APOLLO 7

11-22 OCTOBER 1968

an essay by

HAMISH LINDSAY

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Extracted from content available on the
Honeysuckle Creek Tracking Station
website, developed by Colin Mackellar
www.honeysucklecreek.net

EDITORIAL NOTES

This description of the Apollo 7 mission includes tables listing key activities and times, plus tracking times, and duration, at Honeysuckle Creek.

Ground Elapsed Time (GET) is included for a quick sequential reference and to relate it directly to NASA's Apollo Flight Journal and Apollo Lunar Surface Journal.

Unless otherwise indicated, all times are Australian Eastern Standard Time (AEST, GMT +10), refer to the time of events in relation to the Honeysuckle Creek Tracking Station (HSK), near Canberra, Australia. Change of day is midnight HSK time.

Indented and italicised text are either excerpts from interviews by Hamish Lindsay with astronauts and NASA personnel, air-to-ground conversations, or other relevant commentary and quotes.

The honeysucklecreek.net website is regularly updated with new content, which also includes additions to the subject matter of this essay.

“One million three hundred thousand pounds
is balancing on an arrow of flame…
…And, oh yeah, this time I was riding inside, not watching.”

R. Walter Cunningham

THE APOLLO 7 CREW

Donn Eisele, Wally Schirra, and Walter Cunningham
Image: NASA

AS205/CSM-101 MISSION C NCG 717

PRIME CREW

Commander: Walter M. Schirra
Command Module Pilot: Donn F. Eisele
Lunar Module Pilot: R. Walter Cunningham

BACK-UP CREW

Commander: Thomas P. Stafford
Command Module Pilot: John W. Young
Lunar Module Pilot: Eugene A. Cernan

SPACECRAFT

Command Module: CSM-101
Call Sign: **APOLLO 7**
Saturn IB: SA-205

Note: The indented text in this essay are excerpts from interviews by Hamish Lindsay with Walter Cunningham and Gene Kranz. Other comments including air-to-ground conversations are in *italics*.

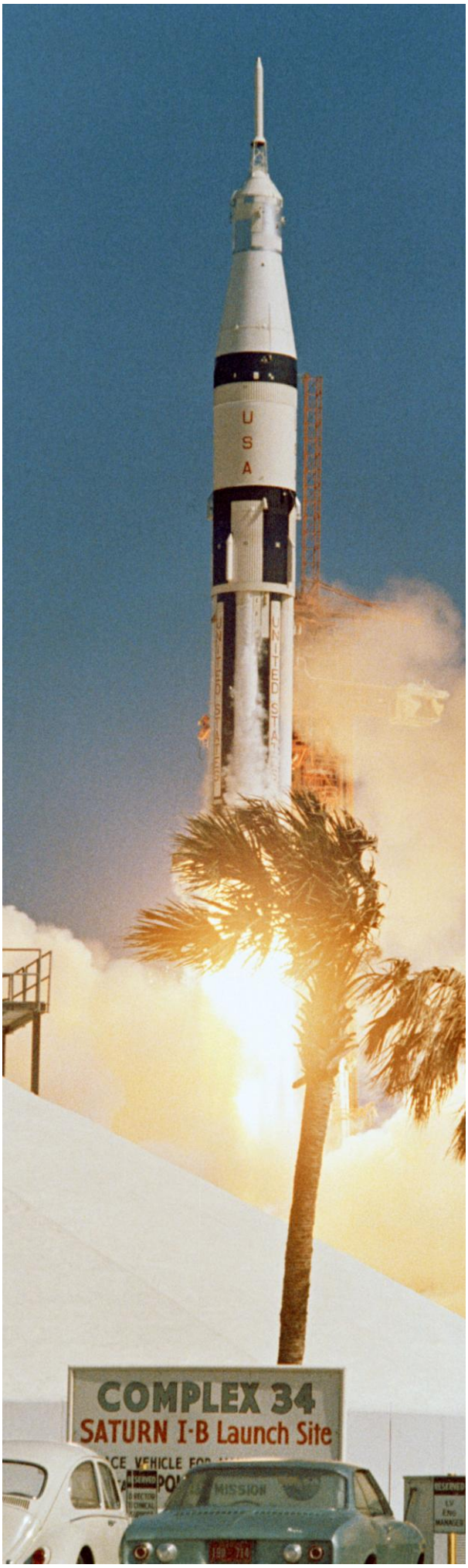
Mission Fact Box

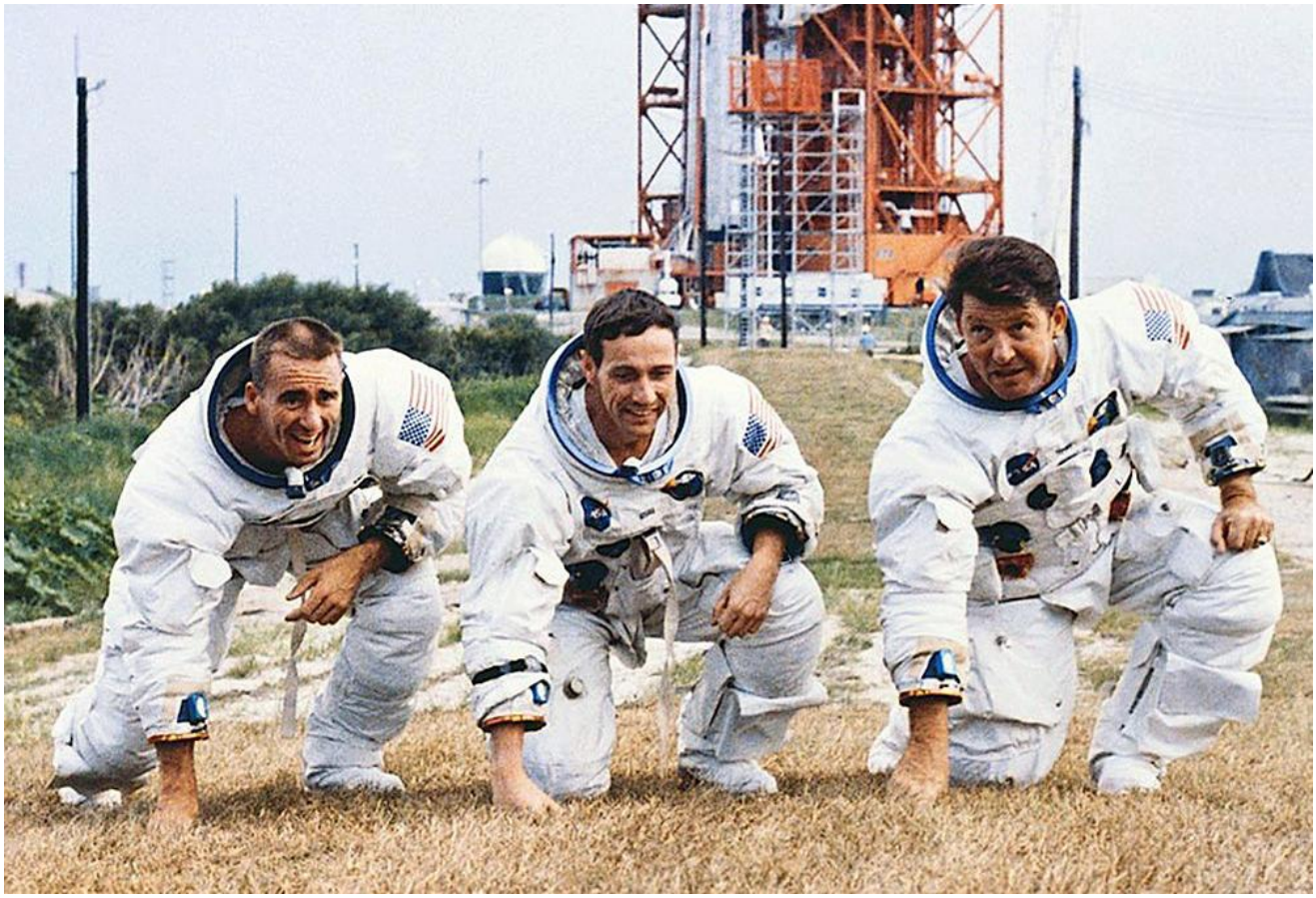
Launch
Launch Complex – LC-34, Cape Kennedy
Friday, 11 October 1968
1102:45 US EDT / 1502:45 UTC
[Saturday, 12 October 1968, 0102:45 AEST]

Mission duration
10 days, 20 hours, 9 minutes, 3 seconds

Earth orbital data
Earth orbit – 301 x 227 kilometres
Inclination – 31.6°
Orbital period – 89.55 minutes
Orbits – 163

Splashdown
CM – 22 October 1968, 1111:48 UTC
North Atlantic Ocean – southeast of Bermuda
27°32'N 64°04'W
Recovery ship: USS Essex





The Apollo 7 crew – Cunningham, Eisele, and Schirra. Image: NASA/KSC

Apollo 7

The Apollo 7 was the first Apollo manned mission, flown to check out the new Apollo launch systems, the Command Module and its ability to fly in space, navigation and rendezvous procedures with a host of lesser tests.

Apollo 7 was Honeysuckle's (and the tracking network's) first taste of manned Apollo flights. It was not very exciting on the ground – for me it was just a continuation of the Carnarvon Gemini flights – grabs of signals for up to 12 minutes every 90 minutes as the spacecraft orbits the Earth while the crew evaluated the Apollo spacecraft for manned flight.

At Honeysuckle Creek we had a quick visit from Goddard's NASA 421 Sim Team led by Jim Kennedy on Tuesday, 2 July 1968 to check us out. However, the aircraft only flew for us on 5 Friday and 6 Saturday July.

The crew selected by Deke Slayton were Wally Schirra, Commander; Donn Eisele, Command Module Pilot and Walter Cunningham, Lunar Module Pilot (with no Lunar Module [LM]). The back-up team were Tom Stafford, John Young, and Eugene Cernan.

Cunningham:

> "The first Apollo mission was originally scheduled to be flown by Gus Grissom and his crew two years earlier in the first manned spacecraft ever built by the Rockwell Corporation. At that time Wally was planning to leave the space program for a job in private industry. Only a personal appeal by his old friend and good neighbour, Gus (Grissom), convinced Wally to stay on as his back-up. While Wally never got excited about playing second fiddle to anyone, Donn and I were overjoyed just to be ON a back-up crew – any back-up crew. And we certainly never expected to actually fly the first mission.
>
> A few short months later we lost our three close friends in a spacecraft fire on the launch pad and inherited their key mission – the first giant step towards landing a man on the moon. With a new motivation and challenge in front of him, Wally committed another two years to the job."

Schirra, son of a WWI fighter ace and a barnstorming, aerial wing-walking mother, was a cool and professional pilot. He was 45 years old

The launch of the Apollo 7 Saturn IB.
Image: NASA/KSC

The launch of the Apollo 7 Saturn IB, as viewed from a USAF Eastern Test Range KC-135 piloted by Lt. Col. Robert L. Mosley. From an ApolloArchive.com scan.

and the oldest astronaut to enter space at the time. He was the only astronaut to fly all three Projects – Mercury, Gemini and Apollo, while both Eisele and Cunningham were first timers. Schirra had already handed in his resignation from NASA two weeks before the mission, saying he wanted to quit while he was ahead, and he wanted it to be clear that he was single-minded about the Apollo 7 mission – that he cared for nothing else. He reckoned he had matured over the years and was no longer the boy in scarf and goggles, the jolly Wally of space age lore. So, anything he did would not jeopardise his career.

After the death of his three friends in the Apollo 1 fire, he took a good hard look at where the space program was headed. Before the investigation into the fire had ended he took his crew, the back-up crew and all the support crew to a borrowed house in Miami. To get their minds off the fatal accident they cut all communication with the outside world and conducted intense training sessions to fit their responsibilities into the upcoming schedule. He decided then that he wasn't going to be influenced by extraneous scientific and political interests. He would not tolerate anything or anyone that would affect the safety of the mission or the crew.

He became a new Schirra. Chris Kraft described him as raising hell, bitching and hollering about everything. For instance, he was told there would be no coffee on the ship. *"You're asking a Navy guy to give up coffee,"* he exploded and fought all the way to the top to have coffee included in the stores. At one top brass conference in Houston, during the break the refreshment trolley was wheeled in without any coffee. In response to the outrage, he got up and said, *"Gentlemen, since you deem it inappropriate for the crew of Apollo 7 to drink coffee during the mission, I thought you might try doing without it for just one day."* He won his point.

Apollo 7 was a trial Block II Command Module which had the capability to accommodate the Lunar Module, but did not have docking facilities, or the transfer tunnel to the Lunar Module, as there was no LM. Schirra wanted to call his spacecraft Phoenix, but NASA declined.

Schirra voiced his concern about the weather at launch. As this was the first time men were going to ride a Saturn rocket into space, there was a chance it might have to be aborted during the launch phase. Tests had shown that to land on hard ground with the early Block I couches they would be using would almost certainly injure the occupants, so Schirra insisted that one of the launch rules should be a maximum onshore breeze of 18 knots, so they could land with the parachutes in water if they had to abort.

Launch

On launch day, 11 October 1968, a high-pressure system over Nova Scotia created an easterly wind varying between 20 and 25 knots – blowing straight inland. The temperature was 28.3°C and relative humidity 65% with cumulonimbus clouds with a base at 2,100 feet. Over in Houston Gene Kranz's team began the countdown, checking out the mission control center, and handed over to Gerry Griffin's gang to check out the spacecraft. Glynn Lunney's flight controllers handled the day shift for the actual launch.

At 2235 AEST the crew crawled into the spacecraft two and a half hours before launch while at Honeysuckle Creek we were busy with Site Readiness Tests, preparing for the first glimpse of the spacecraft. We were listening to the progress of the countdown on an intercom channel which didn't tell us much.

By Schirra's rule the launch should have been postponed, but they decided to go, and the Saturn IB, a scaled down Saturn V, thundered into the air at 1102:45 USEDT 11 October 1968 (0102:45 AEST 12 October) from Pad 34. Schirra described the launch as "… a sense of elation when the bolts blow, the hold-downs release and the big maumoo leaves the launch pad." But the elation of lift-off was tempered with anger at his safety rule being broken. He felt better as they progressed safely through the abort stages, the Saturn giving a smoother ride than he had experienced in either the Mercury or Gemini flights. The Saturn IB was a much smoother ride than the bigger and more powerful Saturn V.

Cunningham described his experience of his first and last launch,

> "The (Saturn IB) rocket rises from the pad so slowly, so ponderously at first, that you could be imagining it even moved at all. It is an agonizingly slow ten seconds before Apollo 7 clears the tower. One million three hundred

thousand pounds is balancing on an arrow of flame. Painstakingly, it climbs, trailing a fireball as vivid as the colours of hell. At the spectator bleachers, two-and-one-half miles away, the earth actually trembles. The vibrations, the noise, the shock; they roll over you in waves. And, from out of the second fire on Pad 34 rises our modern-day Phoenix.

I'd seen many lift-offs, but this one was different: It was the largest rocket ever launched carrying the largest payload ever placed in orbit. And, oh yeah, this time I was riding inside, not watching.

In the cabin we have no way of sensing the actual moment of lift-off. We know our Phoenix has begun its climb from out of the fireball only because the spacecraft clock begins ticking off the elapsed time and Wally can see the altimeter climbing. Inert metal and fuel has turned into a live monster. Once quiet dials begin to move and jump. Donn has the G & N (Guidance & Navigation) computer flashing our trajectory parameters. I am monitoring the environmental and electrical systems to ensure that the cabin pressure is bleeding down according to schedule to prevent a blowup in the vacuum of space. It is the most complex machine ever built by man to be operated by man. And our job is to see that the monster does not eat us alive.

A few seconds after lift-off, we roll a few degrees to enable a pure pitch manoeuvre to eventually place us in the correct orbit. We continue to pitch over backwards (much like going over the top when doing a loop), which will take us into orbit upside down and heading East.

For the first two minutes and forty-seven seconds, our only visual contact with the outside world is through a small forward viewing window on Wally's side and a small round porthole over Donn's head. At that point, when we jettison the launch escape tower, it carries the boost protective cover with it and all five windows are exposed for the first time. However, there is nothing to see but sky until the last few minutes before reaching orbit. Donn started rubbernecking right after the cover cleared, and we both snapped at him to keep his eyes inside and his mind on the job.

Apollo 7 was fifty miles high and sixty miles down-range when the word came from Houston, *"Seven, you're looking good."*

> For the first ten minutes and thirty seconds of a nominal launch, except for performing a few essential functions, we are mostly along for the ride. We're space pilots, but we aren't flying the spacecraft. And Mission Control doesn't control it. It is an on-board computer operation all the way into orbit. We're on automatic pilot. The flight path has been programmed. We monitor the instruments – as does Houston – to see how good a job Seven is doing flying itself. If it doesn't perform, we can take over, fix it or get off."

In deference to the Apollo 1 fire, when the cabin was filled with pure oxygen, the cabin atmosphere at launch was 65% oxygen and 35% nitrogen (though the suits had pure oxygen) but was purged to 100% oxygen for the rest of the mission at a pressure of 34.5 kPa.

Apollo 7 entered Earth orbit at 0113:11 AEST, 12 October and took up an initial orbit of 227.8 by 282.1 kilometres with an orbital period of 89.5 minutes and at a speed of 28,015 kilometres per hour.

Eighty minutes after launch, disaster struck at Mission Control. A power failure plunged the busy room into semi-darkness and blacked out all the consoles. Flight controllers stared helplessly at blank screens and dead displays with only the emergency lights for their eyes to focus on. Power was restored within two minutes and the mission continued with no interruption as far as we were concerned.

The crew spent the first day test firing the SPS (Service Propulsion System) engine, beginning at 0327:40 AEST, and practising rendezvous manoeuvres with the SIVB. The SPS was the largest engine to be manually thrust vector controlled. When they first experienced the boost from it, pressing them into their couches, Schirra involuntarily whooped *"Yabbadabbadoo"* Eisele felt: *"It was a real boot in the rear. We got more than we expected."*

Eight firings resulted in eight almost perfect burns to prove beyond doubt the engine was reliable. It had to be, because this was the engine to put the spacecraft in and out of lunar orbit in the upcoming missions.

The Saturn IVB stage during docking manoeuvres over the Atlantic Ocean off the coast of Cape Kennedy, Florida. The white disc is a simulated docking target. Image: NASA

Wally Schirra looking rather haggard on 14 October 1968. Image: NASA

Illness

> Then: "Surprise! On our second day in orbit, Wally Schirra woke up with the Grand Daddy of all head colds – hardly a fair reward for the three hours of sleep we had enjoyed following a launch day that was 23 hours long. Fair or not, it quickly turned our cosy little spacecraft into a used Kleenex container," Cunningham said.

Schirra called down to mission control to say he was thinking of taking an antibiotic or decongestant, but the surgeon on duty recommended only a decongestant. This was the first illness in space in the American space program.

Cunningham,

> "Wally's cold was a consequence of a bird hunting trip we made three days before launch that ended up in a cold rain. The cold left Wally feeling too wretched for several days to even get out of his sleep restraint. On Earth, he might have called in sick and gone to the doctor. In the spacecraft, that luxury was not available and Wally's discomfort was magnified by the unrelenting demand to perform one complex test after another. The spacecraft commander played a key role in many of the tests and he continued to perform, even from his 'sickbed'. Wally's discomfort, added to a full schedule of activities, made him more irascible by the day. He knew if the mission had to be aborted before he was completely well, his eardrums would probably be damaged from the pressure change during re-entry.
>
> Most of the crucial activities during those times when our necks were on the line were Wally's, and that responsibility carried with it the lion's share of the stress. A stupid mistake by any of us could blow the mission, or worse – the spacecraft. But it was Wally's hand on the abort handle during boost; he did most of the

Donn Eisele during the mission. Image: NASA

spacecraft manoeuvring; and he flew the re-entry. It was on those activities where he concentrated his training. He was the Captain of our ship but sometimes that mantle didn't rest lightly on his shoulders."

A common head cold in space is bad news as mucus accumulates in the nasal passages and does not drain out of the head. Schirra tried blowing hard into tissues but found it only made the eardrums uncomfortably painful.

Cunningham,

"By the third day Wally was miserable. In our on-board storage we had included a large supply of vacuum-packed tissues. They were useful for wiping off the grime, catching urine drops, or any other of the many required body ablutions. Fortunately, we had overstocked on this item. However, the used ones were not vacuum-packed and, consequently, took up twice as much space.

As soon as we were squared away in orbit, Wally began blowing his nose, and within a short time we were stuffing used tissues in every empty spot we could find. Wally showed no interest in conserving them, and Donn and I began to worry whether a tissue crisis could end the mission. When we suggested to Wally that he might try to get more than one blow out of each tissue, our pleas fell on deaf ears.

There was no doubt that Wally felt he had caught the cold they were saving for Judas. He was sleeping poorly and becoming as jumpy as a frog in a biology lab. He continued to perform,

Walter Cunningham during the mission. Image: NASA

issuing orders from his 'sickbed,' but the heavy workload at the outset of the mission, combined with his discomfort, made Wally more irascible by the day. He didn't miss an opportunity to nail Mission Control to the wall and wanted the ground to believe our spacecraft was a hospital room. Donn and I were amazed at the patience of those in the control center with some of the outbursts that came their way. On the ground they were well aware that every word of the air-to-ground communications was being fed directly to the press center, a fact of which we had not been informed. So, Wally's bad temper was making big news back home."

Later Eisele developed a runny nose giving the impression that the entire spacecraft was rife with colds, but according to Cunningham only Wally had a real problem. Eisele's symptoms did not develop, and Cunningham never suffered any affliction at all.

Once the mission settled down, for us each tracking period began as a brief pass in the north east, each pass increasing in duration until the spacecraft crossed overhead with maximum duration of around 11 minutes then the passes shortened as the spacecraft worked its way out of sight into the north west. The first and last passes might only be a minute. It meant we had endless H-30 countdowns (30 minutes to the spacecraft Acquisition of Signal) every 90 minutes, except when the spacecraft went out of sight for a few hours, when the astronauts usually had their sleep periods. During this period their orbit took them over China and South America, well out of our range. This monotonous routine went on for the whole mission.

With Schirra's irritability, angry at his launch rules being broken, and suffering the head cold in the confined cabin of the spacecraft, he became decidedly difficult with mission control when they

Donn Eisele (left) and Wally Schirra on nationwide television on 14 October.
("Keep those cards and letters coming in" is a quote from Dean Martin's weekly television programme.)
Image: NASA Photo ID: S68-50713

wanted to change the flight plan. When the Houston flight controllers tossed some changes into the schedule, Schirra showed his annoyance. He had always opposed the television system being installed on his flight – he saw this flight as an exercise to check out the new procedures and a new spacecraft, a spacecraft that had just incinerated three of his good friends (Grissom was one of the Mercury Seven and his next door neighbour).

As far as he was concerned entertaining television was an unwelcome distraction from the business of a test pilot's duties evaluating a new, untried spacecraft, but had to relent when the heavy guns were brought in to force the issue. Chris Kraft insisted that the American public should get the opportunity to see the action through live video broadcasts.

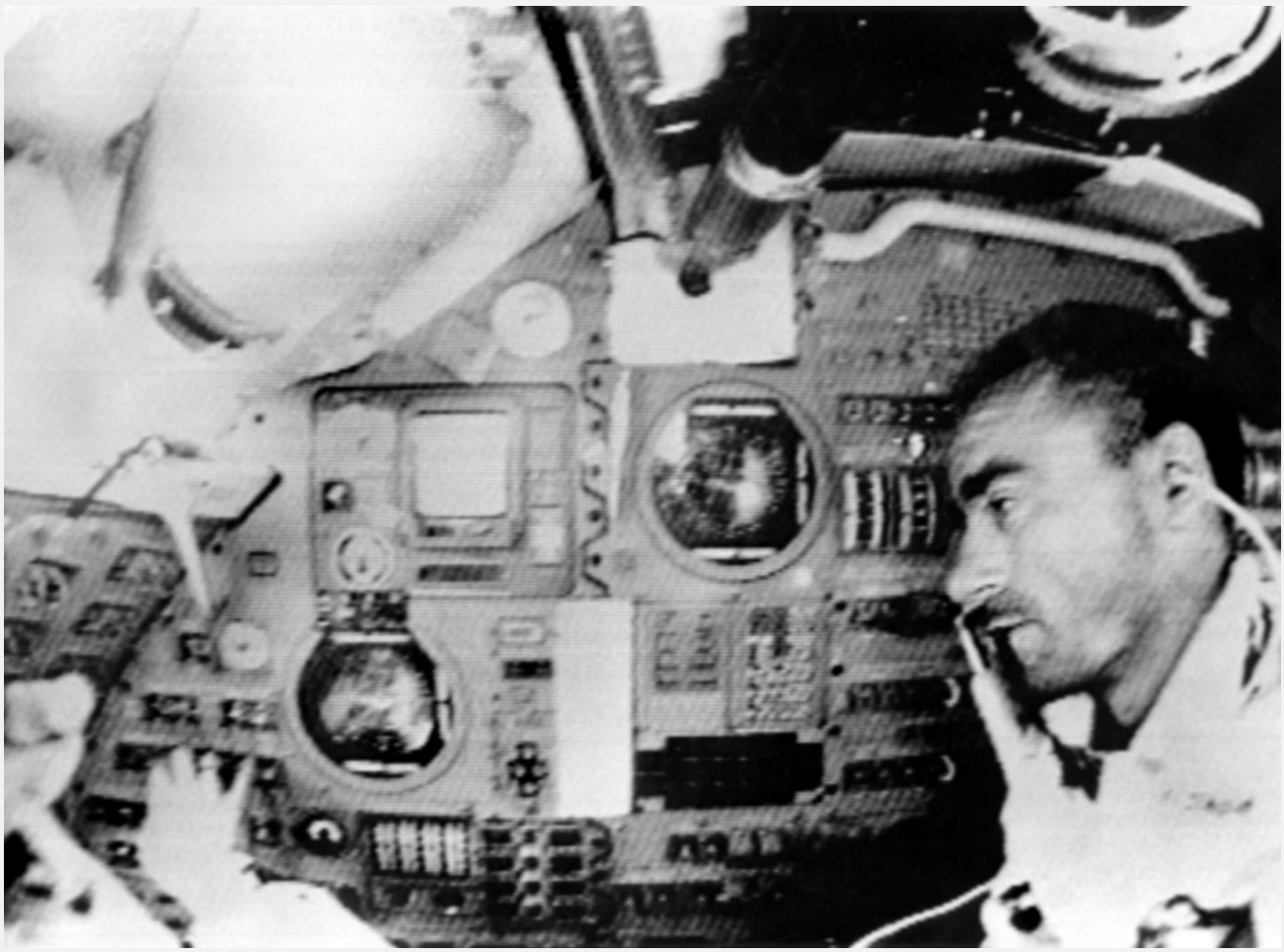
When Schirra woke from a sleep on Saturday morning in the spacecraft he heard Eisele arguing with Houston about a television transmission the ground wanted later in the day. Remembering he had not checked the system out he decided not to support it. Houston was aghast – astronauts don't go against orders from Mission Control. The boss of the astronauts, Deke Slayton admitted, *"There was nothing I could say or do to get Wally to change his mind."* He had tried.

Slayton: *"Apollo 7, this is Capcom Number One."*

Schirra: *"Roger."*

Slayton: *"All we have agreed to do on this is flip it. Apollo 7, all we have agreed to do on this particular pass is to flip, flip the switch on. No other activity associated with the TV. I think we are still obliged to do that."*

Schirra snapped back: *"We do not have the equipment out, we have not had an opportunity to follow setting, we have not eaten at this point, I still have a cold, and I refuse to foul up our timelines this way."*



Donn Eisele (hand at left) and Walt Cunningham during the third TV broadcast. Other SS-TV images here.
Scan: Colin Mackellar. Image courtesy Bruce Withey. Image: NASA

This was mutiny, and from this point the mission became an uncomfortable confrontation between the flight controllers on the ground and the spacecraft crew, Eisele and Cunningham throwing their lot behind their skipper. Cunningham felt that Schirra was justified in the television case.

Eventually, from 0045 AEST 15 October, the first 'Wally, Walt and Donn Show' was aired, repeated each USA morning as the spacecraft passed over the Corpus Christi and Cape Kennedy tracking stations, the only two stations equipped to pass on the live transmissions.

Funnily enough the mission rules laid down by the hierarchy had thought of every conceivable emergency except dealing with disobedient astronauts!

Cunningham,

> "My own attitude was cautious, if not downright cowardly. I did not participate in, nor did I believe the poor behaviour and air-to-ground abuse was justified. I also realised that all three of us would be tarred by the same brush. So, when the exchanges became heated, or threatened to, I would disengage myself, stay out, and later play the apologist for mission control's position. It was awkward and difficult for someone not known for his diplomacy. The new tests were sometimes poorly thought out and did add to our workload (which was not overloaded), but they also produced valuable data.

In the end, the mission left a bitter residue with the support people and controllers who had worked with so many crews before. In Glynn Lunney we had perhaps the best flight director the Johnson Space Center ever produced, and his patience was tried to the limits. The technical success we achieved on the mission was blemished to a great degree by the reputation we earned for being difficult. Then, too, our mission objectives were accomplished so routinely that the news media had very little to report except those 'human interest' items.

Walter Cunningham during the mission. See also this picture taken near the end of the mission, on Day 9. Image: NASA

In retrospect, at least four factors combined to make the flight a pressure cooker for Wally Schirra: his age (he was forty-five at the time); his pre-flight lack of interest in the details of many of the test objectives; the nuisance of his head cold, the effects of which were heightened by zero gravity; and the long duration of the mission. His longest previous stay in space had been twenty-five hours, and Wally was noted more for his quick style and grace than for his endurance.

When one considers the strange sleeping and eating cycles we endured, and the closeness of our quarters, it's remarkable that more tensions didn't result. On our first day in space, we were up for twenty-three hours straight before getting to sleep. NASA liked to get its money's worth from every crew – and did, especially at the beginning of missions."

Schirra found the much bigger, sluggish Apollo Command Module a very different proposition to the more 'sporty' Gemini spacecraft. The crew practiced a rendezvous with the Saturn IVB but without the rendezvous radar to provide the range and approach velocity they had an anxious time judging the braking and distance away to begin station keeping alongside the Saturn IVB at 0658 AEST 13 October, so kept a safe 30 metres away from the tumbling rocket for the 25-minute exercise.

When the crew did turn the television equipment on Schirra was all charm and the Wally, Walt and Donn shows broadcast live over the American networks were so popular they won a special Emmy award. It was a new experience for Earthlings to see astronauts tumbling around weightless, even if it was on a screen.

Cunningham,

"Normally, no one slept his entire period; I was invariably up before it was time. After a couple of problems developed while Donn was on watch, Wally and I began to sleep with one eye open.

Sixty-one hours into the mission, while Donn was on watch, we had a malfunction in the electric power system that threatened a complete electrical shutdown. Wally and I were supposed to be sleeping, but I was so near to consciousness beneath my couch that I was able to rouse myself and correct the situation before Donn could get involved. The electric power system was my specialty. A day or two later, Wally and I each awoke at different times to find Donn asleep during his watch. We found him floating asleep up in the docking tunnel, in the zero-g foetal position: legs, back, and arms all slightly bent. It was not the best way to watch over the spacecraft. On later missions it became standard practice for all three crewmen to sleep simultaneously, so in retrospect it wasn't critical. But on this first mission it didn't make Wally and me feel very secure, knowing the spacecraft was brand-new and unforeseen problems could arise at any moment."

By day four the astronauts were already finding the endless orbits around the Earth were becoming monotonous. Schirra commented, *"We were on day four when I realised that 10.8 days is an eternity."* The endless sunrises and sunsets each 90 minutes became boring. With no books to read or tapes to play to pass the time they made up simple games such as trying to throw a pencil through a ring made by a thumb and forefinger. As the pencil always began to tumble they never succeeded.

When getting dressed one day Schirra noted that men on the Earth pull their trousers on one leg at time, but he found with weightlessness he was able to pull both legs on simultaneously.

During Rev 91 on 17 October 1968 coasting along in the calm of space Apollo 7 passed over Hurricane Gladys trashing the Gulf of Mexico. Image: NASA AS07-07-1877

During Rev 134 they came upon the morning sun blazing down
on a more peaceful Gulf of Mexico on 20 October 1968
after Hurricane Gladys had moved on.

Image: NASA

The Apollo 7 crew arrived aboard the USS Essex, the prime recovery ship for the mission, after splashdown on 22 October 1968. Left to right: Walter M. Schirra Jr., Donn F. Eisele, Walter Cunningham, and Dr. Donald E. Stullken, NASA Recovery Team Leader from the Manned Spacecraft Center's Landing and Recovery Division. Image: NASA/KSC

track a planet down to the horizon. Their telescope was combined with a computer and sextant. Unfortunately, when the computer went into the 'tilt' mode it would lock up. Following this exercise the computer went into the tilt mode and locked up. "What idiot sent that command," growled Eisele. Without the computer they were effectively shut down, no more manoeuvres in orbit, no guided re-entry and all the work they had done was invalidated. *"Hey, remember the night we were trying to look at the nurses?"* Eisele called out. Luckily he had come across this problem when they were trying the equipment at the MIT lab and were observing some nurses across the way for fun and a passing instructor told him to press clear and add together to clear the problem. Eisele tried and it worked.

Cunningham,

> "Halfway through the flight we had already accomplished more than 75 percent of our objectives – missions were always front-end loaded – and rather than exult in the days, we began to just check them off. The flight plan dictated when the day ended. When it said, 'sleep', the day was over. But the start of our sleep periods were moved around the clock, from 5:00 am on the first day (really, the morning of the second day), to 5:00 pm on the tenth day. (We continued to reference our on board time to the Cape, where we had spent our last several weeks and would return after splashdown.) At the end of each day, we would scratch a mark through the date on the calendar. But by October 17, the seventh day, Wally was counting the days so anxiously that he began crossing them off soon after we finished breakfast. There is no question; we were beginning to anticipate that eleventh – and final – day."

In the crew wake-up on his final shift of the mission, as a joke to stir the crew, Flight Director Gerry Griffin threatened to keep Apollo 7 aloft for another four days, to beat the Gemini VII record of fourteen days, but was howled down.

This photo of the crew was sent to Honeysuckle Creek by Walt Cunningham. In part, it reads, "Thanks for your great support." The picture was spied on the wall at Honeysuckle – in some news film taken on July 21, 1969, the day of the Apollo 11 landing (Australian time).

Several days before the mission ended, they began to worry about wearing their suit helmets during re-entry, which would prevent them from blowing their noses. It was feared the build-up of pressure to the Earth's atmosphere might burst their eardrums, so they were told to hold their noses, close their mouths and try to blow through their Eustachian tubes to keep the pressure in the middle ear in balance with the increasing air pressure. To do this Schirra told his crew that they would make the re-entry without their helmets on. Slayton, in mission control, tried

to persuade them to wear the helmets to follow mission rules, but Schirra would not give in as he felt he was ultimately responsible as commander on the flight.

They each took a decongestant pill about an hour before re-entry and made it through the acceleration zone without any problems with their ears.

An 11.9 second de-orbit burn over Hawaii during the 163rd orbit at 2042 AEST on 22 October was followed by splashdown at 2111:48, 370 kilometres south east of the island of Bermuda. Light rain showers were passing by, with a 16 knot westerly breeze raising a one metre chop.

The temperature was a comfortable 23°C. The mission took 260 hours 9 minutes 3 seconds (or 10 days 20 hours 4 minutes) to travel a distance of 7,322,515 kilometres.

The Apollo flotation bags had their first try-out when the spacecraft splashed down less than 2 kilometres from the carrier Essex and promptly flipped upside down in the choppy sea. As soon as the bags righted the spacecraft the helicopters were able to home in on the beacon signals.

I have spoken to both Chris Kraft and Gene Kranz, neither of whom ever spoke to Schirra about his behaviour during the flight, and both are not sure why he carried on the way he did. Chris Kraft's comments to me were,

"Schirra was recalcitrant – the whole crew was recalcitrant as a result, and I imagine there was some justification for that on the basis of what happened on the pad when we killed three people. As fliers they performed the flight well – they just gave us a hard time on the ground."

This certificate was presented to members of the Manned Space Flight Network – signed by H. William Wood, Network Director, and Mike Stevens, Network Operations Manager.
This copy was received by Honeysuckle's Bernard Smith.

At Honeysuckle during the Apollo 7 mission

Bryan Sullivan (left) checking spacecraft command data received via a teletype tape from mission control while Ron Hicks makes entries in the computer log book.

Bryan writes*: "I can still remember the excitement at HSK as we were about hear US voices on the downlink for the first time. The first local SIMS with a GSFC/NASA 421 team was a real hoot but never the less a harrowing experience. It was the first time I got the feeling of the responsibility for the 642B computers and understood the significance of 'what if it is my piece of equipment that causes the mission to fail or worse still – the loss of the astronauts'."*

In the background is the Telemetry Computer and Magnetic Tape unit. Items on the console besides an ashtray include a Motorola high speed printer, an intercom control unit and speaker as well as a precision timing device (Smiths cooking timer). The little timer was used during countdowns and mission operations to alert operators of significant events or when to make important keyboard entries into the computers.

Note the Tektronix oscilloscope displaying a circular Lissajous figure. Bill Perrin remembers these large trolley mounted oscilloscopes as the Tektronix model 545B which were a common item throughout all the operations sections of the station. (Notes: Bryan Sullivan. Scan: Colin Mackellar .)

Gene Kranz answered my question with,

> "This mission was a spectacularly successful test of the manned maiden voyage of the Apollo Command and Service Module. However, learning to work with Wally in flight – well, in my book I called him the 'grumpy commander.' Unfortunately, he got this cold in flight, and space is not too tolerant to people who end up with a lot of congestion. It's very difficult to sleep and continue working – I guess he had his hands full. I never quite figured out why Wally had such a burr under his saddle there."

I could never get hold of Schirra himself, but I think I have explained the reason for his behaviour from the printed material available. Thanks to Schirra's behaviour, neither Eisele nor Cunningham ever flew in space again. However, in his book "Flight," Chris Kraft did admit he would have given Cunningham another chance, however Walt resigned before that could happen.

All the mission objectives were met and all the spacecraft systems worked satisfactorily. The fuel cells providing electricity also supplied hot water at 68°C for Schirra's coffee. For the first time a live television program was broadcast around the commercial networks from space. Apollo Program Director Sam Phillips announced, *"We achieved 101% of our objectives."*

With a successful flight the Apollo Project was ready to go. President Kennedy's deadline of 1969 for a Moon landing now seemed within reach.

Essay by Hamish Lindsay.
Images, illustrations and captions by
Hamish Lindsay and Colin Mackellar.
PDF formatted by Glen Nagle.

Apollo 7 Mission Control Center – Photo taken 19 December 1968
Flight Director Gene Kranz (centre) and two of the Mission Control Center flight support teams for the Apollo 7 mission. Image: NASA/JSC 2013-02700

ABOUT THE AUTHOR

Hamish Lindsay (1937-2022) worked at the Muchea, Carnarvon and Honeysuckle Creek space tracking stations between 1963 and 1981.

He wrote many essays on the history of human spaceflight, and was the author of the book, Tracking Apollo to the Moon.