National Archives and Records Administration

8601 Adelphi Road
College Park, Maryland 20740-6001

Date: September 21, 2007

From: David A. Langbart, NWML

Subject: Request for documents

To: Lisa Bacon, NRO

The CIA has transferred to the National Archives the film "A Point in Time: The CORONA Story." To help our Special Media Staff catalog the film content and to provide supplemental documentation for the accession dossier they would like to have copies of the following NRO documents:

- Motion Picture Script: "A Point in Time: The Corona Story," 53 pages, June 1973, index 2A/0079, barcode 1400023050

- Motion Picture Script Treatment, 20 pages, July 1973, 2/B/0039, barcode 1400040624

They have also asked me to see about securing a video copy of the film for reference use.

I can pick this material up on my next visit, which is scheduled for October 11.

Thank you very much for your assistance.

Document re-reviewed 10/9/07
to send to Natl archives

L. Hathaway
10/9/07

A Motion Picture Script

for a 40-50 minute color

film entitled:

"A POINT IN TIME"
(The Corona Story)

For:

CENTRAL INTELLIGENCE AGENCY
DD/S&T, Office of Special Projects
Photo Reconnaissance Systems Division

From:

OFFICE OF TRAINING
Film Branch

25 June 1973

1. MLS
Mr. Richard Helms takes place on podium at Corona Museum Dedication in October, 1972.

MR. HELMS:

Good morning, ladies and gentlemen.

For a moment let us think back to a point in time--to October 24, 1957 to be precise. On that date the President's Board of Consultants on Foreign Intelligence Activities submitted its report to President Eisenhower on the status of the intelligence community's collection capabilities. With strong urging from Dr. Edwin Land, the Board called for re-assessment of the Air Force's SAMOS Satellite Reconnaissance System, then under development by the Air Force.

2. MS
Closer as he continues.

This was a complicated system based on electrical transmissions from space. At the same time the A-12 OXCART reconnaissance aircraft proposed by CIA was given a careful evaluation. The Board held that while both were promising programs the critical need for intelligence at that point in time warranted an interim photo reconnaissance system that could get into operation earlier than the SAMOS could be ready.

3. MCU
Mr. Helms as he looks up.

4. MLS
As above.

5. MCS
Different angle.

This was a significant decision, particularly for that era. Just 20 days before, the Soviet Union had orbited the world's first satellite, Sputnik I, from the Tyuratam Range. The United States was still over three months away from launching its first small satellite. But the need for reliable intelligence on Soviet missile deployment was becoming more and more urgent. The so-called "missile lag" debate was already under way with the Senate Preparedness Subcommittee holding hearings on this issue. The White House responded rapidly to the Board's recommendations. Dr. James Killian, who had just assumed his new position as Special Assistant to the President for Science and Technology, arranged a meeting for the first week in December among the President, Director of Central Intelligence Mr. Allen Dulles, and the Deputy Secretary of Defense Mr. Donald Quarles. At this meeting only eight weeks after Sputnik I, the President decided to proceed with a joint CIA/Air Force interim

7. MLS
Es-establishing shot.

photo reconnaissance satellite program to answer the critical intelligence questions about Soviet missiles. The system was to be based upon physical recovery of film from the space vehicle. This decision marked the birth of the remarkable CORONA Project. The full import of the decision, however, can be comprehended only if we recall the primitive nature of our understanding of space technology and the critical need for hard intelligence information which existed at that "point in time."

FADE OUT

FADE IN

7. TITLE
Over live-action of a slow motion Agena launch, superimpose:

"A POINT IN TIME"

TITLE MUSIC: In and up.

MUSIC: Swells to emphasize main title.

DISSOLVE TO:

8. TITLE
Over model animation of CORONA satellite, superimpose:

"The Story of CORONA"

MUSIC: Swells again to point up sub-title.

FADE OUT

MUSIC: Title music ends.

FADE IN

MUSIC: Starts an aviation theme. Down and under narration.

9. MS
U-2 Pilot and plane captain walk toward aircraft.

NARRATOR:

By the fall of 1957, the U-2 had already spent a year in service. It had never been intended as operational for more than a year or two. The operational life expectancy was based on the likelihood that the Soviets would in some months track it successfully and with accurate tracking data in hand, bring pressures to discontinue the flights.

10. MLS
They climb stairway and pilot begins to prepare for flight.

11. MCU
Pilot is in cockpit and plane captain helps with life support system.

DISSOLVE TO:

12. LS
U-2 begins to roll on taxiway.

As it turned out we had misjudged the Soviet air surveillance capability at the time and their radars had tracked every flight from the first. The Soviets filed a protest and a standdown was ordered. After that, overflights were made only sporadically although for three more years the U-2 ranged over much of the rest of the world.

13. VLS
U-2 Takes off.

14. AIR TO AIR
U-2 in Flight.

And so we set out on December 8, 1957 to build and develop what has become known as CORONA, the world's first photographic

reconnaissance satellite. Its importance in the perspective of today's time was momentus.

DISSOLVE TO:

15. AERIAL
View of White House.

However, in the weeks after Sputnik I, there was pressure from all quarters to accelerate the U.S. missile and space program and there was much public debate about military versus civilian control of the Space program. In the perspective of that time, President Eisenhower addressed the nation.

FADE OUT

FADE IN

16. STOCK
President Eisenhower addresses the nation on the subject of space science.

PRESIDENT EISENHOWER (synch):

"... long range ballistic missiles as they exist today, do not cancel the deterrent and destructive power of our strategic Air Force. The Soviet launching of earth satellites is an achievement of the first importance and the scientists who brought it about deserve full credit and recognition. Already useful new facts on outer space have been produced and more are on the way as new satellites with added instruments are launched.

Earth satellites in themselves have no direct present effect upon the nation's

16. (Continued)

security. However, there is real military significance to these launchings as I have previously mentioned publically. Their current military significance lies in the advanced techniques and the competence in military technology they imply. For example, the powerful propulsion equipment necessarily used.

FADE OUT

MUSIC: In and up to bridge.

FADE IN

NARRATOR:

17. AERIAL
Pentagon circa 1958.

On 8 February, 1958 the President placed authority for all military space projects under the newly formed Advanced Research Projects Agency (ARPA). The splitting off of CORONA from WS-117L was accomplished by ARPA just 20 days later. Although CORONA was removed from WS-117L and placed under separate management, as a covert activity, overt procurement was made possible by cover experimental programs.

DISSOLVE TO:

18. AERIAL
CIA Headquarters Building.

MUSIC: Changes to a new theme suggesting historical events.

NARRATOR:

At about the time CIA's Headquarters was being built, Project CORONA was begun. It was decided at the beginning that the

18. (Continued)

photographic subsystem of the Air Force's WS-117L, offering the best prospect for early success, be placed under joint CIA/ Air Force management--an approach which had been highly successful in covertly developing and operating the U-2's under OXCART.

DISSOLVE TO:

MUSIC: Ends

SOUND EFFECT: Bissell & Ritland Dialogue.

19. MS
Bissell and Ritland, featuring Bissell. They are talking about how CORONA began.

NARRATOR:

The CORONA Development Projects Staff was formed under the direction of Richard Bissell, then Special Assistant to the Director of Central Intelligence for Plans and Development.

20. MCU
General Ritland as he speaks to Bissell.

His Air Force counterpart was Brigadier General Osmund Ritland, who had served on the U-2 development program under Bissell.

GENERAL RITLAND:

"... and they began to say, 'What was that program you guys were talking about when you were in here mid-summer?' From then on maybe you'd better take it."

21. MCU
Bissell tells how he learned about the program.

BISSELL:

Well, I came aboard what came to be called CORONA and the manner in which I was told

21. (Continued) about it was even more informal and disorganized than when I had learned about the U-2 program some four years before. This time it was Din Land who said that it had been decided at the highest level that a program would be transferred to be managed like the U-2. He appeared in my office and said that he supposed that I knew a decision had been taken to shift that program over to me. And I didn't know what program and I didn't know what shifting it meant. He told me it was part of the 117L program that was Air Fo ce and that it was to be managed in the same way that the U-2 had been manged but, of course, he couldn't answer any of my questions about who was going to pay for it or who would do it on the Air Force side.

22. MS
Feature Ritland. RITLAND:

My endoctrination program was a little bit more formal than that in that General Shriver, when he returned from Washington, instructed me quite precisely what I was

22. (Continued) to do. Much work had been done by yourself and some of your colleagues in Washington but the main job was to re-orient the present Air Force 117L program, kill the recoverable portion of it and try to continue on in the covert side, the same kind of a program on an accelerated basis and funded more actively than we had been funded in the past.

23. CU Richard Bissell. BISSELL: The initial problems in this program--the cover and security problems--were very different from that of the U-2 because there was already a quite widely known and defined for studies, by your command of the Air Force, an interim and preliminary satellite reconnaissance program, that would not involve readout and where the emphasis would be on fairly readily available hardware and speed. It would run for about a year and a half and would, as CORONA eventually did, produce film in a capsule which would somehow be recovered. Because hundreds, if not thousands of people knew of the existence of that plan, we had to

23. (Continued) first devise a way it could be plausibly and convincingly cancelled and then we had to inform a select minority of those people that it hadn't really been cancelled but would be carried on in a different way.

24. MS
Feature General Ritland.

RITLAND:
And I was to come in here and the first thing to do was to correct the policy and paperwork that existed in the Air Force at the time and within the DOD regarding the 117L program. And our job was to kill, if you will, the 2A program which was the recoverable capsule of the 117L program and continue on with the Atlas-Agena read-out portion of it but to accelerate the 2A program under the CORONA guise. And our job at the outset was to develop a rationale to have this happen without causing too much consternation among all the people involved.

25. MCU
Feature Bissell.

BISSELL:
That was a subject to which you and I addressed ourselves on our first meeting and, as you have said, about this time ARPA had come into existence and it seems to me a decision had been made, again at

25. (Continued)

the White House level, that the funding would not be Air Force within the Pentagon but it would be ARPA funded with the CIA funding the payload. And that in any event is the way it turned out ....

26. MLS
The two continue talking.

SOUND EFFECT: Dialogue down and under narration.

NARRATOR:

CORONA got under way in March 1958 at a three day conference in San Mateo, California among CIA, Air Force Ballistic Missile Division, Lockheed, General Electric and Fairchild. The meeting brought out that while plans for a design were under way it was far from complete. Major complications arose over basic design of the camera.

27. MCU
Feature Bissell

BISSELL:

... a great many of the technical decisions were decided at that time. But it turned out, in fact, that there was quite a lot to be decided because the cancelled program was going to use a spin stabilized camera designed by Fairchild which had many advocates in the Air Force, RAND and in the Agency and I think the principal change that you and I

27. (Continued)

made in the plans was a decision that we go instead for a camera that was proposed by ITEK which required vehicle stabilization but would give us almost three times the resolution.

DISSOLVE TO:

28. AERIAL
View of Boston featuring Boston College and MIT.

MUSIC: In and under.

NARRATOR:

ITEK Corporation was a relatively new optical sciences firm, formed by a group of scientists from the university research centers in the Boston area. ITEK's concept proposed a longer focal length lens for the camera and scanning within an earth-centered stabilized pod.

The decision to turn to this new design was agonizing for it meant moving from a relatively simple method of stabilization to one that was untried and technically more complicated. The advantage would be lower cost and much greater definition of intelligence targets.

DISSOLVE TO:

29. MS
Mr. Wolfe of ITEK demonstrates model of CORONA stabilization system.

MUSIC: Down and out.

WOLFE (synchronous sound):

A panoramic camera takes a picture by rotating the lens through an angle like

DOUBLEPRINT:

this. In this model we just took a picture through a large angle. In the original CORONA camera the lens, after taking the panoramic picture, would rotate back into position for the next picture like this. The trouble with that kind of action is that the high torques generated by the lens rotating requires putting a counterbalancing mechanism in so that the action would not vibrate or shake the whole space platform. The electrical and mechanical complexity of doing that--of counterbalancing that high torque--reduced the reliability of that early model. The second version, the so-called "J" version, was one in which we learned to separate the light part of the lens--the upper part near the film--from the heavy part of the lens and we rotate the lens the way the early camera did and at the end of the picture taking cycle the heavy part of the lens would keep on moving and the light part would come back not creating much disturbance. Then the heavy part would be mechanically connected to it and synchronized and another picture taken.

Zoom closer.

Zoom out.

Zoom in close to mechanism.

DISSOLVE TO:

30. AERIAL
ITEK facilities.

30X (if available)
Scene of handwritten note.

DISSOLVE TO:

31. MLS
Optical scientist walks to computer and keys in program for CORONA lens readout.

32. MS
Scientist above looks at computer graphics printout

33. MCU
Zoom in on computer drawn optical design.

DISSOLVE TO:

34. MLS
Lens grinding facility at Itek.

MUSIC: In and under.

NARRATOR:

On 16 April 1958 the final project proposal, including the ITEK design, was forwarded to the President's Staff Secretary with ARPA's review and approval. The proposal was promptly approved although never in writing under the strict security rules surrounding the program. The only record of the President's approval reportedly was in the form of a handwritten report on the back of an envelope. Work on the approved design commenced immediately. The camera optics were optimally designed utilizing then new, computer design techniques. The Itek lens was a 24 inch focal length Tessar type design. Early models were f/5.0 speed and later ones developed to an f/3.5 speed. Although of relatively conventional lens element design, these were far from ordinary.

At the time the CORONA lenses were made, they were equal in quality to any ever previously made. Lens blanks were taken

34A. MCU
Row of grinding machines operating.

from the finest available glasses and precision ground ....

DISSOLVE TO:

35. MS
Optical technician has CORONA lens on optical bench.

... checked and mounted to bring out the highest performance then known to optical science.

DISSOLVE TO:

36. STOCK
VLS Raising a Thor-Agena, circa 1958-59.

The CORONA payload would ride the Thor-Agena vehicle, a hybrid made of a Thor Intermediate Range Ballistic Missile and a second stage Bell Laboratories' developed HUSTLER engine. later to be modified by Lockheed and known as Agena. It's important to remember that at that point in time today's commonplace reliability of systems was unknown.

37. STOCK
Different view.

38. STOCK
Still longer view.

MUSIC: Up and play.

39. MLS
Ed Plummer in Agena test area at Lockheed.

MUSIC: Down and out.

PLUMMER:

DOUBLEPRINT:
"Mr. Ed Plummer,
Lockheed Aircraft"

The Agena vehicle consists of a forward section which encompasses the camera and the recovery system. Behind that an electronics area which contains a horizon sensor, electronics power system and so forth. Behind the large tanks and finally on the back, the engine and the aft rack

which contains the attitude control gas and actuators.

40. MONTAGE
Various views of work on Agena by Lockheed technicians.

MUSIC: In and under.

NARRATOR:

Contractor chosen for the Agena sub-system was Lockheed Aircraft, which also served as the prime contractor. Lockheed had responsibility for integrating the payload, operating the launch preparation facility and managing the sub-contracts.

Agena was more than a means to place the camera in orbit. The planned recovery sequence involved a series of controlled maneuvers by the Agena, any one of which was critical or the mission would fail.

DISSOLVE TO:

41. MONTAGE
GE recovery vehicle building activities.

However, CORONA's most unique feature was its payload recovery system. History would show that the crucial decade of the 1960's intelligence needs could not have been served by the state of readout technology at the time. Actual recovery from space was necessary. It should be noted that both the manned and unmanned U.S. space recovery programs were benefited considerably by the

DISSOLVE TO:

42. MLS
Ken Morton of GE outside clean room with model of system. Inside clean room can be seen recovery system.

DOUBLEPRINT:
"Kenneth Morton,
General Electric Co."

43. CU
The model of recovery system.

pioneering re-entry technology developed for CORONA.

Sub-contractor for the CORONA recovery system was General Electric Company.

MUSIC: Down and out.

MORTON:

"This is the front end portion of the system--the recovery portion. This attached to the Agena and when the Agena tips down in attitude, this front end part of the system is ejected from the Agena. It's put into a return trajectory by means of this thrust cone assembly which is then jetisoned after re-entry. Then the parachute deploys pulling the recovery capsule out of the re-entry heat shield portion of the front end. This portion, after it has done its re-entry job is then dispensed with and this is the portion that we recover. It comes down on its parachute into the water or can be retrieved in air--air snatched by means of aircraft."

DISSOLVE TO:

MUSIC: In and under.

44. AERIAL
Overflight of Vandenberg Base and launch facility.

NARRATOR:

The mission of CORONA necessitated a near-polar orbit, either by launching to the north or south. However, the launch site must be one which prevents danger for highly populated areas so the logical choice, with a ballistic missile squadron already in place, was Cooke Air Force Base, later to be called Vandenberg Air Force Base.

45. STOCK
Preparations of vehicle and payload circa 1959.

Under the highest priorities the preparations for test launches was completed by January, 1959. However, the first vehicle aborted on the launch pad due to inadvertent firing of the separation system.

46. (If available)
Launch of Discoverer I.

Success would not come easy to CORONA. The second Agena, labeled Discoverer I, was launched on 28 February 1959 and never heard from again.

DISSOLVE TO:

MUSIC: Down and out.

47. MLS
Two Lockheed veterans at launch site (Four).

KURT:

Well, Ray, this brings back memories. From pad 4 here in February of 1959, we launched Discoverer I. For a time we thought it achieved orbit but I think in

47. (Continued)

later years people believed that it didn't make it. It probably went in down around the South Pole.

48. MCU
Feature Ray.

RAY:

You know the fellows at the launch base at that time were kind of skeptical that it made orbit.

KURT:

Were you in the block house that day, Ray?

RAY:

No, I was in the LOCC with Colonel Heisler. Ernie Geisler was the Lockheed Launch Conductor in the Blockhouse on that day ....

MUSIC: In to bridge. Then fade out.

SFX: Kruschev's oratory.

49. STOCK
MS Vice President Nixon listens as bombastic Kruschev talks.

NARRATOR:

Meanwhile the undertainties about Soviet missile capability mounted. Vice President Nixon faced a beligerant Kruschev in what came to be called the "Kitchen Debate."

49A. STOCK
Nixon replies.

NIXON:

...there are some instances where you may be ahead of us. For example, in development of the thrust of your rockets for the investigation of outer space....

DISSOLVE TO:

50. (If available) Launch of Discoverer II and/or montage of launches including ones that blew up on the launch pad.

MUSIC: In and under.

NARRATOR:

The third Agena launched a biomedical capsule on 13 April, 1959 and achieved orbit, but due to an incorrect setting of a timing device, ejected within hours over the North Pole and came down in the snow near Spitzbergen, Norway. The capsule was never recovered—at least by a U.S. team. A few years later a movie called "Ice Station Zebra," resulted from speculations about the event.

Problem after problem plagued the early CORONA launch attempts. These were truly the days of space pioneers where the solution to last month's failure only surfaced new problems for which engineering solutions must be found today. And finding them meant little time to look for optimized solutions requiring long development spans. However, the gravity of such events was not without lighter moments.

DISSOLVE TO:

51. MS Engineer and technician ready "test" for ping ball security cover.

A prize example was the solution to security's requirement for an on-pad payload cover. While design of a shroud

51. (Continued)

DISSOLVE TO:

52. LS
The sportscar pulls out into a stream of traffic.

52A. MLS
Motorcycle policeman overtakes the engineer and writes him a ticket. Zoom in on the two.

FADE OUT:

FADE IN:

53. STOCK
JFK listens to a question by newsman.

JFK speaks to the point.

was eventually completed, the interim solution was prepared from ping pong balls, brown paper and piano wire. The test vehicle was what was then a high speed sports car tried out "down range" on the Bayshore Freeway. Unfortunately, the test was aborted by a speeding ticket for the test engineer, and this design was phased out after one "flight."

MUSIC: Turns to more somber bridge.

NARRATOR:

Meanwhile concern about intelligence and our missile posture grew and became a major item of debate in the presidential election of 1959.

JOHN F. KENNEDY:

... my source of concern is a remark made by the President's secretary, Mr. McElroy, about a month ago. He said if the Russians build all the missiles they are capable of building and if we build all we're planning to build, then quite obviously the Soviet Union will enjoy an advantage in the missile area. I would go under the assumption they will build all they can. I'm quite aware of what we are planning to build. I therefore

53. (Continued)

think the President, however expert he may be, has come to the wrong conclusion about the needs of defense....

DISSOLVE TO:

MUSIC: In and up, then under narration.

54. STOCK
Scene depicting Russian missile technology, circa 1959.

NARRATOR:

The Central Intelligence Agency's National Estimate for guided missiles for the year 1959 contained footnotes by both the Army and Air Force intelligence agencies taking issue with CIA's estimate of Soviet missile strength. The discrepancies emphasized the need for hard intelligence. The U-2 had improved knowledge of the Soviet Union but the answers to the critical questions went unanswered.

DISSOLVE TO:

MUSIC: Builds anticipation.

55. STOCK
Countdown scenes for the launch of Explorer XIII.

NARRATOR:

Then on 10 August 1960 the diagnostic flight thirteen was readied for launch.

56. STOCK
XLS Agena ready for launch and then firing.

SFX: Sounds of countdown.

MUSIC: Out.

SFX: The take-off of Discoverer XIII. Let sound effect play for dramatic effect.

Camera pans with the Agena.

MUSIC: Builds suspense.

SFX: Fade under music.

LONG DISSOLVE TO:

MUSIC: Down and under.

57. ANIMATION
Separation of last stage.

NARRATOR:

At the time Discoverer XIII was launched, a number of major problems remained to be solved: achieving an acceptable orbit, operating the camera and in the all important recovering of the payload film.

58. STOCK
Antenna tracking the satellite.

Telemetry quickly revealed that Thirteen did achieve orbit ....

59. ANIMATION
Satellite rotates to proper position.

... and that initial positioning was correct.

DISSOLVE TO:

60. ANIMATION
Satellite deploys for re-entry.

On the 17th orbit, the recovery package ejected, retro-fired and descended normally ....

61. STOCK
Ejection and retro-fire.

62. STOCK
Parachute deploys.

... except for missing its intended impact point by 313 miles.

DISSOLVE TO:

63. STOCK
Aerial of capsule bobbing in ocean.

Although beyond the range of recovery aircraft, Thirteen's capsule splashed down near enough for water recovery.

64. STOCK
Inside helicopter with frogmen silhouetted in window.

For the first time ever, man had orbited an object in space and recovered it according to plan.

65. STOCK
LS Helicopter arrives over the capsule.

66. STOCK
MLS Frogman deploys.

67. STOCK
MS Frogmen attach a cable and begin hoisting out of water.

Although the capsule carried no film, we had proved the ability to do it and beat the Russians in their similar Sputnik V, dog-carrying capsule, by just 9 days. Indeed CORONA had paved the way--through its back-up technology--for splash-down recovery of the U.S. Man-in-Space program missions.

DISSOLVE TO:

68. STOCK
Newsreel of President Eisenhower at news conference displaying the capsule.

President Eisenhower proudly proclaimed Discoverer XIII, "First Returning Space Voyager." History would show that much credit for the success was due to a new cold gas spin and despin technique applied first to Discoverer XIII.

DISSOLVE TO:

69. STOCK
LS Launch of Discoverer XIV.

MUSIC: Builds triumphantly.

NARRATOR:

Just 8 days after this first success, Discoverer XIV was successfully launched. It carried a 20 pound film payload.

70. STOCK
Closer as it moves through clouds.

DISSOLVE TO:

71. ANIMATION
The satellite in orbit. It is corrected into proper position.

Discoverer XIV was a cliff hanger from the start. The satellite was on the verge of tumbling on the first orbits but was finally stabilized by expending precious gas.

DISSOLVE TO:

72. STOCK
C-119's take off
from Hickham.

Air Force C-119's deployed in hopes of air snatching the capsule ....

73. STOCK
Men Aboard Pelican 9.

... and the secret space drama began.

DISSOLVE TO:

74. STOCK
Ejection of capsule.

The satellite recovery vehicle was ejected on the 17th pass.

75. STOCK
Parachute deployment.

This time the capsule deployed right in the "ballpark." Test Squadron 6593 raced to the proper coordinates.

76. STOCK
View from port as
the parachute is missed.

The first two passes missed but on the third try, the capsule was air snatched

77. STOCK
Successful air snatch.

by Pelican 9 adding still another first to CORONA's history.

78. STOCK
Bringing in the capsule.

Although the initial photography was substantially lower in resolution than that from the U-2, it was of intelligence value.

DISSOLVE TO:

79. PHOTOGRAPHS
Illustration of resolution
on early flights.

This one mission yielded more photographic area coverage than the total of all U-2 missions over the Soviet Union.

80. PHOTOGRAPHS
Blow-ups of interest-
ing military installation.

More importantly the mission covered areas never previously reached. And a new age

81. PHOTOGRAPHS
Other early photographs
from CORONA missions.

of technical intelligence had begun.

MUSIC: Up and play.

DISSOLVE TO:

MUSIC: Down and under.

82. STOCK
Kruschev is welcomed by President Eisenhower.

NARRATOR:

Meanwhile, Soviet Party Chairman Kruschev visited the United States.

82A. STOCK
Sequence of train ride. We see Kruschev looking out train window.

82B. STOCK
View of Pacific Coast at Vandenberg

82C STOCK
Kruschev looking out window at California countryside.

An interesting side-light is that his journey from San Francisco to Los Angeles by train took him through a part of the Vandenberg base, virtually within a mile of the CORONA launch complex. While Chairman Kruschev was sightseeing, still another CORONA launch was being readied.

82D. EXTERIOR
Train moves along track. Pan up from the train to show launch facilities in distance.

In the practice of the time, the count-down was halted while trains passed to prevent unauthorized viewing of a launch. Launches were made during the "window" between trains.

DISSOLVE TO:

83. STOCK
MLS Kruschev pounds table at U.N.

While Kruschev pounded the table at the United Nations, our photointerpreters were busy evaluating the substance behind his boast.

DISSOLVE TO:

MUSIC: Up to bridge. then down and out.

84. INTERIOR DAY
MLS Establish Carl Duckett

CARL DUCKETT:

Today we hear a great deal about the Soviet SS-9 and SS-11 ICBM's. We know a great deal about these weapons--in fact enough to

84. (Continued)

Camera zooms in to MCU.

make these very accurate models. However, much earlier in the late 1950's our situation was very different indeed.

It was that year I first became involved with analysis of Soviet weapons systems. It was also in that year that 3 major things occurred. First we obtained U-2 photography of the Soviet missile test facilities and learned the extent of that program. Secondly, Mr. Kruschev announced that the Soviets had achieved an inter-continental ballistic missile capability. Third. and most dramatic I believe, was the beginning of the space era.

85. INTERIOR DAY
LS Carl Duckett near display.

He walks to CORONA model

Well before CORONA the Soviets put in orbit, in the year 1957, Sputnik I. It was a dramatic illustration that the Soviets indeed possessed the capability to launch a weapon against the United States.

85B. INTERIOR DAY
MCU He continues.

The very question, however, was whether such systems were being deployed. We could not provide an answer to that question. This led rather directly to the famous missile gap debates that occurred during the presidential campaign in 1960. In fact, in

85B (Continued)

that same year CORONA was successfully recovered--that is the film of the Soviet Union that was brought back to the United States and we could begin to provide answers. By the mid-1960's we knew with great confidence the exact number of weapons of all types that were deployed in the Soviet Union. It was this information which made it possible for us to start to consider strategic arms talks with the Soviet Union and indeed because of the high confidence that we knew the exact number of weapons this country entered those discussions and as you know, they were successfully completed.

Slight zoom in.

DISSOLVE TO:

86. STOCK
Launch of Discoverer XV (still photograph if no footage available).

MUSIC: In and under.

NARRATOR:

On September 13, 1960 Discoverer XV was sent aloft and soon proved that the CORONA problems were still not yet solved.

DISSOLVE TO:

87. STOCK
Capsule bobbing in water--no one near to recover it.

Although XV apparently worked properly, it re-entered at the wrong pitch attitude, causing the capsule to fall outside the recovery zone. It sank before a recovery ship could reach it.

DISSOLVE TO:

88. STILL PHOTO
DISCOVERER XVI

Discoverer XVI in October failed to achieve orbit.

DISSOLVE TO:

89. STOCK
Air snatch sequence that is different from that seen for Discoverer XIV.

Discoverer XVII was launched in November of 1960 and seemed to be a near perfect mission right up through successful air snatch ... except for one problem--the film broke before any photographs were exposed.

DISSOLVE TO:

90. STOCK
Launch of an Agena "B"

Then on 10 December, success came again to CORONA. Discoverer XVIII returned 39 pounds of film and proved the effectiveness of an improved camera capacity and a more powerful Agena "B" launch vehicle.

DISSOLVE TO:

91. STOCK
Handling cassettes.

Slowly technology was emerging to correct each fault as it appeared. For example,

DISSOLVE TO:

92. PHOTOGRAPHS
Quick cuts of CORONA static marks on film.

mysterious abberrations began appearing on the film from time to time. Scientists soon established that it was the result of a build-up of static electrical charge, coincidentally called "corona." Although this phenomenon was well known, its cause

92. (Continued)

in a space environment was not known until it was accidentally duplicated during a series of component tests. The culprit turned out to be the formulation used in certain rubber parts and once identified could be re-formulated to eliminate the problem.

DISSOLVE TO:

93. STOCK
Eastman Kodak research on film base.

An earlier, far more serious "film" problem was solved by Eastman Kodak researchers who developed a new polyester base to replace the brittle, weaker acetate film. And again CORONA scored a technological "first" by employing the thinner base material and ushering in a new era of film technology. Polyester film development solved one of the major space reconnaissance problems. By 1960 the new film was being used on every flight.

DISSOLVE TO:

94. STOCK
A series of launch scenes of Agena "B" circa 1961.

The year 1961 was the time for the maturing of CORONA. With each series of launches increasing sophistication was added. Discoverer XXI proved the feasibility of re-starting the Agena engine in space--a technique to prove useful to later CORONA and NASA missions.

94. (Continued)

Then on August 30, 1961 the missions began to carry an improved camera system. A mapping capability was developed, re-entry programming debugged and additional launch vehicle difficulties worked out. Slowly but surely the problems were solved but it often seemed that when one was laid to rest, another rose to take its place.

DISSOLVE TO:

95. INTERIOR DAY
MS Mr. Plummer of Lockheed near vehicle

PLUMMER:

One of the very interesting design problems we faced early in the CORONA program was the thermal control of the overall vehicle and camera payload. It was desirable to maintain this temperature within very narrow limits around a room ambient of about 70 degrees Fahrenheidt. This had to be accomplished in spite of the fact we were in the hard vacuum of space and must provide for all the internal power consumption of the vehicle, the radiant heat from the sun and the earth and the loss of heat to free space. This was accomplished by covering the vehicle with thermal control surfaces, for example on the vehicle tank you see the white paint against the polished aluminium.

96. INTERIOR DAY
CU The thermal surfaces as he points to them.

97. INTERIOR DAY
MCU Plummer continues.

Another example, where we wanted a low emicity is in this thruster where the entire assembly is covered with gold because of its particular thermal characteristics. The same technique was used throughout the vehicle with special emphasis on the camera payload where the temperature limits were much tighter.

DISSOLVE TO:

98. INTERIOR DAY
Mr. Morton of GE
with model of capsule.

MORTON:
There were many technical problems--some of them quite horrendous. For example, in the capsule itself, the locating devices were very troublesome....

I guess the primary and most fundamental problem was the heat shield itself. The heat shield turned out to be a selection of materials called "Melamine"--melamine glass. This material fit the design specs very well but there were all kinds of other problems: direction of expansion and cracking and that sort of thing which gave rise to a design consisting of these cuts, annular rings, which allowed certain areas to move with respect to others and keep the thing intact through the re-entry regime.

DISSOLVE TO:

99. INTERIOR DAY

Camera zooms out.

WOLFE:

In the early days of the program there were a number of flight failures which we eventually ascribed to film breakage for reasons we really didn't understand. We had a very extensive program back in the Boston area to try to find out the source of that trouble ....

100. INTERIOR DAY
MCU Wolfe continues.

But the solution turned out to be discovered by accident because it was accidentally duplicated in a test chamber. It turned out that the vacuum chamber was not properly grounded and there was a certain amount of AC ripple riding on the tank. That is to say, the vacuum tank's steel chamber was actually introducing some ripple voltage into the chamber. There's a particular circuit in the camera whose function is to make the camera start up slowly in space and slow down when it stops so as not to break the film. We found that the ripple in the tank was actuating a circuit which made that capability go away. The camera was starting up with a jerk. That gave us a clue so we went back then and looked at

100. (Continued)

the vehicle to see if something like that was occurring and indeed it was.

DISSOLVE TO:

101. INTERIOR DAY
MS Mr. Morton

MORTON:

I think one of the important points we can observe from the program is the tremendous dedication, resolve and purpose that the CORONA team had--government agencies, the service, industry, all up and down the line--to get this thing accomplished. I don't think it could have been done in today's climate. We probably wouldn't have been allowed to go beyond the 6th flight before the program would have been canceled rather than go 12 flights before a successful one on the thirteenth.

Camera zooms into CU.

That isn't to say we didn't have our discouraging moments and our frustrations. I remember some time along mid-stream--I guess about the 8th or 9th flight--when we didn't get it back and one of the members of the team opined at one of our meetings that perhaps there was some fundamental reason why something couldn't come back into orbit. Which just shows the direction of thought at the time. It didn't make much

101. (Continued)

difference and we went right along with accomplishment. We also had a lot of fun with this incident later when we had the thing back in our hands.

DISSOLVE TO:

102. INTERIOR DAY
MLS Mr. Wolfe in front of CORONA test device.

WOLFE:

... Today when we've landed men on the moon several times and we're about to drop a lander on Mars and we've done do many other incredible things, it's a little hard to believe or get the feeling for 13 years ago and how relatively unsophisticated we we were, how little we knew about all the intricate things that had to be done to make a space system work. We ask ourselves today, after the fact, why this program worked so well and particularly what the operating environment was like--how we got along with the other companies in the field, how we got along with the Government and they with us? I think to understand why it worked so well you have to remember that we were a small army in the first place and we were an army banded against a common enemy, namely the apparent impossibility of doing what we were about to try to do.

102. (Continued)

It's really very difficult to convey, particularly to a young person today who has lived the last 10 or so years with all the space achievements which are so common. It's difficult to realize that we were all operating in those days in a field in which we didn't really feel it could be done--we were just going to try and under those conditions the way in which a company or a team works is really different.

DISSOLVE TO:

103. INTERIOR DAY
MS Plummer summarizes.

PLUMMER:

I have a list of the flights that were conducted on the CORONA program. Many people referring to the program remember the large number of failures which preceded the final success in Discoverer XIV. In fact, there were a large number of failures. We had a launch attempt aborted on the pad; we had a capsule that was impacted into the earth in the wrong area; we had an unsuccessful launch where the vehicle did not achieve proper velocity; we had a capsule which was ejected from the vehicle but went off into a new orbit instead of into

103. (Continued)

the earth's atmosphere; we had power failures; we had thermal problems; we had procedural problems and so forth. But while these were a lot of failures, they were also the necessary development to get us to eventual success. For example, we did prove the booster: we did prove the ground control system; we did prove orbital operations; we proved the camera, the re-entry body and finally we proved the overall system.

But, of course, to all of us who worked closely with the program--Government and contractors alike--we did not consider the program a success until we returned exposed film to Washington, D.C.

DISSOLVE TO:

104. STOCK
Mission Control scenes from Discoverer days.

MUSIC: In and under.

NARRATOR:

With the beginning of 1962, the Discoverer series came to an end. After 37 attempts the cover story was simply worn out. With the improved record of success and the near-certainty of continued success, there were too many launches to suggest a continuing scientific program. So beginning

104. (Continued)

with the 38th launch on 18 April 1962, all CORONA missions were announced merely as secret Air Force missions.

105. STOCK
Montage of scenes depicting 1959-1962 operations.

In the first two years, only 7 missions had returned film. But what those yielded is an indication of what was in store. Most of the areas of vital interest had been covered--some 25 million square miles and had yielded many times the number of images of all previous reconnaissance in history. By now the most apparent limitation was the length of missions and the amount of recoverable film. So an extensive R&D effort had produced a two camera system known as MURAL.

106. STOCK
Capsule air snatch recovery, circa 1962.

DISSOLVE TO:

107. PHOTOGRAPHS
Stereoptic views from a two camera system.

The MURAL series produced more film coverage but more importantly literally added <u>dimension</u> by taking two photographs of the same area from slightly varying angles. This allowed photointerpreters the advantage of looking at photographs stereoptically and thus allowing a third dimension and the ability to accurately measure heights.

DISSOLVE TO:

This intelligence ....

108. STOCK
Soviet missile display, circa 1962-1963.

... along with that gathered by other means allowed CIA to put together highly detailed technical data on Soviet weapon systems. Thus we now knew how many were deployed and could define their capabilities. The reliability of the intelligence community product improved quantitatively.

Interestingly, this knowledge meant we need not overreact to conjectures about threats but rather expend our defense resources more realistically.

109. STOCK
Launch of a TAT.

Our own space capability was also growing by now. No small part of our technological strength was coming from the development of CORONA itself. For example, the boosting capacity of the first stage Thor vehicle was increased substantially by attaching a cluster of small solid-propellant rockets. This "Thrust Augmented Thor" or T-A-T as it was called, allowed heavier payloads and meant the camera systems could be improved even further.

We see the boosters jetison.

DISSOLVE TO:

110. PHOTOGRAPHS
Series of still pictures showing the J-1 series camera.

The next step was development of a new series "J" camera system which had the

110. (Continued)

significant advantage of carrying two recoverable "buckets" which meant that one launch could provide film while the satellite was still in position and then be directed to produce another run of photographs.

111. STOCK
Another air snatch recovery.

The J System and the improved launch capability plus all the development effort turned the recovery of capsules from an "event" to a routine operation.

112. STOCK
Crowd listening to President Kennedy.

SFX: Kennedy's speech and roar of crowd.

NARRATOR:

By the time John F. Kennedy stood at the Berlin Wall we knew with confidence that we were unsurpassed militarily.

113. STOCK
MLS Kennedy on the speaker's stand.

KENNEDY:

" ... Freedom is indivisible and if one man is enslaved, all are not free. All free men wherever they may live are citizens of Berlin. And therefore as a free man I take pride in the words, 'Ich bin ein Berliner!'

(Crowd roar)

MUSIC: In and under.

114. STOCK
Another successful launch.

NARRATOR:

In the early 1960's the CORONA capability continually improved. An even more powerful

114. (Continued)

THORAD booster was employed and the J-1 camera gave rise to the J-3. However, one can't leave the story of the J-1 successes without mentioning its most spectacular failure. Mission number One Zero Zero Five was launched on April 27, 1964. Launch and insertion into orbit were uneventful. Then telemetry indicated film break after partial completion and a power failure. Vandenberg transmitted an ejection command but nothing happened. Back-up commands were transmitted from other stations but ejection still did not occur. A month later radar sightings indicated the satellite had probably burned up on entering the atmosphere.

DISSOLVE TO:

115. STOCK
Ground to air of TAT launch, circa 1964

116. STOCK
Radar and radio antennas connected with CORONA.

DISSOLVE TO:

117. PHOTOGRAPHS
Zoom out from boy on bicycle to show campesinos carrying the damaged capsule.

However, on July 7 two farm employees in southwestern Venezuela found a battered, glimmering gold object. A photographer from San Cristobal who photographed the object notified the American Embassy and a CORONA team was sent to purchase it from the Venezuelan government. The event was dismissed as a minor NASA experiment gone astray.

117A. PHOTOGRAPH
CU The reel side of the capsule.

117B. PHOTOGRAPH
CU The crumpled bucket.

DISSOLVE TO:

118. STOCK
Preparing and weighing film.

MUSIC: Changes themes.

NARRATOR:

By 1965 the rate of success was phenominal. On the average, three or four recoveries were made every month. The seven years of frustration and effort were paying off.

119. STOCK
Loading film onto truck for a mission.

A mission in 1964 yielded four full days over target on each of its two buckets. In 1965 this capacity was raised to 5 per bucket for a total mission of 10 days coverage and by 1966 this had been more than doubled.

DISSOLVE TO:

120. INTERIOR NIGHT
MLS From inside special truck as container with satellite is loaded.

All phases of the operation were performed under strict security.

121. EXTERIOR NIGHT
MLS Driver takes papers, signals guard and leaves Sunnyvale compound. A security car follows close behind.

Movements were made at times when they aroused the least interest and under maximum security control.

DISSOLVE TO:

MUSIC: Up and play.

122. AERIAL
Westover Air Force Base

NARRATOR:

Recovery, transporting and processing the exposed film was assigned routinely to the Air Force. The highest priority was given to getting the film into the hands of

122. (Continued)

interpreters. The bulk of exposed film was rushed to Westover Air Force Base where special facilities were set up to expedite the processing under rigid quality control standards.

DISSOLVE TO:

123. INTERIOR NIGHT
Arrival of cassettes.

123A. INTERIOR
MCU Attaching cassette to processing machine.

Elaborate systems for handling and identifying each exposure were evolved, assuring that no human error could pre-empt the intelligence to be gained.

DISSOLVE TO:

124. INTERIOR
Zoom out from machine where frames are being examined and read with a densitometer.

124A. INTERIOR
Technicians work at other machines. We see images crossing light box, etc.

124B. INTERIOR
MS Inspecting and packaging the film.

No time went to waste. Yesterday's recovery was today's processing run and tomorrow's photogrametry assignment at the National Photographic Interpretation Center. The flow of substantive intelligence increased and the speed of information to users went from days and months to hours. The quality of the results was well summarized, "off the record," by President Johnson.

DISSOLVE TO:

125. STOCK
Night shot of White House, circa 1967

125A. STOCK
CU Burning light in window of White House

The President speaking at a conference of educators on March 17, 1967 said that because of satellite reconnaissance, "I know how many missiles the enemy has." At one point he added that the nation had

126. STOCK
President Johnson works at desk.

126A. STOCK
CU Johnson at desk.

spent $35 to $40 billion for military and space programs, but that the benefits of satellite photography alone would justify ten times as much expenditure.

DISSOLVE TO:

127. STOCK
Series of American silos and submarines.

What is interesting at that point in time was the effect of CORONA photography to the then current debate over whether the United States should deploy an anti-ballistic missile system. CORONA intelligence proved the Soviets were deploying such a system and we took steps to meet the threat and urge the Russians to curb the arms race.

DISSOLVE TO:

128. STOCK
Presidential Seal.

Thanks to CORONA, the apprehension ushered in by Sputnik gave way to reasoned and affordable reaction.

MUSIC: Down and out.

129. STOCK
Establishing shot of Russian May Day Parade, circa 1967.

NARRATOR:
In the first decade of the Space Age CORONA had played a vital role. Not only had we

130. STOCK
Parade marshalls begin military parade.

achieved the ability to weigh the balance of power in the world correctly ....

131. STOCK
Long shot of crowd as a missile shaped balloon is launched.

... and differentiate the mock threat from ....

132. STOCK
ICBM's pass in review on mobile carriers.

... the real one ... but we had completely revolutionized the intelligence process. If new weapons were tested in hidden areas of the world ....

133. STOCK
Soviet tanks and troops pass in review.

... or if troops moved or significant changes of any kind occurred, we were no longer vulnerable to the vagaries of chance. CORONA had made possible a new era of technical intelligence. As a result, we were warned before the Soviets intervened in Czechoslavakia and successfully monitored preparation for the 1967 war in the Middle East.

DISSOLVE TO:

134. STOCK
President Johnson addressing Congress.

LYNDON JOHNSON:
We have proved that we are a good and reliable friend to those who seek peace and freedom. We have shown that we can also be a formidable foe to those who reject the path of peace and those who seek to impose on us or our allies the yoke of tyrany.

DISSOLVE TO:

MUSIC: In and under.

135. PHOTOGRAPH
J-3 color photographs.

NARRATOR:
In 1967 the final evolution of the CORONA camera took place. Although the J-1 was

135. (Continued)

performing perfectly, it had been developed to the limit of its potential.

136. INSERT
Close-up of mechanism in the J-3

The J-3 was designed to eliminate vibration, improve resolution and improve calibration data. The sophistication for command response gave the J-3 much greater versatility.

137. INSERT
Film transport system in J-3

The history of the J-3 improved the intelligence quality substantially and proved to be even more reliable than the excellent J-1.

138. INSERT
Lens rotating on the J-3.

DISSOLVE TO:

139. STOCK
Preparations of J-3 for a mission.

MUSIC: Changes theme.

NARRATOR:

However, the real test of the improvements can be seen in the evolution of image quality.

DISSOLVE TO:

140. MONTAGE
Aerial photographs starting with earliest missions showing improvements up through those from J-3 (COR 756 series of photographs).

On the earliest CORONA missions, target images of 25 foot resolution were all that was obtainable but as lenses, stability and film technology improved the images resolved smaller and smaller detail until with the J-3 images resolution was down to a "few feet." This quantum improvement in resolution improved the quality of intelligence on the order of magnitudes.

141. MONTAGE
Series of color and infrared CORONA photographs (SO 180 Mission 1104).

Then in 1968, tests proved the value of color and infrared imagery. Photographs from space could detect crop and environmental conditions--of value to strategic intelligence and ushering in a new field of earth resources studies from space.

142. INTERIOR DAY
LS Museum at NPIC as Harold Brownman unveils "bucket" trophy presented to Art Lundahl.

MUSIC: Ends.

SFX: Ceremonies at NPIC dedication featuring Art Lundahl.

NARRATOR:

The impact on photographic interpretation was enormous.

143. INTERIOR DAY
MCU Lundahl speaks.

ART LUNDAHL:

Before the early 1950's, the Central Intelligence Agency had no photographic intelligence activity at all. We started with a handful of people and one of the great consequences of the program is the enormous rush of growth it has created in our own photographic intelligence resource. Now the National P.I. Center is probably the largest--or one of the largest--photo intelligence activities in the world, certainly the largest in the West.

144. INTERIOR DAY
MS Lundahl continues.

But when started we had less than 13 people; we had less than 800 square feet of floor space; we had a budget of less than $100,000 a year.

145. INTERIOR DAY
MCU Lundahl enumerates changes.

We now have more than 1500 people dedicated to the exploitation of these products; we have a budget each year that is pretty close to 30 million dollars; we have over 400,000 square feet of floor space and a program that is no way topped off—it's steadily growing.

146. INTERIOR DAY
MS Lundahl and listeners.

Little did we realize what was going to develop so quickly when on the 18th day of August in 1960, this first satellite was successfully retrieved. It flew for only one day; it had 16-17 passes—8 of them over the Soviet Union--and 20 pounds of film came back. And with that film in hand, we turned to and in less than 7 days we had produced 130 pages of text; we had a 1.5 million square miles of coverage of the Soviet Union. This was the harbinger that warned us of what was coming. And as we were steadily gearing up and trying to get ready for what was coming, both in instrumentation and data handling procedure, the

146. (Continued)

film was flowing in. By the time the program ended, we were dealing with film that was coming in at the rate of 32,000 instead of 3,600 linear feet per mission; we had covered over 520 million square miles of real estate; we had produced millions of pages of reporting and we were involved in all the major issues of our time.

147. INTERIOR DAY
MLS Lundahl concludes.

All of the ICBM's in the Soviet Union--the complexes--had been discovered by 1964, all their SAM sites, all their air fields, all their nuclear weapons and storage sites, all their "Y" class submarines, all their enigmatic problems, we were right on top of these.

Zoom to MS

We were involved in the major decisions of our time. There was no single issue we were not intimately involved with.

DISSOLVE TO:

MUSIC: In and under.

148. STOCK
Preparing for launch.

NARRATOR:
The 145th and final CORONA launch took place on 25 May 1972.

149. STOCK
LS The Agena moves into place near gantry.

CORONA had proved to be a remarkable investment. The Totality of CORONA's

149. (Continued) contributions to U.S. intelligence holdings on denied areas of the world and the U.S. space program in general is virtually unmeasurable.

150. STOCK
CU Image as above on TV monitor

What had begun as a desperate attempt to meet a most sinister threat had succeeded beyond the wildest imaginings of the program's initiators.

151. STOCK
Mission control.

The list of CORONA firsts is unparalleled. The first recovered objects from orbit, first to deliver intelligence information from a satellite, first mapping and first

152. STOCK
Launch of the last CORONA

stereoptic pictures from space, first satellite to employ multiple re-entry vehicles and the first reconnaissance program to pass the 100 plus mission mark. And not least, the first photography from a satellite. CORONA's 167 successful

153. STOCK
Separation of the TAT pods and follow the flaming missile.

recoveries are more than the total of all the other United States programs combined. CORONA provided photographic coverage of over 500,000,000 square nautical miles of the earth's surface--a dramatic achievement in itself.

DISSOLVE TO:

154. STOCK
Russian space achievements.

155. STOCK
Russian offensive weapons.

156. STOCK
Peking footage.

But the true importance of national security came from the intelligence ....

... from lifting the curtain of secrecy which surrounded the Soviet Union ....

... and the People's Republic of China.

DISSOLVE TO:

157. STOCK
Nixon visits China.

The contribution of CORONA between 1960 and 1972 can be summarized by saying it made possible for the President in office to react more wisely to crucial international situations at a point in time of critical balance between peace and war.

DISSOLVE TO:

MUSIC: Begins final build-up.

158. STOCK
Nixon signs SALT agreements.

NARRATOR:

It was confidence in our intelligence that has allowed the United States to enter into the Strategic Arms Limitations Treaty.

There can be no doubt about the role of CORONA in history.

DISSOLVE TO:

159. MONTAGE
Fast build up of dramatic CORONA scenes (i.e., launches, parachutes, etc.). Pick scenes for visual impact.

MUSIC: Triumphant passage.

NARRATOR:

CORONA is now history. It stands as an important POINT IN TIME--the first, the

159. (Continued)

longest and most successful of the nation's intelligence programs to date. CORONA explored and conquered the unknowns of space reconnaissance and it opened the way for more sophisticated follow-on systems.

There were no elaborate facilities. The work was done in a dairy farm building in Boston, a grocery warehouse in Philadelphia and a "skunk works" section of a helicopter plant in Palo Alto, California. The cost was modest and CORONA paid a huge dividend--vital intelligence and an important POINT IN TIME.

DISSOLVE TO:

MUSIC: Up to play ending.

160. TITLE BACKGROUND
Model photography of CORONA

THE END

A CIA Production

FADE OUT

MUSIC: End with final fade.