal year 1981</i>
Amount of bill as passed by House	1 \$39,287,464,000
Amount of change by Committee.....	+ 29,868,104,000
Amount of bill as reported to Senate.....	69,155,568,000
Amount of appropriations to date, 1980.....	73,309,649,000
Amount of budget estimates, 1981	2 3 73,490,805,000
Under estimates for 1981	- 4,335,237,000
Under appropriations for 1980.....	- 4,154,081,000

¹ Does not include budget estimates of \$33,196,631,000 for annual contributions for assisted housing, \$4,364,500,000 for the research and development activities of the National Aeronautics and Space Administration, and \$500,000,000 for local government transitional assistance.

² Does not include budget estimate of \$300,000,000 for local government transitional assistance, and \$4,569,949,000 for general revenue-sharing payments, deferred pending passage of authorizing legislation.

³ Includes \$113,800,000 request contained in S. Doc. 96-56.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

1980 appropriation	\$4,092,500,000
1981 budget estimate	4,364,500,000
House allowance	Deferred
Committee recommendation	4,430,000,000

The Committee recommends an appropriation of \$4,430,000,000 in fiscal year 1981 for the research and development activities of the National Aeronautics and Space Administration. This amount is \$65,500,000 more than the amended budget estimate and \$139,500,000 less than the January budget request. The House deferred consideration of NASA's research and development program.

The Committee notes that given the funding recommended by the Committee, NASA will be able to support all of the programs authorized by Public Law 96-316.

The Committee recommends a general reduction of \$6,750,000 in the space and terrestrial applications program as a result of NASA's failure to conform to reprogramming requirements in the purchase of a reconnaissance aircraft. With this reduction in the amounts authorized, the funding recommended by the Committee for NASA research and development is \$6,750,000 below the authorization ceiling.

The objectives of the National Aeronautics and Space Administration program of research and development are to extend our knowledge of the Earth, its space environment, and the universe; to expand the practical applications of space technology; to develop, operate, and improve manned and unmanned space vehicles; to provide technology for improving the performance of aeronautical vehicles while minimizing their environmental effects and energy consumption; and to assure continued development of the aeronautics and space technology necessary to accomplish national goals. The Committee firmly believes that the activities conducted by NASA are vital to the scientific, economic, and national security interests of this country. The research and development program at NASA consists of the following activities:

Space transportation systems.—This activity provides all the transportation and associated support capabilities required to conduct space operations. The major focus of NASA's space transportation program is currently the development and testing of the Space Shuttle—the first reusable space vehicle and the principal element of a versatile, space transportation system designed to provide domestic and international users with round trip access to space for the 1980's and beyond. The Shuttle will consist of a reusable delta-wing orbiter vehicle with three main engines, an expendable propellant tank, and reusable twin solid rocket boosters. It will provide unique capabilities for placement and retrieval of satellites, in-orbit servicing of satellites, and delivery to Earth orbit of payloads and propulsive stages for higher altitude and planetary missions. Although difficulties with engine testing

and the thermal protection system have resulted in adjustments to program schedules and initial launch of the first Shuttle orbiter, the first orbital flight is currently scheduled for 1981. The fiscal year 1981 budget request provides for continuation of development, flight testing, and orbiter production on a schedule to meet national requirements. Specifically, in fiscal 1981, NASA will continue to focus on orbital flight testing of the entire system and main engine; completion of external tank and solid rocket booster deliveries to support the orbital flight tests; continuation of fabrication of the second, third, and fourth Shuttle orbiters; and continuation of engine fabrication for the production Shuttle vehicles and flight spares for the orbiters' main engine. The appropriation recommended by the Committee will also provide expendable launch vehicles and services, as well as engineering support, required during the transition to the space transportation system.

The Committee recommends the budget request of \$2,696,200,000 for space transportation systems, the same as the request.

Space science.—This program utilizes space systems, supported by airborne and ground-based observations, to conduct scientific investigations of the Earth and its space environment, the Sun, the planets, and interplanetary and interstellar space, and the other stars of our galaxy and universe. Results from these investigations contribute to our understanding of the universe, including the key questions of life, matter, and energy. In fiscal year 1981, work will continue on development of the space telescope project, \$119,300,000; the continued development of the International Solar Polar Mission, \$39,600,000—a joint NASA and European Space Agency mission scheduled for launch in 1985; initiation of development work on a gamma ray observatory project, \$19,100,000, which will pursue major advances in gamma-ray astronomy; and continuation of development work on Project Galileo—a planetary flyby and probe mission to Jupiter, \$63,100,000.

The Committee has recommended \$589,500,000 for space science. This is \$28,500,000 more than the amended request and \$78,500,000 less than the January budget estimate. The additional \$28,500,000 will be used to continue the work on relativity, continue the effort to define a number of important spacelab payloads, initiate development of a solar electric propulsion system (SEPS), and replace the Pioneer Venus mission computer system, among other activities. Within this account the Committee has included \$6,600,000 for the active magnetospheric particle tracer explorers (AMPTE) program which will initiate the era of active experiments in space for the 1980's, by injecting identifiable ions into the solar wind and magnetosphere and trace their subsequent magnetospheric entry and transport using instruments on a companion spacecraft and on the ground. The program is a part of the baseline of Explorer spacecraft in the recent National Academy of Sciences strategy document "Solar-System Space Physics in 1980's: A Research Strategy, 1980," and represents an integral part of NASA's solar-terrestrial physics program.

Space and terrestrial applications programs.—These programs are designed to develop, demonstrate, and transfer space technology, systems and related capabilities which can be applied for practical benefits

here on Earth. Space applications research and development covers the areas of resource observations, environmental observations, materials processing and communications, and technology transfer and utilization activities, which are designed to accelerate and expand the availability and use of technology developed in all NASA programs into the private and public sectors of the economy. Among the major space and terrestrial applications activities for fiscal year 1981, are: continued development of the Landsat-D Earth resources satellite, which is scheduled for launch in late 1981, \$94,300,000; continued development of the Earth radiation budget experiment satellite system in cooperation with other Federal agencies, \$17,000,000; initiation of the development of a national oceanic satellite system (NOSS) in concert with the Defense Department and the National Oceanic and Atmospheric Administration, \$5,800,000; development of the halogen occultation experiment, \$4,500,000; and continued work in the areas of materials processing, communications research and development; and the utilization of NASA-generated technology by both the public and private sectors.

The Committee has provided \$384,550,000 for the space and terrestrial applications program. This amount is \$15,750,000 more than the amended request and \$10,250,000 less than the January request. A total increase of \$22,000,000 will be used for definition activities on the operational land observing system and advanced technology development on the multilinear array—the next generation of remote sensing technology; continuing research in land and water resources disciplines; continued analysis of remotely sensed ocean data; development of the analytical floating zone experiment system; and a number of other activities. Technology applications would utilize an increase of \$500,000 to start new activities in the areas of biomedical applications, transportation, public safety and manufacturing.

The Committee has deleted \$6,750,000 from the revised request as a result of NASA's failure to conform to reprogramming requirements established by this Committee in the purchase of a reconnaissance aircraft.

Aeronautics and space technology.—The objective of the aeronautics program is the advancement of aeronautical technology to insure safer, more economical, efficient and environmentally acceptable air transportation systems which are responsive to current and projected national needs. The program is designed to help maintain our competitive position in the international aviation marketplace and to aid the military in maintaining the superiority of the Nation's military aircraft. In fiscal year 1981, the program will continue the fundamental disciplinary research and technology activities essential to meet these goals, including: development of a strong research and technology base in aerodynamics, propulsion, avionics, flight controls, human-vehicle interaction, materials, and structures; and continued focused technology activities in the areas of conventional takeoff and landing aircraft, rotorcraft, and high performance aircraft. The 1981 program also includes variable cycle propulsion systems research, focusing on techniques to enhance the aero/acoustic performance of the coannular

exhaust systems in advanced propulsion systems; and on advanced turboprops to develop and verify propeller structural and aerodynamics scaling methodology for advanced turboprop propulsion systems. The objective of the space research and technology program is to provide the technology base necessary to support current and future space activities, including the advanced technology required to further reduce the costs of space activities. NASA also intends to offer support to Government agencies engaged in national energy programs, through its energy technology subactivity.

The Committee has provided \$410,000,000 for aeronautics and space technology. This amount is \$20,500,000 above the amended request and \$500,000 above the January request. The additional \$20,500,000 recommended will provide additional funding for future fuels; variable cycle engine high temperature validation; high speed aircraft structures technology; general aviation; alternate alloys, and commuter propeller technology; advanced chemical propulsion technology activities; expanded cycle dual-thrust engine technology; the expansion of the technical development activities involved in large space structures and space platforms; and a number of other activities.

Tracking and data acquisition.—This program provides for continuation of tracking and data acquisition support for Earth orbital spacecraft, planetary missions, and sounding rockets, and research aircraft. This support is provided by a worldwide network of NASA ground stations, interconnected by a communications system which provides the capability for instantaneous transmission of data and critical commands between spacecraft and the flight control centers. Facilities are also provided to process into meaningful form the scientific, applications, and engineering data which are collected from flight projects. A major aspect of the tracking and data acquisition program in the future will be the tracking and data relay satellite system (TDRSS) which will support essentially all Earth orbital spacecraft missions and improve NASA's Earth orbital tracking and data acquisition capabilities. NASA will acquire this capability through an arrangement under which the contractor will establish the system and provide NASA with TDRSS services beginning next year. In the interim, the agency's spacecraft tracking and data network will support an average of approximately 40 Earth orbital scientific and applications spacecraft, including the high energy astronomical observatories, the heat capacity mapping mission, Landsat-3, all Shuttle orbital flight tests as well as international missions and missions of other U.S. agencies. The deep space network tracking system will continue to support a number of planetary missions in 1981 including the Pioneer 6-11 missions, Helios 1 and 2, Voyager 1 and 2 and Pioneer Venus.

The Committee has provided \$349,750,000 for NASA's tracking and data acquisition activities. This amount is \$750,000 above the amended request and \$9,250,000 below the January request. The additional \$750,000 will be utilized in Network Operations to reduce the risk of inadvertent interruption of on-orbit spacecraft support. It is important to reduce this risk so as to maximize the data required from satellites already aloft.

CONSTRUCTION OF FACILITIES

1980 appropriation.....	\$156,100,000
1981 budget estimate.....	120,000,000
House allowance.....	110,000,000
Committee recommendation.....	120,000,000

The Committee recommends this budget estimate of \$120,000,000 for construction of facilities activities in fiscal year 1981, which is \$10,000,000 more than the level of funding recommended by the House.

The construction of facilities appropriation recommended by the Committee provides for contractual services for repair, rehabilitation and modification of existing facilities; the construction of new facilities; the acquisition of related facility equipment; the design of facilities projects and advance planning related to future facilities needs. Specifically, the funding level approved by the Committee will allow for continuation of prior years' endeavors in meeting the facilities requirements for the Space Shuttle and Space Shuttle payloads; construction and modification of aeronautical research and development facilities; repair, rehabilitation, and modification of other facilities to maintain, upgrade, and improve the usefulness of the NASA physical plant; minor construction of new facilities, and facility planning and design activities.

Of the \$120,000,000 recommended by the Committee for construction of facilities in fiscal year 1981, \$7,480,000 is scheduled to be used for construction of a Man-Vehicle Systems Research Facility at the Ames Research Center; \$15,000,000 for completion of modifications to the Aircraft Landing Dynamics Facility at Langley Research Center; \$7,655,000 for completion of modifications to the central air system at various buildings at the Lewis Research Center; \$15,000,000 for various large repairs at NASA facilities not exceeding \$500,000; \$20,000,000 for rehabilitation and modification of various NASA facilities not exceeding \$500,000; \$4,000,000 for minor construction projects not exceeding \$250,000; and \$10,000,000 for facility planning and design.

RESEARCH AND PROGRAM MANAGEMENT

1980 appropriation.....	\$996,186,000
1981 budget estimate.....	1,033,154,000
House allowance.....	1,023,154,000
Committee recommendation.....	1,032,404,000

The Committee recommends the appropriation of \$1,032,404,000 in fiscal year 1981 for research and program management. This level of funding is \$9,250,000 more than the amount contained in the House passed bill and \$750,000 below the budget estimate.

The research and program management appropriation supports the performance and management of research, technology, and test activities at NASA installations, and the planning, management, and support of contractor research and development tasks necessary to meet the Nation's objectives in aeronautical and space research. Specifically, the appropriation recommended by the Committee provides the technical and management capability of the civil service staff needed to conduct the full range of programs for which NASA is responsible;

maintains facilities and laboratories in a state of operational capability and manages their use in support of research and development programs; and provides technical and administrative support for the research and development programs at NASA. Approximately 75 percent of the appropriation recommended by the Committee is needed to provide for salaries and related expenses of a civil service workforce of more than 22,500 civil service personnel at 10 installations and headquarters.

The Committee's reduction of \$750,000 below the budget estimate represents a cut of 50 percent in senior executive service bonuses, in view of the 50-percent reduction in the number of executives that will be eligible for such bonuses next year mandated by Public Law 96-304.

The Committee notes that section 417 of the bill includes a reduction of \$14,042,000 in the NASA budget to be applied against funds to be spent throughout the Agency for the procurement of consultant services. This 15 percent reduction is not necessarily to be confined to this account.

The Committee reaffirms its belief that a strong program of international space cooperation is of benefit to the United States. Such a program increases useful activity in space while reducing costs to the U.S. Treasury. The Committee recognizes that prudent conduct of an international program requires certain travel to meet project obligations. While the Committee believes that NASA, like all agencies, must exercise restraint in the use of public funds for all its travel, it is the intent of the Committee in appropriating travel funds to NASA that the agency be able to meet its reasonable international programmatic obligations.

REPROGRAMING

Over the past year, the Committee has been deeply concerned about the manner in which NASA has reprogramed funds within and between budget line items. On at least three occasions, the Committee staff has been informed by NASA of reprogramming or program commitments not previously specified in the budget justifications after the commitment of these funds was inevitable. On one such instance—November 21, 1979—the Committee officially objected to the procedures used by NASA and indicated that it expected NASA to conform with the reprogramming procedures specified in authorization legislation, Public Law 96-481, and those contained on page 5 of the Senate report accompanying the fiscal year 1980 appropriations bill, Report 96-258. Since then, the agency has, on at least two occasions, made commitments of substantial funds—\$20,000,000 to \$30,000,000—without prior notification. The Committee feels that it is impossible to exercise its oversight responsibility under such circumstances. Consequently, Committee staff has engaged in extensive discussions with NASA on the reprogramming procedures used by the agency. During the course of those discussions, an understanding was reached as to the circumstances that would warrant prior notification and the procedures that would be followed in those cases. It is understood that:

NASA will continue to notify the Committee of statutory reprogramming actions under section 1(d), 3 and 4, of the annual authorization acts.

As soon as practicable after NASA receives its apportionment, NASA will provide the Committee with a formal operating plan at the level of detail contained in the August 6, 1980 memorandum from NASA to the Committee.

Thereafter, NASA will notify the Committee in advance of increases in any line of the operating plan which exceeds \$1,000,000 cumulatively.

In addition, NASA will notify the Committee in advance of any action which will substantially increase NASA's institutional capabilities, substantially change an ongoing R. & D. program, or require significant funding in future years.

The Committee expects that NASA will transmit such notifications at least 15 days prior to the actual date when such reprogramming is expected to occur. The Committee also expects that NASA will modify its budget justification materials to insure that all programs, activities and procurements costing \$10,000,000 or more are specifically identified in the justifications. In the future, the Committee does not intend to learn of such large procurements through NASA's press releases.

The Committee recognizes that inherent in the management of large-scale research and development programs is the need for flexibility in the use of appropriations to support timely work on unanticipated problems or to seize new unexpected opportunities. Because the Committee desires NASA to retain such flexibility, it has proposed the above outline procedures on a trial basis. It is not now the intent of the Committee to propose legislation on specific reprogramming requirements. However, in the event that the implementation of the above procedures prove unsatisfactory, the Committee will consider the introduction of such legislation next year.

TITLE IV—GENERAL PROVISIONS

The Committee concurs with the general provisions that apply to the Department and agencies funded through this legislation in fiscal year 1981 as approved by the House with the following deletions, amendments, and additions:

FRAUD, ABUSE, WASTE, AND ERROR

Five, the Committee recommends the addition of four new sections to the bill—sections 414 through 417 of the bill as reported—all of which are designed to prevent fraud, abuse, waste, and error in programs funded by this bill.

Few problems are more damaging to the confidence Americans have in their Government than are fraud, abuse, waste, and error in Federal programs. Problems of this kind cost taxpayers millions of dollars every year; they reduce the effectiveness and value of programs that provide vital services; and perhaps most importantly, they lead many citizens to conclude that no one in the Federal Government is capable of or interested in using tax dollars properly.

During the course of several years, the Committee has taken important steps to reduce fraud and waste and to counter these unfortunate side effects. Most recently, the Committee included a comprehensive package of general provisions and report language in the fiscal year 1980 Supplemental Appropriations Act, Public Law 96-304, to address these problems.

That package directed agencies to improve management, accounting, and internal controls; eliminate unresolved audits; collect overdue moneys owed the Government; prevent withdrawal of cash by Federal grantees in excess of their immediate needs; and properly discipline employees guilty of fraudulent behavior associated with their official duties. The Committee also served notice that it would impose a last-quarter spending limit on all fiscal year 1981 appropriations bills, as well as make a substantial cut in spending for consultants throughout Government.

Because of the Committee's continuing interest in finding solutions to these problems, it has included in this appropriation bill those general provisions on fraud and waste that were in Public Law 96-304 and has added general provisions to limit last-quarter spending and to reduce consultant costs. The Committee wishes to reiterate the necessity for all agencies to comply with both the letter and the spirit of all of these provisions, as well as to heed carefully the report language in this bill and the 1980 Supplemental Appropriations Act relating to these provisions.

All Federal agencies and officials must make the fight against fraud and waste one of their highest priorities. As part of that effort, they must institute more effective management procedures and internal controls. Unless Federal managers at all levels and all grades actively pursue efforts to curb fraud and waste, and unless internal controls to prevent such problems are operating properly, the problems of fraud and waste in Government will continue unabated.

That is why each Federal agency and department must carefully and continuously review its operations and make any improvements necessary to assure that fraud, abuse, waste, and error are effectively prevented from occurring. That responsibility is no less important than any other duty of Federal officials in any department or agency.

LIMIT ON LAST-QUARTER SPENDING

In section 414 of the bill, the Committee has recommended a limit on last-quarter spending. That limitation is designed to curb the serious problem of agencies spending excessively at the end of the year to avoid returning money to the Treasury or to avoid possible cuts in future appropriations.

The Committee firmly believes that immediate action of this kind is necessary to stem the wasteful flow of public funds during the closing days and hours of the fiscal year. Taxpayers are legitimately demanding that agencies stop this practice and Congress must take action now to see that they do so. Not only does hurry-up spending result in unnecessary expenditures, it gives citizens the impression that Federal funds are not being properly controlled.

The Committee believes that this general provision will force agencies to plan their expenditures more carefully and will help prevent these last-quarter spending sprees.

All agencies and departments are expected to comply strictly with this provision and to implement all necessary management and internal controls to make certain it is carried out. The Committee will closely monitor agency performance under the provision and will make any necessary adjustments in the future.

At the same time, the Committee wishes to reiterate that this provision does not interfere with any other actions by Congress or the executive branch to curb abuses in last-quarter spending. In fact, the Committee urges authorizing committees and the Office of Management and Budget to address this problem immediately. Procedures or operations within agencies that encourage last-quarter spending abuses, or which make them easier, should be corrected. The Committee believes that such actions would reinforce the efforts of the Appropriations Committee and make it even clearer to agencies that Congress expects them to put an end to such abuses at once.

UNRESOLVED AUDITS

In section 415 of the bill, the Committee has recommended language directing agencies to resolve all unresolved audits now pending by the end of fiscal year 1981 and to resolve any new audits within 6 months. This repeats a general provision included in the fiscal year 1980 Supplemental Appropriations Act.

Hundreds of millions of dollars worth of audit findings, some of which are many months or years old, are pending in agencies throughout Government.

The Committee believes that those audits can be resolved—that is, Federal managers can decide whether to collect questioned costs—by the end of the fiscal year. That appears to be a reasonable expectation in light of the fact that OMB has set a 6-month limit on resolution of audits. Further, the Committee gave adequate warning in the 1980 Supplemental that agencies would be expected to eliminate their backlog by the end of fiscal year 1981.

At the same time, the Committee cautions agencies against hastily resolving pending audits simply to reduce the backlog. That is not the intention of the Committee. Agencies have enough time before the close of the fiscal year to properly review and resolve those audits now pending.

All agencies should report their progress in resolving audits—as well as provide a summary of unresolved audits—as directed in the report language on section 305 of Public Law 96-304. The Committee intends to monitor agency performance and progress carefully.

OVERDUE DEBTS OWED THE GOVERNMENT

In section 416 of the bill, the Committee has proposed language requiring agencies to improve their efforts to collect overdue debts owed the Government. Once again, this general provision repeats a similar provision included in the fiscal year 1980 supplemental.

The Committee is troubled by the fact that agencies often maintain ineffective, out-of-date procedures to collect debts—often not knowing exactly who owes what or how much is overdue. The Committee is even more troubled by the apparent lack of concern shown by many Federal managers about collecting overdue debts.

Therefore, the Committee has included this general provision requiring agencies to take action to improve collection of overdue debts, charge reasonable interest on overdue debts, and reduce the amount of debts written off as uncollectible.

The Committee intends to monitor agency performance in this area carefully and expects agencies to report their progress under this provision as the Committee directed in report language attached to the supplemental.

CONSULTANTS

In section 417 of the bill, the Committee has recommended a general reduction of \$28,297,000 in funding for consultants' services.

The Committee has long been concerned over excessive use and misuse of consultants to perform tasks which should be done by current regular Government employees, which may not need to be done at all, or which make no useful contribution to the accomplishment of an agency's mission.

For that reason, the Committee has made a substantial reduction in the funds Federal agencies can spend during fiscal year 1981 for the use of consultants. That spending cut amounts to approximately 15 percent of what agencies would likely have spent during the year for consultants. This reduction is fully justified in light of the need to cut unnecessary spending and to eliminate serious abuses that continue to occur in the use of consultants.

OMB had previously issued a bulletin (80-9) stating the Administration's intention to reduce funding for consulting services in the fiscal year 1981 budget by 15 percent and requiring executive departments and agencies to provide information on the amounts included in their fiscal year 1981 budgets for this purpose. In its report on the fiscal year 1980 supplemental bill, the Committee had stated its intention of reducing these base figures by 20 percent once they were ascertained.

However, when these figures on funding for consultant services were finally obtained, in late August, it was obvious that they were unrealistically low, totaling only about \$414,000,000 out of a total budget of \$691,000,000.

In order to obtain more realistic figures, the Committee's investigation staff—in cooperation with that of the Subcommittee on Civil Service and General Services of the Committee on Governmental Affairs—compiled the actual dollar amounts of all contract awards for expert and consultant services published by each agency of Government in Commerce Business Daily during calendar year 1979. These totaled \$2,477,503,000.

The Committee believes that these figures are a more realistic reflection of actual expenditures for consultant services because the agencies awarding the contracts designated them as being for this purpose and, unlike the figures provided to OMB, they were not reported for the purpose of a budget cut. Consequently, the Committee decided to use these figures as the basis for its consultant cut rather than those reported to OMB. However, because the figures are generally so much higher than the OMB figures, the Committee has imposed only a 15-percent cut rather than the 20 percent initially proposed in the report on the 1980 supplemental.

The base amounts and the 15-percent cut for the major departments and agencies included in this bill are as follows:

	Base amount	15-percent cut
HUD	\$23,253,000	¹ \$3,487,000
EPA	109,124,000	¹ 16,368,000
NASA	93,616,000	14,042,000
VA	3,208,000	² 481,000
Total	229,201,000	34,378,000

¹ A portion of these cuts were made in the "Salaries and expenses" accounts rather than in section 417 of the General Provisions.

² This amount is subsumed by a \$4,683,000 reduction which the subcommittee made in the amounts to be made available to VA for procurement of consultant services.

The Committee notes that of this total reduction in consultants, \$6,081,000 was taken as the result of specific cuts made in line item accounts in titles I and II of the bill, leaving a total of \$28,297,000 to be reduced as a result of this general provision.

The Committee believes that the major reason for the vast discrepancy in the consultant figures published in Commerce Business Daily and those reported to OMB is the narrowness of the definition of consulting services in OMB Circular A-120. This circular states that consulting services are those services of a purely advisory nature relating to the governmental functions of agency administration and management and agency program management. Apparently this definition allowed agencies to exclude many services they normally regard as consultant services, in order to minimize the proposed budget cut.

The Committee's major concern is not whether the services being obtained from outside sources are of a purely advisory nature or relate to some other purpose, but rather whether they are necessary and whether they could be provided more economically by Government personnel. Discussions have been held with representatives of OMB on a possible revision of the definition of consulting services, but no agreement has yet been reached.

In order to make more informed decisions and selective cuts in appropriations for consultant services in the future, the Committee has repeated in this bill a general provision from the 1980 Supplemental Appropriation Act, Public Law 96-304, section 307, which requires each Federal agency to include in its annual budget justifications, beginning with fiscal year 1982, the estimated amount of funds requested for consulting services; the appropriation accounts in which these funds are located; and a brief description of the need for these services, including a list of those major programs that require consulting services.

In order to comply with this provision, OMB issued Bulletin No. 80-13 to the heads of executive departments and agencies on August 4, 1980. Because OMB used its existing definition, the Committee is concerned that this will result in the same kind of unrealistically low figures which were reported to OMB in connection with the proposed 15-percent cut in 1981 appropriations for consultant services. If so, the Committee may have to broaden its focus beyond consultant services and more closely scrutinize proposed expenditures for procurement of all outside services.

BUDGETARY IMPACT OF H.R. 7631¹

(Dollars in millions)

	Budget authority		Outlays	
	Committee allocation	Amount in bill	Committee allocation	Amount in bill
I. Comparison of amounts in the bill with the Committee allocation to its subcommittees of amounts in the First Concurrent Resolution for 1981:				
SUBCOMMITTEE ON HOUSING AND URBAN DEVELOPMENT—INDEPENDENT AGENCIES	76,800	68,168	60,800	\$ 48,000
II. Summary of functional category of 1981 budget amounts recommended in the bill:				
090—National Defense		188		\$ 188
250—General Science, Space, and Technology		6,130		\$ 6,045
270—Energy		87		\$ 145
300—Natural Resources and Environment		4,840		\$ 5,105
370—Commerce and Housing Credit		1,802		\$ 840
400—Transportation		885		\$ 840
480—Community and Regional Development		8,916		\$ 8,882
800—Education, Training, Employment, and Social Services		12		\$ 10
820—Health		48		\$ 48
830—Income Security		50,807		\$ 5,471
700—Veterans Benefits and Services		50,885		\$ 20,028
780—Administration of Justice		39		\$ 39
800—General Government		6		\$ 0
850—General Purpose Fiscal Assistance		7		\$ 7
880—Allowances		-1,280		-888
III. Financial assistance to State and local governments for 1981 in the bill		26,784		5,891
IV. Projections of outlays associated with budget authority recommended in the bill:				
1981				\$ 28,051
1982				6,888
1983				3,843
1984				2,141
1985				28,428
Future year				

¹ Prepared by the Congressional Budget Office pursuant to sec. 208(a), Public Law 96-341.
² Includes outlays from prior-year budget authority.
³ Excludes outlays from prior-year budget authority.

COMPARATIVE STATEMENT OF NEW BUDGET (OBLIGATIONAL) AUTHORITY FOR FISCAL YEAR 1980 AND BUDGET ESTIMATES AND AMOUNTS RECOMMENDED IN THE BILL FOR FISCAL YEAR 1981—Continued

(Amounts in dollars)

Item	1980 Appropriation	Budget estimate	House allowance	Committee recommendation	Increase (+) or decrease (-) compared with—		
					1980 Appropriation	Budget estimate	House allowance
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION							
Research and development	4,092,500,000	4,366,500,000	Deferred	4,430,000,000	+337,500,000	+65,500,000	+4,430,000,000
Construction of facilities	154,100,000	170,000,000	110,000,000	120,000,000	-36,100,000		+10,000,000
Research and program management	998,186,000	1,033,154,000	1,022,134,000	1,032,404,000	+36,218,000	-750,000	+9,250,000
Total, National Aeronautics and Space Administration	5,244,786,000	5,517,654,000	1,133,134,000	5,562,404,000	+337,618,000	+64,750,000	+4,449,250,000

MAKING APPROPRIATIONS FOR THE DEPARTMENT OF HOUSING AND
 URBAN DEVELOPMENT, AND FOR SUNDRY INDEPENDENT AGEN-
 CIES, BOARDS, COMMISSIONS, CORPORATIONS, AND OFFICES

NOVEMBER 21, 1980.—Ordered to be printed

Mr. BOLAND, from the committee of conference,
 submitted the following

CONFERENCE REPORT

[To accompany H.R. 7631]

The committee of conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 7631) making appropriations for the Department of Housing and Urban Development, and for sundry independent agencies, boards, commissions, corporations, and offices for the fiscal year ending September 30, 1981, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its amendments numbered 5, 17, 18, 31, 33, 36, 40, 51, 52, 65, 72, 75, 78, and 79.

That the House recede from its disagreement to the amendments of the Senate numbered 7, 12, 13, 15, 16, 20, 21, 24, 26, 28, 32, 41, 42, 43, 48, 50, 53, 57, 58, 62, 63, and 64, and agree to the same.

Amendment numbered 38:

That the House recede from its disagreement to the amendment of the Senate numbered 38, and agree to the same with an amendment as follows:

In lieu of the sum proposed by said amendment insert \$115,000,000; and the Senate agree to the same.

Amendment numbered 39:

That the House recede from its disagreement to the amendment of the Senate numbered 39, and agree to the same with an amendment as follows:

In lieu of the sum proposed by said amendment insert \$1,030,000,000; and the Senate agree to the same.

The committee of conference report in disagreement amendments numbered 1, 6, 19, 23, 25, 29, 34, 37, 44, 45, 59, 60, 61, 66, 67, 68, 69, 70, 71, 73, 74, 76, 77.

EDWARD P. BOLAND,
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Managers on the Part of the House.

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 JIM SASSER,
 JOHN A. DURKIN,
 WARREN G. MAGNUSON,
 HENRY BELLMON,
 LOWELL P. WEICKER, JR.,
 PAUL LAXALT,
 HARRISON SCHMITT,
 MILTON YOUNG,

Managers on the Part of the Senate.

JOINT EXPLANATORY STATEMENT OF THE COMMITTEE OF CONFERENCE

The managers on the part of the House and the Senate at the conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 7631) making appropriations for the Department of Housing and Urban Development, and for sundry independent agencies, boards, commissions, corporations, and offices for the fiscal year ending September 30, 1981, and for other purposes, submit the following joint statement to the House and the Senate in explanation of the effect of the action agreed upon by the managers and recommended in the accompanying conference report:

TITLE II—INDEPENDENT AGENCIES

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Amendment No. 37: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate with an amendment as follows:

RESEARCH AND DEVELOPMENT

For necessary expenses, not otherwise provided for, including research, development, operations, services, minor construction, maintenance, repair, rehabilitation and modification of real and personal property; tracking and data relay satellite services as authorized by law; and purchase, hire, maintenance, and operation of other than administrative aircraft, necessary for the conduct and support of aeronautical and space research and development activities of the National Aeronautics and Space Administration; and including not to

exceed (1) \$29,000,000 for Space Transportation Systems Upper Stages, (2) \$30,900,000 for Space Transportation Systems Operations—Upper Stages, (3) \$119,300,000 for the Space Telescope, (4) \$39,600,000 for the International Solar Polar Mission, (5) \$19,100,000 for the Gamma Ray Observatory, (6) \$63,100,000 for Project Galileo, (7) \$88,500,000 for Landsat D, (8) \$1,873,000,000 for the Space Shuttle, and (9) \$149,700,000 for Spacelab, without the approval of the Committees on Appropriations, \$4,396,200,000 to remain available until September 30, 1982.

The managers on the part of the Senate will move to concur in the amendment of the House to the amendment of the Senate.

Included within the above total are the following changes from the budget estimate:

Physics and astronomy research and analysis.....	+ \$6,100,000
Life sciences research and analysis.....	+ 4,100,000
Planetary mission operations and data analysis.....	+ 4,300,000
Technology transfer program.....	+ 4,000,000
Aeronautics and space technology.....	+10,250,000
Solar electric propulsion system (SEPS).....	+ 7,000,000
Operational land observing system.....	+ 5,000,000
Materials processing in space.....	+ 2,700,000
Space flight operations.....	- 5,000,000
Reconnaissance aircraft.....	- 6,750,000

The conferees endorse the reprogramming requirements contained in the Senate report. The conferees are concerned with NASA's apparent recent inability to adequately anticipate technical problems and project overruns. Furthermore, the conferees question the adequacy of the NASA review process that leads to the selection of a course of action when such problems are encountered. Consequently, the conferees direct NASA to establish an ongoing relationship with the National Academy of Engineering and the National Academy of Sciences for the purpose of providing an independent project review capability. To assure the independence of the review process, the conferees direct the National Academies to select the participants of each review panel. It is expected that these reviews will be coordinated by NASA's Chief Engineer and that the written report (including minority opinions) prepared by the reviewers will be simultaneously submitted to NASA and the Committees on Appropriations. In the future, the Committees do not intend to recommend approval of any major program changes unless such an independent review panel concurs with the proposed course of action. During a review period, NASA should not take any action that would prejudice the pursuit of any of the options under consideration. The conferees earmark \$1,000,000 from NASA's research and program management account for the creation of this review capability. The Committees expect a report on NASA's progress in implementing this directive by March 31, 1981.

The process established here, including Committee approval of specific reprogrammings, clearly does not deal with the causes of the problems NASA has encountered, but rather just attempts to gain control of the current situation. It is expected that an in-depth examination of NASA's management by Congress will identify the roots of the problem and what can be done. It is also expected that NASA will work closely with the Congress in making the changes that will reduce the need for unusual legislative measures such as this.

Amendment No. 38: Appropriates \$115,000,000 for construction of facilities, instead of \$110,000,000 as proposed by the House and \$120,000,000 as proposed by the Senate.

The committee of conference agrees that the \$5,000,000 restored above the House allowance should be allocated to space shuttle facilities requested at the Michoud Assembly Facility.

Amendment No. 39: Appropriates \$1,030,000,000 for research and program management, instead of \$1,023,154,000 as proposed by the House and \$1,032,404,000 as proposed by the Senate.

TITLE IV

GENERAL PROVISIONS

Amendment No. 65: Restores language proposed by the House and modified by the Senate exempting from limitation travel performed in connection with treatment of Veterans Administration medical beneficiaries.

Amendment No. 66: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate exempting from limitation travel performed in connection with major disasters or emergencies declared by the President.

Amendment No. 67: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate with an amendment as follows:

Nothing herein affects the authority of the Consumer Product Safety Commission pursuant to section 7 of the Consumer Product Safety Act (15 U.S.C. 2056 et seq.)

The managers on the part of the Senate will move to concur in the amendment of the House to the amendment of the Senate.

Amendment No. 68: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate limiting the obligation or expenditure of any funds in the Act for contracts for consulting services to contracts which are a matter of public record and which shall be listed in a publicly available document of all contracts entered into within 24 months before the list is made publicly available.

Amendment No. 69: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate with an amendment as follows:

SEC. 412. Notwithstanding any other provision of this Act, the total budget authority provided by this Act for payments not required by law shall be reduced by 2 per centum: Provided, That of the amount provided in this Act for each appropriation account, activity, and project for payments not required by law, the amount reduced shall not exceed 3 per centum: Provided further, That this section shall not apply to budget authority provided by this Act for the Veterans Administration.

The managers on the part of the Senate will move to concur in the amendment of the House to the amendment of the Senate.

Amendment No. 70: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate prohibiting the use of funds in the Act for contract services unless an executive agency (1) has awarded the contract in complete compliance with the Office of Federal Procurement Policy Act and (2) requires any report prepared pursuant to a contract to contain certain information concerning the contract and the contractor.

Amendment No. 71: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate prohibiting agencies funded in this Act from obligating more than 30 per centum of available budget authority during the last quarter of the fiscal year and more than 15 per centum during any month in the last quarter of the fiscal year without the approval of the Director of the Office of Management and Budget.

Amendment No. 72: Deletes language proposed by the Senate which would prohibit obligations or expenditures during the last two months of the fiscal year for contracts, or contract modifications greater than 10 per centum, unless notification or solicitation is made 60 days before the date of the award or modification.

Amendment No. 73: Reported in technical disagreement: The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate with an amendment as follows:

In lieu of the section number named in said amendment, insert 415.

The managers on the part of the Senate will move to concur in the amendment of the House to the amendment of the Senate.

Amendment No. 74: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate with an amendment as follows:

In lieu of the section number named in said amendment, insert 416.

The managers on the part of the Senate will move to concur in the amendment of the House to the amendment of the Senate.

Amendment No. 75: Deletes language proposed by the Senate which would reduce amounts available for procurement of consultant services for certain agencies funded in this Act.

Amendment No. 76: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate with an amendment as follows:

In lieu of the section number named in said amendment, insert 417.

The managers on the part of the Senate will move to concur in the amendment of the House to the amendment of the Senate.

Amendment No. 77: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the amendment of the Senate with an amendment as follows:

SEC. 418. Notwithstanding any other provision of this Act, any amount appropriated by this Act for the fiscal year ending September 30, 1981, for any department, agency, or instrumentality of the United States Government, which is available to pay for or conduct advertising or public relations activities is reduced by 10 per centum: Provided, That this section shall not apply to funds provided for the Veterans Administration.

The managers on the part of the Senate will move to concur in the amendment of the House to the amendment of the Senate.

Amendment No. 78: Deletes language proposed by the Senate prohibiting the use of funds to increase paperwork requirements above the fiscal year 1980 level.

The conferees intend to require each agency funded in this Act to submit as an integral part of its testimony on fiscal year 1982 appropriations requests a quantitative estimate of the annual information requirements imposed on the American public. Such estimates may be based upon, or may include, the Information Collection Budget which is required of the agency by the Office of Management and Budget. The conferees intend in future years to pay careful attention to any increases in information requirements imposed by the agencies.

Amendment No. 79: Deletes language proposed by the Senate exempting solar energy projects or programs from any general reductions.

CONFERENCE TOTAL—WITH COMPARISONS

The total new budget (obligational) authority for the fiscal year 1981 recommended by the committee of conference, with comparisons to the fiscal year 1980 amount, the 1981 budget estimates, and the House and Senate bills for 1981 follow:

New budget (obligational) authority, fiscal year 1980.....	\$73,296,364,000
Budget estimates of new (obligational) authority, fiscal year 1981.....	¹ 78,088,088,000
House bill, fiscal year 1981.....	39,635,707,000
Senate bill, fiscal year 1981.....	73,793,253,000
Conference agreement, fiscal year 1981.....	74,126,287,000
Conference agreement compared with:	
New budget (obligational) authority, fiscal year 1980.....	+829,923,000
Budget estimates of new (obligational) authority, fiscal year 1981.....	-3,961,801,000
House bill, fiscal year 1981.....	+34,460,580,000
Senate bill, fiscal year 1981.....	+333,032,000

¹ Includes \$37,704,265,000 of budget estimates not considered by the House.

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Managers on the Part of the House.

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LOWELL P. WEICKER, Jr.,
PAUL LAXALT,
HARRISON SCHMITT,
MILTON YOUNG,

Managers on the Part of the Senate.

94 STAT. 3044

PUBLIC LAW 96-526—DEC. 15, 1980

Public Law 96-526
96th Congress

An Act

Dec. 15, 1980
[H.R. 7631]

Making appropriations for the Department of Housing and Urban Development, and for sundry independent agencies, boards, commissions, corporations, and offices for the fiscal year ending September 30, 1981, and for other purposes.

Department of
Housing
and Urban
Development—
Independent
Agencies
Appropriation
Act, 1981.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, for the Department of Housing and Urban Development, and for sundry independent agencies, boards, commissions, corporations, and offices for the fiscal year ending September 30, 1981, and for other purposes, namely:

TITLE II

INDEPENDENT AGENCIES

94 STAT. 3054

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

For necessary expenses, not otherwise provided for, including research, development, operations, services, minor construction, maintenance, repair, rehabilitation and modification of real and personal property; tracking and data relay satellite services as authorized by law; purchase, hire, maintenance, and operation of other than administrative aircraft, necessary for the conduct and support of aeronautical and space research and development activities of the National Aeronautics and Space Administration; and including not to exceed (1) \$29,000,000 for Space Transportation Systems Upper Stages, (2) \$30,900,000 for Space Transportation Systems Operations—Upper Stages, (3) \$119,300,000 for the Space Telescope, (4) \$39,600,000 for the International Solar Polar Mission, (5) \$19,100,000 for the Gamma Ray Observatory, (6) \$63,100,000 for Project Galileo, (7) \$88,500,000 for Landsat D, (8) \$1,873,000,000 for the Space Shuttle, and (9) \$149,700,000 for Spacelab, without the approval of the Committees on Appropriations, \$4,396,200,000, to remain available until September 30, 1982.

PUBLIC LAW 96-526—DEC. 15, 1980

CONSTRUCTION OF FACILITIES

For construction, repair, rehabilitation and modification of facilities, minor construction of new facilities and additions to existing facilities, and for facility planning and design not otherwise provided, for the National Aeronautics and Space Administration, and for the acquisition or condemnation of real property, as authorized by law, \$115,000,000, to remain available until September 30, 1983: *Provided*, That, notwithstanding the limitation on the availability of funds appropriated under this head by this appropriation Act, when any activity has been initiated by the incurrence of obligations therefor, the amount available for such activity shall remain available until expended, except that this provision shall not apply to the amounts appropriated pursuant to the authorization for repair, rehabilitation and modification of facilities, minor construction of new facilities and additions to existing facilities, and facility planning and design.

RESEARCH AND PROGRAM MANAGEMENT

For necessary expenses of research in government laboratories, management of programs and other activities of the National Aeronautics and Space Administration, not otherwise provided for, including uniforms or allowances therefor, as authorized by law (5 U.S.C.

94 STAT. 3055

5901-5902); awards; purchase (for replacement only, of one aircraft, for which partial payment may be made by exchange of at least one existing administrative aircraft and such other existing aircraft as may be considered appropriate), hire, maintenance and operation of administrative aircraft; purchase (not to exceed thirty-six for replacement only) and hire of passenger motor vehicles; and maintenance and repair of real and personal property, and not in excess of \$75,000 per project for construction of new facilities and additions to existing facilities, repairs, and rehabilitation and modification of facilities; \$1,030,000,000: *Provided*, That contracts may be entered into under this appropriation for maintenance and operation of facilities, and for other services, to be provided during the next fiscal year: *Provided further*, That not to exceed \$25,000 of the foregoing amount shall be available for scientific consultations or extraordinary expense, to be expended upon the approval or authority of the Administrator and his determination shall be final and conclusive.

94 STAT. 3064

PUBLIC LAW 96-526—DEC. 15, 1980

TITLE IV

GENERAL PROVISIONS

Travel expenses.
Ante, pp. 3044,
3050.

SEC. 401. Where appropriations in titles I and II of this Act are expendable for travel expenses and no specific limitation has been placed thereon, the expenditures for such travel expenses may not exceed the amounts set forth therefor in the budget estimates submitted for the appropriations: *Provided*, That this section shall not apply to travel performed by uncompensated officials of local boards and appeal boards of the Selective Service System; to travel performed directly in connection with care and treatment of medical beneficiaries of the Veterans Administration; to travel performed in connection with major disasters or emergencies declared or determined by the President under the provisions of the Disaster Relief Act of 1974; or to payments to interagency motor pools where separately set forth in the budget schedules: *Provided further*, That the limitations may be increased by the Secretary when necessary to allow for travel performed by employees of the Department of Housing and Urban Development as a result of increased Federal Housing Administration inspection and appraisal workload.

42 USC 5121
note.

SEC. 402. Appropriations and funds available for the administrative expenses of the Department of Housing and Urban Development and the Selective Service System shall be available in the current fiscal year for purchase of uniforms, or allowances therefor, as authorized by law (5 U.S.C. 5901-5902); hire of passenger motor vehicles; and services as authorized by 5 U.S.C. 3109.

Legal services.
31 USC 841 note.
12 USC 1749a.

SEC. 403. Funds of the Department of Housing and Urban Development subject to the Government Corporation Control Act or section 402 of the Housing Act of 1950 shall be available, without regard to the limitations on administrative expenses, for legal services on a contract or fee basis, and for utilizing and making payment for services and facilities of Federal National Mortgage Association, Government National Mortgage Association, Federal Home Loan Mortgage Corporation, Federal Financing Bank, Federal Reserve banks or any member thereof, Federal home loan banks, and any insured bank within the meaning of the Federal Deposit Insurance Corporation Act, as amended (12 U.S.C. 1811-1831).

SEC. 404. No part of any appropriation contained in this Act shall remain available for obligation beyond the current fiscal year unless expressly so provided herein.

SEC. 405. No funds appropriated by this Act may be expended—
(1) pursuant to a certification of an officer or employee of the United States unless—

(A) such certification is accompanied by, or is part of, a voucher or abstract which describes the payee or payees and the items or services for which such expenditure is being made, or

(B) the expenditure of funds pursuant to such certification, and without such a voucher or abstract, is specifically authorized by law; and

PUBLIC LAW 96-526—DEC. 15, 1980

94 STAT. 3065

(2) unless such expenditure is subject to audit by the General Accounting Office or is specifically exempt by law from such an audit.

SEC. 406. None of the funds provided in this Act to any department or agency may be expended for the transportation of any officer or employee of such department or agency between his domicile and his place of employment, with the exception of the Secretary of the Department of Housing and Urban Development, who, under title 5, United States Code, section 101, is exempted from such limitations.

Certain
government
transportation,
prohibition.

SEC. 407. None of the funds provided in this Act may be used for payment, through grants or contracts, to recipients that do not share in the cost of conducting research resulting from proposals not specifically solicited by the Government: *Provided*, That the extent of cost sharing by the recipient shall reflect the mutuality of interest of the grantee or contractor and the Government in the research.

Research
projects.

SEC. 408. None of the funds provided in this Act may be used, directly or through grants, to pay or to provide reimbursement for payment of the salary of a consultant (whether retained by the Federal Government or a grantee) at more than the daily equivalent of the maximum rate paid for GS-18, unless specifically authorized by law.

SEC. 409. No part of any appropriation contained in this Act for personnel compensation and benefits shall be available for other object classifications set forth in the budget estimates submitted for the appropriations without the approval of the Committees on Appropriations.

SEC. 410. None of the funds in this Act shall be used to pay the expenses of, or otherwise compensate, non-Federal parties intervening in regulatory or adjudicatory proceedings. Nothing herein affects the authority of the Consumer Product Safety Commission pursuant to section 7 of the Consumer Product Safety Act (15 U.S.C. 2056 et seq.).

SEC. 411. Except as otherwise provided under existing law or under an existing Executive order issued pursuant to an existing law, the obligation or expenditure of any appropriation under this Act for contracts for any consulting service shall be limited to contracts which are (1) a matter of public record and available for public inspection, and (2) thereafter included in a publicly available list of all contracts entered into within twenty-four months prior to the date on which the list is made available to the public and of all contracts on which performance has not been completed by such date. The list required by the preceding sentence shall be updated quarterly and shall include a narrative description of the work to be performed under each such contract.

Consulting
service
contracts.
Public record,
availability.

SEC. 412. Notwithstanding any other provision of this Act, the total budget authority provided by this Act for payments not required by law shall be reduced by 2 per centum: *Provided*, That of the amount provided in this Act for each appropriation account, activity, and project for payments not required by law, the amount reduced shall not exceed 3 per centum: *Provided further*, That this section shall not apply to budget authority provided by this Act for the Veterans Administration.

SEC. 413. Except as otherwise provided by law, no part of any appropriation contained in this Act shall be obligated or expended by any executive agency, as referred to in the Office of Federal Procurement Policy Act (41 U.S.C. 401 et seq.) for a contract for services unless such executive agency (1) has awarded and entered into such contract in full compliance with such Act and the regulations

promulgated thereunder and (2) requires any report prepared pursuant to such contract, including plans, evaluations, studies, analyses and manuals, and any report prepared by the agency which is substantially derived from or substantially includes any report prepared pursuant to such contract, to contain information concerning (A) the contract pursuant to which the report was prepared and (B) the contractor who prepared the report pursuant to such contract.

31 USC 2.

Sec. 414. (a) No appropriations made available in this Act shall be obligated in a manner that would cause obligations from the total budget authority available to any department or establishment, as defined in section 2 of the Budget and Accounting Act 1921, or any major administrative subdivision thereof, during the fiscal year ending September 30, 1981, to exceed 30 per centum for the last quarter of such fiscal year or 15 per centum for any month in the last quarter of such fiscal year. The Director of the Office of Management and Budget may waive the requirements of the preceding sentence with respect to any program or activity if the Director determines in writing that the waiver is necessary to avoid a serious disruption in carrying out such program or activity.

Report submittal.

(b) Not later than forty-five days after the end of each quarter of the fiscal year, the head of each department and establishment shall submit a report to the Committees on Appropriations and to the Director of the Office of Management and Budget, specifying the amount of obligations incurred during the quarter and the percentage of total available budget authority for the fiscal year which the obligations constitute.

Report to congressional committees.

(c) The Director of the Office of Management and Budget shall keep the Committees on Appropriations fully informed of actions taken to carry out the requirements of this section, including any waivers granted, and shall promptly report in writing any situation in which the obligations of any department and establishment exceed such requirements other than pursuant to a waiver. Not later than December 31, 1981, the Director shall submit a report to the Committees on Appropriations on the results of the requirements of this section and actions taken under this section, including the effects upon procurement and apportionment processes, together with any recommendations the Director considers appropriate. Concurrent with the submittal of the report to the Committees on Appropriations under the preceding sentence, the Director shall submit a copy of such report to the Comptroller General, who shall promptly review that report and submit to the Committees on Appropriations an analysis of the report and any recommendations which the Comptroller General considers appropriate.

Report to Comptroller General. Review.

Audits.

Sec. 415. All unresolved audits currently pending within agencies and departments, for which appropriations are made under this Act, shall be resolved not later than September 30, 1981. Any new audits, involving questioned expenditures, arising after the enactment of this Act shall be resolved within six months of completing the initial audit report.

Debt collection.

Sec. 416. Each department and agency for which appropriations are made under this Act shall take immediate action (1) to improve the collection of overdue debts owed to the United States within the jurisdiction of that department or agency; (2) to bill interest on delinquent debts as required by the Federal Claims Collection Standards; and (3) to reduce amounts of such debts written off as uncollectible.

OUTLAY SCHEDULES AND REPORTS

SEC. 417. Departments and independent agencies receiving appropriations in excess of \$50,000,000 under this Act shall, within thirty days following enactment, submit to the Committees on Appropriations of the two Houses of Congress a schedule of anticipated outlays for each month of the fiscal year beginning October 1, 1980. These departments and agencies shall also submit to the Appropriations Committees, within thirty days after the end of each calendar quarter, reports showing actual outlays for the preceding quarter and any necessary changes in the schedule of outlays originally submitted. In the event a department or agency determines that its total outlays during the fiscal year will vary by more than 1 per centum from the total projected in its original schedule, it shall immediately submit to the Committee on Appropriations of the two Houses a revised schedule. Unless disapproved by both of the Appropriations Committees within fifteen legislative days after submission, the department or agency may implement the revised outlay schedule. Departments and independent agencies shall submit copies of the outlay schedules and reports required herein to the Congressional Budget Office concurrently with their submission to the House and Senate Committees on Appropriations. The Congressional Budget Office shall analyze these schedules and reports and assess their implications for Congressional budget and appropriations policies and submit the results of its analyses on a timely basis to the Committees on Appropriations and Budgets of the two Houses of Congress.

Submittal to congressional committees.

Schedule implementation.

Submittal to congressional committees.

Report analysis.

Sec. 418. Notwithstanding any other provision of this Act, any amount appropriated by this Act for the fiscal year ending September 30, 1981, for any department, agency, or instrumentality of the United States Government, which is available to pay for or conduct advertising or public relations activities is reduced by 10 per centum: *Provided*, That this section shall not apply to funds provided for the Veterans Administration.

This Act may be cited as the "Department of Housing and Urban Development—Independent Agencies Appropriation Act, 1981".

Short title.

Approved December 15, 1980.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 96-1114 (Comm. on Appropriations) and No. 96-1476 (Comm. of Conference).
SENATE REPORT No. 96-926 (Comm. on Appropriations).
CONGRESSIONAL RECORD, Vol. 126 (1980):
July 24, 25, 28, considered and passed House.
Sept. 15-19, 22, 23, considered and passed Senate, amended.
Dec. 2, House agreed to conference report; receded from its disagreement and concurred in certain Senate amendments and in others with amendments.
Dec. 3, Senate agreed to conference report and concurred in House amendments.



Public Law 96-536
96th Congress

Joint Resolution

Dec. 16, 1980
[H.J. Res. 644]

Making further continuing appropriations for the fiscal year 1981, and for other purposes.

Continuing
appropriations
for fiscal year
1981

Resolved, by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, and out of applicable corporate or other revenues, receipts, and funds, for the several departments, agencies, corporations, and other organizational units of the Government for the fiscal year 1981, and for other purposes, namely:

SEC. 101. (a)(1) Such amounts as may be necessary for projects or activities (not otherwise specifically provided for in this joint resolution) for which appropriations, funds, or other authority would be available in the following appropriation Acts:

Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriation Act, 1981; and Treasury, Postal Service, and General Government Appropriation Act, 1981.

(2) Appropriations made by this subsection shall be available to the extent and in the manner which would be provided by the pertinent appropriation Act.

(3) Whenever the amount which would be made available or the authority which would be granted under an Act listed in this subsection as passed by the House as of October 1, 1980, is different from that which would be available or granted under such Act as passed by the Senate as of October 1, 1980, the pertinent project or activity shall be continued under the lesser amount or the more restrictive authority: *Provided,* That where an item is included in only one version of an Act as passed by both Houses as of October 1, 1980, the pertinent project or activity shall be continued under the appropriation, fund, or authority granted by the one House, but at a rate for operations not exceeding the current rate or the rate permitted by the action of the one House, whichever is lower, and under the authority and conditions provided in applicable appropriation Acts for the fiscal year 1980.

(4) Whenever an Act listed in this subsection has been passed by only the House as of October 1, 1980, the pertinent project or activity shall be continued under the appropriation, fund, or authority granted by the House, at a rate for operations not exceeding the rate permitted by the action of the House, and under the authority and conditions provided in applicable appropriation Acts for the fiscal year 1980, except section 201 of title II of the Departments of Labor, and Health, Education, and Welfare and Related Agencies Appropriations Act, 1980 (H.R. 4389) as adopted by the House of Representatives on August 2, 1979.

(5) No provision which is included in an appropriation Act enumerated in this subsection but which was not included in the applicable appropriation Act of 1980, and which by its terms is applicable to

CONTINUING APPROPRIATIONS FOR
FISCAL YEAR 1981

more than one appropriation, fund, or authority shall be applicable to any appropriation, fund, or authority provided in the joint resolution unless such provision shall have been included in identical form in such bill as enacted by both the House and the Senate.

(b) Notwithstanding section 10 of Public Law 91-672, the amendments made by sections 201 and 501 of Public Law 95-118, and section 15(a) of the Act entitled, "An Act to provide certain basic authority for the Department of State", approved August 1, 1956, as amended, such amounts as are necessary to carry out the rates and terms agreed to in the Conference Report 96-1536 as reported and agreed to December 13, 1980, for section 101(b) of H.J. Res. 637.

(c) Such amounts as may be necessary for continuing projects and activities under all the conditions and to the extent and in the manner as provided in H.R. 7593, entitled the "Legislative Branch Appropriation Act, 1981", as passed the House of Representatives, July 21, 1980, and the provisions of H.R. 7593 shall be effective as if enacted into law; except that the provisions of section 309 of H.R. 7593 shall not apply to the General Accounting Office, and the last proviso under the heading "Government Printing Office, Office of Superintendent of Documents, Salaries and Expenses" in H.R. 7593 shall not apply, and the provisions of section 306 (a), (b), and (d) of H.R. 7593 (providing salary pay cap limitations for executive, legislative, and judicial employees and officials) shall apply to any appropriation, fund, or authority made available for the period October 1, 1980, through June 5, 1981, by this or any other Act. Notwithstanding section 102(c) of this joint resolution, for mileage of Members, as authorized by law, \$210,000.

(d) Such amounts as may be necessary for continuing the following activities not otherwise provided for, which were conducted in fiscal year 1980, but at a rate for operations not in excess of the rate for fiscal year 1980: *Provided*, That no appropriation or fund made available or authority granted pursuant to this subsection shall be used to initiate or resume any project or activity for which appropriations, funds, or authority were not available during fiscal year 1980:

- activities of the Council on Wage and Price Stability;
- activities for which disbursements are made by the Secretary of the Senate, and the Senate items under the Architect of the Capitol;
- activities of the National Health Service Corps under section 338(a) of the Public Health Service Act;
- activities for support of nursing research under section 301 of the Public Health Service Act;
- activities for support of health professions education and nurse training under titles VII and VIII of the Public Health Service Act including authority to guarantee new loans under the Health Education Assistance Loans (HEAL) program;
- activities under the Community Mental Health Centers Act;
- activities of the National Arthritis Advisory Board and the National Diabetes Advisory Board; and
- activities under title IV, part A, subparts 2 and 3, and titles VII and VIII of the Comprehensive Employment and Training Act, except that activities under title VIII shall be conducted at not to exceed an annual rate for new obligations of \$200,000,000.

(e) Such amounts as may be necessary to permit payments and assistance mandated by law for the following activities under the terms, conditions and limitations included in the applicable appropriation Act for 1980:

22 USC 2412.
22 USC 286e-1f,
285s, 285t.
22 USC 2680.

5 USC 5318 note.

42 USC 254k.

42 USC 241.

42 USC 292, 296.

42 USC 2689 et
seq.

29 USC 891, 893,
899, 907, 981,
991.

30 USC 901.
42 USC 1305.

29 USC 1071.
Effective date.
Ante. p. 1504.
Ante. p. 1449.

activities under title IV of the Federal Mine Health and Safety Act of 1977;
activities under the Social Security Act;
retirement pay and medical benefits for commissioned officers of the Public Health Service;
activities under title IV, part B, of the Higher Education Act; Notwithstanding paragraph 1393(a) of the Education Amendments of 1980, paragraph 446 of such amendments shall be effective on July 1, 1981;

notwithstanding any other provision of this joint resolution except section 102, activities of the Department of Labor, Employment and Training Administration for "Federal unemployment benefits and allowances" and "Advances to the unemployment trust fund and other funds"; and
activities of the Department of Labor, Employment Standards Administration for "Special benefits" and "Black Lung Disability Trust Fund".

(f) Such amounts as may be necessary for Department of Energy, Operating Expenses, Energy Supply, Research and Development Activities, to continue the breeder reactor demonstration project, or such project alternative as may be approved by Congress in authorizing legislation, at the current rate of operations notwithstanding the provisions of section 102 (a) and (b) of this joint resolution.

(g) Activities of the Department of Health and Human Services to process, maintain, return or resettle Cuban and Haitian entrants shall be funded at not to exceed an annual rate provided in the budget estimate.

(h) Notwithstanding any other provision of law, amounts appropriated to the State and Local Government Fiscal Assistance Trust Fund shall be available for payments to units of local government in accordance with the provisions and conditions set forth in the State and Local Fiscal Assistance Act of 1972, as amended and as further amended by H.R. 7112 as enacted by the Congress, for a one-year entitlement period beginning October 1, 1980, but at not to exceed an annual rate for operations of \$4,566,700,000.

(i) Notwithstanding any other provision of this joint resolution: There is appropriated an additional amount of \$46,700,000, to remain available until expended, for Department of Energy, Operating Expenses, Atomic Energy Defense Activities, and an additional amount of \$65,300,000, to remain available until expended, for Department of Energy, Plant and Capital Equipment, Atomic Energy Defense Activities, such amounts to be merged with and subject to the same provisions as amounts previously provided for such Activities in Public Law 96-367, Energy and Water Development Appropriation Act, 1981; section 120(b) of the Water Resources Development Act of 1976 (90 Stat. 2924) is amended by striking out "for the fiscal years ending September 30, 1978, and September 30, 1979,"; and appropriations and funds made available to the Appalachian Regional Commission, including the Appalachian Regional Development Programs, by this or any other Act shall be used by the Commission in accordance with the provisions of the applicable appropriation Act and pursuant to the Appalachian Regional Development Act of 1965, as amended, notwithstanding the provisions of section 405 of said Act.

(j) Notwithstanding section 101(a) of this joint resolution, not to exceed \$1,850,000,000 shall be available for an annual rate for operations to continue the low-income energy assistance program under the State allocations provided for in H.R. 7998 as passed the House of Representatives August 27, 1980, and in House Report

31 USC 1221
note.
Post. p. 3516.

Appropriation
authorization.

Ante. p. 1331.
42 USC
1962a-bd.

40 USC app. 1.
40 USC app. 405.

96-1244, except that the sum of \$50,000,000 shall be reserved for payments to any State which would receive under the above formula an amount less than 75 per centum of the amount it would have received under the State allocation formula for low-income energy assistance as provided in the regulations published on May 30, 1980, in volume 45, numbered 106, Federal Register, pages 36810-36838, such payments to be, to the maximum extent possible, the amount necessary for the allocations to those States to be equal to 75 per centum of their allocation under such regulations; the energy assistance program shall be continued under the terms and conditions of such regulations and any nonformula amendments thereto, except that an eligible household shall also include any single person household at or below 125 per centum of poverty: *Provided*, That none of the funds appropriated in this paragraph shall be used to provide assistance either in cash or in kind to any household during fiscal year 1981 which exceeds a value of \$750, except this \$750 limitation may be waived by the Secretary of Health and Human Services upon request of a State.

Waiver.

(k) Notwithstanding section 102(c) of this joint resolution, such amounts as may be necessary for programs, projects, and activities provided for in the Agriculture, Rural Development, and Related Agencies Appropriation Act, 1981 (H.R. 7591), to the extent and in the manner provided for in such Act as enacted by the Congress.

Ante. p. 3095.

(l) Notwithstanding section 102(c) of this joint resolution, such amounts as may be necessary for programs, projects, and activities provided for in the District of Columbia Appropriation Act, 1981 (H.R. 8061), to the extent and in the manner provided for in such Act as enacted by the Congress.

Ante. p. 3121.

(m) Notwithstanding section 102(c) of this joint resolution, such amounts as may be necessary for programs, projects, and activities provided for in the Department of Housing and Urban Development-Independent Agencies Appropriation Act, 1981 (H.R. 7631), to the extent and in the manner provided for in such Act as enacted by the Congress.

Ante. p. 3044

(n) Notwithstanding section 102(c) of this joint resolution, such amounts as may be necessary for programs, projects, and activities provided for in the Department of the Interior and Related Agencies Appropriation Act, 1981 (H.R. 7724) to the extent and in the manner provided for in such Act as enacted by the Congress.

Ante. p. 2957

(o) Notwithstanding section 102(c) of this joint resolution, such amounts as may be necessary for programs, projects, and activities provided for in the Departments of State, Justice, and Commerce, the Judiciary, and Related Agencies Appropriation Act, 1981 (H.R. 7584), to the extent and in the manner provided for in such Act as enacted by the Congress, except section 606 of such Act.

(p) Notwithstanding section 102(c) of this joint resolution, such amounts as may be necessary for programs, projects, and activities provided for in the Department of Defense Appropriation Act, 1981 (H.R. 8105) to the extent and in the manner provided for in such Act as enacted by the Congress.

Ante. p. 3068.

Sec. 102. Appropriations and funds made available and authority granted pursuant to this joint resolution shall be available from December 15, 1980, and shall remain available until (a) enactment into law of an appropriation for any project or activity provided for in this joint resolution, or (b) enactment of the applicable appropriation Act by both Houses without any provision for such project or activity, or (c) June 5, 1981, whichever first occurs.

Funding availability.

Sec. 103. Appropriations and funds made available or authority granted pursuant to this joint resolution may be used without regard to the time limitations for submission and approval of apportionments set forth in section 665(d)(2) of title 31, United States Code, but nothing herein shall be construed to waive any other provision of law governing the apportionment of funds.

Sec. 104. Appropriations made and authority granted pursuant to this joint resolution shall cover all obligations or expenditures incurred for any project or activity during the period for which funds or authority for such projects or activity are available under this joint resolution.

Sec. 105. Expenditures made pursuant to this joint resolution shall be charged to the applicable appropriation, fund, or authorization whenever a bill in which such applicable appropriation, fund, or authorization is contained is enacted into law.

Sec. 106. All obligations incurred in anticipation of the appropriations and authority provided in this joint resolution for the purposes of maintaining the minimum level of essential activities necessary to protect life and property and bringing about orderly termination of other functions are hereby ratified and confirmed if otherwise in accordance with the provisions of this joint resolution.

Sec. 107. No provision in any appropriation Act for the fiscal year 1981 that makes the availability of any appropriation provided therein dependent upon the enactment of additional authorizing or other legislation shall be effective before the date set forth in section 102(c) of this joint resolution.

Sec. 108. Notwithstanding any other provision of this joint resolution except section 102, none of the funds made available by this joint resolution for programs and activities for which appropriations would be available in H.R. 7998, entitled the Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriation Act, 1981, as passed the House of Representatives on August 27, 1980, shall be used to prevent the implementation of programs of voluntary prayer and meditation in the public schools.

Prayer and meditation in public schools.

Sec. 109. Notwithstanding any other provision of this joint resolution except section 102, none of the funds made available by this joint resolution for programs and activities for which appropriations would be available in H.R. 7998, entitled the Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriation Act, 1981, as passed the House of Representatives on August 27, 1980, shall be used to perform abortions except where the life of the mother would be endangered if the fetus were carried to term; or except for such medical procedures necessary for the victims or rape or incest when such rape has been reported within seventy-two hours to a law enforcement agency or public health service; nor are payments prohibited for drugs or devices to prevent implantation of the fertilized ovum, or for medical procedures necessary for the termination of an ectopic pregnancy; *Provided, however*, That the several States are and shall remain free not to fund abortions to the extent that they in their sole discretion deem appropriate.

Abortions.

Sec. 110. Funds contained in Public Law 95-205 for carrying out section 525 of the Education Amendments of 1976 shall remain available through September 30, 1982.

Sec. 111. Notwithstanding any other provision of this joint resolution, there is appropriated such amounts as are required for allowances and office staff for the former President pursuant to 3 U.S.C. 102 note: *Provided*, That the aggregate amount to be expended for the Allowances and Office Staff for Former Presidents account

91 Stat. 1460.
20 USC 2565.

shall not exceed \$823,000: *Provided further*, That such amounts as are necessary may be expended under Operating Expenses, National Archives and Records Service for the provision of a temporary repository and essential archival processing of Presidential materials.

Sec. 112. Notwithstanding any other provision of this joint resolution, there is appropriated for settlement of claims against the Coast Guard pursuant to section 646 of title 14, United States Code, \$198,523.41 and for settlement of claims by the Seneca Nation of Indians pursuant to section 10 of the Act of August 31, 1964 (78 Stat. 738), \$19,774.95.

Sec. 113. Notwithstanding the provisions of section 101(a) of this joint resolution, the maximum amount allowable during the current fiscal year in accordance with section 16 of the Act of August 2, 1946 (60 Stat. 810), for the purchase of any passenger motor vehicle (exclusive of buses and ambulances), is hereby fixed at \$6,000, except station wagons, for which the maximum shall be \$6,400: *Provided*, That these limits may be exceeded by not to exceed \$1,700 for police-type vehicles, and by not to exceed \$3,600 for special heavy duty vehicles: *Provided further*, That preference should be given for the purchase of American made vehicles.

Sec. 114. The Administrator of the Small Business Administration, pursuant to section 4(c)(5)(A) of the Small Business Act, as amended, is authorized to issue notes to the Secretary of the Treasury in an amount not to exceed \$600,000,000 for the purpose of providing Disaster Loans in addition to the amount provided for such purpose in H.R. 7584 as adopted by the House of Representatives on November 21, 1980, and to transfer an amount not to exceed \$10,000,000 to "Salaries and Expenses".

Sec. 115. Notwithstanding any other provision of this joint resolution, there is hereby appropriated an additional amount for capital outlay, Panama Canal Commission, of \$10,210,000 for navigation projects to be derived from the Panama Canal Commission Fund and to remain available until expended: *Provided*, That all such funds be derived solely from tolls and other charges for services provided by the Panama Canal Commission.

Sec. 116. None of the funds appropriated by this joint resolution may be used to disqualify, pursuant to section 411(d)(1)(B) of the Internal Revenue Code of 1954, any plan which has vesting requirements or provides for nonforfeitable rights to benefits, equal to or more stringent than 4/40.

None of the funds appropriated by this joint resolution may be used to issue an unfavorable advance determination letter, pursuant to section 411(d)(1)(B) of the Internal Revenue Code of 1954, with respect to any plan which has vesting requirements or provides for nonforfeitable rights to benefits, equal to or more stringent than 4/40.

Sec. 117. Notwithstanding any other provision of law, no funds available to the Secretary of Education shall be used to adopt or enforce any final regulations which replace the current "Lau remedies" for use as a guideline concerning the scope or adequacy of services to be provided to students of limited English-language proficiency, or for defining entry and exit criteria for such services, before June 1, 1981.

Sec. 118. Notwithstanding any other provision of this joint resolution, or Public Law 96-369: For temporary employment assistance under title VI of the Comprehensive Employment and Training Act, no more than \$729,000,000 of new budget authority shall be available during fiscal year 1981; notwithstanding subpart (4) of part A of title

31 USC 638c.

15 USC 633.

Appropriation authorization.

28 USC 411.

Ann. p. 1351.
29 USC 961.

29 USC 893.

Publication in
Federal
Register, use of
funds.

IV of the Comprehensive Employment and Training Act, new budget authority for the youth employment and training program under subpart (3) of part A of title IV of that Act shall be at the annual rate of \$746,000,000.

Sec. 119. None of these funds may be used for the purpose of publishing in the Federal Register, implementing or enforcing the proposed Conditions of Participation for Skilled Nursing Facilities (SNF's) or Intermediate Care Facilities (ICF's) which were first published as proposed in the Federal Register on July 14, 1980, prior to receipt of revised cost estimates by the Department and the final draft of a General Accounting Office evaluation of the impact of the proposed regulations, and in no case, prior to January 12, 1981.

Approved December 16, 1980.

LEGISLATIVE HISTORY:

HOUSE REPORTS. No. 96-1484 accompanying H.J. Res. 637 (Comm. on Appropriations) and No. 96-1536 accompanying H.J. Res. 637 (Comm. on Conference).

CONGRESSIONAL RECORD, Vol. 126 (1980):

Dec. 3, H.J. Res. 637 considered and passed House.

Dec. 10, 11, H.J. Res. 637 considered and passed Senate, amended.

Dec. 12, House disagreed to Senate amendments.

Dec. 13, House agreed to conference report; concurred in certain Senate amendments and in others with amendments; Senate agreed to conference report, and insisted on its amendment No. 7; House agreed to further conference; H.J. Res. 644 considered and passed House.

Dec. 16, Senate further insisted on its amendment No. 7 to H.J. Res. 637; H.J. Res. 644 considered and passed Senate, amended; House agreed to Senate amendment with an amendment; Senate agreed to House amendment.

SUPPLEMENTAL APPROPRIATIONS AND RESCISSION
BILL, 1981

MAY 4, 1981.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. WHITTEN, by direction of the Committee on Appropriations, submitted the following

REPORT

together with

ADDITIONAL AND DISSENTING VIEWS

[To accompany H.R. 3400]

The Committee on Appropriations submits the following report in explanation of the accompanying bill making supplemental appropriations for the fiscal year ending September 30, 1981, rescinding certain budget authority, extending the existing continuing resolution, and for other purposes.

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TITLE I

CHAPTER VI

SUBCOMMITTEE ON HOUSING AND URBAN DEVELOPMENT—
INDEPENDENT AGENCIES

EDWARD P. BOLAND, Massachusetts, *Chairman*

BOB TRAXLER, Michigan
LOUIS STOKES, Ohio
LINDY (MRS. HALE) BOGGS,
Louisiana
MARTIN OLAV SABO, Minnesota

BILL GREEN, New York
LAWRENCE COUGHLIN,
Pennsylvania
C. W. BILL YOUNG, Florida

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

The Committee has included in the bill a recommended rescission of \$4,500,000. In addition, the following reprogrammings are also approved:

- A January 14, 1981 request to reprogram \$70,000,000 from space flight operations to the space shuttle.
- A March 26, 1981 request to reprogram \$60,000,000 from a number of selected programs to the space shuttle.
- A March 27, 1981 request to reprogram \$15,022,000 from object classes for personnel compensation and benefits to other object classes—primarily for added support for the initial launch of the space shuttle and increases in contractor wage levels, utility rates, supplies and equipment.
- A March 9, 1981 request that the cap of \$29,000,000 for space transportation systems upper stages carried in the 1981 HUD-Independent Agencies Appropriation Act be increased to \$38,300,000. This request is occasioned by NASA's decision to terminate the three-stage inertial upper stage (IUS) for planetary missions and substitute the Centaur as a high energy upper stage.

The reprogramming of \$60,000,000 and the \$4,500,000 proposed rescission are being taken from the following activities:

	(In millions)
Space flight operations:	
Deletion of planned development of solar electric propulsion system.....	\$7.0
Minor rephasing of mission control center upgrading.....	0.5
Subtotal.....	7.5
Physics and astronomy:	
Deletion of planned U.S. spacecraft for international solar polar mission.....	14.6
Delay of gamma ray observatory.....	9.4
Subtotal.....	24.0

Space applications:	
Reduction of Agristars project effort.....	10.0
Reduction of operational satellite improvement activity.....	2.0
Cancellation of National Oceanic Satellite System.....	5.0
Phase out of technology transfer effort.....	2.0
Reduction of materials processing program activities.....	3.0
Phasedown of technology utilization efforts.....	5.0
Subtotal	27.0
Aeronautical research and technology: Reductions including variable cycle engine technology and vertical/short take-off and landing systems technology.....	
	4.0
Energy technology identification: Phase out of NASA direct funded activities.....	
	2.0
Total research and development	64.5

The largest single reprogramming item is \$14,600,000 proposed for transfer from the international solar polar mission to the space shuttle. The effect of that transfer is to cancel the U.S. spacecraft for the ISPM mission. The Committee is cognizant of the deep concern of the European Space Agency in connection with this action. It understands that alternate options are being pursued that may restore funding for some type of U.S. spacecraft. If the decision to cancel the U.S. spacecraft is reviewed and a substitute proposal adopted, the Committee expects the Administration to transmit a budget amendment, and/or a reprogramming proposal, requesting any additional funds, or authority, required to support such a mission.

In connection with the proposed phase down of technology utilization efforts, the Committee urges NASA to review the planned reprogramming of \$5,000,000 from this activity. If a part of this reduction can be absorbed in other programs, the Committee would support such a change from the above reprogramming scenario. The Committee has no objections to the other areas targeted for reduction—but directs the Agency to advise the Committee of any changes in the above proposals before such changes are implemented.

Finally, in connection with the reduced supplemental request for pay costs carried in Title II of this bill, the Committee understands that a reduction of \$1,300,000 from the original January estimate was applied to programmatic travel costs. The Committee recognizes that NASA's travel funds are severely limited and directs that sufficient funding be made available for travel during the shuttle orbital test period, notwithstanding the existing ceiling carried in the revised estimate in the amended budget.

COMPARATIVE STATEMENT OF NEW BUDGET (OBLIGATIONAL) AUTHORITY ESTIMATES AND AMOUNTS RECOMMENDED IN THE BILL—Continued

TITLE I—GENERAL SUPPLEMENTALS—Continued

Reported in H. Doc. 97-2 as amended by H. Rep. 1	Department or activity	Budget estimates	Recommended in the bill	Bill compared with estimates
INDEPENDENT AGENCIES				
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION				
97-32	Research and development (recession).....	-4,500,000	-4,500,000	-----

TITLE II

INCREASED PAY COSTS, FISCAL YEAR 1981

Title II provides amounts to meet increased pay costs for fiscal year 1981. The estimates are included in House Documents 97-2 and 97-29. The following table summarizes recommendations of the Committee for pay cost increases in the bill:

	Estimates	Recommended in the bill	Differences
New budget (obligational) authority.....	\$6,062,939,800	\$5,920,141,000	-\$142,798,800
Appropriations.....	(6,056,290,800)	(5,920,141,000)	(-136,139,800)
Reappropriations.....	(6,659,000)		(-6,659,000)
(By transfer).....	(19,158,000)	(56,353,000)	(+37,195,000)
(Increase in limitations).....	(174,829,700)	(122,854,000)	(-51,975,700)
(Trust fund transfer).....	(5,659,000)	(1,485,000)	(-4,174,000)
(Transfer from Commodity Credit Corporation).....	(5,831,000)	(5,831,000)	
(By transfer from FHA fund).....	(14,494,000)	(14,494,000)	

Title II includes \$5,920,141,000 in budget authority for fiscal 1981. Government agencies and departments absorbed nearly 19 percent of pay and related cost for fiscal 1981. The Appropriations Committee has recommended reductions of \$142,798,800 under the budget requests which result in about 21 percent absorption of the total cost of pay raises.

The increases provided in Title II were ordered pursuant to law, as follows:

Civil and military pay raises were effective in October 1980 under Executive Order No. 12248 and comparable raises were granted by administrative action. Executive Order No. 12248 was issued pursuant to public laws. Public Law 91-656 provides for adjusting the salary scale of civilian statutory pay systems to rates comparable to those paid for similar work in private industry. Public Law 90-207 provides that whenever the rates of the General Schedule are raised, there must be a comparable increase in the basic pay of the uniformed services.

Actual wageboard pay raises effective in fiscal year 1981 and granted under 5 U.S.C. 5341, together with additional raises to be granted under the same authority through September 30, 1981.

The total estimated cost of these pay raises is \$7.5 billion in fiscal 1981. This amount includes related costs such as Government retirement and life insurance contributions and the Government's share of employment taxes in the amount of \$629.1 million.

COMPARATIVE STATEMENT OF NEW BUDGET (OBLIGATIONAL) AUTHORITY ESTIMATES AND AMOUNTS RECOMMENDED IN THE BILL

TITLE II—INCREASED PAY COSTS

Reported in H. Doc. 97-2 as amended by H. Doc. 1	Department or activity	Supplemental estimates	Recommended in bill	Bill compared with estimates
TITLE II				
INCREASED PAY COSTS				
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION				
97-29	Research and program management.....	41,400,000	41,400,000	-----

TITLE III
GENERAL PROVISIONS

Title III of the bill contains general provisions.

Section 301 carries the usual prohibition against the obligation of funds provided in the bill beyond the current fiscal year as follows:

Sec. 301. No part of any appropriation contained in this Act shall remain available for obligation beyond the current fiscal year unless expressly so provided herein.

Section 302 is a routine provision associated with the many pay increase appropriations contained in the bill which will, when added to the amounts provided in regular appropriation acts, increase the total approved to an amount authorized either for direct accounts or limitations as follows:

Sec. 302. Except where specifically increased or decreased elsewhere in this Act, the restrictions contained within appropriations, or provisions affecting appropriations or other funds, available during the fiscal year 1981, limiting the amounts which may be expended for personal services, or for purposes involving personal services, or amounts which may be transferred between appropriations or authorizations available for or involving such services, are hereby increased to the extent necessary to meet increased pay costs authorized by or pursuant to law.

Section 303 is similar to a general provision carried in the Department of Housing and Urban Development—Independent Agencies Appropriation Act, 1981, that prohibits funds in the Act for personnel compensation and benefits from being available for other object classifications. The language is as follows:

Sec. 303. No part of any appropriation contained in this Act for departments and agencies funded in the Department of Housing and Urban Development—Independent Agencies Appropriation Act, 1981, for personnel compensation and benefits shall be available for other object classifications set forth in the budget estimates submitted for the appropriations without the approval of the Committees on Appropriations.

Section 304 provides that none of the funds made available to the Department of the Treasury by this Resolution shall be used to implement changes shortening the time granted, or altering the mode of payment permitted, for payment of excise taxes by law or regulations in effect on January 1, 1981. The language is as follows:

Sec. 304. None of the funds made available to the Department of the Treasury by this resolution shall be used to implement changes shortening the time granted, or altering the mode of payment permitted, for payment of excise taxes by law or regulations in effect on January 1, 1981.

TITLE IV
FURTHER CONTINUING APPROPRIATIONS

Title IV provides for the further continuing appropriations for the programs contained in House Joint Resolution 644 (P.L. 96-536) through September 30, 1981. House Joint Resolution 644 (present continuing resolution) expires on June 5, 1981 and Title IV merely extends this joint resolution to the end of fiscal year 1981. Presently four appropriation bills have not been enacted into law and this extension is required in order to continue funding for the programs covered under these bills for the remainder of this fiscal year. In addition, House Joint Resolution 644 provides funding for certain unauthorized programs and entitlement programs that required funding authority for the remainder of the fiscal year and necessitate this extension. The four bills involved in the continuing resolution are the Labor, Health and Human Services, and Education Appropriation bill, the Treasury-Postal Service-General Government Appropriation bill, the Foreign Operations Appropriation bill, and the Legislative Branch Appropriation bill.

Toward the end of the last session of Congress when it became apparent that a further continuing resolution would be required, it was the intention of the Committee to recommend that the October continuing resolution be extended through September 30, 1981, thus providing continuity and full year financing for those programs and activities for which regular annual appropriations had not been enacted. This proved to be impossible since the second budget resolution, which was agreed to during the time the Committee was preparing a further continuing resolution, did not contain adequate ceilings to provide financing for the major departments for the full fiscal year. In view of this unrealistic feature of the new budget resolution, the Committee was obliged to recommend continuing financing for only part of the fiscal year. Calculations made at that time indicated that the ceilings in the new budget resolution would carry those programs and activities until some time in June. Consequently, the expiration date of June 5, 1981 was selected.

The Committee takes the position that the practical effect of further extending the continuing resolution through September 30, 1981 is to enact into law the specific figures contained in the House-passed versions of the Labor, Health and Human Services, and Education bill, the Treasury-Postal Service-General Government bill, and the Legislative bill. It also provides full year funding for foreign assistance programs and for other federal activities. In other words, these items are treated just as if the regular bills had been enacted last year. Accordingly, Titles I and II of the accompanying bill include provisions which supplement, rescind, or defer amounts for various items covered

by the continuing resolution in the same fashion as for items carried in appropriation bills actually signed into law last year. Had the Committee not taken this view it would have been necessary to undertake a complicated and burdensome process of changing the existing rates for numerous items in the continuing resolution. The approach recommended is much more simple and understandable.

In addition to extending the effective date of House Joint Resolution 644 (P.L. 96-536), Title IV of the accompanying bill also extends until September 30 the cap on federal executive salaries including Members of Congress.

Section 101(c) of House Joint Resolution 644 contains language that stipulates that the provisions of H.R. 7593 (Legislative Appropriation bill) shall be effective as if enacted into law, with several exceptions noted. The purpose of this language is to insure that several items in H.R. 7593 are incorporated as permanent law, as specified by the language of the bill, and are not subject to termination.

RESCISSIONS

Pursuant to Clause 1(b), Rule X of the House of Representatives, the following table is submitted describing the rescissions recommended in the accompanying bill.

RESCISSIONS RECOMMENDED IN THE BILL—Continued

Department and activity	Amounts recommended for rescission
CHAPTER V	
INDEPENDENT AGENCIES	
National Aeronautics and Space Administration	
Research and development.....	—4,500,000

Calendar No. 93

97TH CONGRESS } SENATE { REPORT
1st Session } No. 97-67

SUPPLEMENTAL APPROPRIATIONS AND RESCISSION BILL, 1981

MAY 14 (legislative day, APRIL 27), 1981.—Ordered to be printed

Mr. HATHFIELD, from the Committee on Appropriations,
submitted the following

REPORT

[To accompany H.R. 3512]

The Committee on Appropriations, to which was referred the bill (H.R. 3512) making supplemental and further continuing appropriations for the fiscal year ending September 30, 1981, rescinding certain budget authority, and for other purposes, reports the same to the Senate with various amendments and presents herewith information relative to the changes recommended.

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Chapter II—Commerce, Justice, State and the Judiciary.....	30
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION RESEARCH AND DEVELOPMENT

1981 appropriations to date.....	\$4,396,200,000
1981 rescission request.....	-4,500,000
House allowance.....	-4,500,000
Committee recommendation.....	-37,900,000

The Committee recommends a rescission of \$37,900,000. This is \$33,400,000 more than the rescission request (R81-101) and the House allowance.

A comparison between the administration's request and the Committee recommendation is displayed below.

[In millions of dollars]

Activity	Requested	Recom- mendation
Deletion of planned development of Solar Electric Propulsion System.....	-7.0	-4.0
Minor rephasing of mission control center upgrading.....	-5	-5
Deletion of planned U.S. spacecraft for International Solar Polar Mission.....	-14.6	
Delay of Gamma Ray Observatory.....	-9.4	-9.4
Reduction of Agristars project effort.....	-10.0	-10.0
Reduction of operational satellite improvement activity.....	-2.0	-2.0
Cancellation of National Oceanic Satellite System.....	-5.0	-5.0
Phase out of technology transfer effort.....	-2.0	-2.0
Reduction of materials processing program activities.....	-3.0	
Phasedown of technology utilization efforts.....	-5.0	-3.0
Reductions including variable cycle engine technology and vertical/short take-off and landing systems technology.....	-4.0	
Phase out of NASA direct funded energy technology activities.....	-2.0	-2.0
Research and program management.....	-10.0	-10.0
Total reductions.....	-74.5	-47.9
Disposition of reductions:		
Space Shuttle proposed reprogramming.....	+60.0	
Reduction of proposed R. & P.M. supplemental appropriations.....	+10.0	+10.0
Proposed rescission of R. & D. appropriations.....	-4.5	-37.9

Although the House approved the changes as requested, the Committee believes that the manner in which the rescission was submitted obscured the fact that space science and applications programs were being terminated to support additional funding for the Space Shuttle. The specific uses of the \$60,000,000 requested for the Shuttle has not been documented by NASA. The Shuttle's position as this Nation's highest priority space program, does not, in and of itself, obviate the need to justify the use of funds nor does it justify the termination of other important NASA programs. Furthermore, the Committee understands that funding above the \$60,000,000 may be required and recommends that NASA forward a consolidated supplemental request covering all of the Shuttle needs. The Committee intends to act expeditiously on such a request when it is submitted.

The largest single reprogramming item is \$14,600,000 proposed for transfer from the International Solar Polar Mission (ISPM) to the Space Shuttle. The effect of that transfer is to cancel the U.S. spacecraft including the de-spun platform and the coronagraph for the ISPM mission. The Committee is cognizant of the deep concern of the European Space Agency and is also concerned, as is the Secretary of State and the authorizing committees, with this unilateral action. The Committee understands that alternate options are being pursued that may restore funding for some type of second spacecraft. In denying this rescission, the Committee expects NASA to study all of the options including the originally envisioned U.S. spacecraft configuration and develop a plan for a two spacecraft mission.

The Committee has also restored \$3,000,000 of the \$7,000,000 proposed for rescission in the Solar Electric Propulsion System program. The restored funds will be directed at maintaining the nucleus of critical engineering and manufacturing skills associated with thruster development, continuation of thruster testing, conduct of solar cell applications testing and in-depth study of mission requirements for small body rendezvous.

The restoration of the \$3,000,000 in the materials processing program will permit this program to proceed as planned with commercialization and scientific investigations. The Committee believes that the United States should accelerate its efforts to capitalize on the unique characteristics of the Shuttle's space environment to develop new pharmaceutical and chemical processes and products.

The restoration of \$2,000,000 of the \$5,000,000 proposed for rescission in the technology utilization program would permit the continuation of the publication of technology spinoff reports, responses to industry requests for technical information and six bioengineering/rehabilitation projects.

Restoring \$4,000,000 in the aeronautics program will permit the continuation of four activities slated for termination in fiscal year 1982 until the Committee can review these recommendations. The funded programs are aimed at: (1) increasing fuel efficiency and decreasing operating costs through advanced technology for higher temperature materials and materials with greater durability; (2) establishing technology for reducing gas turbine engine exhaust emissions over the entire subsonic flight regime, improving performance, durability and fuel flexibility; (3) providing the aerodynamic configuration and propulsion system technology required for subsequent development of effective military and civil V/STOL aircraft; and (4) developing the engine technology base for civil and military supersonic cruise aircraft.

NASA has requested that the Committee raise the cap of \$29,000,000 contained in the fiscal year 1981 bill for space transportation systems upper stages to \$38,300,000. The Committee notes that discussions are currently underway between NASA and General Dynamics for a sole-source contract with General Dynamics for the Centaur upper stage. This has raised a number of issues. In particular, the Committee is concerned that an upper stage vehicle should be designed to meet the near and mid-term needs of space science, space applications, and national security. In particular, there is concern that NASA may be proceeding

to build a vehicle designed to meet a 1985 launch date rather than a multipurpose vehicle.

Therefore, the Committee requests that NASA and the Department of Defense (USAF) conduct a joint study to reexamine the options for the development of an upper stage. This study should consider the technical merits of each option, the adaptability of the option to both NASA and DOD requirements, the advantages and disadvantages of a competitive procurement process, and possible funding alternatives. The study should be conducted and a report submitted by the new NASA Administrator and Secretary of the Air Force to the Committee.

The Committee understands that NASA intends to continue working on a schedule to support the 1985 launch, including the signing of a letter contract on or about June 1. The Committee directs that NASA not enter into a final contract until the above noted report has been submitted and the Committee has had 15 days to review the report.

The Committee is also concerned about the cost growth that has occurred on a number of NASA projects and notes that the justification for a sole-source contract relies heavily on the availability of proven technology and a high degree of confidence in successful within-cost delivery. The Committee, therefore, directs NASA to pursue contractual arrangements that minimize the Federal Government exposure to unforeseen costs growth and consider possible alternatives such as fixed priced or cost overrun share ratio contracts.

COMPARATIVE STATEMENT OF NEW BUDGET (OBLIGATIONAL) AUTHORITY ESTIMATES
RECOMMENDED IN THE BILL
TITLE III - GENERAL SUPPLEMENTALS

(Amounts in dollars)

H. Doc.	Department or activity	Budget authority	House bill	Senate Committee recommendation	Senate Committee recommendation compared with (+ or -)	
					Budget authority	House bill
	CHAPTER VI INDEPENDENT AGENCIES					
	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION					
97-52	Research and Development Technology Administration	\$4,300,000	\$4,300,000	\$4,300,000	\$4,300,000	\$4,300,000

TITLE III

GENERAL PROVISIONS

Title III of the bill contains two general provisions.

Section 301, identical to the House provision, carries the usual prohibition against the obligation of funds provided in the bill beyond the current fiscal year as follows:

SEC. 301. No part of any appropriation contained in this Act shall remain available for obligation beyond the current fiscal year unless expressly so provided herein.

Section 302 is a routine provision associated with the many pay increase appropriations contained in the bill which will, when added to the amounts provided in regular appropriation acts, increase the total approved to an amount authorized either for direct accounts or limitations. This section, identical to the House provision, reads:

SEC. 302. Except where specifically increased or decreased elsewhere in this Act, the restrictions contained within appropriations, or provisions affecting appropriations or other funds, available during the fiscal year 1981, limiting the amounts which may be expended for personal services, or for purposes involving personal services, or amounts which may be transferred between appropriations or authorizations available for or involving such services, are hereby increased to the extent necessary to meet increased pay costs authorized by or pursuant to law.

Sections 303 and 304 of the House bill, which were not truly "general" provisions, have been deleted from title III of the bill and added to chapters VI and XII, respectively, of title I. Section 305 was deleted.

TITLE IV

FURTHER CONTINUING APPROPRIATIONS

Title IV provides for the further continuing appropriations for the programs contained in House Joint Resolution 644 (Public Law 96-536) through September 30, 1981. House Joint Resolution 644 (present continuing resolution) expires on June 5, 1981 and title IV merely extends this joint resolution to the end of fiscal year 1981. Presently four appropriation bills have not been enacted into law and this extension is required in order to continue funding for the programs covered under these bills for the remainder of this fiscal year. In addition, House Joint Resolution 644 provides funding for certain unauthorized programs and entitlement programs that required funding authority for the remainder of the fiscal year and necessitate this extension. The four bills involved in the continuing resolution are the Labor, Health and Human Services, and Education Appropriation bill, the Treasury-Postal Service-General Government Appropriation bill, the Foreign Operations Appropriation bill, and the Legislative Branch Appropriation bill.

As the 96th Congress drew to a close, the need for a continuing resolution became clear. The Committee intended to recommend a continuing resolution which extended through September 30, 1981. This action was necessary to provide orderly financial operation for those programs without regular appropriations bills. When the Congress adopted an unrealistically low budget ceiling, however, this prudent course of action was not possible.

The second concurrent resolution for fiscal year 1981 imposed an outlay ceiling of \$632,400,000,000. This level was recognized at the time as inadequate to cover the requirements of the budget. When the Committee met in conference with the House, these unrealistic limits became apparent and the Committee set June 5, 1981 as the expiration date for the continuing resolution to meet the budget ceiling. As a consequence, the Committee now must resort to yet another continuing resolution to complete orderly funding for the remainder of the year.

The Committee concurs with the House position that the practical effect of further extending the continuing resolution through September 30, 1981 is to enact into law the specific figures contained in the House-passed versions of the Labor, Health and Human Services, and Education bill, the Treasury-Postal Service-General Government bill, and the Legislative bill. It also provides full-year funding for foreign assistance programs and for other Federal activities. In other words, these items are treated just as if the regular bills had been enacted last year. Accordingly, titles I and II of the accompanying bill include provisions which supplement, rescind, or defer amounts for various items covered by the continuing resolution in the same fashion as for items carried in appropriation bills actually signed into law last year. Had the Committee not taken this view it would have been necessary to undertake a complicated and burdensome process of changing the existing rates for numerous items in the continuing resolution. The approach recommended is much more simple and understandable.

In addition to extending the effective date of House Joint Resolution 644 (Public Law 96-536), title IV of the accompanying bill also extends until September 30 the cap on Federal executive salaries including Members of Congress.

Section 101(c) of House Joint Resolution 644 contains language that stipulates that the provisions of H.R. 7593 (Legislative Appropriation bill) shall be effective as if enacted into law, with several exceptions noted. The purpose of this language is to insure that several items in H.R. 7593 are incorporated as permanent law, as specified by the language of the bill, and are not subject to termination.

The Committee recommends an amendment to the House bill to strike section 109 of the continuing resolution, and related language from previous appropriations acts.

97TH CONGRESS }
1st Session }

HOUSE OF REPRESENTATIVES

REPORT
No. 97-124MAKING SUPPLEMENTAL AND FURTHER CONTINUING AP-
PROPRIATIONS FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1981

JUNE 3, 1981.—Ordered to be printed

Mr. WHITTEN, from the committee of conference, submitted the following

CONFERENCE REPORT

[To accompany H.R. 3512]

The committee of conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 3512) "making supplemental and further continuing appropriations for the fiscal year ending September 30, 1981, rescinding certain budget authority, and for other purposes," having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its amendments numbered 3, 4, 7, 8, 10, 11, 23, 26, 28, 30, 31, 32, 39, 63, 64, 69, 73, 74, 78, 88, 89, 90, 91, 92, 95, 97, 104, 119, 120, 121, 122, 124, 125, 126, 130, 132, 133, 134, 135, 136, 137, 141, 149, 153, 181, 182, 183, 186, 187, 203, 211, 212, 213, 214, 217, 232, 252, 254, 270, 271, 274, 279, 288, 291, 317, 324, 327, 328, 329, 330, 332, 334, 336, 345, 347, 354, 355, 360, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 407, 408, 409, 410, 411, 412, 413, 414, 416, 418, 419, 420, 423, 424, and 425.

That the House recede from its disagreement to the amendments of the Senate numbered 1, 2, 5, 6, 9, 12, 14, 16, 19, 22, 34, 35, 36, 43, 67, 71, 85, 93, 99, 106, 107, 108, 112, 127, 128, 129, 138, 144, 146, 156, 160, 163, 165, 167, 168, 170, 172, 175, 176, 177, 179, 180, 188, 200, 218, 219, 224, 233, 239, 243, 248, 249, 250, 257, 258, 263, 265, 281, 292, 309, 310, 315, 316, 318, 320, 323, 326, 333, 335, 338, 341, 344, 346, 348, 349, 350, 352, 358, 359, 362, 363, 364, 373, 375, 379, 380, 381, 382, 385, 386, 404, 405, 406, 415, 417, 422, 426, 427, 430, 431, and 432, and agree to the same.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

(RESCISSION)

Amendment No. 120: Rescinds \$4,500,000 from research and development as proposed by the House, instead of \$37,900,000 as proposed by the Senate.

The conferees agree that NASA may reprogram \$52,000,000 to the space shuttle of the \$60,000,000 proposed for such purpose. The conferees direct that the remaining \$8,000,000 be made available for the following program activities:

International Solar Polar Mission.....	\$3,000,000
Solar Electric Propulsion System.....	533,000,000
Technology Utilization	532,000,000

The conferees have restored \$3,000,000 for the International Solar Polar Mission (ISPM). The European Space Agency (ESA) has invested over \$100,000,000 in this program with the understanding that the United States would provide one of the two spacecrafts. The Administration has now indicated its intent to terminate the development of the U.S. spacecraft and has requested the transfer of \$14,600,000 from the program to the space shuttle.

Various spokesmen for the Administration have expressed different opinions as to the proper course of action relative to terminating work on the U.S. spacecraft. Furthermore, ESA has submitted a proposal to NASA for the development of a second European spacecraft in lieu of a U.S. spacecraft. This ESA proposal would permit many of the originally envisioned mission objectives to be accomplished—but it would eliminate some U.S. instrumentation, including the important coronagraph.

The conferees understand that restoring \$3,000,000 will maintain the viability of a fully instrumented U.S. spacecraft option, including the coronagraph, until a final mission configuration can be determined. Retaining \$3,000,000 for ISPM expresses the support of the conferees to keep open various options for a two-spacecraft mission. However, it is clear that if any option is to succeed, the Administration must make a firm commitment to support that option over the life of the program.

To assist the Administration and Congress in making a decision, the conferees instruct NASA to initiate a review of ISPM, with the National Academy of Sciences, through the procedures established in House Report 96-1476. The conferees expect this review to consider the scientific merits and costs of all of the two spacecraft options. Because of the time criticality of the decision, the conferees expect to be briefed by the review panel on its recommendations by September 11, 1981.

TITLE III—GENERAL PROVISIONS

Amendment No. 425: Restores provision proposed by the House and stricken by the Senate limiting funds provided for agencies funded in the HUD-Independent Agencies Appropriation Act for personnel compensation and benefits to be used for other purposes without the approval of the Committees on Appropriations.

TITLE IV

FURTHER CONTINUING RESOLUTION

Amendments No. 430, 431, and 432: Change section numbers as proposed by the Senate.

CONFERENCE TOTAL—WITH COMPARISONS

The total net new budget (obligational) authority recommended by the committee of conference, with comparisons to the budget estimates, and the House and Senate bills follow:

Budget estimates of net new (obligational) authority.....	188,374,139,259
House bill.....	6,810,285,916
Senate bill.....	6,695,450,041
Conference agreement.....	6,649,301,016
Conference agreement compared with:	
Budget estimates of net new (obligational) authority.....	-1,724,838,243
House bill.....	-160,984,900
Senate bill.....	-46,149,025

¹Includes a net of \$776,325,000 in budget estimates not considered by the House. Of this amount, \$536,124,000 for the food stamp program has not yet been officially transmitted to the Congress.

JAMIE L. WHITTEN,
EDWARD P. BOLAND,
WILLIAM H. NATCHER,
NEAL SMITH,
JOSEPH P. ADDABBO,
CLARENCE D. LONG,
SIDNEY R. YATES,
EDWARD R. ROYBAL,
TOM BEVILL,
ADAM BENJAMIN, Jr.,
BO GINN,
JULIAN C. DIXON,
VIC FAZIO,
SILVIO O. CONTE,
JOSEPH M. McDADE,
JACK EDWARDS,
JOHN T. MYERS,
J. KENNETH ROBINSON,
CLARENCE E. MILLER
(except amendment No. 102),
LAWRENCE COUGHLIN,
C. W. (BILL) YOUNG
(except amendment No. 102),
Managers on the Part of the House.

MARK O. HATFIELD,
TED STEVENS,
LOWELL P. WEICKER, Jr.,
JAMES A. McCLURE,
PAUL LAXALT,
JAKE GARN,
HARRISON SCHMITT,
THAD COCHRAN,
MARK ANDREWS,
JAMES ABDNOR,
ROBERT W. KASTEN, Jr.,
ALFONSE M. D'AMATO,
MACK MATTINGLY,
WARREN RUDMAN,
ARLEN SPECTER,
WILLIAM PROXMIRE,
JOHN C. STENNIS,
ROBERT C. BYRD,
DANIEL K. INOUE,
THOMAS F. EAGLETON,
LAWTON CHILES,
J. BENNETT JOHNSTON,
WALTER D. HUDDLESTON,
QUENTIN N. BURDICK,
PATRICK J. LEAHY,
JIM SASSER,
DENNIS DECONCINI,
DALE BUMPERS,

Managers on the Part of the Senate.

Public Law 97-12
97th Congress

An Act

June 5, 1981
(H.R. 3512)

Making supplemental and further continuing appropriations for the fiscal year ending September 30, 1981, rescinding certain budget authority, and for other purposes.

Supplemental
Appropriations
and Rescission
Act, 1981.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, to supply supplemental appropriations (this Act may be cited as the "Supplemental Appropriations and Rescission Act, 1981") for the fiscal year ending September 30, 1981, that the following rescissions of budget authority are made, and for other purposes, namely:

CHAPTER VI

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

(RESCISSION)

Of the funds appropriated under this head in the Department of Housing and Urban Development-Independent Agencies Appropriation Act, 1981, \$4,500,000 are rescinded.

94 Stat. 3054

TITLE II

INCREASED PAY COSTS FOR THE FISCAL YEAR 1981

For additional amounts for appropriations for the fiscal year 1981, for increased pay costs authorized by or pursuant to law as follows:

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

"Research and program management", \$41,400,000;

TITLE III

GENERAL PROVISIONS

Sec. 301. No part of any appropriation contained in this Act shall remain available for obligation beyond the current fiscal year unless expressly so provided herein.

Sec. 302. Except where specifically increased or decreased elsewhere in this Act, the restrictions contained within appropriations, or provisions affecting appropriations or other funds, available during the fiscal year 1981, limiting the amounts which may be expended for personal services, or for purposes involving personal services, or amounts which may be transferred between appropriations or authorizations available for or involving such services, are hereby increased to the extent necessary to meet increased pay costs authorized by or pursuant to law.

Increased pay costs.

Sec. 303. No part of any appropriation contained in this Act for departments and agencies funded in the Department of Housing and Urban Development-Independent Agencies Appropriation Act, 1981, for personnel compensation and benefits shall be available for other object classifications set forth in the budget estimates submitted for the appropriations without the approval of the Committees on Appropriations.

94 Stat. 3044

Sec. 304. The Social Security system is vital to the well-being of the Nation's elderly and disabled citizens and currently provides benefits to about 35 million Americans.

The Social Security system faces serious short-term and long-term financing problems that jeopardize the payment of benefits.

It is essential that Congress act forthrightly to address the Social Security financing problem and to restore the American people's confidence in the system.

Any resolution to this problem will have come as a result of a bipartisan effort.

It is the sense of the Congress that Congress should carefully study all options in order to find the most equitable solution to insuring the fiscal integrity of the system.

That Congress shall not precipitously and unfairly reduce early retirees' benefits.

That Congress will enact reforms necessary to ensure the short-term and long-term solvency of the Social Security system but will not support reductions in benefits which exceed those necessary to achieve a financially sound system and the well being of all retired Americans.

Sec. 305. None of the funds in the Act shall be used to prevent or interfere with the right and obligation of the Commodity Credit Corporation to sell surplus agricultural commodities in World Trade at competitive prices as authorized by law.

Surplus agricultural commodities sale

TITLE IV

FURTHER CONTINUING APPROPRIATIONS

Sec. 401. Clause (c) of section 101 and clause (c) of section 102 of the joint resolution of December 16, 1980 (Public Law 96-536), are hereby amended by striking out "June 5, 1981" and inserting in lieu thereof "September 30, 1981".

5 USC 5318 note
94 Stat. 3166.
3169.

CHRONOLOGY OF EVENTS
AUTHORIZATION BILL
 HOUSE (H.R. 6413)

SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND COMMUNICATIONS

10/30/79 James J. Kramer
 2/6/80 Dr. Walter B. Olstad

SUBCOMMITTEE ON SPACE SCIENCE AND APPLICATIONS

10/16/79 Dr. Anthony Calio, Samuel W. Keller, S. Ichtiaque Rasool,
 Dr. James Kramer, Donald A. Beattie, Edwin Kilgore,
 Billie J. McGarvey
 10/17/79 Dr. Thomas A. Mutch, Andy Stofan, Adrienne Timothy,
 Charles Wash, Dr. William C. Schneider, Norman Pozinsky,
 Paul Anderson
 10/18/79 Dr. Robert A. Frosch
 2/5/80 John Yardley, Dr. Glen Lunney
 2/6/80 Dr. Thomas A. Mutch
 2/7/80 Dr. Anthony J. Calio, Samuel W. Keller, S. Ichtiaque Rasool
 2/11/80 Dr. William Schneider, Ronald R. Dapice, Norman Pozinsky
 2/20/80 Dr. Walter B. Olstad, Donald A. Beattie
 2/21/80 Dr. Walter B. Olstad, Dr. Anthony Calio, Floyd I. Roberson,
 Kathleen Charles
 2/26/80 Thomas Newman, Charles E. Wash, Billie J. McGarvey, Edwin
 Kilgore, Frank Penaranda, S. Neil Hosenball, Eldon Taylor

FIELD HEARINGS

2/14/80 Jet Propulsion Laboratory
 2/15/80 Rockwell International
 2/18/80 Lockheed Missiles and Space Company, Inc.
 3/7/80 John F. Kennedy Space Center- Richard Smith,
 Gerry Griffin, Charles Hollinshead, Edward
 Parry, James Rowe, Jay Diggs, Dr. Paul
 Buchanan, Ben Hursey, Robert Gray, John
 Neilon, Andrew Picket, George Page,
 Ray Clark, Pete Minderman, Joseph Malaga
National Space Technology Laboratories-
 I. J. Hlass, Mr. Mooneyhan
 3/8/8 Michoud Assembly Facility - Dr. Siebel,
 Mr. Timmons
 3/9/80 Lyndon B. Johnson Space Center- Dr. C. C.
 Kraft, Jr., Bob Thompson, Aaron Cohen
 3/10/80 George C. Marshall Space Flight Center-
 Dr. W.R. Lucas, Robert E. Lindstrom, James
 R. Thompson, George B. Hardy, James B. Odom,
 James A. Downey III, Thomas J. Lee, Otha C.
 Jean, William Teir, Dr. Fred A. Speer,
 Lowell K. Zoller, William A. Brooksbank,
 John H. Harlow, Luther E. Powell, Robert
 E. Pease

CHRONOLOGY OF EVENTS
AUTHORIZATION BILL
 SENATE (S.2240)

<u>COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION</u>	<u>CONFERENCE COMMITTEE ACTION</u>
2/6/80 Dr. Robert A. Frosch, Dr. Alan M. Lovelace, John F. Yardley, Tom Newman	6/27/80 Conference Committee Report No. 96-1142
2/7/80 Dr. Walter C. Williams, Dr. Glynn Lunney, Charles Gunn, Wayne L. Draper, Capt. Chester Lee, Joseph Mahon	7/2/80 House Approved Conference Report
2/20/80 Dr. Thomas A. Mutch, Andrew Stofan, Dr. Adrienne Timothy, Paul Anderson, Dr. William Schneider, Norman Pozinsky, Ronald R. Dapice	7/21/80 Senate Approved Conference Report
2/21/80 Dr. Anthony J. Calio, Samuel W. Keller, Dr. S. Ichtiaque Rasool, Pitt Thome, Dr. Lawrence R. Greenwood, Floyd I. Roberson, Dr. John R. Carruthers, Dr. John H. McElroy, Kathleen J. Charles, Billie J. McGarvey, Richard Irwin, Dr. Charles Neubauer	7/30/80 President Approved P.L. 96-316
2/27/80 Walter B. Olstad	
2/29/80 Kenneth S. Pedersen, Richard Barnes	
4/3/80 Dr. Alan M. Lovelace	

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APPROPRIATION BILL

HOUSE (HR 7631)

3/25/80 Dr. Robert A. Frosch, Dr. Alan M. Lovelace,
William E. Lilly, John Yardley, Gen. Billie
J. McGarvey, Edward Kilgore

6/19/80 House Committees Report No. 96-1114

7/28/80 House Approved

CONFERENCE COMMITTEE ACTION

11/21/80 Conference Committee Report No. 96-1476

12/2/80 House Approved Conference Report

12/3/80 Senate Approved Conference Report

12/15/80 President Approved P.L. 96-526

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5/4/81 House Committee Report No. 97-29

5/13/81 House Approved

CONFERENCE COMMITTEE ACTION

6/3/81 Conference Committee Report No. 97-124

6/4/81 House Approved Conference Report

6/4/81 Senate Approved Conference Report

6/5/81 President Approved P.L. 97-12

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4/24/80 Dr. Robert A. Frosch, William E. Lilly,
John F. Yardley, Dr. Glen Lunny

4/25/80 Dr. Robert A. Frosch, William E. Lilly,
Dr. Thomas A. Mutch, Dr. Anthony J.
Calio, Dr. Walter B. Olstad, Billie J.
McGarvey, Dr. Harriet Jenkins, Dr. Glen
Lunny

9/4/80 Senate Committee Report No. 96-926

9/23/80 Senate Approved

SENATE (HR 3512)

5/14/81 Senate Committee Report No. 97-67

5/21/81 Senate Approved