

The Shoot Down of Sun Valley 56-0528



By Steve Wolff

Lockheed C-130A-II Hercules, 56-0528, msn 3136, one of ten that had been modified. Aircraft belonged to the 7406th Combat Support Squadron based at Rhein Main, Germany. The overly large external tanks were false and made from fiberglass. Each was six feet in diameter and 15 feet long and housed sophisticated electronics. The tanks could be fueled with a small amount of fuel further concealing their purpose. The national insignia was held on by dzus fasteners that allowed quick removal. (Photo from Don Rogers)

On September 2, 1958, a Lockheed C-130A-II transport was shot down by four Soviet MiG 17 fighters over Nerkin Sasnashen, Soviet Armenia, resulting in the loss of the aircraft and 17 crewmembers. The U.S. State Department (State) condemned the attack on an unarmed U.S. military transport as “without regard to the rules of civilized international practice” and followed with a statement that the aircraft was “on a world-wide U.S. Air Force mission to study the propagation of radio waves transmitted by U.S. radio stations.”¹ However, as facts were later to prove, this was the beginning of an odyssey of intentional dissembling and prevarication by the U.S. government that continues to this day.

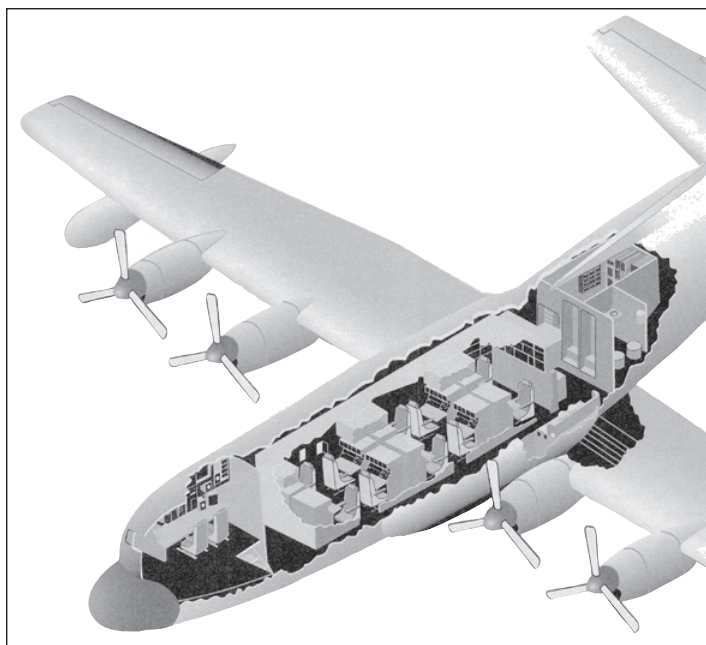
The United States since before WWII has been engaged in what is broadly known as Signal Intelligence (SIGNET) gathering against actual or perceived hostile countries. SIGNET,² a term coined by the National Security Agency (NSA), is further subdivided into Electronic Intelligence (ELINT) and Communication Intelligence (COMINT). ELINT deals with all electromagnetic radiation other than voice, while COMINT in 1958, dealt exclusively with voice/code communications.

Because of the multiple duplication of signals collection by military commands, Congress in the mid 1950s pushed to have the NSA to have responsibility for all signals collection.³ The beginning of the Cold War focused these efforts on the Soviet Union, its large geographical expanse and dearth of land lines, made it particularly vulnerable to SIGNET operations. Soviet air defense radar sites communicating over long distances between control centers necessitated the use of encrypted high frequency (HF 3-30 MHz) radio and Morse code that was vulnerable to interception and decryption.

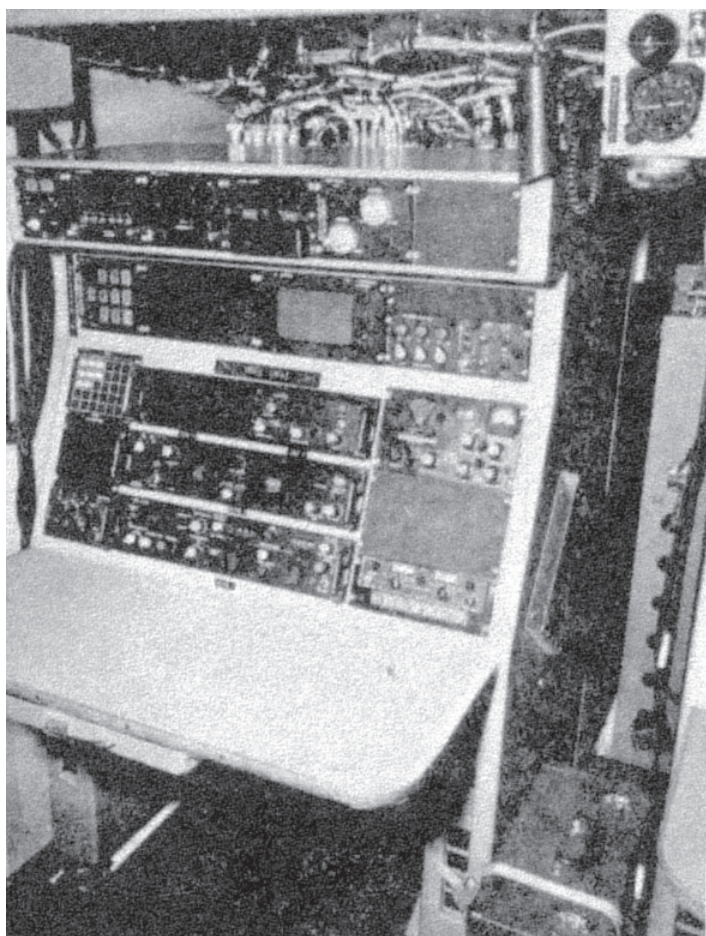
Timely collection and analysis is essential and aircraft with their greater mobility are particularly suited for ELINT/COMINT. The Lockheed C-130 with its exceptional endurance and voluminous cargo bay, has been an ideal collection platform allowing equipment, analysts and support personnel to function as an integrated unit. Furthermore, lumbering cargo aircraft present the least provocative profile in the event of interception by enemy aircraft.

Under the auspices of the U.S. Air Force Security Command, the air arm of the NSA, aircraft conducted flights known as *Flight Wolf* along Soviet borders and on some occasions intentionally penetrated the Soviet airspace.⁴ These SIGNET operations covered a large electromagnetic spectrum from high frequency radio to microwave radar emissions. This collection contributed greatly to the understanding Soviet of air defense units state of readiness, air activity, reaction times, enemy order of battle, ground control intercept frequencies, signal strength, locations and weaknesses, all which were vital to the conduct of future military operations.

In 1957, the U.S. Air Force Security Services, contracted with the Texas Engineering and Manufacturing Company (TEMCO) to modify 10 new Lockheed C-130As to replace the aging Boeing RB-50G HAYSTACK SIGNET aircraft both of which were organized under the BIG FIVE program.⁵ The aircraft were flown direct from Lockheed’s Marietta, Ga., production line to Majors Field, Greenville, Tex., for modification as part of the previously established Airborne Communication Reconnaissance Program (ACRP). The following aircraft known as *Sun Valley I’s*, underwent modifications: 56-0484, c/n 3092; 56-0525, c/n 3133; 56-0528, c/n 3136; 56-0530, c/n 3138;



Artist rendition showing the eight COMINT operator positions, and the airline type crew rest area in the rear. Forward crew bunk has been removed to make room for the second navigator. (Big Safari Association)



One of the eight COMINT operator stations showing the scanners and recorders. Each operator scanned separate frequencies. (Big Safari Association)

56-0534, c/n 3142; 56-0535, c/n 3143; 56-0537, c/n 3145; 56-0538, c/n 3146; 56-0540, c/n 3148; 56-0541, c/n 3149.⁶ All were dedicated COMINT aircraft and redesignated C-130A-IIs.

The interior aft of station 245 bulkhead, which comprises the cargo compartment, was soundproofed with eight operator positions each covering separate frequencies. Each position was partitioned to prohibit crew members lacking the necessary clearances from observing classified equipment. The ramp and door normally used for loading/off loading cargo, was bolted shut and partitioned. This area with oscilloscopes, signal generators, voltmeters and work bench, was manned by two maintenance technicians. In order to conceal the aircraft's true purpose, all exterior antennas normally associated with previous COMINT aircraft, were housed in the two fiberglass external pods. Also, the wing span appeared to have been increased several feet beyond the normal 132 feet that possibly concealed additional antennas.

COMINT equipment included; receivers for High Frequency, Very High Frequency (VHF 30-300 MHz), Ultra High Frequencies (UHF 3-3000 MHz) direction finding, narrow and wide band recorders with the capability of intercepting frequencies from .1 MHz to 1.75 GHz. In addition, panoramic receivers displayed intercepted frequencies and signal strength over a frequency range of 100 to 150 MHz.⁷

The directional receiving capabilities of the Sun Valley Herc's made them unique from the previous series of COMINT aircraft. The two fiberglass pods that held matched spiral antennas, targeted the selected ground based transmitters receiving the signals slightly out of phase and through the use of an interferometer, converted this to bearing and distance. Several bearings taken at different geographical positions further refined the transmitter's location.⁸

State of the art electronics was not limited to snooping. Missions of the sort required precise navigation and this was accomplished with an integrated system known as the APN-99. The APN-99 consisted of the ASN-7 Ground Position Indicator (GPI) and the APN-81 doppler radar.⁹ The ASN-7 was an enhanced version of the ASN-6 Ground Position Indicator analog computer. Both the ASN-6 and ASN-7 were self-contained navigation systems and impervious to jamming.

The ASN-6 required the navigator to manually set departure and destination latitude and longitude, and winds aloft (direction and velocity) prior to takeoff into the control panel that was located at the navigators position. After takeoff, the computer displayed a continuous ground position expressed as latitude and longitude. Accuracy was dependant upon the navigator who had to manually insert wind direction, wind velocity and magnetic variation throughout the flight. Stated accuracy of the ASN-6 was 1.5% of the total distance flown.¹⁰

The ASN-7 resolved the inaccuracies of inflight wind velocity and direction calculations by using the APN-81 doppler radar that provided aircraft ground speed and drift to the computer. A indicator separate from the analog latitude and longitude readout, displayed course and distance to the destination.

An additional aid to navigation pertinent to this flight, was the very capable monochromatic X-band AN/APN 59 search radar



Soviet radar operator Junior Sergeant A. Gvozdev tracking an intruder aircraft. This photo appeared on the front page of *Sovetskaya Aviatsiya*, Russian Air Force Daily, September 19, 1958. This and the accompanying photo are purported to be that of a training exercise by Soviet Air Defense Command. American officials believe it to be that of 56-0528. (*Aviation Week*)

Soviet airmen resolving intercept problem of 56-0528 and the Soviet MiG-17s. This photo appeared on the front page of *Sovetskaya Aviatsiya*, September 20, 1958. Left to right are: Navigator Captain N. Romanyuta, Plotters Privates D. Pankeev, N. Budarin and S. Ichin. (*Aviation Week*)

Airmen Second Class Robert H. Moore
Airmen Second Class Gerald H. Medeiros

Bulgarian
Russian

Airmen First Class Robert J. Oshinski
Technical Sergeant Arthur L. Mello

Romanian

Airborne Maintenance Technician

Airmen Second Class Archie T. Bourg Jr.

Airborne Maintenance Technician

Captain Duncan was an addition to the normal crew complement on this flight only and evaluating Capt. Swiestra's performance. Msgt. Petrochilos orchestrated the flight, coordinating the mission activities and intercepted communications with the aircraft commander and had the additional responsibility to forewarn the aircraft commander of any threat to aircraft safety. The front end crew with the exception of Capt. Simpson, were U.S. Air Force Reservist. All had Top Secret clearances. *All crew members were volunteers and knew the risks* [emphasis added].

Parachutes were provided, but normally not worn and were stowed on the left wall (as viewed from the rear) of the cargo compartment.¹³ Cruise altitudes flown would be cardinal altitudes plus 500 feet that in theory would provide separation between 0528 and civil aircraft. The higher the altitude, the greater the range of COMINT interception, which gives a better quality of signal analysis because the signals are in range for a longer period.¹⁴

All intelligence and communication stations were forewarned of 0528's track and time of departure. Sun Valley 0528 departed Incirlik at 10:21Z after a five hour delay for unknown reasons and was last heard from at 11:42Z reporting over Trabzon, Turkey.¹⁵ Figure 1 shows this was not the case and was likely part of the official dissembling that still surrounds this incident.

The zigzag flight track as 0528 proceeded generally southeast, served two purposes. First, every change in

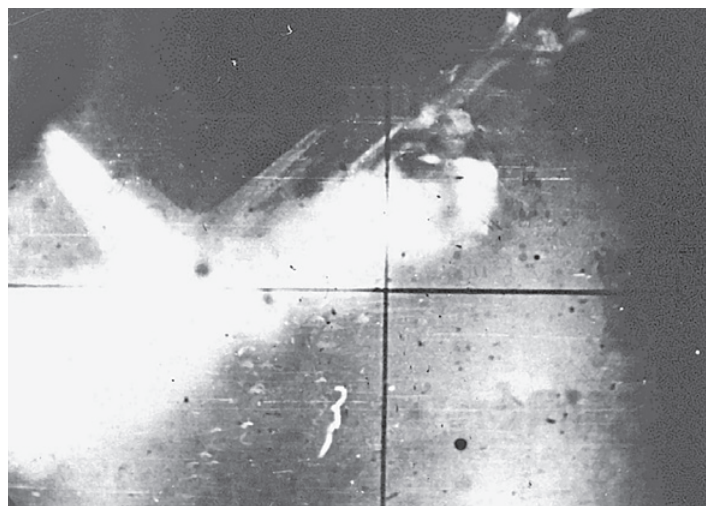
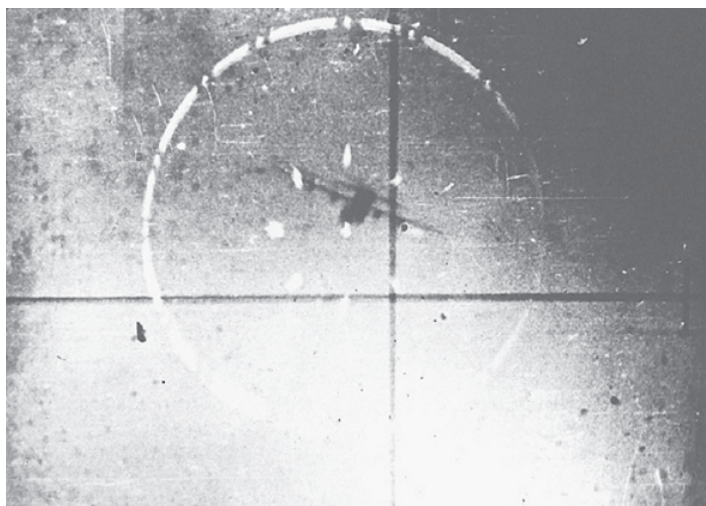
direction hopefully would elicit HF radio transmissions between Soviet ground radar sites and Soviet Air Defense Command. HF radio under most atmospheric conditions, can be heard thousands of miles from the point of transmission. These transmissions would be picked up at NSA COMINT facilities located worldwide as well as Samsun, Trabzon and Karamürsel, Turkey;¹⁶ Secondly, the straighter the legs flown, the greater the accuracy for directional finding of specific communication installations.¹⁷

Soviet early warning radar started tracking 0528, now assigned track number 7845 *hostile/unidentified*, 31 miles southeast of Rize, Turkey, at 11:32Z at 24,600 feet, approximately 45 minutes before interception.¹⁸ At 11:52Z, MiG flight 582/583 from Leninakan was scrambled and flew defensive patrol along the Turkey/Soviet Armenia border.

Still inside Turkey, 0528 climbed to 31,160 feet, then descended to 29,520 feet several minutes prior to 12:00Z. This is very high for an A model Hercules and 5,000 feet higher than necessary for good COMINT reception. A possible rationale is that the crew planned convert altitude to airspeed in the event of interception. At 12:03Z, 12 minutes before the shoot down, approximately 15 miles west of Atir, Soviet Armenia, 0528 turned due east and crossed the Arpa river that served as the international border. An additional MiG flight, 201/218 was scrambled from Leninakan and vectored toward 0528.

At 12:06Z, 0528 plotted as an *intruder aircraft*, turned southeast as MiG flights 582/583 and 201/218, now *engaged in combat*, merged with 0528's point in space.¹⁹ Identified as *hostile/unidentified in combat*, Sun Valley 0528 existence was measured in minutes. Shortly after the attack, Soviet Air Defense Command broadcast, target destroyed.

The following VHF transcript between Soviet MiG fighter pilots and their ground controllers was intercepted by Turkish National Security Service and given to the U.S. Central Intelligence Agency (CIA). This version is likely *edited and sanitized* [emphasis added].²⁰



Gun camera film from one of the attacking MiGs. Gun camera only worked when the firing button was depressed. Each MiG carried one 37mm cannon, each projectile weighing 26.5 ounces and two 23mm cannons, each projectile weighing 7 ounces. (Soviet Air Defense Archives via The Armenian Mirror-Spectator)

The ideal attack position favored by Soviet pilots, below and to the right or left rear quarter. Deflection shooting is at a minimum while presenting the largest aircraft cross section. Burning fuel is streaming out of the #3 wing tank back along the right side the aircraft. Squiggly line at the 6:30 position is MiG cannon fire tracer. (Soviet Air Defense Archives via The Armenian Mirror-Spectator)

Explanation of Superscripts

- A - Approximate time intercept started. Time intercept terminated is unknown. *Authors note: Play back of both audio tapes total 64 minutes.* This would put the end of the intercept at 12:54Z. Add 3 hours to Z time for local time.
- B - 583 [B% Pilot suffixes subordinate to Fighter Division (REDACTED) Regiment C].
- C - 218 [B% Pilot suffix subordinate to Fighter Division (REDACTED) Regiment A or B].
- D - 582 [B% Pilot suffixes subordinate to Fighter Division (REDACTED) Regiment C].
- E - 201 [B% Pilot suffix subordinate to Fighter Division (REDACTED) Regiment A or B, both based at Leninakan. This suffix possibly designates regimental commander].
- F - ZABOR. Probably refers to the state border.
- G - ChETYRE ChETVERKI. Designates broadside approach.
- H - Or *burst* [OChERED].
- I - 577 [B% Regimental controller of Fighter Division (REDACTED) Regiment C based at Erevan.
- J - 16 [B% Pilot suffixes subordinate to Fighter Division
- O - B% 6)8. [Not identified].
- P - 81 [Not identified].
- Q - Possibly refers to USSR side of the border.
- R - The verb used here is normally associated with motor vehicles, etc., and not aircraft.

Additional notes from author:

- [B%] - Shorthand for *probably* used by SIGNET personnel.
- [M] - This appears to be a transmission a single MiG interceptor.

- [M] [M] - Possibly plane to plane.
- [XM] - Exchange missing.
- [XG] - Exchange garbled.
- [1-2 wd G] - 1-2 words garbled.
- [XG/M] - Exchanged garbled/missing.
- Erevan is now Yerevan.
- Leninakan is now Gyumri.

Although the MiG divisions and regiments are redacted, several belonged to the 236th Fighter Air Division and the 25th Fighter Air Regiment and 117th Guards Fighter Air Regiment.²¹

Metric units have been converted to English measurements by the author. These are in parenthesis, italicized.

[Note: Time at this point approximately 1150Z]^A

ER TO

- [M] [M] I am at maximum speed [1-2 wd G] (B% the entire group) [XM].
- [M] [M] Roger.
- [M] [M] What is yours? [altitude]
- [M] [M] 3,000. (*9,800 feet*)
- [M] [M] I read you excellently.
- 583^B [M] I read [you] excellently.
- [583] [218]^C I read [2] 18 excellently.
- [583] [M] Roger, altitude 100 [00 meters] ... Understood. (*32,800 feet*).

Pause

- [582^D] [M] In the northwest, (B% approximately) seven [tenths cloud coverage] here.
- [582] [M] Very poor, almost none ... 130?... Roger, 330.
- [Note: the following transmission approximately 1154Z]**
- [582] [M] I have taken course 330 [degrees], altitude 80 [00 meters] (*24,246 feet*)

[Note: Intercept possibly missing at this point]

[582] [M] Roger, I am taking [it].
[582] [M] [XM] You are understood, altitude 90 [00 meters]. (29,527 feet)
[M] [M] Roger, 40 kilometers. (24.8 miles)
[M] [M] [XG] poor, (B% I cannot see the orientation point yet).
[M] [M] No, not visible, it doesn't matter.
[M] [M] [1 wd G].
[M] [M] (B% 4) 5 [XM].
[M] [M] [I have] taken [course] 180 [degrees].
[201^E] [M] Passed the second [one].
2(B% 01) [M] I can see the fence^F well...Roger.
[M] [M] Roger, proceed (B% in a slight climb) toward your point.
[M] [M] Altitude 100 [00 meters] (32,800 feet).
[M] [M] My course is 200 [degrees].
[M] [M] Roger ...Roger
[M] [M] (B% Now, for directing, 200 degrees).
[M] [M] (B% Roger, over [point] 136).
[M] [M] [1-2 wd G].
[201] [M] Roger, I have already turned toward the point, over [point]136. Now I am turning to 180 [degrees].
[201] [M] I am turning toward [point] 135.
[201] [M] Yes, I am over [point]136 now.
[M] [M] (B% Roger).
[M] [M] Roger, I am approaching your point.
[M] [M] I am turning to 180 [degrees], I am taking [my course] toward [point]135. (B% I do not see) [it].
[M] [M] Roger, [XG/M].
[M] [M] Roger, I am approaching your point. My altitude is 110 [00 meters]...Roger, I am looking. (36,089 feet)
[201] [M] I am climbing, I am climbing...Roger.
[201] [M] No [XM].
[M] [M] [2-3 wd G].
[582] [M] Roger, [1 wd G].
[582] [M] I am looking.
[201] [M] To the south there is... two to three [tenths cloud] cove coverage].
[582] [M] I see the target, to the right... I see the target, a large one...its altitude is 100 [00 meters], as you said. (32,800feet)
[201] [M] I see the target, attack!
[201] [M] I am attacking the target!
[582] [M] You are understood... I am attacking the target.
[a 3rd speaker] [M] Standby.
[582] The target is a large one...Roger.
[201] [218] Attack! Attack! 218, Attack!
[a 3rd speaker] [M] Standby.
[582] [M] [XG/M].
[582] [M] Roger.
[M] [M] [XM] (B% Roger).
[M] [M] [2-3 wd G]...Roger.

[201] [M]
[201] [M]
[M] [M]
[M] [M]
[M] [M]
[201] [M]
[M] [M]
[218] [M]
[Note: Intercept possibly missing at this point]
[201] [M]
[201] [M]
[201] [M]
[582] [M]
[M] [M]
[582] [M]
[201] [M]
[M] [M]
[M] [M]
[201] [218]
[218] [M]
[M] [M]
[M] [M]
[M] [5]82
[M] [M]
[M] [M]
[M] [M]
[M] [M]
[M] [M]
[M] [M]
[5] 82 [M]
[M] [M]
[M] [M]
[M] [M]
[M] [218]
[M] [M]
[M] [M]
[5]82 [M]
[M] [M]
[Note: Break in intercept at this point. Following transmission occurred at 1225Z.]
[M] [M]
[201] [M]
[M] [M]
[M] [M]
[M] [M]
[577^I] [16^J]
[16] [M]

Attack at [target angle] 4/4^G.
(B% Shoot now?) [XM].
(B% The target is a transport, four engine)...
Roger.
Roger, [2-3 wd G].
[XG/M]
[1-2 wd G]
I am attacking the target!
[1 wd G]
[XG/M]
Target speed is 300, I am flying along with it.
It is turning toward the fence! (186 mph)
[XM] The target is burning.
There's a hit.
[XG]
(B% The target) is burning.
The target is banking...it is going toward the fence.
[1-2 wd G] I am opening fire. [XM]
[XG]
Attack!
Yes, Yes, I [am attacking].
The target is burning [XG].
The tail assembly (B% is falling off) the target.
Do you see me? I am in front of the target.
[XG]
[2-4 wd G] look!
Oh?
Look at him, he will not get away, he is already falling.
Yes, he is falling. (B% I will finish him off), (B% I will finish [him] off) on the run.
The target has lost control, it is going down.
Now the target (B% will fall) [XG].
A little to the right.
The target has turned over [XM].
[XG]
The target is falling.
[1-2 wd G]. no?
[XM] you see me? [XM]
[1 wd G] (B% form up) [XM].
(B% I see), I am watching the target, I see [it].
Aha, you see [it] is falling [XG/M].
Yes [1 wd G] form up, leave for the base.
After my (B% third) pass^H the target started burning.
(B% Then) [2-3 wd G] in succession.
[2-3 wd G]
Roger, (B% I am turning)...Roger.
Give altitude, mission.
Who asked? I did not understand.

[577] [M] 577.
 [16] [577] Altitude 100 [00 meters], toward [point] 135. (32,800 Feet)
 [577] [16] Roger.
 [M] [M] [XM] Repeat, where are you?
 [M] [M] On the left, on the left, below.
 [M] [M] Well, let's form up, follow. Let's go.
 [M] [M] (B% I) have [my fuel] tanks, (B% not those from) the group.
 [M] [M] Oh?
 [M] [M] I have [my fuel] tanks.
 [M] [M] Yes.
 [16] [577] You passed [point] 134?
 [577] [M] Yes, yes, I am going toward [point] 135.
 [M] [577] I see you, proceed, contact the [1 wd G]
 [201] [M] [XG]
 [577] [M] [My] altitude is still only 3,000, but I will climb a little higher (B% to there) from below. (9,800 feet)
 [M] [577] Roger, [1 wd G] (B% hold back more).
 [577] [M] Roger.
 [M] [M] Over [point] 130, I am climbing...Roger.
 [M] [M] [XG/M]
 [M] [M] [XG/M]
 [M] [M] Yes, lets.
 [M] [M] That's right, go off to the left.
 [M] [M] [2-3 wd G]
 [M] [M] (B% We are beginning).
 [16] [577] How do you read me?
 [577] [16] Excellently, I read you excellently.
 [16] [577] You should be at altitude 120 [00 meters] in the area of [point] 134, 135, watch out for the fence.^F (39, 370 feet)
 [577] [16] Roger.
 [16] [582] How do you read me?
 [577] [582] 16 is asking you.
 [16] [582] How do you read me?
 [577] [582] Why don't you answer 16?
 [577] [582] Roger, this is 577 talking to you.
 [M] [M] Switch off [1 wd G], (B% and you)?
 [M] [M] I did not understand you, repeat... not (B% received) yet?
 [16] [582] How do you read me?
 [M] [M] What area? Speak more clearly.
 [201] [M] Repeat what you said.
 [M] [M] I am located (B% here) to the north of [point] 130.
 [577] [M] I read you excellently.
 [577] [M] Well, I am between [points] 134 and (B% 135).
 [577] [M] Roger, I am climbing.
 [M] [M] Roger.
 [16] [582] How do you read me?
 [M] [M] [XG].
 [16] [583] How do you read me?
 [16] [577] Do you have communication with [5]82?
 [577] [16] I will ask now.
 [16] [577] Do you have communication with [5]82?
 [577] [16] I will ask now.
 [577] [582] How do you read me?
 [577] [M] Go to the base, why are you fooling around there some place?
 [577] [M] Say that he has gone to the base.
 [577] [5]82 Did you understand me?
 [577] [16] Roger, 582 [has left] for point 107. [He] will land.
 [16] [577] Roger, you should be at [altitude] 12 [000 meters], in that area. (39, 370 feet)
 [577] [16] Roger, Roger... I am climbing.
 [577] [M] Roger I will take [course] 350 [degrees].
 [M] [M] Brakes.
 [M] [M] [XM] approach [1 wd G].
 [M] [M] [2-4 wd G].
 [577] I have taken [course] 350 [degrees].
 [M] [M] [XG].
 (Pause)
 [1 wd G- 16 [M] On communication.
 [577] [16] I read you excellently. My course is 350 [degrees]. I am proceeding to the far [beacon].
 [16] [577] Roger, where are you?
 [577] [16] Approximately on the TRAVERSE^K point 107.
 [16] [577] Roger.
 [577] [16] My altitude is 10 [000 meters] absolute, I am climbing farther. (32,800 feet)
 [16] [577] Roger.



Rear view of the remains of the empennage of 0528 that would be the ramp and door. Inflight maintenance the COMINT gear, was done in this area by the two onboard technicians. (Soviet Air Defense Archives via The Armenian Mirror-Spectator)

[577] [16]	Roger.	[M] [M]	Excellent 11.
[16] [577]	Your course is 100 degrees?	[M] [M]	159 12.
[577] [16]	Yes, I am turning toward you. [1 wd G] ordered [it].	[577] [M]	Landing gear is down, landing.
[16] [577]	Roger, I see you.	[16] [577]	Did not understand you.
(Pause)		[577] [16]	Landing gear is down, landing.
[577] [M]	Roger.	[16] [577]	I authorize landing.
[16] [129] ^L	I read 129 excellently.	[577] [16]	Full flaps.
[16] [B% 129]	I do not authorize [it].	[16] [577]	Roger, the wind is from the right, at [a angle] 90 [degrees], two to three meters [per second]. (4-7 mph)
[16] [577]	For communication [check].	[577] [16]	Roger.
[577] [16]	I read you well.	[577] [16]	After a run [PROBEG] toward METALL ^N .
[16] [577]	I see you, approach the point from the north.	[M] [M]	Excellent, 11.
[577] [16]	Roger, Roger, I am turning toward [point] 130.	[M] [M]	159, 12.
[16] [577]	Send.	[M] [M]	Excellent, 11.
[577] [M]	[XM] I am proceeding toward [point] 130 from (B% point) 108.	[M] [M]	199 12.
[577] [M]	I did not understand you.	(Pause)	
[577] [M]	Roger, I am going on [altitude] 10[000 meters] I am climbing farther. ((32,800 feet)	[M] [M]	Excellent, 11.
[M] [M]	Excellent, 11 ^M .	[M] [M]	199 12.
[M] [M]	Roger.	[M] [M]	Excellent, 11.
[M] [M]	I read you excellently, 11.	[M] [M]	229 I cannot.
[M] [M]	159, 12 ^M .	[M] [M]	(B% I read you) excellently.
[16] [577]	(B% Approach) the point for a landing,	[M] [M]	[1 wd G].
[577] [16]	Roger, (B% I am descending).	[M] [M]	199 12.
[M] [M]	Excellent, 11.	[M] [M]	Excellent, 11.
[M] [M]	129, 12 ^M .	[573] [16]	How do you read me?
(Pause)			(Repeats above transmission twice).
[M] [M]	Excellent, 11.	[M] [M]	199 12.
[M] [M]	I read excellently.	[573] [68 ^O]	How do you read me?
[M] [M]	129 12, 199 11 ^M .	[68] [573]	I read you excellently.
[M] [M]	199, 12.	[573] [68]	Why is 16 silent there?
[M] 577	Where are you?	[68] [573]	Just a minute.
[577] [M]	I am approaching the old point.	[573] [81 ^P]	I have communication with my [people], I am ending communication with you.
[M] 577	How is your fuel?		
[577] [M]	Well, only the wing tank has run out.	[M] [573]	[XG/M]
[M] [577]	I did not understand.	[573] [M]	I read you well.
[577] [M]	Only the wing tanks, only [1 wd G].	[M] [573]	(B% You also)?
[M] 577	What is your altitude?	[573] [M]	Now I am approaching the place where our [people] were working.
[577] [M]	Well, [my] altitude is 5,000, I am descending. (16,404 feet)	[M] [573]	Roger, approach [1 wd G].
[M] 577	You should be at [altitude] 5,000, over the point now. (16,404 feet)	[573] [M]	[XM] I am going closer to our side ^O .
[577] [M]	Roger.	[573] [81]	How do you read me?
[M] [M]	Excellent, 11.	[573]	[1 wd G] How do you read me?
[M] [M]	Roger you have [1 wd G]. Roger	[573] [M]	It is necessary [B% to go past] ^R orientation point 135, [1 wd G] orientation point 132 to the north and far [1-2 wd G].
[M] [M]	129, 12.		
[M] [M]	Roger.		
[M] 577	You are you descending. Where are you?		
[577] [16]	I am approaching (B% the small one), altitude 5[000 meters]. (16,404 feet)		
[16] [577]	Left turn, with an (B% approach) for landing.		
[577] [16]	Roger.		
[M] [M]	Excellent, 11.		
[M] [M]	I cannot.		
[577] [M]	[I am] over you.		

[End of intercept]

The U.S. Air Force Security Service listening facility at Trabzon monitoring the MiG traffic, immediately flashed the news of the shoot down to President Eisenhower, NSA Ft. Meade, Md., CIA Langley, Va., and State via Critical Intelligence Communication Network (CRITCOM).²² CRITCOM messages were sent anytime events occurred in an

area of interest to the U.S. that could conceivably escalate into a military confrontation.

As with any COMINT, meaningful analysis is dependent on who heard what and when. The voice intercept was presumably in the VHF range as the Soviet fighter command had been converting to VHF from HF since the early 1950s.²³ The intercept was recorded by the Turkish National Security Service COMINT facilities. On September 22, the translated recordings were turned over to the CIA, headed by Allen Dulles, and then forwarded to the NSA.²⁴ The Turkish involvement was likely a ruse to disguise the fact the NSA had listening posts in Turkey, Iraq and Iran, any one of which that was in 200 miles of the shoot down, could have recorded the MiG exchange.

The British Government Communication Headquarters (GCHQ), the United Kingdom's equivalent of the NSA, also provided transcripts of the exchange. The GCHQ felt that the tapes contained garbled references to crew members who jumped. NSA did not accept this version. Several meetings were necessary between NSA, United Kingdom representatives and State to resolve the differences between what NSA heard, what GCHQ heard and what State wanted released.²⁵

The tapes were transcribed and edited over a period of 43 days after the shoot down, after which NSA published the comprehensive COMINT report of tracking and voice analysis.²⁶

State headed by John Foster Dulles, was at the forefront of the U.S. efforts to publicly obfuscate 0528's actual mission, although it was clear to the Soviets. In an unprecedented action, after repeated denials by the Soviets that 0528 was not shot down by MiG fighters, the transcript in its edited version was released to the public on February 5, 1959, five months after the incident. Three days later Moscow Radio labelled the transcript "a clumsy farce and a gross forgery."²⁷

State not only claimed the Soviets shot down 0528 without provocation, but also intentionally lured 0528 into Soviet territory by meaconing – the use of a deceptive navigation beacon. State later backed off meaconing due to fears that the Soviets would provide additional evidence of previous overflights.²⁸

Dulles in a letter to the families of the missing crew members wrote, "That every effort will be made to learn their fate." However, an October 6, 1959, office memo from Assistance Secretary of State Foy Kohler contradicted State's public policy saying, "We believe no purpose will be served by further communications with them (Soviets)."²⁹

Rumors continued to persist that crewmembers parachuted to safety. A classified memo dated September 13, 1960, claimed, "We cannot disregard rumors that we constantly hear about three survivors."³⁰ East German reporter Wolfgang Schreier in a January 1961 article in the Moscow magazine *Ogonek*, wrote that 11 crewmembers parachuted to safety; however, later issued a retraction.³¹

Director of the NSA (1956-1960), Lt. Gen. John Samford, suggested that NSA employees refrain from speculating on the circumstances surrounding the C-130 flight.³² Employees not only did discuss the far reaching consequences, two

NSA employees who defected to the Soviet Union in 1960 and appeared in public, admitted that the C-130 deliberately crossed into Soviet Armenia to get in proximity to Soviet radar installations.³³

Ferret flights, those specifically assigned to search out early warning radar locations, frequency, pulse width and pulse repetition can be collected without penetrating national borders. However, the Soviets characteristically held back their ground control intercept voice communications that vectored fighters to targets. In some instances, a response required an actual penetration of Soviet airspace in order to reveal any meaningful COMINT.³⁴ After penetrating the Armenian border, 0528 resumed its southeasterly track that if allowed to continue, would have put it in the vicinity of Yerevan, the site of a previous shoot down two months before. (see below)

The usual *modus operandi* based on previous peripheral reconnaissance flights of this nature was to dart in quickly across the international border, evoke a response from enemy communications network and turn out quickly to safety. In spite of having five Russian linguist on board, 0528's crew was apparently unaware of the proximity of MiG interceptors. Only after the first cannon shells struck, did 0528 turn back west toward the Arpa river that marked the international border. Each 37mm high explosive projectile, two of which were capable of bringing down an aircraft the size of a Boeing B-29, opened a 10 foot square hole instantly subjecting the crew to explosive decompression.³⁵ While not immediately fatal at 30,000 feet, the time of useful consciousness without oxygen is 2-3 minutes; in addition, any crew member in proximity of the openings would be blown out or severely injured.

The crew entrance door was not considered as a means of escape and any attempt would be blocked by the rotating propeller of the number 2 engine. Burning fuel from the number 3 fuel tank streaming along the right side of the fuselage precluded escape from the right rear paratrooper door. With the ramp and door bolted shut, the only remaining viable exit would be the left rear paratrooper door, provided it was not damaged in the attack. NSA's conclusion that there were no survivors was likely correct.

Authors of *The Price of Vigilance*, Larry Tart and Robert Keefe, contend that the loss of 0528 was a perfect storm of a crew that had never flown together before; maintenance issues with APN-99 doppler navigation system and APN-59 search radar plus other ancillary navigation aids all of which allowed 0528 to drift into Soviet airspace; however, a failure of any primary navigation system(s) after departing Incirlik, would likely be grounds for aborting the mission.³⁶

Not pointed out was the fact that 0528 could have experienced a total electrical failure and the one navigation aid that works under any circumstance at this latitude, is the magnetic compass.³⁷ Any turn(s) made by 0528 while in Turkey after which the magnetic compass settled on E, the aircraft commander, and or navigators would have realized they were headed towards Soviet Armenia. Figure 1 shows that turn being made at 1203Z while 0528 was still in Turkish airspace. The Arpa river, the international boundary, also would be visible to the front end crew of 0528.

This flight may have been in response to the shoot down of Allen Dulles' C-118A, 51-3882, on June 27, 1958, 20 miles south of Yerevan.³⁸ This plane was legitimately lost in bad weather on a flight from Wiesbaden, Germany, to Peshawar, Pakistan, and was intercepted by MiG fighters as it flew through Soviet Armenia. Several passengers parachuted to safety, while the cockpit crew put the aircraft into a small runway with no loss of life. All crew members and passengers were returned safely on July 7, 1958.

With the 0528's flight coming so soon after the C-118A loss, one has to question the propriety of U.S. policy makers. This was not initiated by some rouge USAF Wing commander intent on launching WWII. It was orchestrated from the highest echelons of government as evidenced by the signatories to the transcript release; Lt. Gen. John Samford, Director NSA; James H. Douglas, Jr. Secretary of Air Force; and Hugh S. Cummings, Jr., Office of Intelligence and Research, the intelligence branch of the State Department.³⁹

Unfortunately, personnel of NSA, U.S. Air Force Security Service and the Naval Security Group could do little to warn 0528 as they listen to the drama played out over Soviet Armenia. Immediately after the shoot down, the ACRP stood down one month while an assessment was made of the cost vs benefits of peripheral reconnaissance flights. Eventually in 1962, using the Strategic Air Command HF single side band (SSB) radios, a worldwide alert system was adopted called *White Wolf* to warn reconnaissance aircraft of impending hostile action. →

Chronology of Exchanges

The following brief chronology of exchanges between the U.S. State Department and the Soviet Government:

September 2, 1958; C-130A-II Hercules 56-0528 flies into Soviet airspace and is shot down.

September 6; American Embassy in Moscow asks the Soviet's for any information of the plane and its crew.

September 8; Soviet Foreign Ministry informs the American Embassy at Moscow that the Ministry has no information as to the whereabouts of the aircraft or crew.

September 12; The Soviet Foreign Ministry informs the American Embassy that a USAF aircraft has been found 55 kilometers northwest of Yerevan in Soviet Armenia and that no survivors were found, but six crewmembers perished.

September 13; The American Charge d' Affairs, Richard Davis, requests the whereabouts of the missing 11 crewmembers and to the visit of the crash site by technical experts to determine to cause of the crash. The U.S. further acknowledges that it has evidence that the aircraft was shot down by three Soviet fighters. The Soviets maintain the violation of the border was deliberate.

September 15; Mr. Davis asked the Soviet Acting Foreign Minister, Kuznetsov if any information regarding the missing men requested on the

13th was available. Kuznetsov replies "that these unpleasant affairs would be avoided if Americans planes would stop penetrating Soviet airspace."

September 19; Soviets reply that it has no information on the 11 missing crewmembers and that they will return the remains of the six airmen found. The Soviets continue to deny that 0528 was shot down. The U. S. continues to demand that the crash site be inspected by technicians.

September 22; The Turkish National Security Service gives the CIA a verbatim translated transcript of the shoot down that is forwarded to NSA.

September 24; The remains of six airmen, the front end crew, are returned by Soviet authorities.

October 3; American Ambassador Thompson repeats the description of the Soviet fighter pilots involved and does not understand why the Soviets are not more forth coming with more information about the disposition of the 11 remaining crewmen. Thompson repeats the request for U.S. technicians to visit the site to determine the cause of the crash. The Soviets still maintain the violation of the border was deliberate.

October 6; The U.S. continues to demand access to the crash site. The Soviets inform the U.S. that the crash is in a restricted frontier area and is closed.

October 16; Ambassador Thompson is handed a note by Kuznetsov that no further information is available and that the U.S. bears responsibility for the incident.

November 4; The Air Force announces the identity of four of the six returned crew members.

November 13; Deputy Under Secretary of State Robert D. Murphy receives Ambassador Menshikov along with Maj. Gen. Mikhail N. Kostiouk and presents the Soviets with evidence of the fighter interception and shoot down of 0528. Menshikov refuses to listen to the recordings claiming he is not qualified from a technical point of view to make an assessment of authenticity.

January 7, 1959; Vice President Nixon in a conversation with First Deputy Premier Anastas I. Mikoyan asks that the Soviet government make a statement as to the actual disposition of the 11 missing crewmembers. Mikoyan says that all the information has been released.

January 16, 1959; The Secretary of State during a conversation with Mikoyan, asks about the fate of the crew. Mikoyan says that the Soviet government has done all it can do and declares that the plane was not shot down.

February 5, 1959; The transcript is released to the press.

Notes:

1. *Aviation Week*, February 16, 1959, 108.
2. Alfred Price, *the history of U.S. Electronic Warfare, Volume II, The Association of Old Crows*, (Port City Press, 1989), 223.
3. *Ibid.*, 223.
4. Price, *the history of U.S. Electronic Warfare, Volume III, The Association of Old Crows*, (Port City Press, 2000), 2.
5. Bill Grimes, *The History of the Big Safari Program*, (Archway Publishing, Bloomington, Indiana, 2014), 108.
6. Lars Olausson, *Lockheed Production List 1954-2003*, 20th Ed., (Self Published, Satenas, Sweden, 2002), 12.
7. Grimes, 117.
8. Price, *Volume II*, 166.
9. Grimes, 117.
10. *The Navigator*, Vol. 6, No. 1 (USAF, Spring, 1959), 31.
11. Price, *Volume II*, 345.
12. Larry Tart, Robert Keefe, *The Price of Vigilance: Attacks on American Surveillance Flights* (Ballentine Books, New York, 2001), 264.
13. Telephone conversation Richard Thompson CMsgr flight engineer C-130A-II, 7406th Support Squadron, July 26, 2020.
14. Price, *Volume II*, 372.
15. It is unlikely that because of the sensitive nature of the mission that 0528 made any position reports after departing Incirlik, AFB.
16. James Bamford, *The Puzzle Palace*, (Houghton Mifflin, Boston 1982), 159.
17. Price, *Volume II*, 372.
18. Tart and Keefe, 303.
19. https://www.nsa.gov/Portals/70/documents/news-features/declassified-documents/cryptologic-quartely/maybe_you_had_to_be_there.pdf. (accessed November 12, 2019).
20. https://www.nsa.gov/news-features/declassified-documents/c-130_shoot_down/index.html. (accessed November 12, 2019).
21. Tart and Keefe, 303.
22. Bamford, 180.
23. Price, *Volume II*, 165.
24. <https://www.nsa.gov/Portals>, 26.
25. *Ibid.*, 26.
26. *Ibid.*, 43, footnote 77. The word *jumped* is used. Peterson states “presumably with parachutes.” Conceivably some crew members may have *jumped* without parachutes rather than go with the burning aircraft or fell out. The scenarios of the crew’s last minutes are endless.
27. Bamford, 183.
28. Peter Cary, Susan Headdon, Douglas Stanglin, *Secrets of The Cold War*, (U.S. News and World Report, Washington, D.C., March 15, 1993), 50.
29. *Ibid.*, 49.
30. *Ibid.*, 50.
31. *New York Times*, January 24, 1961, F.P.
32. Wayne G. Barker, Rodney E. Coffman, *The Anatomy of Two Traitors*, (Aegean Park Press, Laguna Hills, California, 1981), 73.
33. *Ibid.*, 74.
34. <https://www.rfcafe.com/references/electronics-mag/silent-war-electronics-spying-radio-electronics-mag-april-20-1964.htm> (accessed July 1, 2020).
35. Douglas C. Dildy, Warren Thompson, *F-86 vs MiG 15*, (Osprey Publishing, Oxford, United Kingdom, 2013), 27.
36. Tart and Keefe confuse the APN-99 system with doppler radar. The APN-99 system consisted of the ASN-7 GPI and the APN-81 doppler radar. If the APN-81 failed for any reason the ASN-7 GPI could still be updated manually., 455.
37. The magnetic compass has turning and acceleration errors; however, these disappear when the wings are level and the aircraft is no longer accelerating. Pilots are aware of these errors.
38. Renee Francillon, *Douglas Propliners*, (Haynes, North America, Newbury Park, California, 2012), 262.
39. <http://www.nsa.gov/news>. Secret Pivot document dated November 12, 1958.