



ROLE OF POLISH AIRMEN IN ESTABLISHING THE ROYAL PAKISTAN AIR FORCE: A HISTORICAL ANALYSIS OF PROFESSIONAL CAPACITY BUILDING IN THE EARLY COLD WAR ERA

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Abstract

This study will focus on the role of Polish airmen in the formation and growth of the Royal Pakistan Air Force (RPAF) during the early years (1948-1960). After the geopolitical turmoil of World War II and the Yalta Conference (1945), some 30-100 exiled Polish airmen who had possessed extensive combat experience and technical skills, entered into the contractual service with the fledgling State of Pakistan. This research paper examines the diverse contributions of these aviators to the development of Pakistan's air power capabilities and infrastructure through a qualitative analysis of archival sources, documentary evidence, and secondary literature. The study shows that Polish airmen played a key role in the establishment of the operational, training, maintenance, and air transport commands of the RPAF with the particular focus as how then Squadron Leader Wladyslaw Turowicz and the Polish contingent leader, stood as an influential figure who even influenced the space and missile programmes in Pakistan. The results show that despite their comparatively limited numbers and the geopolitical factors that obscured their achievements, these Polish aviators laid solid foundations on which, professional edifice of the Pakistan Air Force was erected. The research fills a major gap in the historiography of Pakistan-Poland strategic relations and adds to the general knowledge on the topic of post-colonial military capacity building in the early Cold

War era.

Keywords: Royal Pakistan Air Force, Polish airmen, Wladyslaw Turowicz, technical assistance, military capacity building, history of the Cold War, Pakistan-Poland relations.

1. Introduction

1.1 Background

The emergence of Pakistan as an independent state in August 1947, was associated with one of the most defining phases in modern international relations. The post-World War II settlement, especially the Yalta Conference of February 1945, had re-established global geopolitical lines and created new spheres of influence that were to mark out the Cold War period (Plokhy, 2010). In the case of newly established Dominion of Pakistan, independence was not only the euphoria of having ceased being colonized, but also the harsh realities of state-building in the circumstances of acute scarcity of resources and existential threats.

At the time of partition, Pakistan was assigned disproportionately smaller share of the British Indian Empire's military resources. The distribution of aircraft, which is very important to any contemporary air force, was unfair. According to historical accounts, Pakistan was transferred only 41 out of 123 aircraft allocated to it, which was only 33 percent of what was to be provided (Chishti, 2022). That comprised 4 of 32 Dakotas, 16 of 35 Tempests, 7 of 16 Tiger Moths, 12 of 29 Harvards, and 2 of 10 Auster aircraft (Glogowski, 2016). To add to this shortage of military hardware, was the loss of British staff who had been running and servicing these planes. Most of them went back to the United Kingdom, whose reconstruction efforts also demanded their skills back home (Pietraszek, 2008).

At the same time, some 17,000 Polish airmen who had been on the front line with the Royal Air Force (RAF) during World War II, were in a very awkward situation. As a result of the Yalta Conference, despite its eminent services including the vital role it played in the Battle of Britain, geopolitically Poland was placed under the Soviet sphere of influence. It was a landmark event in its history, to which Winston Churchill had been referring to as the Iron Curtain (Churchill, 1946). Neither the new pro-Soviet Polish government nor the British authorities were willing to receive or retain these veterans, and the British authorities, who had achieved their goals of the war, were not keen to have huge number of foreigners (Glogowski, 2016). The war had killed about 2,500 Polish airmen, 3,500 decided to go back to Poland (where most were repressed), and 11,000 were forced to find other new homes (Pietraszek, 2008).

It was under such peculiar circumstances that an agreement was reached between the Pakistani need and the Polish displacement. British authorities also helped in recruiting Polish airmen to serve in the Royal Pakistan Air Force at the behest of the government of Pakistan. These airmen who secured the contracts initially on a three-year term, were not only experienced in the technical aspects but also had vast experience in the operational work during the war (Hali, 2016a).

1.2 Research Problem

Although the role of Polish airmen's assistance in developing the air arm of Pakistan is clearly important however, limited academic literature is available on this topic. Reference material consist of a few articles, documentary films, and one book translated from Polski into English in 2016 (Glogowski, 2016). There has never been a systematic academic research to analyse the extent, nature, and long-term effects of the services of Polish airmen in Pakistan. This gap in the historical record prompts significant questions about the actual measure of their contribution, especially when it comes to operational, tactical

and technical details in their respective domains of service.

Moreover, the geopolitical environment of the Cold War, where combined India (before the creation of Pakistan) was a member of the Western bloc (allies) and Poland was associated with the Soviet bloc, provided the circumstances that did not contribute to the official recognition and recording of this cooperation over decades (Laskowska, 2016). It is only after the collapse of the Soviet Union and the removal of the Iron Curtain that this part of Pakistan-Poland relations could be studied in greater detail.

The main research question, then, relates to the discrepancy in perceived importance of the role of Polish airmen in the establishment of the Royal Pakistan Air Force and the lack of a systematic academic focus on the topic. This research aims to fill this gap by answering the following research questions:

1.2.1. How significant and in what way did the effort of the Polish airmen contribute to create the Royal Pakistan Air Force?

1.2.2. How far is the present professional brilliance of the Pakistan Air Force based on the experience of Polish aviators?

1.2.3. What was the impact of the geopolitical constraints of the Cold War on the documentation, recognition, and historical memory of these contributions?

1.3 Research Objectives

The paper sets the following aims:

1.3.1 To discuss and write down the particular contributions of the Polish airmen to the different spheres of RPAF development, such as operational flying, training, maintenance, air transport, and technical education.

1.3.2. To discuss and record the contributions and life of the Squadron Leader (later Air Commodore) Wladyslaw Turowicz as the most notable and senior Polish aviator in the history of aviation and aerospace development in Pakistan.

1.3.3. To determine the long-term institutional heritage of Polish technical assistance in the Pakistan Air Force and other organisations like Pakistan International Airlines (PIA) and the Space and Upper Atmosphere Research Commission (SUPARCO).

1.3.4. To examine the political and social aspects that influenced the experience of Polish airmen in Pakistan and how it affected the historical memory of their contributions.

1.3.5. To create a rigorous qualitative and quantitative text that fills the existing gap in the scholarly literature.

1.4 Research Significance

The research is important in various aspects. It is an academic work that covers a forgotten chapter of the history of strategic relations between Pakistan and Poland, and adds to the wider literature on post-colonial state-building, the history of technical assistance in the Cold War, and the transfer of military capacity. The study also sheds light on the lives of displaced individuals during the post-WW-II period and gives an idea of how professional individuals managed the geopolitical turbulence of the time.

To Pakistan, this study serves to understand the history of the establishment of the significant national institutions even more comprehensively. Today, as a highly professional and able force, the Pakistan Air Force has significant aspects of its institutional DNA that can be traced back to the Polish airmen who contributed to the formation of its training and maintenance culture. Awareness of this heritage will add to the national historical consciousness and institutional identity.

In the case of Poland, this paper brings to light an unrecognized aspect of the global contributions of the Polish diaspora. The Polish pilots who served in the RAF and later on in RPAF are the only example of rendering technical skills to a European country in the process of communist restructuring as well as to an Asian country in the early Cold War era.

Lastly, this historical case study contributes to the study of modern international relations, providing a viewpoint of effective technical collaboration between states with varying cultural, religious, and political structures-lessons that still hold value to the modern development assistance and capacity-building efforts.

1.5 Research Limitations

There are a number of limitations recognized in this study. To start with, the ability to collect primary documentary sources, especially those related to the Pakistani side, is limited, which limits the evidentiary base. The informality of the majority of the Polish-Pakistani contacts and the delicacy of the entire situation in terms of geopolitics make much of the historical information rely on memoirs, oral histories, and retrospective histories.

Second, there are no specific archival records of the personnel in question, and thus it is not easy to find out the exact number of Polish airmen who served in Pakistan, their assignments, and their stay in Pakistan. The estimates are between 30 and around 100 people (Glogowski, 2016), but it is impossible to determine this number accurately.

Third, problems of a language barrier exist. Though some portion of the materials is translated into the English language, however, a full scope of the Polish-language materials has been unreachable to the majority of researchers. On the other hand, the Urdu-language sources, which may include relevant references, have not been traditionally explored in this view.

Fourth, time has inevitably diminished the number of people who could make first-hand accounts. The majority of the Polish airmen who served in Pakistan have passed away, and Pakistani nationals who served with them are also either passed away or getting older. This limits the opportunities for gathering oral history.

Nevertheless, despite these shortcomings, the documentary motion pictures, published memoirs, articles by scholars, available institutional records inter-personal interactions give an adequate basis on which useful historical analysis can be done.

2. Literature Review

2.1 Theoretical Framework: Post-Colonial States Technical Capacity Building

The export of technical skills and capabilities of the developed countries to the developing countries have attracted a lot of academic interest. The issue of the new independent states of the post-World War II era, caught in a need to build new modern military institutions without the colonial system of administration that helped them, is discussed by Johnson (2017). This literature indicates that technical

capacity building not only involves equipment transfer but also involves human capital building, institutional processes, and organizational culture building.

The South Asian case by Siddiqua (2001) considers how the Pakistani military was involved in the process of modernization during the early 30 years of its existence and, in particular, the relationships with the external aid. However, most of the scholarship focuses on the important relations of alliance of Pakistan with the United States under CENTO and SEATO, and with China after the 1962 Sino Indian war, though very little focus is laid on the minor-scale technical assistance programmes, such as the Polish contingent.

The Polish aviators' experience offers somewhat an interesting variation of the typical trends of technical support. In contrast to the traditional aid relationships, where government-to-government agreements are made, the Polish airmen were individual contractors, not the representatives of their home government (Glogowski, 2016). This system was a by-product of the Cold War geopolitics that led to a unique dynamic whereby technical knowledge flowed via personal connections and professional networks and not via institutional means.

2.2 World War-II and the Displacement of Polish Airmen

The contributions of the Polish Air Force in the World War-II have been accorded great scholarly attention, especially on its role in the Battle of Britain. Olson and Cloud (2003) give a detailed description of the experiences of the Polish pilots who served in the RAF, their successes in combat, as well as the difficulties they had to go through as displaced people. Zak (2012) focuses on the bigger picture of the Polish military exile and the impact of the decisions that were made at the Yalta and Potsdam that effectively isolated thousands of Polish servicemen who had stood and fought alongside the Western allies.

Peszke (2013) provides specific insights into the structure of the Polish Air Force and its actions throughout the war and the issue of the postwar destiny of Polish airmen. His work records the British pressure on the Polish servicemen to go back to Poland, the resistance many gave, and the eventual resettlement of about 11,000 Polish airmen in countries such as Australia, Canada, the United States, and the United Kingdom.

Recruitment of Polish airmen to Pakistan is touched upon with minimal reference in this general literature. The only thing Peszke (2013) says about some of the Polish personnel is that they were employed in new air forces in the Middle East and South Asia, but offers no specific analysis of the situation within Pakistan. This is the overall trend: the episode of Pakistan is depicted as an appendix to the history of the Polish diaspora instead of a topic of ongoing research.

2.3 Military Development in the Early Days of Pakistan

Problems of the armed forces of Pakistan at independence have been widely reported. Cheema (2002) examines the security dilemmas that the new state faced with the immediacy of the Indian threat in the aftermath of the Kashmir controversy of 1947-1948. Nawaz (2008) focuses on the civil-military relationships that influenced the institutional development in early Pakistan, whereas Rizvi (2000) gives an in-depth view of the military development since independence up to the present era.

As far as air power is concerned, Khan (2014) provides an institutional history of the Pakistan Air Force, which follows the formation of the Royal Pakistan Air Force in 1947 to the decades that followed. This work recognizes the foreign aid in the initial years of PAF but revolves more around the contributions of



Britain and America. The participation of the Polish is given scant discussion, which is representative of the general trend of insufficient coverage of this aspect.

Hussain (2005) also evaluates how the 1965 war influenced the development of the military of Pakistan with particular reference to the importance of maintenance and logistics in supporting the combat operations. The technical capabilities that Polish personnel aided in developing are indirectly evidenced by their analysis of the ways in which PAF had managed to keep its serviceability rates high, despite American sanctions.

2.4 Pakistan-Poland Relations in Historical Perspective

The two countries, Pakistan and Poland, have not received much academic interest in terms of their bilateral relations. Wldkowska (2012) briefly explains the history of the diplomatic relations in the sense that formal relations had been established in 1962, but the Cold War had pitted the two countries into opposing sides. Her work focuses on the economic and cultural interactions and does not rule out the fact that political relations were still limited due to the Poland being on the Soviet side and Pakistan having a pro-Western outlook.

Kraszewski (2015) discusses the Polish involvement with South Asia throughout the Cold War and how Poland tried to balance its relationships with India as well as Pakistan. His publication observes that Poland had long-established close relations with India, which dated back to the early years of the Non-Aligned Movement, but this was not an obstacle to some types of cooperation, especially in the technical sphere.

The fact that the Polish airmen were in Pakistan was a unique and innovative thing in this bilateral association, which is more ancient than even the official diplomatic acknowledgement. However, this aspect is mostly missing in diplomatic histories, because of the informal character of the arrangement, and because it was geopolitically sensitive, which inhibited the record-keeping.

2.5 Turowicz's Family: Case Study of Transnational Technical Transfer

The remarkable contributions and years of service have made Wladyslaw Turowicz and his wife, Zofia, the centre of attention among other Polish airmen. Hali (2016a, 2016b, 2021) has written numerous articles on Turowicz in Pakistani magazines, highlighting his contributions to the development of PAF and the extra efforts he put into the space program of Pakistan. These journalistic descriptions, though useful in the retention of memory, are not a systematic study of the scholarly work.

Chishti (2022) gives a biographical overview to place Turowicz in the framework of the Polish-Pakistani cooperation. This book is based on documentary material and interviews to trace the career of Turowicz, which began with his studies at the Warsaw University of Technology, duty with the RAF, and his forty years in Pakistan.

Intelligence records of the Polish communist era have helped to add a twist to the Turowicz story. Laskowska (2016) states that the Polish secret service records show that Turowicz was a spy, which he vehemently denied. This finding illuminates the ambivalent position of the Polish expatriates who had been employed by the Western-oriented countries since their country continued to be under the Soviet dominion.

There is less attention given to the contributions of Zofia Turowicz as an instructor of gliders, teacher, and philanthropist, but the documentary by Pietraszek (2008) has interviews and footage of Zofia Turowicz at work. Her contributions were given the due recognition and importance they deserved, as

her name could be marked by the award of Pride of Performance and Sitara-i-Imtiaz by the government of Pakistan (Hali, 2021).

2.6 Institutional Memory and Commemoration

There has been more interest in marking the contribution of the Polish to the development of Pakistan in the post-Cold War era. A monument to Air Commodore Turowicz was erected in the PAF Museum in Karachi in August 2006, and presence of the Polish Consul General marked the first official appreciation of the figure decades later due to the geopolitical restraints of the time (Glogowski, 2016). Likewise, the naming of the Wladyslaw Turowicz Space Complex at Lahore in Pakistan by the SUPARCO space agency is a recognition of his pioneering contributions to the Pakistan space program.

His memory is institutionalized in the educational system of PAF by the introduction of the Turowicz Trophy at the College of Aeronautical Engineering, PAF Academy Risalpur (Hali, 2021). Although important, these commemorative acts have not been supported by much academic interest in the history they celebrate.

2.7 Research Gap

Review of the literature shows that there is a gap in the research. Although the history of Polish aviation during the World War-II is well documented, the dispersal of the Polish airmen in the aftermath of the war is scarcely covered. Although the development of the military in Pakistan is a thoroughly researched topic, the role of Polish staff is not thoroughly investigated. Similarly, the Pakistan-Poland bilateral relations have been studied by a few scholars, however, the historic moment of Polish airmen's service, preceding the establishment of formal diplomatic relations between the two countries has not been investigated.

This paper fills this gap by methodically reviewing the role of the Polish airmen in the development of RPAF/PAF, contextualizing this discussion within the socio-political context of the post-colonial state-building, Cold War geopolitics, and transnational transfer of technology.

3. Research Methodology

The research methodology used in this study is a qualitative approach to historical research, which relies on various sources of evidence to develop and analyze the role played by the Polish airmen in the formation of air power in Pakistan. The research design is majorly descriptive and analytical, aiming not only to describe the historical events, but also to explain their meaning in the context of the greater theoretical and comparative conceptions.

Information was collected by conducting a systematic review of secondary sources available to date, specifically the book by Professor Aleksander Glogowski (2016) titled *They Polished the Royal Pakistan Air Force* (translated by Artur Zwolski), which is the most extensive single source of information on the topic. Visual evidence and interview content with participants were offered by documentary films, especially the work of Anna Pietraszek (2008) titled *Polish Eaglets in Pakistani Skies* and the documentary on Turowicz by Air Commodore (Retd) Khalid Chishti. Detailed biographical details and current opinions were provided through journalistic reports, particularly the work of Group Captain (Retd) S.M. Hali in the Dawn newspaper.

Published sources about the proceedings of the Yalta Conference (Plokhy, 2010), the documentation of the Marshall Plan (United States National Archives), and declassified Polish intelligence documents as cited in the reporting by Laskowska (2016) all qualify as archival sources. Information about the

commemorative practices and institutional memory was obtained through the institutional publications of the PAF and SUPARCO.

The research relies on the published interviews with Pakistani personnel as well who were on air with Polish airmen, which are preserved in documentaries and journalistic reports. Although this type of oral history is scarce in quantity, these sources offer important eyewitness accounts of the professional and social dynamics of the Polish-Pakistani working relationship.

Data analysis involved the use of thematic coding in order to determine the patterns among sources in terms of the nature of Polish contributions, the challenges faced, and the long-term effects on the institutions. The triangulation of various types of sources, including academic, journalistic, documentary, and archival ones, increased confidence in the findings where there was the convergence of the sources, and discrepancies were observed and discussed in terms of implications to historical memory and documentation.

The research recognizes the shortcomings of secondary and retrospective sources, especially the possibility of memory loss, storytelling, and focus on specific elements. Nevertheless, the uniformity of records among independent sources and the specificity of technical details indicate that the base of evidence, although not perfect, can be a credible source of historical analysis.

4. Findings and Discussion

4.1 The Composition and Arrival of the Polish Contingent

Practicality dictated by the circumstances was seen with the recruitment of Polish airmen to serve in Pakistan, done via a two-member aviation mission that was created at the Pakistan High Commission in London. Glogowski (2016) states that the candidates were ranked based on a hierarchy that ranked fighter pilots and flight instructors first, followed by multiengine pilots, with marital status coming next. This prioritization shows the immediate operational requirements of the RPAF, the right to fly and service available aircraft, and the right to educate Pakistani personnel to take up these roles on its own.

The final Polish staff that actually arrived in Pakistan is unknown, and it is estimated that between 30 and around 100 people did so (Glogowski, 2016). Such imprecision is evidence of the informality of the recruitment process, the multitude of entry points through which Poles could have entered, and the lack of detailed official documentation. Others who failed to qualify as employees of RPAF were taken up by Orient Airways, the private airline that would later become the backbone of the current airline, Pakistan International Airlines (PIA) (Hali, 2021). This implies that the Polish aviation knowledge infiltrated through the other sectors of aviation in Pakistan as well and not only in the military set-up.

The composition of the contingent was very diverse, including pilots, flight instructors, flight engineers, aerial gunners, radio technicians, maintenance personnel, academicians, and, in a unique case, female glider instructors in Zofia Turowicz and Maria Younga (Pietraszek, 2008). This variety also allowed the Polish contingent to work in a variety of areas of air force development, at the same time giving the effect of their relatively small numbers.

4.2 Contributions to RPAF Institutions

4.2.1 Training Infrastructure

Perhaps the most lasting contribution was the creation of good training institutions by the Polish



contingent. It was the Technical Training Section (TTS) formed at RPAF Base Drig Road, Karachi (later renamed as PAF Base Faisal) under Squadron Leader Turowicz as Chief Instructor, which developed the technical staffing capability as an indigenous base (Glogowski, 2016). Before this, Pakistan had been totally reliant on the British-trained staff who had left critical gaps.

In RPAF College Risalpur, the House of Eagles, Polish instructors were instrumental in various areas of training. In the early days of the college, Flight Lieutenant Boleslaw Kaczmarek and Flight Lieutenant Bronislaw Malinowski headed Flight Training and Navigator Training Squadrons, respectively (Glogowski, 2016). Flight Lieutenant Roman Kozik and Flying Officer Kossakowski, and Sergeant Ludwik Swierzb, a veteran of World War-II, aerial gunner, founded aviation gunnery and radio-electronics training courses which would yield generations of Pakistani experts.

These training contributions were appreciated by the founding father of Pakistan, Quaid-e-Azam Mohammad Ali Jinnah, when he paid a visit to the Flying Training School Risalpur in March 1948. Jinnah himself, despite his sickness, remarked: "The Royal Pakistan Air Force has begun with very little except devotion and will to conquer, but the Royal Pakistan Air Force is already shaping up. This school was formed only seven months ago; it is a good example of this" (quoted in Hali, 2021). This early presidential support, a mere few months after the institution was founded, served as a symbol of the strategic emphasis placed on air force development and confirmed the training philosophy that Polish instructors were following.

4.2.2 Maintenance and Technical Capabilities

Opening up maintenance facilities was as daunting as training was. The ability of any air force to maintain aircraft in a fit state is vital to its combat capabilities, and Pakistan was left with little in the way of maintenance facilities and almost none in its own technical manpower. The Polish contingent's maintenance specialists bridged this gap in several ways.

The fact that Squadron Leader Turowicz was both a pilot and an aeronautical engineer came in handy. His experience in wartime with the RAF had included surveying the repaired aircraft and redeploying them to the frontline bases- experience that could be directly useful in setting up the maintenance rules in Pakistan (Chishti, 2022). His later postings as commander of No. 102 Maintenance Depot at RPAF Base Drig Road and as Chief Scientist at the Maintenance and Technical Wing of PAF College Risalpur put him in a position to impact maintenance practices on both operational and technical educational levels.

The performance of the Polish technical officers was dramatic in the war with India in 1965. Air Commodore Turowicz and his maintenance crew kept the F-86 Sabre fleet of Pakistan in the air by creating innovative solutions, improvisation, and strict maintenance discipline when the United States imposed an arms embargo and halted the supply of spare parts to the fleet (Chishti, 2022). The 97 percent reliability and 100 percent availability of the PAF aircraft in this war (Pietraszek, 2008) is a testimony to the maintenance culture that Polish technicians had contributed. Attainment of such a remarkable achievement was later translated into the conception and development of indigenisation and self-reliance in the field of technical support and manufacturing in the form of Pakistan Aeronautical Complex (PAC).

4.2.3 Operational Flying

Although the main contributions of the Polish contingent were training and maintenance, the Polish pilots were also directly involved in combat work. RPAF was requested to assist ground troops in fighting Pashtun rebels commanded by the Faqir of Ipi in Waziristan and Indian and Maharaja forces in



Kashmir (Glogowski, 2016). The following operations were highly challenging: operations in the mountains, the risk of collateral damage, and the intricacies of the close air support during irregular warfare.

Squadron Leader Kozak of No. 9 Fighter-Bomber Squadron, commenting on these operations, explained that it was difficult to fly to Kashmir: "The flight was a difficult one because the mountains were very high (quoted in Glogowski, 2016, p. 47). Polish pilots, despite these difficulties, performed many air-to-ground missions, which helped in the military work, at the same time showing the Pakistani colleagues the methods of work.

Flight Lieutenant Kaczmarek and Flying Officer Zbigniew Kossakowski, two Polish officers, died on duty while serving Pakistan (Glogowski, 2016). Their martyrdom, their demise being that of airmen in the service of the country they adopted, was the supreme dedication to their professional duties and their new land.

4.2.4 Air Transport Development

No. 6 Transport Squadron was challenging because of its heterogeneous fleet of C-47 Dakota, DC-3, and Halifax airplane types that demanded different handling features and maintenance processes. Airmen of Polish origin whose squadron was deployed to visit Pakistan were very successful in such arduous conditions in the mountainous north of the country and in narrow valleys (Hali, 2021).

The leadership of Flight Lieutenant Czeslaw Siwik, as a chief maintenance officer, was able to attain high serviceability rates in this diverse fleet, which allowed the continuation of transport operations (Glogowski, 2016). The trust placed in Polish airmen was also evidenced when Squadron Leader Tarkowski, a veteran of the Battle of Britain, was posted to the Governor-General of Pakistan Flight and Communication Unit as Pilot-Commander of the air crew (Hali, 2021). This assignment put a Polish officer in the position of the national leadership with the air transportation directly under his responsibility- a position of great trust.

4.3 Turowicz Phenomenon: Air Force to Space Program

Although there were several Polish airmen who made significant contributions however, the career of Wladyslaw Turowicz is unique in its scale and the impact it has had. His career as Squadron Leader in the first Polish group, Air Commodore, Assistant Chief of Air Staff (Maintenance), and then Executive Director of SUPARCO constitutes an impressive transnational technical career.

The theoretical background of his practical work was the academic qualifications of Turowicz, a PhD in Aeronautical Engineering at Warsaw University of Technology. His engineering knowledge was complemented by his experience as a test pilot and a bomber pilot (Chishti, 2022). This theoretical and practical experience combined within him, resulted in being in a unique position to discuss the many-layered issues of creating an air force out of little.

The technical expertise and confidence that he instilled in his subordinates was reflected in his promotions up the PAF ranks: Wing Commander in 1952, Group Captain in 1959, and Air Commodore in 1960 (Glogowski, 2016). In 1960, he was appointed as the Assistant Chief of Air Staff (Maintenance) and was put at the top of the technical establishment of PAF, which he stayed until 1967.

After retiring in PAF, Turowicz used his skills in the new space program in Pakistan. Being the first Executive Director of SUPARCO (1967-1970), he was the head of the team that developed the Sonmiani satellite launch facility and solid-propellant multi-stage rockets (Hali, 2016b). It was the basis of work

that in the future would become the surface-to-surface missile arsenal of Pakistan like the Hatf, Ghori, Shaheen and Nasr.

The leadership of Pakistan realized the strategic importance of the work. Turowicz along with Nobel laureate Dr. Abdus Salam, persuaded President Ayub Khan to give priority to indigenous space and nuclear programs (Hali, 2016b). This advocacy at the highest level influenced the course of strategies in Pakistan over the decades. The breadth and depth of his contributions are testified by Turowicz being awarded the Sitara-i-Pakistan (1965), Tamgha-i-Pakistan (1967), Sitara-i-Khidmat (1967), Sitara-i-Imtiaz (Military) (1972), Dr. Abdus Salam Award

In addition to Turowicz, the social and educational aspect was provided by his wife Zofia, a glider instructor, Karachi University, and an American School educator and philanthropist. She earned the Pride of Performance and Sitara-i-Imtiaz awards (Hali, 2021), which recognized the work she had done in the aviation industry, as well as in education and community.

4.4 Social and Cultural Dimensions of Polish-Pakistani Collaboration

The case of the Polish airmen as a part of the Pakistani society contains some interesting patterns that can be analysed. Polish staff did not have the status of colonial masters as did the British officers who came before them, but were contracted workers, and this status influenced how they interacted with their Pakistani counterparts (Pietraszek, 2008). Pakistani airmen of the period always recount that Polish counterparts were more amiable, friendly, and socially integrated than the British personnel used to be (Glogowski, 2016).

Such disparity in social processes could be related to various aspects. Polish history of foreign domination and partition itself might have primed Polish airmen to be more susceptible to matters of national dignity and predisposed to more egalitarian relations. Moreover, since they were not the representatives of an imperial force, but people who were interested in new houses, they were more motivated to establish authentic relations with colleagues in the country.

The appearance of Polish women in the workplace, especially as glider instructors (Zofia Turowicz and Maria Younga), was a great break with the local traditions of the conservative 1940s and 1950s Pakistan. The fact that the young Pakistani trainees were positive about these women instructors is an indication that professional competence may override gender expectations even in a conservative society (Pietraszek, 2008). The relationships between students and instructors that were developed during glider training were positive recollections of the Pakistani participants 30 years later.

Socializing was not limited to the workplace. The Polish staff based mostly in Karachi attended beaches and had a taste of officers' mess socialization with Pakistani fellow officers (Glogowski, 2016). The social aspect of the expatriate and military communities was helped by the Polish ladies' participation in mess activities and community events.

4.5 Geopolitical Constraints and Historical Memory

The Cold War situation had a monumental influence on the experience of the Polish airmen, as well as the historical memory of their activity. Since Poland was under the Soviet bloc, the government of Warsaw did not recognize these anti-communist emigrants working in a country that was aligned to the West. As a nation allied to the United States and keen on not making its strategic partnerships more complicated, Pakistan had a reason to not emphasize its use of personnel of the communist bloc (Laskowska, 2016).

Such mutual silence caused the circumstances under which the contributions of the Polish airmen were appreciated in PAF, but were barely publicly recognized and were scarcely documented. Editing their experiences to preserve them as history was not the main concern of the Polish airmen themselves, who were displaced and found themselves in a precarious situation, and instead chose to cope with their duties (Glogowski, 2016). What was produced was a historical record which was much sparser than the contributions they made would have justified.

The aftermath of the Cold War has allowed this history to be recovered in a gradual manner. The defeat of the communist rule in Poland created avenues of recognizing the Polish expatriates who had made other decisions as opposed to returning. Changing strategic relations in Pakistan opened up room in acknowledging contributions, which were not seen before. The 2006 monument in the PAF Museum, the Turowicz Space Complex in Lahore, and the Turowicz Trophy in the College of Aeronautical Engineering are official honors that were decades late but eventually came to fruition (Hali, 2021).

Nevertheless, despite such commemorative activities, a great deal of historical work still exists. The dearth of written sources, the old age of witnesses who survived, and the scattering of the Polish families in different countries limit the chances of an exhaustive documentation. With every single year, chances of oral history gathering and personal validation are lost.

4.6 Assessing Long-Term Impact

To evaluate the long-term contributions of the Polish airmen, one will have to distinguish between the direct input into the specific institutions and the contribution impact on the technical and strategic course of Pakistan.

Direct institutional contributions are to a certain extent easy to identify. The Technical Training Division at Drig Road, the training systems at Risalpur, the maintenance procedures which have been evolved throughout the bases of PAF, the performance that Polish pilots and technicians have demonstrated, all these were real bases on which the subsequent development or growth has been based. The Polish technicians helped in developing the culture of maintenance and as the aircrafts of Polish maintenance acquired impressive serviceability rates during the war of 1965, they demonstrated the continuation of the culture.

Beyond such direct influence, the Polish influence prepared the technical and strategic direction of Pakistan through the education of the people they trained and the model of an institution. The Pakistani employees who were taught by the Polish trainers, taught the following generations and the impact of the initial transfer of knowledge was multiplied. Organizational culture of PAF included professionalism, technical rigor and devotion which were the traits of Polish airmen.

The greatest long-term impact was the work of the Turowiczs on the SUPARCO and the creation of the rocket/missile technologies. The role of Wladyslaw Turowicz in the highest level of national security policy was to assist in the development of Pakistan space program and advance the notion of indigenous strategic capabilities. The successors of solid-propellant rockets that he had developed at Sonmiani are now considered a crucial element of the deterrence posture in Pakistan in the form of missile systems (Chishti, 2022).

Even the example of the Polish airmen revealed that effective cooperation of people with absolutely different cultures, religious and political backgrounds can be effective. This historical case of successful cross-cultural technical cooperation can apply to the present situation of the development of civilizational rhetoric and civilizational conflict on the identity basis.



5. Conclusion

In conclusion, this paper has demonstrated that the role played by the Polish airmen in the formation of the Royal Pakistan Air Force was far more than previously believed. They were seminal contributors, and their contributions were in the fields of training, technical infrastructure, operational preparedness, and institutional development over the long term. In their efforts; they helped to form up the professional standards and resilience that subsequently enabled the Pakistan Air Force to endure substantial adversity. Their lives also reflect more general processes of post-colonial capacity building and informal knowledge transfer during the Cold War, which is not carried out by the state but through the expertise of the individual. It is also significant that they managed to become the part of society, and it challenges the belief that cultural and religious differences are an obstacle to professional cooperation.

This history is little known, even though subsequent commemorations have come to appreciate their contributions. The research explores the archival and oral domains, but additional research is needed. And lastly, the Polish airmen were unsung heroes whose significant contributions and services towards the development of the modern Pakistan Air Force are evident in its operational, training and maintenance excellence which has been recognized worldwide.

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