



# SAFETY ••• СОВЕТКІЙ STYLE

*A SAC navigator  
describes his flights  
aboard Russian aircraft*

**By CAPT. SAMUEL E. PIZZO**  
**Forbes Air Force Base**

HAVE YOU EVER WONDERED about your Soviet aircrew counterpart? About his equipment, his skill, how he flies his missions and meets his problems, or the consideration he gives safety? I have, and I was fortunate enough to observe firsthand some of his operations. To make the picture even clearer, I was on a flight where the utmost would be expected a flight with the Soviet premier aboard.

During the trip of Premier Khrushchev to the United States in a TU 114 some months ago the Soviet Union maintained a supply task force to ferry mail and passengers between Moscow and Washington. The supply aircraft utilized was the TU 104. Major Augustine S. Puchrik, SSgt Patrick Pellham and I were assigned as one of the American escort crews to accompany these aircraft on their entries to and exits from the United States. Our job was to insure that correct reporting of ICAO procedures was followed, that no restricted or prohibited areas were overflown, and to operate the radio equipment for mandatory reporting and letdowns.

Soviet routing was from Moscow direct to London, with an overnight stay in London. A British officer boarded the aircraft at London and accompanied it until it returned to that city. The next stop of the flight was Iceland, where we boarded to complete the journey via Gander and thence to Washington. Our first flight was one of three scheduled for round trip service between the two capitals.

Major Puchrik, who speaks Russian fluently, handled all VHF and UHF communications, and Sergeant Pellham operated the CW radio over water. In addition, Major Puchrik had to relay all GCA information and letdown instructions to the Russian crew. At no time were we allowed to operate the equipment other than to transmit radio messages. My job was to monitor the navigation and relay ETAs and ATAs.

Prior to the arrival of our TU 104 from London, Major Puchrik and I laid out the flight plan based on the Weather Central forecast. The Soviet crew appeared extremely cordial and cooperative and we encountered no difficulty in filing our first joint clearance.

The Soviets use a navigator's log quite similar to the log used on our conventional type aircraft. Little information is placed on the maps. Instead of an E 10 computer, they use a slide rule which is also

used for measuring distance. Their maps are quite detailed, resembling our WAC charts rather than our JN type charts. This surprised me somewhat until I later observed that they do a great deal of visual navigation and these charts were excellent for this purpose.

The first takeoff in the TU 104 proved quite interesting and gave me a few extra heartbeats. The aircraft accelerates rapidly. I felt terrific jolts, and the aircraft veered to the right and to the left as we progressed down the runway. We used an extreme length of runway for takeoff, and after we were airborne I queried Major Puchrik regarding this. He informed me that the TU 104 has no steering control for takeoff and landing other than braking action. Therefore, each time we veered right or left the brakes had been applied, which induced drag and resulted in slowing of acceleration. This makes it quite interesting with a high crosswind component such as we had during this takeoff roll.

The TU 104 essentially is a modified transport version of the Badger Bomber, lacking of course, the bombing system. The other instruments and computers are those we would normally expect to find in a modern jet transport. The radar set is comparable to our APQ 15. The Loran set is not an advanced type and the Soviet astrocompass could not be construed to be of the latest design. This is understandable, though, as the TU 104 has been flying for quite a few years.

As a SAC crew member I visualized certain types of navigation that the Soviets would employ for ocean crossings, and based on this I prepared myself accordingly, with celestial and DR equipment. I found this preparation unnecessary.

The greatest navigational difference between the Soviets and us is that they made no attempt to use either celestial navigation or their Loran set to navigate the ocean. As a matter of fact, the mount of the sextant, which is located to the rear of the aircraft commander, was covered and no sextant was on board the aircraft! They did strictly radio compass navigation. We homed to ocean weather ship Alpha, from there to the southern tip of Greenland, then to ocean weather ship Bravo, and on to Gander.

Overwater flying to SAC crews is commonplace; but as the Soviet Transport Service flies very few over ocean routes, apparently

the number of experienced over water navigators is small. Primarily the Soviets rely on radio compass, radar, and visual navigation.

This could possibly explain the lack of any other method being employed during our crossing. I made numerous attempts to ascertain this, but to no avail.

The Soviet navigator encountered radar trouble during the flight when his scope turned 180 degrees out of phase. This was corrected by calling the electrician on board who turned the set off and on three or four times, hit it twice, and presto, all was okay not exactly preventative maintenance but it seemed to do the job. The point is that the navigator made no effort to repair his set and, therefore, the conclusion is that only trained technicians are allowed to work on in flight maintenance troubles. Our navigators are trained and encouraged to perform in flight maintenance within their capability.

The Soviets are keenly aware of the danger of flying through thunderstorms. This fact was brought forth numerous times when the aircraft commander asked the radar operator to check weather ahead when flying in clouds. This facet of flying safety appears to be operating in air forces other than our own.

No effort was made to maintain optimum altitude; instead we cruised on a fixed altitude, usually around 30,000 feet with an airspeed of approximately 450 knots TAS. This varied only if the pilot attempted to get above or below a cloud deck.

Since I had no method of checking our actual position, I had to use metro ETAs, and my ETA became an ATA for position reporting. I could only hope we were on course, and I guess we were as we didn't get lost. I think the Russian navigator was utilizing the same procedures when reporting to Moscow via the short wave radio as our ETAs and ATAs were the same.

Letdown procedures were not standard. The Soviet crew preferred a straight in approach with the letdown starting quite a distance out. If there were clouds below, the Soviets would attempt to find a hole and let down. As an example, going into Iceland with the ceiling below 800 feet and visibility around three miles the Soviet crew found a hole in the cloud deck and made a letdown, rather than using ILS or GCA. The traffic controller was advised that we were heading inbound, using the range as our means of approach. Definitely this is not our method but it worked as we had no difficulty during the approach and landing.

The only other time that weather was encountered during letdown and landing provided me with a firsthand knowledge of a Soviet pilot's skill in handling his aircraft. This occurred during a landing at Gander when we had 300 feet and one mile visibility. During the letdown Major Puchrik was receiving instructions from our GCA operators and relaying this information to the Soviet aircraft commander. A straight in approach could not be made. We were on a dogleg to final when we started receiving some extremely large heading corrections from the controller. The navigator and I saw the field as the aircraft broke out around 300 feet and quite a distance to the right of the runway. Major Puchrik saw the field and told the pilot to make a go around. At this time the pilot came off of the gages, saw the field, racked it up to the left, then back to the right and leveled out over the runway but some distance down from the normal touchdown point. We landed and had to use the brake chute to stop. This was the only time that this chute was ever deployed. No check is made to obtain best flare or stopping distances. I feel that this action was strictly below our level of safety, and had we done this in a SAC airplane, we would have been severely dealt with. While the actual handling of the aircraft by the Russian pilot was good, I felt that a pullup and go around were definitely in order.

Evidently the Russian pilot did not think too much of our GCA, as he requested and received an interview with the controller in an

effort to determine the reason for our being so far off the centerline on final. To the best of my knowledge no reason was ever determined. I am sure that this approach convinced Ivan that our GCA system was not very good and that he should stick to his own method.

I had nine flights with this particular TU-104 crew and at no time did I see any evidence of panic, hesitation, or lack of proficiency. I feel that the Soviet crew was well trained and worked excellently as a team. I would estimate their ages to be between 35 and 40. They had been flying at least since 1942 and had WW II experience. I would rate them as proficient as most SAC crews with the same amount of flying time.

Possibly due to the fact that we had something in common, being aircrews, the Soviets displayed nothing but complete friendship and cooperation. We had access to every nook and cranny of the aircraft, and they willingly explained anything that we did not understand.

The return home by Mr. K in the TU 114, a transport version of the Bear turboprop bomber, turned out to be a very pleasant surprise as I did not know that I would be on board until the day prior to the flight. I replaced the scheduled navigator who had become ill.

Our USAF crew included Capt. Harold E. Renegar, AC; MSgt Gaylor Robinson, radio operator, and myself. The day prior to flight Captain Renegar introduced me to my new Russian counterpart in the TU 114. This aircraft is much more advanced than the TU 104; many of the instruments have been improved and, in addition, there were new types of equipment. The Russian navigator displayed the same spirit of friendship and cooperation that had been offered by the crew of the TU 104. A complete briefing was given, and I also received an abbreviated safety preflight on use of oxygen equipment. I was told that there was an oxygen bottle above the navigator compartment that would be available in case of decompression.

In the TU 114 the navigator has newer radar and Loran sets than in the ' 104, and also an improved true heading unit. In addition, the TU 114 has a periscopic sextant that is a permanent part of the aircraft.

Neither aircraft was equipped with ejection seats. Remember that these aircraft were the transport versions of the bomber models. I cannot say whether the bomber versions are equipped with ejection seats.

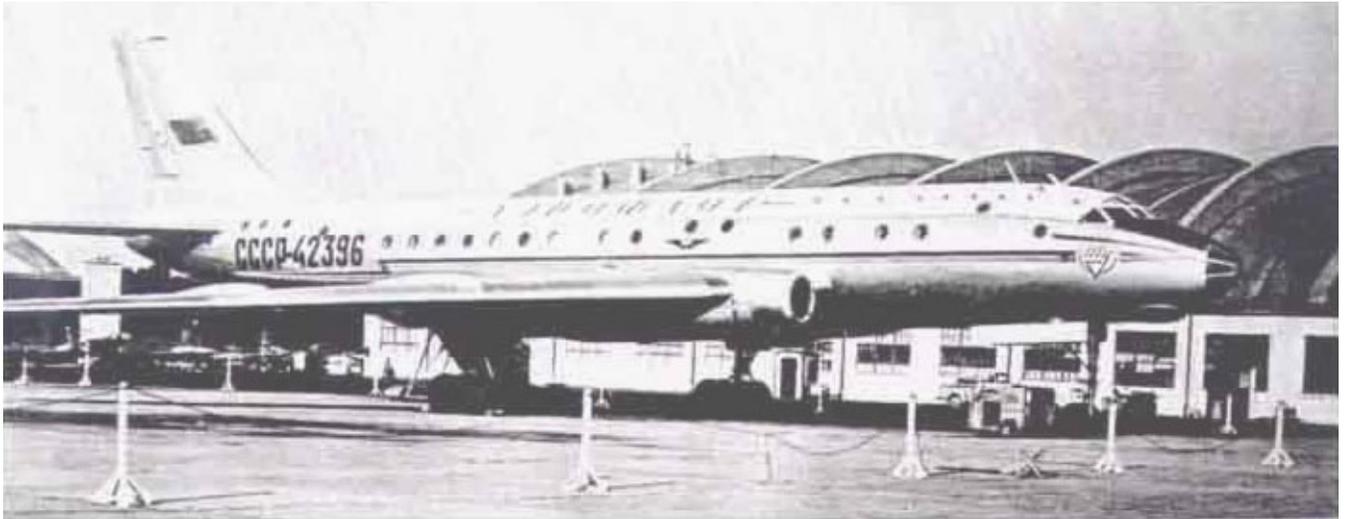
Prior to our departure we received the forecast from Weather Central and I drew up my flight plan. This weather information was made available to the Soviet crew for their flight planning purposes. However, they received their own weather through the Soviet Embassy, and their metrological office used our weather as a basis for comparison. I did not learn which of the two was the more accurate forecast.

This flight, I felt sure, would afford me the opportunity to observe firsthand a top notch Soviet crew doing celestial navigation as our route would be more over water than the previous flights. But again, this was not the case. The Soviets had stationed four vessels approximately 250 miles apart in the ocean and each vessel had homing facilities on board. You guessed it; radio compass navigation once more! So once again my ETAs were ATAs, as I had no idea where the ships were located and therefore I had to rely on DR only.

Our cruising altitude was around 30,000 feet, with a speed of approximately 405 knots TAS. The Soviets had two crews on board and approximately halfway through the trip the second crew took over for the last half of the mission to Moscow. All of our position reporting was made through English speaking stations. At no time did the Soviets attempt to make any calls other than HF contacts with Moscow. There were no problems encountered whatsoever, and the entire flight was extremely smooth.

As we passed over a country Mr. Krushchev would send a mes-

***THE SOVIETS used neither celestial methods nor Loran sets to navigate across the ocean, and the TU 104, transport version of the Badger bomber, has no steering control for takeoff and landing, except its brakes.***



**SAFETY—SOVIET STYLE . . .**



***FLIGHT LUNCH aboard a B 47 was never like the caviar and cognac the author was served aboard the TU 114. This transport counterpart of the Soviet turboprop Bear bomber is much more advanced than the TU 104, but navigation was still by radio compass.***

sage of greetings to the prime minister of the over flown country advising him that we were flying over the country returning to Russia and that he (Mr. K) wished the people well. These messages were prepared and typed by one of the many stenographers on board. Incidentally, they worked through the entire flight with the many articles that Khrushchev and his party wanted on paper. Soviet special cameramen were aboard busy taking pictures during the entire flight (Soviet pictures, such as an American crew eating caviar).

Our job terminated the moment we departed Sweden and headed into Russia. At this time the Soviets invited us to the rear of the aircraft to the flight lunch department, where we had a first class feast, including cognac. Breakfast on board a B 47 was never like this!

Based on my limited but firsthand observation of Soviet aircraft operations, I don't think their crews are as safety conscious as ours. This is not criticism of their flying ability, for the Soviet crew members I encountered are certainly competent but how safe is another matter. I believe our equipment, training and knowledge are superior. The end result is a safer operation by our aircrews.

#### About the Author



Captain Samuel E. Pizzo, squadron navigator, 343rd Strategic Reconnaissance Squadron, 55th Strategic Reconnaissance Wing, Forbes AFB, is qualified to compare Soviet and U.S. aircraft and aircrews. He has nearly 4000 flying hours and served as a standardization evaluator for three years before assuming his present duties. He has flown in B 17s, B 26s, B 29s and B 47s, and has the rating of master navigator.

COMBAT CREW

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